

November/December 2014  
Vol.22 No.5

# what's new in **Food** technology & manufacturing



**Meat harvesting  
expertise**

PP100007395

Best practice

Health claims

Clean rooms

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- ✓ Greenfield site
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### Site Technical Manager

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- Be technical and quality conscience of the business
- Achieve constant audit readiness
- Achieve/maintain BRC requirements
- Involved in NPD
- Track and reduce complaints
- Report on freshness and quality

### Site Engineering Manager

- Assist to set up new team and procedures
- Deliver launch plan
- Engineering projects, designs and modifications to meet standards
- All engineering projects deliver outcomes on time and on budget

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# contents

November/December 2014



## 8

### food for thought

- 6 Marketing functional foods in Australia



## 11

### bulk handling, storage & logistics

- 15 Product-specific cleanrooms
- 25 Food and beverage-grade compressed air - best practice guidelines



## 29

### meat, poultry, seafood

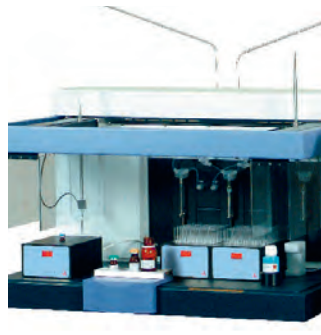
- 31 No time for waste - Technical developments in meat harvesting
- 36 Extending shelf life of seafood key to exports



## 39

### processing

- 46 Full line supply brings savings to wine bottling plant
- 52 Where is production line technology headed in the food industry?



## 55

### testing



## 57

### packaging

- 63 The top three functional additives in the plastic packaging market



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# A cup of tea

## a fruit salad, then jog to the wine bar

Research presented at the European Society of Cardiology 2014 ESC Congress has revealed that daily fruit consumption cuts the risk of cardiovascular disease (CVD) by up to 40%, while drinking tea reduces non-cardiovascular mortality by 24%. However, those who have been encouraged by recent evidence of the health benefits of wine consumption may have their mood slightly dampened by the news that wine only protects against CVD in people who exercise.

### When it comes to fruit, the more the better

The findings from a seven-year follow-up study of nearly half a million people with no prior history of CVD found that the more fruit people ate, the more their risk of CVD declined. The researchers found that compared to people who never ate fruit, those who ate fruit daily cut their CVD risks by 25-40%.

The researchers concluded: "Our results show the benefit of eating fruit in the healthy general population and in patients with CVD and hypertension. Fruit consumption is an effective way to cut CVD risk and should not only be regarded as 'might be useful'. Policies are needed to promote the availability, affordability and acceptability of fresh fruit through educational and regulatory measures."

### Tea-drinkers healthier than coffee-drinkers

Meanwhile, French researchers presented the results from their study on the effect of coffee and tea consumption on CV mortality and non-CV mortality. The study of over 130,000 people found that coffee-drinkers had a higher CV risk profile than non-drinkers, and that non-coffee-drinkers were more physically active.

Tea-drinkers had the reverse profile of coffee-drinkers, with consumers having a better CV risk profile than non-consumers. Physical activity also increased with the number of cups of tea per day, from 43% in moderate tea-drinkers to 46% in heavy drinkers.

### Wine is fine, but only if you exercise

In news that might inspire wine-drinkers to walk more briskly to the bottle shop, results from the In Vino Veritas (IVV) study, presented by Professor Milos Taborsky from the Czech Republic, found that wine only protects against CVD in people who exercise.

The IVV study is the first long-term, prospective randomised trial comparing the effect of red and white wine on markers of atherosclerosis. The 146 participants were randomised to one year of moderate consumption of red wine (Pinot Noir) or white wine (Chardonnay-Pinot) from the same year and wine region of the Czech Republic.

Participants kept a logbook on their consumption of wine and other alcoholic beverages, medication use, and amount and type of exercise. They were also required to return the corks from the wine bottles to confirm that they had consumed the wine rather than sold it.

The researchers found that there was no difference between HDL ('good') cholesterol levels at the beginning of the study compared to one year in either the red or white wine groups.

Professor Taborsky said: "A rise in HDL cholesterol is the main indication of a protective effect against CVD; therefore, we can conclude that neither red or white wine had any impact on study participants as a whole."



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# Marketing functional foods in Australia

## How to navigate the rules on health and therapeutic claims

*Frances Wheelahan (Partner, Corrs Chambers Westgarth) and Virginia Burns (Associate, Corrs Chambers Westgarth)*

**Australia's demand for functional foods is growing rapidly and there are many opportunities for businesses wishing to market these foods in Australia. However, the formulation, advertising and labelling of these foods is heavily regulated and care must be taken to comply with food and therapeutic goods laws.**

A 'functional food' is generally any food or food component that may provide demonstrated health benefits or functions beyond basic nutritional functions. Examples of functional foods include foods fortified with vitamins and minerals such as juice, bread and pasta, margarine containing plant sterols and yoghurt with specific bacterial strains.

Demand for these types of foods is being driven worldwide by an ageing society, increasing prevalence of lifestyle-related diseases and growing interest among consumers in health and wellbeing.

The functional food market is particularly strong in Asia with growing opportunities for businesses operating in the Australian food industry. Japan, for example, has one of the largest functional food and beverage markets in the world with a reported market size in 2012 of approximately AU\$20 billion. Key factors driving consumer choice in the Japanese market are product efficacy, strong scientific substantiation for health claims, product safety and general product awareness.

### Five steps for advertising and labelling functional foods in Australia

#### ***Step 1: Determine whether your functional food is a 'food' or a 'therapeutic good'***

Determining whether your product is a 'food' or a 'therapeutic good' is a key first step. This will establish which regulatory regime applies to your product and how it can be formulated, marketed and labelled in Australia.

Generally speaking, 'therapeutic goods' are more heavily regulated in Australia than 'foods'. So, our tip is to position your product as a food not a therapeutic good, if possible.

In Australia, the legal definition of 'food' includes all the products you would normally expect to be foods as well as products like chewing gum, confectionery and beverages including tea and coffee. But it does not include a therapeutic good.

Foods are regulated under state and federal food laws and are subject to the Food Standards Australia New Zealand (FSANZ) Food Standards Code.





A 'therapeutic good', in contrast, is a good that is or is represented as being for a therapeutic use such as preventing, diagnosing, curing or alleviating a disease, ailment, defect or injury or influencing, inhibiting or modifying a physiological process in persons. Accordingly, the manner in which a good is represented and the claims made in relation to the good are crucial in determining whether the good is a 'food' or a 'therapeutic good'.

The Therapeutic Goods Administration (TGA) is responsible for regulating the supply, import, export, manufacturing and advertising of therapeutic goods including medicines and vitamins and minerals.

Businesses wishing to market a functional food that falls within the definition of a 'therapeutic good' (such as complementary medicines, vitamins and minerals) will need to comply with the more stringent requirements of the *Therapeutic Goods Act 1989* (Cth) and the Therapeutic Goods Advertising Code. Business will also need to consider whether their product needs to be listed or registered with the TGA.

### **Step 2. Ensure the food's formulation complies with the Food Standards Code**

The formulation of a functional food must comply with all relevant requirements under the FSANZ Food Standards Code. Businesses looking to market a product as a functional food in Australia should closely consider the requirements in:

Part 1.3 - substances added to food (including the addition of vitamins and minerals); Part 1.4 - contaminants and residues (including maximum levels of metal and non-metal contaminants and other toxicants in foods including fish, confectionery and other products); Standard 1.5.1 - novel foods (which may include plant or animal extracts or micro-organisms used as ingredients in another food); Standard 1.5.2 - food produced using gene technology (only specified foods produced using gene technology may be sold in Australia); and Standard 1.6.1 - microbiological limits in food (which specifies the limit on the presence of certain microorganisms in certain foods, including some seafood).

### **Step 3. Avoid making therapeutic claims**

All claims relating to the effect of the functional food must be health or nutrition-related, as therapeutic claims are specifically prohibited in relation to foods. For example, a claim that a food "prevents heart disease" is not permitted under Australian law. Therefore, businesses looking to market functional foods in Australia relevant to cardiovascular disease should consider claims such as "may lower blood pressure" or "can help lower cholesterol", as these would be more likely to be permitted high level health claims under the FSANZ Food Standards Code.

### **Step 4. Ensure that any nutrition content or health claims included on food labels or in food advertising comply with Standard 1.2.7**

Food Standard 1.2.7 - *Nutrition, Health and Related Claims* sets out the claims that can be made on labels or in advertisements about the nutritional content of food (nutrition content claims) or the relationship between the food and a health effect (health claims).

Standard 1.2.7 also mandates the conditions under which nutrition content and health claims can be made. For example, a high level health claim that a food "contains calcium to reduce the risk of osteoporosis" may only be made in relation to a food that contains no less than 290 mg of calcium per serving, must refer to the relevant population group ("persons aged 65 years and over") and must be accompanied by a context statement ("diet high in calcium and with adequate vitamin D"). More information on Standard 1.2.7 can be found in the Corrs Chambers Westgarth publication 'New food standard to regulate nutrition content and health claims'.

Again, businesses must avoid making therapeutic claims (claims that a product can prevent, diagnose, cure or alleviate a disease) or comparing a functional food with a product that is represented for therapeutic use.

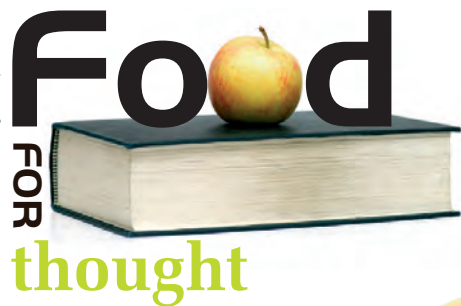
### **Step 5. Ensure all claims made with respect to the functional food comply with the Australian Consumer Law**

All nutrition content and health claims must be factually correct and be able to be substantiated (for example, through scientific research papers or clinical trials) to avoid misleading consumers in breach of the Australian Consumer Law.



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Corrs Chambers Westgarth  
www.corrs.com.au



## Chinese food scandal further erodes consumer trust

Yet another Chinese food scandal has irreparably eroded consumer trust in the government and food safety regulations, according to research from the University of Illinois (U of I).

Producers of Wuchang, a brand of gourmet rice that has a particular scent, had reportedly been tampering with the product for about a decade, adding in less-expensive rice that had been aromatised to bulk out the real deal.

Only 800,000 tons of Wuchang rice was produced but up to 10 million tons were sold. Adding just one pound (450 g) of fragrance to 10 tons of rice enabled producers to pass lower-quality rice off as the more expensive Wuchang brand rice. The story was finally broken by the Chinese Central TV, which said that the government was doing its best and the culprits would be dealt with accordingly. But the general public was still concerned about the issue.

The U of I study was published in the *International Journal of food Safety, Nutrition and Public Health*.

## Start date for dietary fibre claim requirements could be pushed back

New requirements for nutrition content claims about dietary fibre could be delayed by 12 months after the Australian Food and Grocery Council (AFGC) applied to extend the requirements to January 2017.

Food Standards Australia New Zealand (FSANZ) has released a consultation paper on the application.

“The requirements are part of a health claims standard which has a three-year transition period finishing on 18 January 2016,” said FSANZ Chief Executive Officer Steve McCutcheon.

“At the request of industry, FSANZ reviewed the requirements for nutrition content claims about dietary fibre and decided to make no change. The AFGC is seeking an extension of the transition period to allow for implementation work that was deferred by manufacturers while the review was undertaken.”

FSANZ is calling for stakeholder submissions on the issue.

## Tool tracks financial impact of traceability in seafood industry

To help the seafood industry understand the financial impact of implementing traceability, the Global Food Traceability Center (GFTC) has launched a Seafood Traceability Financial Tool.

Developed with input from seafood business leaders and owners, and as part of its service to the seafood industry, the tool is freely accessible online at [www.seafoodtraceability.org](http://www.seafoodtraceability.org).

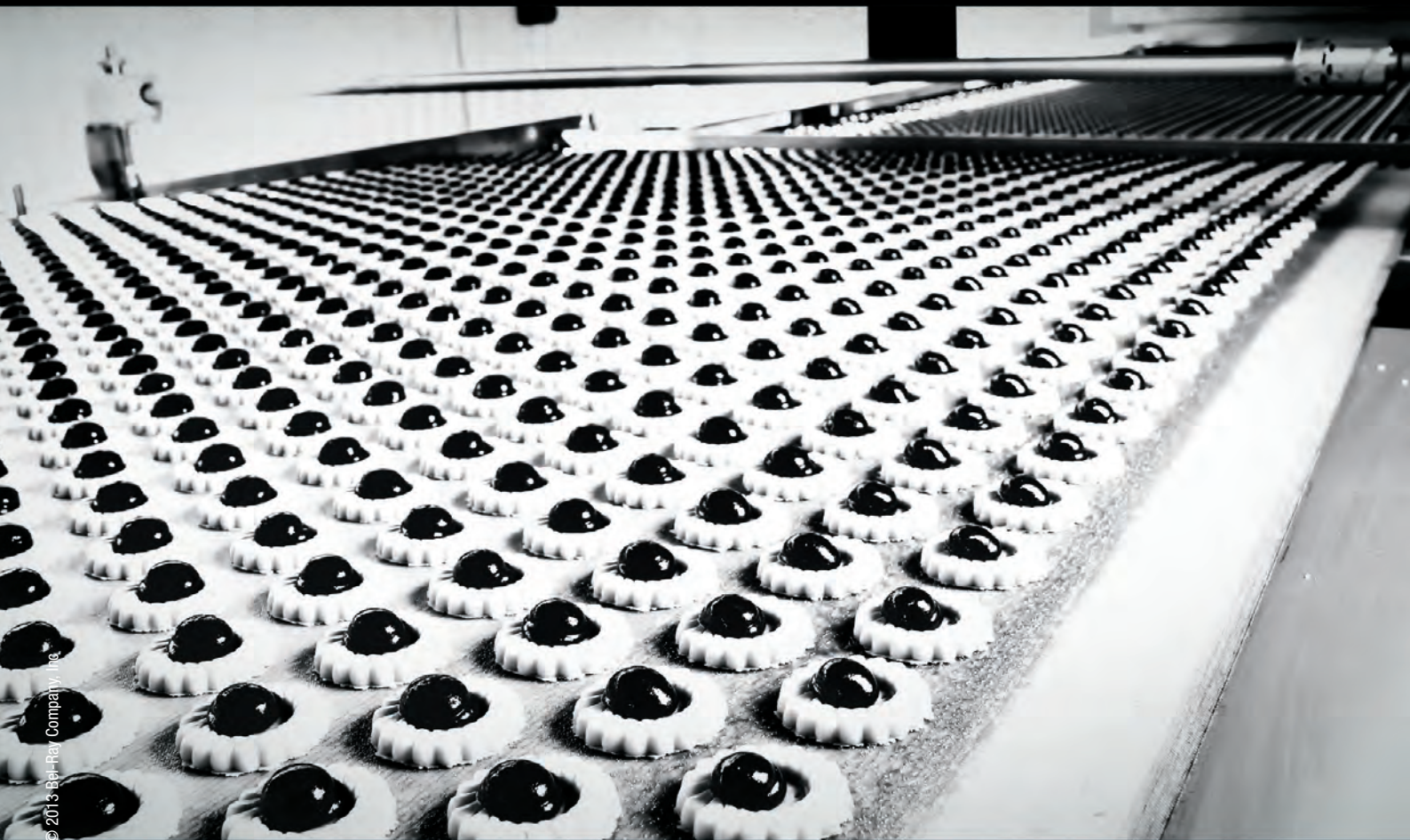
The tool can be used by any seafood business, but will be especially helpful for smaller businesses that may lack the time and resources to execute a detailed business case. It produces simple results within a few minutes; alternatively, the user can choose to conduct a more detailed analysis.

“From retailers and foodservice companies, all the way back to the catch, the entire food industry is becoming more concerned and conscious about traceability and how to help protect the public,” said Brian Sterling, managing director of the GFTC.

“In addition to providing a way to verify the source of products, traceability also offers tangible financial benefits for companies. It’s a proven business tool that can drive new market opportunities, lower costs and increase margins.”



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# Food FOR thought



## E-catalogue links Australian exporters with Asian buyers

Hoping to expand into Asia? Food Innovation Australia Limited (FIAL) has launched an interactive e-catalogue that links Australian food and beverage suppliers with overseas buyers.

A government-funded industry initiative, the tool was developed in response to frustration expressed by both Australian producers and international buyers about the industry's past methods of fostering international relationships.

More than 350 Australian suppliers are already listed in the e-catalogue, including major brands such as Arnott's, Bundaberg Brewed Drinks and Weis. FIAL is calling on all Australian food and beverage producers interested in exporting to register.

The e-catalogue utilises a rating system that allows buyers to rate suppliers on their unique selling proposition, product range and company website. This gives suppliers information about why their business may or may not appeal to international buyers.

According to Najib Lawand, FIAL general manager market development, the benefits of buyer feedback are invaluable and could help remove the barriers many Australian suppliers face when initiating their export business.

## Rebate available for small exporters

Small exporters, listen up: there's still time to apply for a rebate for your export registration charges for the 2014-15 financial year. The rebate covers 50% of export registration charges.

"The rebate is worth up to a maximum of \$5000 to eligible exporters and is available in 2014-15 as part of the Coalition's \$15 million Package

Assisting Small Exporters promised before the election and delivered in this year's budget," Agriculture Minister Barnaby Joyce said.

"This four-year package is all about helping small exporters of meat, dairy, grain, horticulture, eggs and seafood products improve their competitiveness and profitability in the international marketplace.

"Since this assistance package opened in August, my department has written to more than 2200 registered exporters inviting them to apply, and I'm pleased that we have already received 240 applications to date."



## Tracking fresh produce to maximise shelf life

What if a tracking system could let you know when a shipment of fresh fruit and vegetables is close to expiration while also providing the freshest possible products to the consumer? Such a system could soon be a reality, thanks to research from the University of Florida (UF).

UF's Jeffrey Brecht led a team that followed strawberries from harvest in Florida and California through to stores in Illinois, Washington, Alabama and South Carolina.

The team placed two RFID devices into each pallet of strawberries as they were picked. The devices tracked the strawberries' temperature from the field, through pre-cooling and into trucks, to distribution centres and then stores.

The researchers theorised that, by gathering information about the quality of the produce and the temperatures to which it has been exposed, distributors will know which produce needs to be delivered first.

The food distribution industry generally operates on the theory of 'first in, first out' (known as FIFO). The researchers found that a better system would be FEFO, or 'first expired, first out', when dealing with delicate fruits and vegetables.

While companies usually measure the temperature of an entire truck, the temperature of individual pallets can vary greatly. The time of day the berries were picked and even their placement on the truck can influence quality - for instance, strawberries picked in cooler morning temperatures are likely to stay fresher for longer than strawberries picked in the afternoon heat.

"If you improve the efficiency of post-harvest handling, you reduce waste and losses and that improves sustainability," Brecht said.

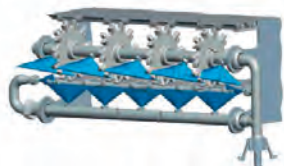




# bulk handling



## CIP units for the meat and poultry processing industry



The HyCLEAN Cleaning in Place (CIP) System from Habasit is a modular, customised automatic cleaning system for the sanitation of plastic modular belts in hygiene-sensitive food processes.

The company says that the system uses up to 70% less water, as well as cleaning and labour time, and that the lower use of detergents and chemicals will mean longer belt lifetime.

The cleaning system can be integrated into new or existing conveyors and works with low water pressure from normal tap water supply.

The M5065 HyCLEAN plastic modular belts have 0% open area, solid plate, Smart Fit rod retention, an extra-wide open hinge and are available in food approved materials. The Sprocket Series M5000 HyCLEAN is suitable for industries such as meat and poultry processing which require hygienic design and easy cleaning.

**Habasit (Australia) Pty Ltd**  
[www.habasit.com.au](http://www.habasit.com.au)

## Safety option for decentralised drive inverter

SEW-Eurodrive has developed the integrated S12 safety option for its decentralised Movifit FC/MC drive units, used for constructing modular and flexible conveyor systems. The safety technology is suitable for most applications - from control cabinet technology with integrated or independent axis monitors to decentralised technology.

The safety option offers the additional safety functions STO (safe torque off), SS1a/c (safe stop 1), SLS (safely limited speed) and SDI (safe direction) on top of the standard Movifit functions. The SLS function can be easily applied using the EI7C/(FS) simple motor integrated encoder.

The safety option can be used either independently or as a fieldbus slave with Profisafe via Profibus or Profinet. The inputs can also be set as 1- or 2-channel, and they can read OSSD (output signal switching device)-capable sensors such as light grids and scanners.

The safety option is suitable wherever materials need moving, for example on roller conveyors, rotary tables or electrified monorail systems for light loads.

**SEW-Eurodrive Pty Ltd**  
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## Mid-sized gate for conveyor pan

Heat and Control has developed the Revolution Mid-Gate for its FastBack conveyor pan.

The gate, which is suitable for small and medium capacity lines and tight equipment layouts, can be mounted at the beginning, middle or end of the conveyor pan to eliminate product transfer pinch-points and get the advantages of proportional distribution, including zero cross-contamination, reduced product breakage, easy cleaning and safe, responsive full-open to full-closed speeds for all throughputs.

**Heat and Control Pty Ltd**  
[www.heatandcontrol.com](http://www.heatandcontrol.com)

## Bag emptier with integrated automated pallet handler

Dinnissen Process Technology has developed a bag emptier with an integrated automated pallet handler suitable for companies looking to process large numbers of bags. This version of the Dima 1200 can empty 200 - 1500 bags (200 kg - 50 tons) per hour quickly, safely and efficiently.

The operator feeds the pallets with the bags into the system. The pallets are first tipped at an angle, after which the bags are fed, layer by layer, via a special conveyor into the rotating drum unit of the system. Inside the unit, two shafts, each fitted with five knives, cut the bags open from the top and the bottom side. The ingredients then leave the unit through a perforation in the rotating drum and are collected in a special storage container. The end result is a separation of the packaging from its contents. The rotating drum is fitted with a suction and feedback system that prevents the emission of fine particles or loss of product. Depending upon the specific product, the particle size distribution and the type of bag processed, the bag emptier can empty and recover 99.5 - 99.99% of the product inside the bag.

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## Slow release sanitiser for coolrooms and refrigerated areas

Botanical Innovations has developed a slow release sanitiser for coolrooms and refrigerated areas.

The freshness gel is housed in a blue pouch, which is placed in the corner of the refrigerated area or coolroom. The gel inside the pouch slowly releases essential oils, which are claimed to protect the refrigerated areas or coolroom from bacteria and germs, keeping the area fresh.

Ultra Purus Freshness Sanitiser lasts for up to one month and is suitable for coolrooms and refrigerated areas including refrigerated transport containing meat, poultry, fish, fresh fruit, vegetables, cooked and processed foods.

This is a simple, cost-effective solution for the hospitality, food service, healthcare, food manufacturing and food retail industries.

The sanitiser kills up to 99.9% of bacteria, reduces the risk of mould and deodorises for up to one month.

The size and number of pouches required depends on the size of the refrigerated area or coolroom.

The Botanical Innovations Ultra Purus range of sanitisers and disinfectants has been designed to be safe to handle, biodegradable and residue-free.

**Botanical Innovations**

[www.botanicalinnovations.com.au](http://www.botanicalinnovations.com.au)

## Safety sensor with RFID technology

The RSS260 safety sensor combines the detection principle of RFID technology and a high switching distance in a compact design.

The actuators allow integration of the safety sensors in the surrounding architecture of removable, hinged and sliding covers and doors. All variants offer tamper resistance as the RFID-based sensor technology permits individual actuator coding.

In the basic version, the sensor accepts any suitable RSS260 family target. A second version for increased tamper resistance only responds to an individually assigned target - the teaching process can be repeated any number of times. The third version available for the highest level of tamper resistance only accepts the target presented at initial power-up.

In addition to the standard actuator, which is suitable for assembly on the normal aluminium profile systems, additional actuator designs can be selected. There is a compact rectangular target and a flat, elongated actuator which is suitable for design-oriented machines and plants as well as for being mounted on polycarbonate safety gates.

The sensor can be connected with up to 31 safety sensors in series which can be evaluated with a single safety module.

**Control Logic Pty Ltd**

[www.control-logic.com.au](http://www.control-logic.com.au)



## Desiccant air dryers

Norgren has introduced the Hydra-D range of high-purity desiccant air dryers. The dryers use the pressure swing absorption principle to efficiently dry compressed air, minimising the risk of water contamination.

The dryers feature a heatless twin tower configuration, with each column containing a desiccant

cartridge incorporating inlet and outlet filtration. This improves the flow distribution, resulting in enhanced performance while lowering the pressure drop, meaning purge air for regeneration is only 15%, while dew-point monitoring means purge only occurs when the bed is fully saturated.

The dryer is controlled by a programmable logic controller system which periodically switches the solenoid valves during operation, reversing the function of each column and ensuring a continuous supply of dry air.

Optimum dew-point performance is ensured through a pressure-maintaining device which controls air velocity. Other features include PLC memory retention, a strong, corrosion-resistant construction, and the ability to be either floor or wall mounted.

**Norgren Pty Ltd**

[www.norgren.com/au](http://www.norgren.com/au)



# Product-specific cleanrooms

## Moving away from large cleanrooms to small, local solutions

**Y**oghurt, bread, sausage, cheese, salads and drinks - more and more products are being filled and packed in sterile environments. Once, when the catchword 'cleanroom' came up, most people thought of the large halls in microchip factories. However, now production under cleanroom conditions is increasingly finding its way into the food industry.

So-called 'clean-label' products promote themselves by advising consumers that they do not contain additives. It is the unpopular preservatives that are being cut from the recipes more than anything. "Less chemistry, more physics" is the philosophy that Martin Schüring from the Bremerhaven Institute for Food Technology and Bioprocess Engineering (BILB) is using to make this point. However, the manager of the F&E Innovation department knows there is another side to this coin - "By shying away from preservatives, food manufacturers have to keep microbiological threats at a greater distance from the product in order to achieve the desired shelf-life" - hence the growth of cleanroom manufacturing.

### Fewer germs in the air

A clean - that means sterile - environment is the prerequisite for being able to relinquish preservatives. Every germ counts - especially when it comes to fresh products such as salads, pasta or sandwiches. Cleanrooms can be used to securely lock out bacteria and mould, the factors that cause food to spoil prematurely.

In the cleanroom a constant inlet of sterile air generates high pressure, which forces the impure air out of the production zone. Multilevel, high-efficiency particulate air filters can block even the most minuscule particles from the air stream.

The ISO 14644-1 standard defines cleanroom classes 1 to 9 and determines how many particles of which size are allowed per cubic metre of air - the lower the cleanroom class, the greater the level of purity.

Whilst a chip factory requires a very high level of purity, cleanrooms between ISO class 5 and 8 are the norm for food manufacture. ISO class 5 already represents a load of less than 1 germ/m<sup>3</sup> - in other words, practically sterile.

It isn't always necessary to furnish complete production halls as cleanrooms, which can make a large dent in the budget. Instead, some manufacturers are opting for room-in-room concepts. Clever divisions make it possible to set up zones in the production area with different grades of purity.

The highest level of purity is only used where it is really necessary, like in the production of sliced bread: laminar flow tunnels come into operation for this process. The boxes, which are sealed on three sides, generate a horizontal or vertical stream of pure air to provide the necessary high pressure. Once the baked goods have been removed from the oven, they are cooled using sterile air and cut whilst still in the tunnel. They only leave the local cleanroom once they have been packed.

Every cubic centimetre of pure air is expensive. The aim of the plant construction firm is therefore to configure this on as small a scale as possible. Machines that might be impure are kept outside of this sterile zone.

The drinks industry in particular has tried to reduce the cleanroom to an absolute minimum over the years. Restricted-access barriers (RABs) and isolators are the focus of current developments. The compact 'hygiene minis' are not only cheaper to build but also to operate. The area around an isolator is so

*By shying away from preservatives, food manufacturers have to keep microbiological threats at a greater distance from the product in order to achieve the desired shelf-life" - hence the growth of cleanroom manufacturing.*

strictly marked out that employees are allowed to wear normal-hygiene clothing. In modern, cold aseptic filling facilities, only the bottle track still runs inside the isolator, which is separated from the surroundings to form a thick chamber. In this process, non-heated fruit juice flows directly into the bottles.

RABs, on the other hand, are not hermetically sealed: An air barrier is generated from the high pressure inside the housing and protects the heart of the machine - the sterile area. While production is taking place, it can only be accessed from the outside using glove boxes. These are placed at critical points along the filling machine. All other areas can be reached via external doors without air locks.

Organic cultivation in 'pure culture' is a new aspect of cleanroom technology. The Japanese technology group Fujitsu goes one step further as part of its 'Kirei Yasai' (clean vegetables) program. Salads are being cultivated on 2000 m<sup>2</sup> under cleanroom conditions in a former semiconductor plant. Perfect environmental control means the harvested salad should remain fresh for two weeks at 10°C and display low levels of nitrate.

At the upcoming Anuga FoodTec event taking place from 24-27 March 2015 in Cologne, Germany, visitors will be able to meet the following cleanroom technology suppliers: Anton Hurtz GmbH & Co KG, B-Hygienic - PolySto bvba, BLU Ewelina Kasprzyk, Dastex Reinraumzubehör GmbH & Co KG, Ecolab Europe GmbH, Endress + Hauser Messtechnik GmbH + Co KG, FF Fischer Planning LTD, FIMINOX SPA, Friedrich Sailer GmbH, Fromfroid SA, Heraeus Noblelight GmbH, Index-6 Ltd, Maschinenbau Helmers GmbH, Niebling Techn. Bürsten GmbH mrca GmbH, Peschl Ultraviolet GmbH, PNR Deutschland GmbH, Industriespritzdrüsen, SPX Flow Technology, TRAVAGLINI SPA, Vikan A/S and Wiedemann GmbH. They will be exhibiting in the 'Food Safety/Hygiene Technology' sector of Anuga FoodTec. 🐮



### Bulk container dumper

National Bulk Equipment (NBE) has developed a bulk container dumper designed for processing applications handling non-free-flowing, high bulk density materials.

Process-specific features of the bulk container dumper include specially milled 304-2b stainless steel sheet that has a reduced coefficient of friction relative to typical flat sheet, for improved material release during infeed and faster, more thorough cleaning during changeovers.

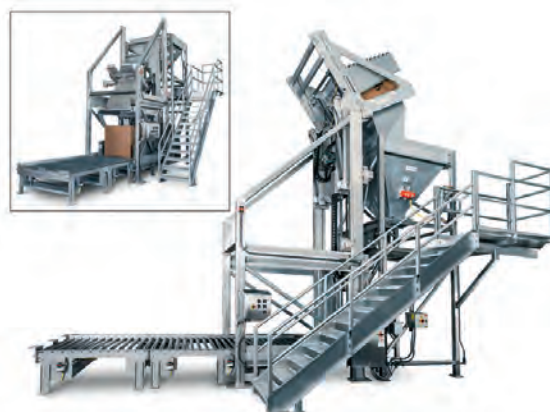
Additional design features to speed changeovers and improve product safety include: the elimination of internal angles that could harbour contaminants; the use of rounded-radius framework turned 45° to horizontal to speed moisture run-off; and subassembly designs that enable single-operator access, removal and replacement. The thick-wall, 203 x 152 mm, stainless steel chassis enables stable, heavy-lift performance during the raise-and-rotation sequence of 1.1 tonne loads at a 4.88 m dump height.

According to the company, changeover times have been reduced by the design and process throughput has increased due to improved material release and complete discharge. The material discharge carriage also features a container lift-and-seal function that eliminates the release of migrant material dusts into the operator work area.

The complete process sequence, including container loading and sealing and container high-lift and discharge, operates on a paired, process-specific structural framework chassis with all automation and control functions centralised to a single, menu-driven HMI to enable standardised and system-wide data reporting.

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# Compressors meet the demand for clean air in dairy processing

Tatura Milk Industries, a wholly owned subsidiary of Bega Cheese, has been manufacturing dairy products since 1907 and is the largest Australian-owned supplier of infant formula and the historic dairy brand Tatura.

Tatura processes 80,000 tonnes of dairy products every year, with milk supplied by 65,000 cows from dairy farms located in the immediate area. This milk is used to manufacture a wide range of quality dairy products that serve the Asian, European and local markets.

High-quality clean air is a fundamental component of dairy manufacturing. It ensures that the quality raw dairy ingredients remain uncontaminated during processing. As such, Tatura operates production systems which are marked by the most rigorous benchmarks and specifications.

Kaeser Compressors has satisfied Tatura's stringent internal benchmarks for air quality in its food-processing operations. Four Kaeser dry-running screw compressors were recently installed at two of the company's sites to provide absolutely oil-free clean air.

At the first site, Tatura opted for a specially designed Kaeser compressor station. This includes two DSG290-2 series 8 bar dry-running screw compressors, one DSG290-2 SFC series 8 bar frequency controlled dry-running screw compressor, a 13,700 L air receiver, one heated DW series desiccant dryer, one heatless DC series desiccant dryer (standby) and a Sigma Air Manager system (station controller).

Kaeser Compressors Engineering Manager Jeff Coyle said, "This is an extremely effective compressed air system, with energy efficiency at its core. The SFC compressor [frequency control drive] is utilised during all operations to adsorb the minor fluctuations in air demand. When a surge in air demand occurs, one of the DSGs kicks in at full load to supply the extra air in a complete block.

"Direct-drive compressors operate most effectively when operating at maximum capacity, so the Sigma Air Manager (SAM) is programmed to run each compressor at its most efficient levels against fluctuating air demands. Master



controllers (SAM) are vital for any multicompressor station. It is an automatic optimisation of the compressor station to match with altered consumption (adaptive behaviour) to achieve maximum cost effectiveness for the entire compressor station."

The second compressor station includes a Kaeser DSG290-2 series 8 bar dry-running screw compressor, a 3800 L air receiver and one heated DW series desiccant dryer. An important component of both stations is the heated DW1053 desiccant dryers, which ensure there is no purge loss. There are two purge air outlets connected to an insulating, descending collective line, consequently leaving the compressor room similar to outdoor ambient temperatures.

The Kaeser DSG series dry-running two-stage screw compressors feature water- or air-cooling as required with drive powers up to 355 kW and free air deliveries from 13.5-50 m<sup>3</sup>/min (fixed speed) or 6.8-51.8 m<sup>3</sup>/min (frequency controlled).

*Kaeser Compressors Australia*  
[www.kaeser.com](http://www.kaeser.com)

## Burden carrier

The Taylor-Dunn Bigfoot burden carrier, available from Warequip, has been designed to give the operator a better ergonomically designed seating area, which increases comfort and performance. Ergonomic features include increased operator platform length, tilt steering wheel and adjustable bucket seats.

The vehicle is equipped with latest generation AC technology and is available with 36 or 48 V power sources, making it suitable for most applications. The vehicle has LED headlights, a non-skid texture coated floor, dual cup holders and recessed tie downs along each side.

The vehicle can be adapted for outdoor use by adding a steel or fibreglass cabin, windscreen, doors and sliding windows. A second row of passenger seating can also be added, increasing the capacity to four.

*Warequip*  
[www.warequip.com.au](http://www.warequip.com.au)





## Poly composite drum

Schuetz has developed the Poly Composite Drum CSF which combines steel and plastic into one product. The inner bottle consists of high-purity HD-PE and, depending on the volume, weighs between 3 and 6 kg. The drum body is made of coated steel and has a top plate made of galvanised steel. An additional G3/4 screw fitting allows any air between the drum sides and inner bottle to be removed. The drum is available in 202 or 205 L capacity.

The drum is suitable for filling goods that require a high degree of safety and cannot be filled into PE drums or IBCs. These include very permeable products and aggressive, corrosive substances. The drum can be stacked immediately after filling, even if it is filled with hot liquids.

**Schuetz Australia**

[www.schuetz.net](http://www.schuetz.net)

## Long-life end-cap ball bearings

xiros xirodur B180 polymer ball bearings are designed to be maintenance free and dry running. They are made from tribologically optimised polymers, providing low friction values that allow high rotational speeds with a limit speed of 1800 rpm.

The cap ball bearing is resistant to chemicals and corrosion, meaning temperatures of between -40 and +80°C can be managed without malfunctions, even over long periods.

The low weight of between 25.9 - 32.5 g permits installation even under very low weight requirements.

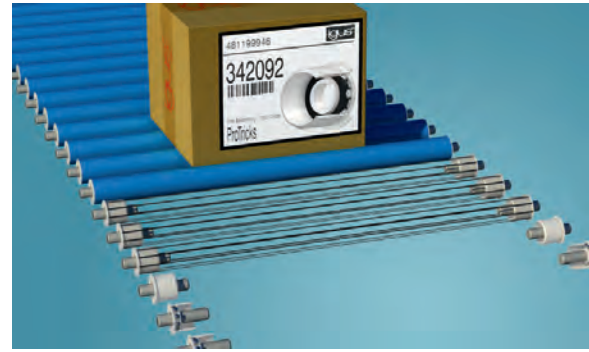
The axial load-bearing capacity is 245 N in static use and 294 N in dynamic applications and the end-cap ball bearing can be equipped optionally with glass, plastic or stainless steel balls. The balls are housed in a polyamide cage, which provides high strength and ductility.

The end-cap ball bearing is suitable for a range of applications such as roller conveyors and, since no lubrication is required, unnecessary soiling and the use of solvents can be avoided.

The ball bearings can be cleaned with water, thus meeting many hygienic and ecological standards. This is important where soiling is not tolerated at all, such as the food or packaging industries.

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# Cooperative Bulk Handling almost doubles its lifting tonnage with bucket elevator drives

Bonfiglioli HDO-Series Helical Bevel drives have been selected to help Cooperative Bulk Handling upgrade the technology and capacity in its Western Australia grain silos.

The HDO130 drives have enabled Cooperative Bulk Handling to almost double the total tonnage of grain being lifted from 250 to 480 tons.

Two Bonfiglioli bucket elevator drives have been installed over the last year, with an additional seven to be added progressively. "They come with an auxiliary 'inching drive' installed so that the bucket elevator can literally be inched through its cycle, which greatly improves maintenance and inspections," explains Kris Jaryn, business development manager at Bonfiglioli. "An over-running clutch separates the drives, so that when the main motor is on, the inching drive freewheels," he said.

Peter Schulz, manager at Powerdrive, the distributor that installed the drives, says the main function of the drives is to power the elevator that lifts grain from underground storage to the top of the silo, which means it is a significant advantage to



productivity to be able to increase the load that can be carried each time.

HDO helical bevel drives from Bonfiglioli are suitable for compact, heavy-duty and low-maintenance installation on major materials handling and resources plant such as conveyors and feeders. The HDO130 produces torque of up to 69,500 Nm.

*Bonfiglioli Transmission Pty Ltd*  
[www.bonfiglioli.com.au](http://www.bonfiglioli.com.au)



## Small pneumatic actuators

Firestone has released the smallest-ever version of its Airomatic pneumatic actuators. The actuators, which are available from Air Springs Supply, stand 11 mm high deflated and are suitable for light load applications requiring rapid cycling and metal-free hygiene.

The polyactuators feature both inlet and outlet feeds so they can be deployed in series in applications such as conveyors and materials handling.

The polyactuators achieve a stroke of 10 mm at maximum pressure of 3.5 bar and a diameter of 50 mm inflated. They can exert forces of up to 38 kg (.379 kN) at 3.5 bar. According to the company, the product will last for millions of cycles in demanding industrial environments.

The actuators are suitable for most industrial applications requiring very small pressure and stroke. The three-barb fitting design allows for installation of standard industrial tubing.

The actuator has a footprint of 57.91 mm and is fabricated of moulded plastic elements welded together in a sealed unit. It is customisable to meet specific sizes and shapes for a variety of materials handling and processing applications.

**Air Springs Supply Pty Ltd**  
[www.airsprings.com.au](http://www.airsprings.com.au)

## Endless woven belts with EC and FDA food contact approval

Ammeraal Beltech's AmDough endless woven belts have been declared compliant with EC regulations, in addition to their existing FDA approval. According to the company, the belts are the first to offer the biscuit bakery industry full food contact approval.

The endless woven splice-free construction and selvages are designed for continuous cookie extraction combined with food safety.

**Ammeraal Conveyor Belting P/L**  
[www.ammeraal.com.au](http://www.ammeraal.com.au)







## IBC food-grade liner bags

CHEP Pallecon Solutions has launched MaxiValve liners to complement its suite of intermediate bulk container

(IBC) rental solutions. The liner range is prefitted with the MaxiValve, a disposable ball valve, capable of reducing container discharge time by up to 33%.

The 1000 L liner bags are food contact, kosher, and parve approved, and designed for use with IBCs for the transport of bulk liquid. The liners, available in both aseptic and non-aseptic films, are offered as part of the company's full service container rental program. Depending on the application type, either a pillow or form-fit version of the liner can be used.

The EB125MV is the first bag in this product line. Manufactured in Australia, the liner includes a three-layer construction, providing high flex resistance while transporting. The ball valve delivers an unrestricted flow of product without additional fitting requirements and has a tamper-evident numbered security clip to protect the integrity of the product.

The range of bags is suitable for applications with fill or exposure temperatures under 80°C, and can be steam sterilised for up to 30 min at a temperature of up to 130°C and a pressure bar of 3.

**Chep Pallecon Solutions**

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

## Halal-certified metal conveyor belts

Cambridge Engineered Solutions has received halal certification for its metal conveyor belts from the US-based Islamic Services of America (ISA). The certification recognises that the company's belts are manufactured with synthetic lubricants rather than pork or animal fats. The designation provides food processors - and ultimately consumers - assurance that nothing haram (forbidden) was used during food preparation, cooking, cooling or packaging.

According to the company, it is the first US metal conveyor belt manufacturer to achieve halal certification.

**Cambridge Engineered Solutions**

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## The pursuit of perfection

The pursuit of perfection led Pasta Montana to install an Optyx digital sorter from Key Technology to eject foreign material (FM) and defects from the product stream. The sorter was installed in July 2013 on a line that produces short pastas such as penne, shells and elbows.

"As a pasta manufacturer for Japanese customers that accept zero defects, we need to ensure the quality of our product. Of course, our domestic customers appreciate this too," said Claude Smith, Plant Manager at Pasta Montana.

"We wanted to add a quality-control step that was as close to certain as we could get. We were looking for a way to guarantee perfect pasta. That's what drove this project.

"We looked at multiple suppliers and compared their after-sales service and spare parts availability as well as their willingness to customise the technology for our application.

"Key was head and shoulders above when it came to service. They also had better technology. As we got deeper into it and Key continued to modify things for us, we ended up with an integrated system that is steps ahead of what the others offered."

Traditionally used to sort harvested foods like fruit, vegetables, nuts and potato products, the digital sorting technology needed to be adapted to work with pasta. Key Technology customised the sorter and developed the intelligent software and algorithms for the application.

"Prior to Optyx, we relied on mechanical screening and metal detection as well as QC checks. When we ran products for some of our Japanese customers, we'd slow the line down to half speed and add four people assigned to watch the product and achieve 100% inspection," said Adam Hatch, Maintenance Tech Class A at Pasta Montana.

"Now, with Optyx, we can run at full speed and we've eliminated the human error that comes with manual inspection. We've increased productivity by 20% on that line and we're better able to ensure the quality of our product."

The Optyx 3785 at Pasta Montana features colour cameras and a laser, sorting on a 610 mm wide belt to inspect as much as four metric tons of pasta per hour. Via intelligent algorithms, the cameras recognise colour, size and shape to detect product defects and co-mingled product. The laser recognises differences in structural properties to detect FM, even when it is the same colour as good product - which is especially important when Pasta Montana is running tri-coloured pasta. When FM, defects and co-mingled product are identified, Optyx



activates its ejection system to remove these objects from the product stream.

In addition to the Optyx sorter, Key supplied Pasta Montana with an Iso-Flo scalping shaker that removes fines as well as under- and over-size objects and an Iso-Flo shaker with an air flow system that removes lightweight material. A third Iso-Flo conveyor, configured as a scale feed shaker, was installed above the combination weigher to maximise the efficiency of the bagger. This integrated system is found on Line Two at Pasta Montana, which produces a wide variety of small pastas.

"We use shape sorting for every product we run so we can catch an elbow pasta if we're running penne, and double our protection. The scalper upstream of the sorter does a great job giving the sorter clean product. Compared to our old scalper, this is so much better. For one thing, it's easier to change screens, which we typically do for each product run. It used to take four people 15 to 20 minutes to change the screens. Now, it takes two people 5 to 7 minutes," said Amanda Carpenter, Floating Operator at Pasta Montana.

Gentle handling is an important consideration, as some pasta shapes are more fragile than others. "This entire project was geared to producing perfect pasta, and gentle handling was an important part of that. We eliminated breakage points and lowered elevation drops. The discharge of the sorter was a concern, so Key worked to decelerate the product there," said Smith.

Carpenter added, "Now, we have much less breakage than before and less waste. Further down the line, with the less breakage, the bagging operation becomes much more efficient."

"Since we installed Optyx, we've not had a single customer complaint," concluded Smith. "And we've made it easier for our people to package the best pasta."

Key Technology Australia Pty Ltd  
[www.keywww.com](http://www.keywww.com)



## UHF RFID read/write device

The Sick RFU620 UHF RFID read/write unit offers a solution for the identification of containers, boxes or the correct aisle. It supports universal use even in extreme applications such as on stackers and in deep-freeze stores, or simply as a Kanban station.

The device is suitable for medium ranges and limited installation space. Numerous filter functions and a range of connection variants enable the creation of versatile identification solutions.

Like the RFU630, the device operates within a frequency range of 860-960 MHz. Unlike this device, however, it is optimised for applications in which UHF transponders meeting the worldwide ISO/IEC standards must be reliably identified at medium ranges and in close physical proximity to one another. The SOPAS user interface offers tools for rapid, flexible and simple integration.

The device is suitable for container and storage space identification in intralogistics. The compact housing is particularly useful on forklifts as the read/write unit offers a space-saving location between the lifting forks.

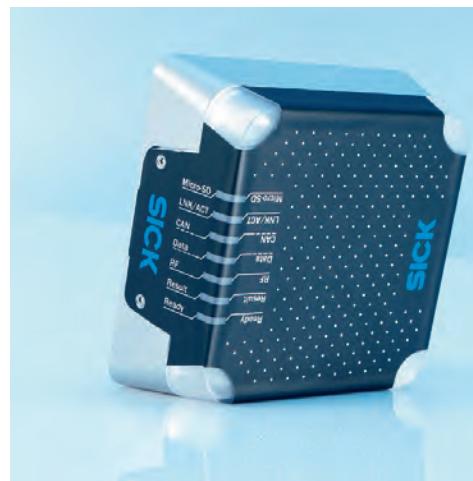
The interface and fieldbus standards common in these sectors (including RS232/422, Ethernet TCP/IP, EtherNet/IP, CANopen, Profibus DP and Profinet IO) are supplemented with the integration option of Power over Ethernet (PoE). There is therefore no need for an additional power supply when setting up, for example, simple RFID Kanban stations.

The device is ready for operation with a single cable connection to a PoE network. In information terms, it also offers the familiar amount of future orientation - particularly as the read/write device is compatible with IDpro, the company's cross-technology platform and portfolio strategy for auto-ID system solutions.

The Sick visualisation platform detects and stores all the captured data in a database and offers comprehensive search and statistical functions for their evaluation.

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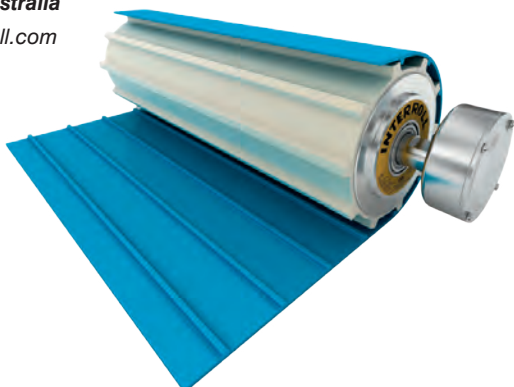
## Drum motor with multibelt profile

Depending on the conveyor belt - plastic modular belts, positive drive solid homogeneous belts, belts made of steel braid or wire, or the classic friction-driven belts made of rubber, PVC and PU - Interroll drum motors offer a suitable torque transmission method for every application.

The company has developed Multiprofile for positive drive solid homogeneous belts. With only one profile, it is possible to drive nine different belts. The Interroll Multiprofile is easy to clean and meets the highest hygiene standards. In addition, it features low-noise running as well as a high resistance to oil, grease and chemicals.

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## Sanitary rotary finish on vibratory conveyors

Key Technology has introduced a rotary polish as the standard finish on its vibratory and horizontal motion conveyor beds. Replacing the 2B mill finish on Iso-Flo, Impulse, and Horizon conveyors and processing systems, the rotary finish provides a smoother stainless steel surface that resists bacterial attachment and biofilm formation.

Compared to a 2B finish on stainless steel that often varies from 0.254 to 1.016  $\mu\text{m}$  Ra, the rotary finish provides a more constant Ra value of less than 0.254  $\mu\text{m}$ . The finish is suitable for all food products including fruits, vegetables, potato products, snacks, nuts, meat and dairy.

The conveyors also feature ground and polished welds within the product contact zone and ground and polished surfaces within the 'drip, drain or draw zones' where there is a risk the product area could become contaminated.

**Key Technology Australia Pty Ltd**  
[www.keywww.com](http://www.keywww.com)



## Pallet wrappers

European Machine Developers (EMD) has launched two pallet wrappers.

The Easy Pallet Wrapping Machine is suitable for loads up to 1500 kg and wraps 1-50 pallets/day.

The Classic Pallet Wrapping Machine is suitable for loads up to 2000 kg and wraps 50+ pallets/day. It features adjustable wrap programs.

Both machines operate at 15 rpm and have automatic pallet height detection, soft start/stop turntable for load stability and an optional ramp for a pallet jack.

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# Food and beverage grade compressed air

## best practice guidelines

Compressed air is an essential part of many aspects of food and beverage production and processing from the 'farm to table'. As demands to improve health and hygiene in the food chain continue to increase, a best practice guideline is required to meet these demands.

As there is no direct standard in Australia to provide guidance to companies in the food and beverage industries, many companies choose to use a best practice guide produced by the British Compressed Air Society (BCAS).

Working with the British Retail Consortium Trading Ltd (BRC Trading Ltd), the BCAS produced a best practice guide several years ago. This has recently been updated to bring it into line with current needs.

Aspects of compressed air that need to be addressed for use in the food and beverage industries include:

- food safety
- ingredients
- contaminants
- control measures

This best practice guideline does not consider the ingredients used due to the variation in requirements.

### Contamination

Contaminated compressed air is a significant potential source of compromise when used in conjunction with the food chain. Contaminants commonly associated with compressed air are dirt, water and oil.

Other influences include the presence of microbiological organisms such as bacteria which may be transported through the compressed air system or propagated due to the conditions existing in a compressed air system.

Control systems need to address contaminants that are potential health hazards. The controls applied to all types of contaminants may either be a customer requirement or one set by regional or national legislation.

### Codex and HACCP

The Codex Alimentarius international food standards have become the global reference point for food producers and

processors, national food control agencies and the international food trade. The Codex is the source of both the prerequisite program and the hazard analysis and critical control point (HACCP) philosophy.

When applying the HACCP process, prerequisite programs will be put in place to cover such aspects as good hygiene practices and training. These programs should be well established, fully operational and verified in order to facilitate the successful application and implementation of the complete HACCP system.

The HACCP principles are designed to ensure the quality of the final product by identifying potential contamination entry points or zones, known as critical control points (CCPs), and implementing rectification and monitoring procedures.

This guideline sets out the minimum recommendation for compressed air purity in existing and new installations and sets out recommendations for compressors and associated equipment in terms of their location, air intake, ventilation and maintenance.

### Purity

Compressed air used in the food and beverage industry is generally classified into two purities:

- Air coming into direct contact with foods or beverages
- Compressed air coming into indirect contact with foods or beverages

Direct contact compressed air should meet, or exceed, the purity designation ISO 8573-1:2010 (2:2:1).

Indirect contact compressed air should meet, or exceed, the purity designation ISO 8573-1:2010 (2:4:2).

Once a system has been installed and is producing the required purity levels, it is necessary to have test procedures in place to regularly check these levels. These tests should be carried out a minimum of twice a year, unless otherwise identified in the HACCP process. ISO 8573 provides methods to carry out these tests.



Atlas Copco Compressors Australia  
www.atlascopco.com.au



## Bulk solids level measurement

Emerson Process Management has released the Rosemount 5402 non-contacting radar level transmitter for demanding bulk solids level measurement applications. The high-frequency, 2-wire radar uses Rosemount Radar Master software and unique algorithms to overcome the specific challenges of solids level measurement in vessels, bins and silos, such as inclining or sloping surfaces, low dielectric properties and high filling rates.

2-wire technology enables fast and cost-effective installation by taking advantage of existing cabling, while still providing the same high levels of data and diagnostics that would normally require 4-wire connections.

User-friendly graphical interfaces with wizards and suggestions for application-specific configuration help users easily integrate the transmitter into new or existing control systems. This, in addition to reduced maintenance operation and advanced diagnostics, results in a quicker return on investment with overall improved uptime and enhanced safety.

The 5402 offers connectivity to a range of communications protocols including HART, Foundation fieldbus, FISCO and Modbus. The device has ATEX, IECEx, FM, CSA, CRN, Inmetro, DIBt, GOST and NEPSI approvals.

**Emerson Process Management**  
[www.emersonprocess.com.au](http://www.emersonprocess.com.au)

## Lightweight robots for SMEs

Universal Robots has launched the UR5 and UR10 simple-to-program robots in Australia and New Zealand. The flexible, lightweight robots are suitable for small and medium-sized enterprises.

The robots are designed to integrate into existing production processes and work alongside personnel with little to no safety shielding required. As soon as an employee comes into contact with the robot arm and a force of at least 150 Newton is exerted, the robot arm will automatically stop operating.

The products provide users with a simple user interface combined with a teaching function which allows the user to simply grab the robot arm and show it how a movement should be performed. This means they can be programmed and operated by people with no previous experience.

The robots weigh just over 18 kg, enabling them to be moved around the production area to perform different tasks. The UR5 is suitable for loads up to 5 kg, while the UR10 can handle 10 kg.

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## Stainless steel press fittings and piping systems



Europress can be used to install 316L stainless steel pipework without welding. Using press fittings or, as they are sometimes called, crimp fittings is much faster than traditional tig welding of stainless steel and needs no naked flames, hot work permits or gas bottles etc.

The system features a toroidal seat which, when pressed, produces a two-stage locked joint. The first, radial crimp compresses the O-ring and ensures that the pipe is hermetically sealed. The second, geometric crimp of both fitting and pipe, creates a mechanical joint, resistant to both lineal and rotational movement.

Stainless steel Europress press fittings have the added feature of press check sleeves for extra integrity when installing stainless steel press fittings onto SS pipe systems. The 316L Stainless Steel Press Fit System can offer the corrosion and hygienic washdown properties of traditional stainless steel systems and installation is claimed to be up to 10 times faster than conventional welding of stainless steel. Neither skilled labour nor hot work permits are required.

**Air Energy Australia Pty Ltd**

[www.airenergy.com.au](http://www.airenergy.com.au)

## Valveless metering pump

The Fluid Metering IVSP Industrial Variable Speed Metering Pump is a valveless pump for dispensing of additives for food processing applications.

The pump is suitable for viscous fluids, including vitamins, colours, flavours, fragrances, enzymes and preservatives. For ingredients that are added in concentrated form, the pump's precision of 0.5% ensures product consistency, while eliminating waste.

The pump uses one moving part, a sapphire-hard ceramic piston, to perform all fluid-control functions. The valveless function is accomplished by the synchronous rotation and reciprocation of the ceramic piston within a ceramic liner. The reciprocation action of the piston, similar to a standard piston pump, accomplishes the pumping function.

The pump has a ¼ HP variable-speed drive motor and is available with sanitary quick-disconnect fittings. Speed is controlled via a DIN-mountable controller for both manual and electronic speed control.

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# Nutty solution for Global Foods



After Global Foods' nut roasting room was destroyed in a fire, the company took the opportunity to build a more efficient system that's dynamic and now multifunctional. Sydney-based Global Foods is a leading specialty food importer and manufacturer, distributing a large range of specialty products including olives, nuts, fruits, beans, antipasti and more.

"This gave Enmin the exciting opportunity to custom design and build new equipment to more efficiently service their needs," said Anthony Gallaher, general manager Enmin Vibratory Equipment. "We were able to provide them with a turnkey solution. The circumstances provided us with a 'greenfields' type of opportunity. The fire had left a blank canvas to create a system that would offer all the flexibility Global Foods really needed," said Gallaher.

"The customer already had the roaster, the multihead weigher, VFFS, check weigher and metal detector, and needed equipment designed and built to link these key components to create a system that could bulk and mini pack, potentially at the same time with minimal interruption and maximum efficiency.

"The project was rolled out over two phases, putting together the jigsaw for Global Foods with the result culminating in their current complete system."

Traditionally Enmin hasn't been known for turnkey solutions but the company becomes involved when the core benefit is the use of vibratory feeders as this is its prime area of expertise.

In this application the four key ingredients were all vibratory feeders in screening, storage, metering and delivery of product.

Removing fines was the first task. Once the product leaves the fryer it is turned at right angles and conveyed the full width via an electromechanical vibratory feeder. The feeder has a screen section prior to discharge that removes a large portion of all undersized product, which is collected underneath the feeder.

The next goal was to ensure accumulation could occur and the product could be buffered/stored in the process when necessary. This was required if the system stopped downstream for any reason or when an alternative packaging format was required.

"The roaster cannot be turned off, so the ability to buffer the product was a must have," said Colin Wilson of Global Foods.

Enmin decided to use one of its electromagnetic hopper feeders with a diversion system. This would enable the product to be stored for a period of time so that when required the product could either be transferred to a bulk packing system or allowed to continue onwards to the high-speed vertical packing end.

At this point the system had to be able to deliver the product to two bulk bags or two 25 kg boxes for filling. A reversing vibratory feeder provided the ideal solution. After the hopper feeder, the product is elevated and delivered centrally into the feeder so that the operator can control which discharge point is ready to be filled. The key benefits of the Enmin system for Global Foods was the ability to maximise production rates, ensure efficiency through minimal operator intervention and deliver a system that provided multiple packaging options without equipment interchange.



"The Enmin system has exceeded our expectations" said Wilson. "We're getting greater and more efficient production capacity with far less intervention. Enmin has been able to seamlessly integrate a large number of different processes!"

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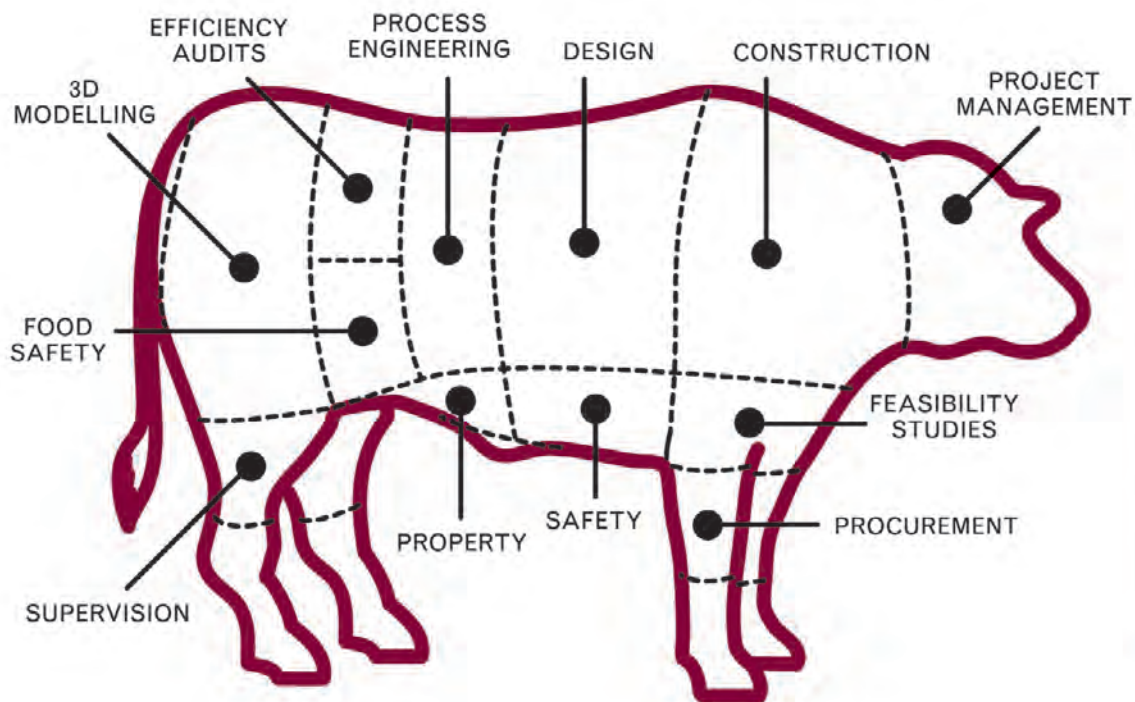


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# No time for waste

## Technical developments in meat harvesting

Geert Leenen

**Meat harvesting, the process of optimally scraping residual meat off animal carcasses, is a fast-moving industry subject to many of the megaforges that will dominate both production and consumption in the near future. This article provides an overview of the most important technical developments in the meat-harvesting industry up to this day, as well as a projection of the technical requirements of tomorrow, in relation to the megatrends, the challenges the world will be facing over the next several decades. If one thing becomes clear from these, it is that wastefulness is the deadly sin of today and tomorrow.**

In the early 1970s, the invention of the linear press meat harvester marked a revolution in meat harvesting, offering more types of meat input as well as vastly increased capacity and quality compared to the so-called rotating systems that had been in use for poultry in the US. Whereas rotational systems focused exclusively on processing poultry meat, linear systems allowed for the processing of pork and beef as well. As a result, the harvested meat product range expanded considerably. Besides this, the lower pressure applied in linear harvesting led to a great boost in meat quality compared to the meat products from traditional rotating harvesters which have a more crushing and grinding effect, operating under high pressure.

Once the initial uncertainties of the early adoption phase had been overcome, the late-1970s to mid-1980s were devoted to increasing product reliability. This process succeeded so well that several meat-harvesting companies today are still using machines of over 20 years old to great satisfaction and at extremely low cost.

Innovations between 1983 and 1995 were mainly driven by the demand for more capacity and higher yield. Technically, this meant higher pressure was being applied to the bones to scrape off even more residual meat. As a result, the grade, and thus the market value of the meat harvested, declined steadily as yields rose.

By the mid-1990s, a pivotal shift took place in our thinking about meat harvesting as all efficiency-driven parameters were thrown overboard in favour of meat quality. The lower pressure applied in linear systems drove the enormous quality improvements over rotational systems, which damaged the carcasses substantially more by applying higher pressure, thus adding more bone material to the meat.

Thus quality became one of the core values, which has been central to the industry ever since. Despite the somewhat lower yields due to lower pressure being applied, nothing was lost in terms of overall value. After all, scraping less meat off the carcass in a more controlled way results in a higher grade residual meat product that represents a higher



Modern linear systems operate with a more flexible application of lower pressure for a variable meat quality. This is achieved by the coordinated operation of a patented piston system. Linear system, ProFIVE (low pressure). 1. Identical steps as with high pressure. 2. Extra step after step 2: main and counter plunger work together in a patented sequence.

market value per kg. So the value lost at one end of the production process was more than compensated for at the other. Meanwhile, consumers profited from a higher-quality end product. Thus, producers of residual meat products were able to improve their reputation in the meat chain and the consumer market significantly.

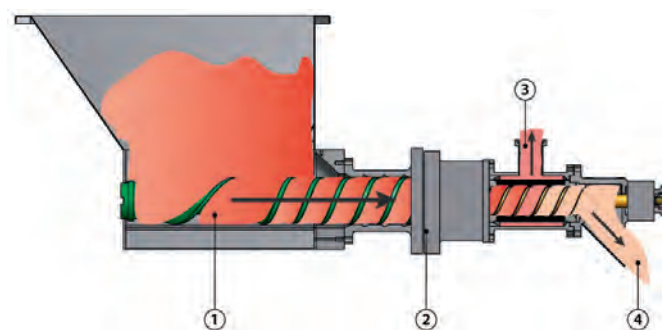
With quality now firmly and indisputably established as the industry's core value, developments since 2000 have been marked by further optimising yield while retaining the high quality standards established earlier. One important recent step towards improving yield at good quality levels was the patented development of two-phased meat harvesting in the 2000s. A linear system and a rotating harvester (or two linear harvesters) are run consecutively (or in tandem). The linear system ensures optimal meat quality while the second system scrapes the bones clean, thus achieving optimal yield.

The latest generation of linear press meat harvesters on the market can process over 4700 kg of bones per hour and turn it into respectable quality meat. Recently, newly developed linear meat harvesters have been introduced, equipped with a patented piston system. These new machines provide adjustable meat quality with an extra yield of 4-6% (of the input weight). At the same time, the cost of maintenance has dropped and the payback time, based on additional revenue, has been reduced to less than one year.

### Present and future challenges

Like other sectors, the meat industry is increasingly affected by several megatrends. These are strong, often interconnected forces in society that drive, or even demand, current and future technical innovations. We discern demographics and resources, health, environment and technology and the value shift as areas of great change and of pervasive influence on today's and tomorrow's world in general and on the meat industry and its technologies in particular.

The world population will continue to grow, at least until 2045. Global population growth presents a challenge in that more mouths will have to be fed from naturally limited resources such as water and food. Unless food and water technology create major breakthroughs, food and water



Rotational systems allow the recovery of residual poultry meat. Rotating system, RotoMeat: 1. Feed screw conveys input material through pre-sizer. 2. Vane pump transports bones into separating chamber. 3. Meat extrudes through chamber's filter. 4. Auger discharges bone residue through restraint.

“... meat harvesting may actually make a vital contribution to global health in the future through protein extraction. As the world population increases, protein needs will rise ...”

production will reach their natural limits, and prices are likely to rise as the population increases. In this context, the meat industry carries a moral responsibility literally to make the most of meat, all with great consideration for public health. In meat harvesting, the tension between using every part of the animal fully and retaining healthy, high-quality meat products has been resolved by the latest generation of adjustable harvesters. They always deliver respectable quality, even at their highest capacity. Further optimisation of the yield at the high-quality level is a future challenge to the industry.

Another important development in society is an increasing focus on health and healthy ageing. Although meat production and consumption has been under some attack from the environmental lobby and several proponents of alternative lifestyles recently, meat harvesting may actually make a vital contribution to global health in the future through protein extraction. As the world population increases, protein needs will rise dramatically, and the demand for protein may soon outstrip its supply. That could be disastrous to global health. However, current meat-harvesting technology already allows for highly efficient protein extraction and capturing, turning what was once a 'worthless' waste product into a valuable health asset.

Trying not to waste any resources is part of another global concern: the environment. To capture the complex and often reinforcing relationships between the environment, demographics, resource scarcity, public health concerns and technology, the term sustainability was first coined in the 1980s. Since, it has played an ever more prominent role



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in our thinking about the future. For the meat processing industry, its implications are twofold: first, we turn waste into value, as the above example of residual protein extraction shows. Second, we introduce technical innovations to use the resources needed with maximum responsibility and efficiency throughout the product's life cycle. Thus, the current generation of linear press meat harvesters should be durable, low maintenance and more energy efficient than ever. Both yield and quality should be consistently high. Support and servicing should increasingly become local to save costs and the environment. Moreover, current harvesting units must remain serviceable as well as dismountable for decades to come. Units in the near future should even be capable of further optimising the user's integral chain management through advanced electronic waste detection systems. Thus, the meat harvester will become an advanced management and decision-making tool.

Finally, we see the recent connectivity revolution, including internet and smartphone developments, as an important driver and accelerator of a trend known as the value shift, in which people increasingly value personal autonomy and transparency. Today, openness is rapidly replacing privacy, while top-down centralism and backroom secrecy are losing support with an ever emancipating and more demanding population, as represented by relevant pressure groups and (inter)national organisations.

In response to this strong societal current, companies in the meat chain should also offer more autonomy to their users and increased transparency to consumers and society at large. With overall product quality higher than ever and the range of ready-to-cook consumer meat products continuously expanding, users of our machines are increasingly asking

“

*... today's and tomorrow's harvesters should be able to deliver on demand either decent quantities of the highest quality or the highest possible yields of respectable quality.*

”

for autonomy in the form of user-adjustable meat quality. Thus, today's and tomorrow's harvesters should be able to deliver on demand either decent quantities of the highest quality or the highest possible yields of respectable quality. Having only one factory preset quality/yield ratio on a meat harvester is no longer sufficient nor acceptable to a growing number of users.

At the same time, the meat harvesting industry should not be afraid to become more transparent about its activities and the grade of meat it uses. The days mechanically separated meat tended to have a bad reputation are gone. Especially at current base quality levels, we have nothing to be ashamed of, nor to hide from the consumer: we abide by the laws of the land, we gladly comply with all safety and quality regulations imposed on us and technical advancements have enabled us to raise the standard quality of MSM to today's high level, while wasting almost nothing. We trust that technology will continue to enable us to do so in the future.

For all the reasons outlined above, concepts such as corporate social responsibility, cradle to cradle and sustainability have taken strong hold in business, including the meat complex, and rightly so. In times of a growing, ageing and more demanding world population, dwindling resources and increased connectivity between people, the only reasonable and viable options for business are sustainability and utter transparency. They present a noble challenge, also in terms of technology, across sectors, worldwide, including our own. Thanks to the ongoing technical developments, particularly in meat harvesting, there already is very little waste in the meat chain - something to be proud of. Let us keep striving for zero waste and maximum sustainability in the near future: to feed the people, preserve the planet and make a healthy profit.

### Working principle - linear versus rotating

In linear systems, the main ram transports bones into the pressing chamber and puts gentle pressure on them. While under gentle pressure, relative movement between the bones releases the meat, which is discharged over the filter. As linear systems are executed with coarse filters, a secondary filtration is needed by belt separation. In rotational systems, a feed screw from the hopper conveys input material directly into the filter. Pressure build-up inside the filter is generated through an adjustable restraint. The pressure causes meat to extrude through the filter, while the auger discharges the bone residue through the restraint.



Marel Australia Pty Ltd  
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## Illegally imported pork labelled as fish

A Perth import business has been fined more than \$50,000 for illegally importing pork products labelled as fish from Taiwan. The importer reportedly concealed the products among other imported goods and fraudulently invoiced as he knew the product is prohibited in Australia.

Importing company Vihentico was fined \$52,250 for illegally importing 26,040 packets of Songlin Brand Fish Maw from Taiwan between 2007 and 2010. The company's owner, James Huynh, received a suspended eight-month custodial sentence and a \$5000 good-behaviour bond.

"Fish maw is traditionally made from the swim bladders of fish, but this brand of the product contains pork skin and not a single trace of fish," said Raelene Vivian, First Assistant Secretary of the Department of Agriculture's Compliance Division.

"Australia does not allow pork products to be imported from Taiwan as biosecurity risks have not been assessed and risk-management measures are not in place.

"One of the risks associated with pork products is foot-and-mouth (FMD) disease which, should it become established in the country, has been estimated to cost Australia around \$50 billion over a decade. Taiwan had several cases of FMD during the period that the illegal importing took place."

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# Extending shelf life of seafood key to exports

John Merriman

Innovations in packaging have allowed a newly formed Australian seafood company to expand its business to national and international markets.

A group of independent pipi harvesters joined together in 2012 to form The Goolwa Pipi Company with the help of the South Australian Government as a partner.

The pipi - commonly known as a Goolwa cockle - has gone from being used for fish bait to a seafood delicacy in Australia.

The tiny shellfish graces tables of silver service restaurants in Sydney and Melbourne and has attracted the attention of celebrity chefs such as Simon Bryant and Matt Moran.

A decade ago savvy catchers started to 'de-sand' the pipis (making the animal spit out the sand it harboured) to make it an appealing seafood meal.

The second component to successful marketing was finding a way to package the shellfish to be able to reach extended markets - particularly Asia, where cockles are a seafood staple.

Using a \$12,000 Innovation Voucher granted by the South Australian government, the pipi industry began investigating modified atmosphere packaging (MAP) with the assistance of the South Australia Research Development Institute, Primary Industries and Regions South Australia and the Fishery Research and Development Association.

Roger Edwards is the independent chair of the Goolwa Pipi Harvesters Association, which represents about 60% of the catch quota.

"Using what we learned from the MAP trials, we were able to produce a proof of concept plan which gave us the confidence to invest in a manufacturing plant," he said.

"The vacuum-seal style of the packaging greatly increases the shelf life of the pipi while also allowing a use-by date to be stamped on the bag."



*Pipi harvesters hard at work.*

In the past 10 years, the edible pipi industry has grown from \$700,000 a year to \$4 million a year with the bulk sold to restaurants in Sydney and Melbourne.

Tom Robinson, director of Coorong Cockles, said the pipis are harvested by raking a 60-kilometre stretch of beach on the Young Husband Peninsula, south-east of the Murray Mouth in South Australia.

"About three-quarters of the current quota of 450,000 kilograms goes to Sydney and Melbourne," he said.

"We export about 5% of the catch overseas - primarily to the Asian markets - and that is what we have identified as a major growth area for us.

"With the MAP packaging in place and the extended shelf life, it opens up markets for us that just weren't possible previously."





## Continuous slicing and portioning

The Treif Falcon Hybrid is a continuous slicing/portioning machine for boneless or bone-in meat products. This high-production machine is suited to mid- to large-scale food processing facilities where it can be used for slicing portions of a prescribed weight as well as slices to a certain thickness without any kind of weight specification.

A 4D camera system joins forces with top-speed computer technology - four cameras measure the product extensively so that cuts can be made with high precision.

Different software programs meet special requirements such as a specific tolerance range within which the weight of the individual slices may vary. Yield on some products is claimed to be up to 100% thanks to this software.

With the Falcon Hybrid, loading takes place continuously via a conveyor belt. Products are automatically transported to the cutting area. The intelligent gripper recognises which parts of the cutting material are harder (contain bones) and simply rests gently on these areas. The other hooks hold the meat safely in place. The sickle blade is firmly secured between two stainless steel plates. This so-called sandwich guidance system prevents wedge cuts, resulting in clean cuts and increased output.

The grouping unit enables the packaging of the products and the discharge of individual slices; eg, when there is a deviation from the target weight. The dynamic portion separation ensures the clean and precise depositing of the slices on the grouping belt. Products up to 1000mm in length can be processed.

The machine can be combined with robot technology. With up to 100 picks/min, the robots ensure reliable sorting of the slices into packages and a smooth flow of the production process.

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Ray Townsend,  
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## Inline freezing systems

The StarContact inline systems from Milmeq offer freezing solutions for a range of products.

The CFH Surface Hardening System hardens the surface of a variety of food products through a contact freezing method. Upon contact with the system, the underside of the product immediately starts to freeze which enables the product to retain its shape.

Product is transported on a micro-thin continuous food-grade film which is driven over a freezer plate connected to a mechanical 'closed-circuit' refrigeration system. This refrigeration system typically operates at -40°C and can use either primary or secondary refrigerants.

The CFF Total Freezing System has the same base as the CFH but with the addition of an overhead air blast freezing section. This unit provides simultaneous freezing of the whole product and achieves final temperatures of -18°C in one single operation.

Both systems can be fitted with lateral guides that raise the film edge and permit the freezing of liquids and semisolids such as sauces, purees, soups, juices and smoothies.

**Milmeq Pty Ltd**

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



## X-ray inspection systems

Ishida's range of X-ray Inspection systems can be used to not only accurately detect bone, metal, plastic and other foreign objects but also imperfections unrelated to contamination.

The system's image processing algorithm generates and analyses image data for each product over time. As a result, the system develops a high sensitivity that more clearly identifies any foreign materials.

To help users decide if X-ray is right for their company, Ishida has released a white paper - Do I need X-ray inspection? - which can be downloaded in the Industry Resources section of Heat and Control's website.

**Heat and Control Pty Ltd**

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## Membrane skinner

The Maja EVM split 4006 is for manual (open) removing of sinews, fat and membranes, especially from bigger cuts of beef and veal but also from pork and lamb. The unit is floor-standing in design and is compact enough for butcher shops and small-to-large meat processing facilities.



The product features split roller configuration - 1/3 for heavy removal and 2/3 for fine membrane removal. No tools are required to remove or replace the knife, meaning the operator can perform all adjustments and blade changes without tying up maintenance staff. No parts are removed for cleaning - the knife holder is placed into cleaning position but stays on the machine, eliminating the chance of loss/damage.

The product's toothed roller is cleaned continuously by compressed air, maintaining a clean roller at all times. All adjustments are made at the blade holder at the time of blade-fitting, meaning better consistency and more flexibility in machine positioning as the sides of the machine are smooth.

The operator protection system MAJA-OPS offers increased safety for operators of open MAJA de-rinding and membrane skinning machines. The operator wears two electrically conductive gloves which serve as electrodes. As soon as the operator has put on the gloves and has connected to the machine, this is recognised by the electronic system and the machine is released.

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# Processing



# High bottling output from a small footprint

HiteJinro Beverage's plant in Cheongwon, South Korea, is idyllically situated at the end of a valley in which the River Mushimcheon has its source. From springs 200 m underground, natural mineral water is extracted for bottling under the Seoksu brand. In 2013, the plant produced around 100 million fills, equivalent to 80 million L, in PET containers and gallon-size water dispensers. And sales are steadily rising.

HiteJinro wished to capitalise on Korea's booming water market but was limited in production space. The answer came in the form of the ErgoBloc L from Krones, an all-in-one filling monobloc that has been up and running at the plant since early 2014.

The ErgoBloc L line has been dimensioned to fill 54,000 x 320 and 500 mL containers or alternatively 36,000 x 2.0 L bottles per hour, a maximum of 72 m<sup>3</sup> of water per hour. It's used for handling the main brand Seoksu, plus dealers' brands, in two-shift operation.

The change to the ErgoBloc L has enabled the company to revamp the bottle design, including a reduction in weight, from 17 to 12.3 g for the 0.5 L bottle and from 48 to 37 g for the 2.0 L bottle, and incorporate a new closure, which is 1.2 g lighter than the previous one.

With the ErgoBloc L, everything happens inside an enclosed clean room measuring approximately 30 x 12 m. A Contifeed RS brings the preforms into the clean room. They are flushed with air to remove dust and then passed directly to the oven of the Contiform C324 blow moulder. This is followed by a Starmodule labeller with two Contiroll HS (high speed) stations, on which the PET containers are dressed in wraparound labels. Then a first PET-View 776 D uses five cameras to monitor the quality of the bottles or preforms in the blow moulder and oven.

The prelabelled bottles are passed to the electro-pneumatically controlled volumetric Modulfill VFJ filler, which fills the containers. Since the bottles are filled in non-



contact mode, a high level of microbiological safety is assured. The filler passes the filled bottles to the synchronised capper. Having been blow moulded, labelled, filled and capped in a single machine, the containers then leave the ErgoBloc L and are inspected by a Checkmat FEM-IR, which uses infrared technology to monitor the fill level and verify the labels' positioning. Then the containers can leave the enclosed clean room on conveyors for end-of-the-line packaging and palletising.

The ErgoBloc L has entirely eliminated conveyors and buffering sections, because all the machines integrated have been seamlessly concatenated. This means the monobloc has a footprint that's up to 70% smaller than a conventional layout.

*JL Lennard Pty Ltd  
www.jllennard.com.au*

## Sensor-based corn sorter with second camera

TOMRA Sorting Solutions has expanded its ZEA sorter range developed for the seed and fresh corn industry. A second camera module has been added, enabling the inspection of both sides of the corn ear.

The system allows sorting and grading by husk, defect, disease and size. The product is spread uniformly onto the infeed belt, before being scanned by cameras. It uses top- and bottom-mounted colour and near-infrared (NIR) optical sensors to scan the surface of each item in-flight; the 'off-belt view' allowing unobstructed inspection. The colour vision sensors analyse for features such as size, shape and colour, while the NIR sensors scan for gross defects and foreign materials.

Second- and third-grade produce is redirected into individual streams by a bank of intelligent, low-wear paddle ejectors at the end of the infeed belt, while the first-grade material progresses along the sorting line and through the machine.

The system's integrated shaker and infeed belt feeding system keeps installation and running costs low and reduces the risk of stoppages. Controls and feedback are provided via a touch screen.

**TOMRA Sorting Solutions Pty Ltd**  
[www.tomra.com](http://www.tomra.com)







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## Checkweigher for high-rate food can lines

The Thermo Scientific Versa Teorema checkweigher provides accurate operation at line rates up to 660 cans/min. It is suitable for checkweighing a variety of canned food products including soups, vegetables, fruits, beans, sauces and seafood.

The checkweigher offers easy-to-use touch-screen control, a helix infeed, a high-rate reject system and additional communications capabilities. A full mesh cover is available for enhanced safety.

Because the checkweigher does not rely on a traditional conveyor-style weigh table, there is a lower 'wear vulnerability' at higher production

speeds. This results in reduced maintenance requirements and improved reliability, according to the company.

The checkweigher's stainless steel design enables it to be used in wet and other harsh environments. It can checkweigh both closed and open cans, giving processors the option of using the checkweigher further upstream before more expensive ingredients have been added.

The United Kingdom's National Measurement Office (NMO) has certified that the Versa Teorema is in compliance with European Council Directive 2004/22/EC for measuring instruments. Further, the Teorema has been certified by NMO for accuracy class XIII(1) ( $e \geq 0.5$  g) under the Measuring Instruments Directive and the Organisation Internationale de Métrologie Légale (OIML R51 - Edition 2006(E)).

**Thermo Fisher Scientific**  
[www.thermofisher.com.au](http://www.thermofisher.com.au)

## Metal-detectable antimicrobial pen

Detectapen is a pen moulded from XDETECT, a polypropylene-based compound, optimised for metal and X-ray detection in the food and pharmaceutical industries. The compound also incorporates silver ion antimicrobial technology, which is effective against harmful bacteria and mould, including *E. coli*, MRSA and *Salmonella*.

The pen, which is constructed of shatter-proof plastic and contains no small parts or springs, is food contact approved. The pen is available in eight colours for high visibility and to enable segregation of areas.

**WR&D Wells Pty Ltd**  
[www.wrdwells.com](http://www.wrdwells.com)



## Colour enhancing spiral oven

Heat and Control has improved product browning in a spiral oven with its CEO Colour Enhancing Oven. Available in single and twin-drum models, CEO combines controlled browning of both sides of products with uniform high-volume cooking.

The oven cooks product uniformly, wherever it is located on the conveyor belt. Hot, moisture-controlled air is evenly distributed in a 360° pattern to ensure equal and uniform heating across all tiers. Steam, dry heat or combinations of both are controlled independently to provide optimal cooking conditions for different products.

The PLC control, with easily accessible process parameters for multiple products, provides repeatable browning and cooking with fast changeovers.

**Heat and Control Pty Ltd**  
[www.heatandcontrol.com](http://www.heatandcontrol.com)





# The Secret To Keeping Electronics Cool!

## NEMA 12 Cabinet Coolers

The NEMA 12 Cabinet Coolers for large heat loads up to 5,600 Btu/hr. are ideal for PLCs, line control cabinets, CCTV cameras, modular control centers, etc.

- Measures 203mm high
- Mounts top, side or bottom
- Enclosure remains dust-tight and oil-tight

## NEMA 4 and 4X Cabinet Coolers

NEMA 4 and 4X Cabinet Coolers for large heat loads up to 5,600 Btu/hr. They are ideal for PLCs and modular controls.

- Enclosure remains dust-tight, oil-tight and splash resistant
- Suitable for wet locations where coolant spray or hose down can occur

## Type 316 Stainless Steel Cabinet Coolers

Type 316 Stainless Steel Cabinet Coolers for NEMA 4X applications are available for heat loads up to 5,600 Btu/hr.

- Resists harsh environments not suitable for Type 303/304
- Ideal for food and chemical processing, pharmaceutical, foundries, heat treating and other corrosive environments

## Mini NEMA 12, 4 and 4X Cabinet Coolers

The mini NEMA 12, 4 and 4X Cabinet Coolers for small heat loads up to 550 Btu/hr. are ideal for control panels, relay boxes, laser housings, electronic scales.

- Measures 127 mm high
- Mounts top, side or bottom
- Enclosure remains dust-tight and oil-tight

## High Temperature Cabinet Coolers

High Temperature Cabinet Coolers for NEMA 12, 4 and 4X applications are available for heat loads in many capacities up to 5,600 Btu/hr.

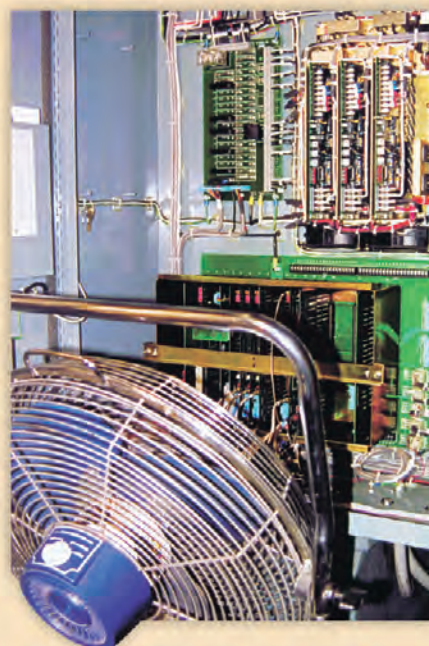
- Suitable for ambients up to 93°C
- Ideal for mounting near ovens, furnaces, and other hot locations

## Non-Hazardous Purge Cabinet Coolers

NHP Cabinet Coolers keep a slight positive pressure on the enclosure to keep dirt from entering through small holes or conduits. For use in non-hazardous locations.

- Uses only 1 SCFM in purge mode
- For heat loads up to 5,600 Btu/hr.
- NEMA 12, 4 and 4X

## A bad choice could cost you thousands!



### Look Familiar?

When hot weather causes the electronics inside a control cabinet to fail, there is a panic to get the machinery up and running again. The operator might choose to simply open the panel door and aim a fan at the circuit boards. In reality, the fan ends up blowing a lot of hot, humid, dirty air at the electronics and the cooling effect is minimal. If the machinery starts functioning again, the likelihood of repeated failure is great since the environment is still hot (and threatens permanent damage to the circuit boards). Worse yet, that open panel door is an OSHA violation that presents a shock hazard to personnel.



### The Real Solution!

Stop electronic downtime with an EXAIR Cabinet Cooler® System! The complete line of low cost Cabinet Cooler Systems are in stock and can ship now. They mount in minutes through an ordinary electrical knockout and have no moving parts to wear out. Thermostat control to minimize compressed air use is available for all models. All Cabinet Coolers are UL Listed to US and Canadian safety standards.



### Watch The Video!



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Jeff Hauck, Lasercraft Inc. Cincinnati OH

"It took us three days to get a replacement computer cabinet and we didn't want to risk another heat failure. Fans weren't an option since they would just blow around a lot of hot air. Freon-type air conditioners like those on some of our other machines were a constant maintenance project of their own. We purchased EXAIR's Model 4330 NEMA 12 Cabinet Cooler System since it was easy to install and requires no maintenance."

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## Continuous inkjet printer for washdown environments

Designed for washdown environments, the A520i continuous inkjet printer uses marine-grade stainless steel (316), with IP66-rated fully sealed

electronics from Domino's plenum airflow cooling system. This technology keeps the printer cool and the electronics sealed, which keeps the production line running. With energy-saving software, the printer can automatically shut down when the production line stops.

Domino's service-free i-Tech ink system delivers low makeup usage, driving down the solvent footprint while reducing costs and operator intervention. The CleanFill cartridges can be changed while the printer is still operating, and the larger volume makeup cartridges provide extended runtime between changes - this means the A520i is online for longer, with fewer interruptions and less waste.

The flexible design of the A520i allows the user to site the user interface and printer separately to suit their working environment. Multiple coders can be controlled from a single interface panel for increased operational efficiency. Hot, cold, wet or dry - the A520i inkjet printer is suitable for even the harshest of environments.

**Insignia Pty Ltd**

[www.insignia.com.au](http://www.insignia.com.au)



## 16-stream die for co-extruded snacks

Baker Perkins has developed a 16-stream die which increases the output capability for co-extruded snacks, compared to the previous 12-stream die.

The die, which is part of the CoEx Master Systems range, is suitable for producing snacks containing two components - a cereal outer and a centre filling. Fillings with contrasting tastes and textures are incorporated into the cereal tube, emerging from a twin-screw extruder. It is formed into individual pillows, tubes, bars or wafers to create products in sizes ranging from small bite-size up to sticks.

Extrudate and filling are combined into concentric streams at the die, with the flow at each outlet individually adjustable for consistency and weight control. Fillings can be of virtually any colour or flavour, including sweet and savoury creams, fruit pastes, chocolate praline or cheese.

Co-extruded pillow snacks can be made in patterns such as chevrons, waves and trapeziums. It is also possible to produce different shapes and flavours simultaneously for variety packs.

**Baker Perkins UK**

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

## 15" stainless steel fully sealed LCD monitor

Interworld has released the ADP-1153 IP65 fully sealed VESA mount industrial LCD monitor. The monitor features a 15" 1024 x 768 pixel, 350 cd/m colour LCD panel with a viewing angle of 150°. An optional resistive touch screen can be fitted if required.

The ADP-1153 provides a standard 15-pin VGA input. Rear panel mounted controls provide access to the on-screen display menu for control of brightness, contrast, horizontal and vertical position, and colour balance. The automatic screen set-up allows for one-touch configuration of the display.

The monitor is constructed in a 304 grade stainless steel IP65 case with waterproof connectors, making it suitable for food processing plants where hosedown cleaning is required. If a greater resistance to caustic chemicals, or if metallic contamination is a concern, the ADP-1153 can be supplied with an optional 316L grade stainless steel case. VESA 75 rear mounting holes allow the monitor to be arm, bracket or wall mounted. The monitor requires an 11~32 VDC input power source and can be supplied with an optional 240 VAC power adapter.

For applications requiring a larger screen size, a 19" model is also available.

**Interworld Electronics and Computer Industries**

[www.ieci.com.au](http://www.ieci.com.au)





## Your guide to superior food and beverage performance

In the Food and Beverage industry, the ability for your site to make more improved, informed decisions about its operation is critical to process efficiency.

From the handling and batching of raw ingredients, to the manufacturing, final packaging and dispatching of the product, upgrading to a new automation system is often a core component to successfully achieve these optimum efficiency gains.

With many process plants today still running an outdated DCS, NHP have created a complete White Paper that addresses the ways in which a new automation system can deliver superior performance.

If you are experiencing higher maintenance and operating costs associated with supporting legacy hardware, this is for you and it's FREE.



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# Full line supply brings savings to wine bottling plant

It started with boxes of wine - very big ones.

Every day, tankers bring 12-15 shipping containers from the docks at Avonmouth, UK, to Accolade Park, the largest of the global company's European wine importing and distributing operations.

Each container holds up to 25,000 litres of wine. The Accolade Park site extracts the wine, bottles or boxes it, then ships it out for distribution in the UK and Europe.

The problem was that too much wine was getting left behind in the container bags.

"As you pump the wine out, the bags collapse," says Julian Rainbow, the company's utilities and process engineering manager.

The collapsed bags made it difficult to reach the liquid near the end of the pumping process. So the company sent out a challenge to different pump manufacturers: reduce our losses. After a trial period, Grundfos won the bid with its Liquid Ring SIPLA pump range - the best performer of all the products tested.

Rainbow tells the story accompanied by Grundfos's Ian Dure, key account manager for Grundfos Industry, Water and Waste in the UK.

Dure asks, "You were leaving behind 300 litres beforehand. What did we get that down to?"

"The best we had was 60 litres - the average is 100," says Rainbow.

"So," Dure says, "at a loss of about one British pound per litre, going from 300 pounds to 100 pounds, and with 12 to 15 containers a day, if you multiply the savings across each container, the cost of the new solution paid for itself in a couple of days, including the installation costs."

"It was an excellent trial," Rainbow adds. "Nobody else provided the same kind of technical support and background for the trial, and we were very pleased with that."

## One full-line supplier

At the time, Accolade was designing a new facility to replace the two, ageing plants in the area. "We were looking for ways to improve the company's carbon footprint locally," says Neil Wallburton, engineering manager. Part of this solution lay in finding energy efficient pumping solutions - from water supply and distribution to boiler feeding to processing and cleaning and all the way to effluent treatment.

"Grundfos suggested they could provide a lot more than just those tanker offloading pumps," Rainbow says. "We liked what we saw with all their controls and modern designs. It gave us the best opportunity to make some savings from an



“

*In the two and a half years we've been running, the mean time between failures is huge...*

”

energy point of view as well. And that's why this site has predominantly Grundfos systems in it.”

In a tour through one of the tank houses, Rainbow spreads his arm out in a broad gesture. “Certainly wherever you look there are Grundfos pumps dotted around,” he says, adding that Accolade Park specified Grundfos throughout the entire process.

Dure says, “Our global manufacturing already supplies the leading OEM companies that would supply to this type of process - in this case, Kronos. This cleared the way for strong communication among all parties.”

### One replacement

Accolade's previous plants used several different pump suppliers, he adds. That meant the factory needed to stock spare parts for all the different types of impellers, seals, motors and so on. The company also rebuilt its pumps annually for some applications. “We knew if we didn't, we'd get a failure 18 months down the road,” Rainbow says.

Going with Grundfos as one full-line supplier has meant a large cut in costs for spares due to the large degree of interchangeable parts on different products, he says - not that the spares have been so necessary.

“In the two and a half years we've been running, the mean time between failures is huge,” says Wallburton. “I can't think of one instance where a pump has been at fault for a failure.”

In fact, of the 100 or so Grundfos pumps on-site, only one has needed replacement due to a bearing failure.

“We knew it was going to fail,” says Rainbow. “We had a window of opportunity to replace it and it only took a couple of hours. The commonality of spare parts is very, very good. It could have been a whole different story, but it was fantastic.”

Wallburton adds, “If you think of the speed and scope of our operation compared to what we had previously, we're running longer hours, seven days a week, at higher rates. The attrition on pumping gear is higher, yet we've only had one failure.

“It is quite a good success story,” he says. “From an end user's point of view, reliability has been absolutely excellent, maintenance has been minimal and the life-cycle costs to me are very impressive. It's something I will take forward when I'm looking for spec'ing future equipment.”



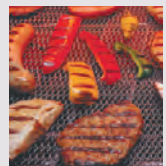
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## Patty interleaver, stacker and tray loader

Smo-King Ovens has released the Prolever patty interleaver, stacker and tray loader. This equipment accepts patties from a patty former, places an interleaving sheet beneath each patty, stacks to a predetermined count and places the stacks into packaging trays.

The range can also be used for placing an underleaving board beneath sliced salmon and shingled meat slices.

**Smo-King Ovens Pty Ltd**

[www.smo-kingovens.com.au](http://www.smo-kingovens.com.au)

## Hygienic polypropylene handle

Manufactured using food-grade, reinforced and recyclable polypropylene, the Vikan Ultra Hygienic Handle is chemical resistant, so it can withstand aggressive cleaning chemicals with no corrosion. The handle is ergonomically designed to provide force and stability and has a rounded top to allow for comfortable and efficient use. The smooth surface and large rounded hanging hole are easy to clean.

The handle is available in either 1300 or 1500 mm lengths and a choice of nine colours. It features a durable thread that fits all Vikan brushes, squeegees and scrapers.

**WR&D Wells Pty Ltd**

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



## Fillet weld grinding and polishing tool

Stainless polishing of internal welds has always been problematic and the need to meet stringent surface finishing specifications for food production or processing compounds the difficulty.

To help overcome this problem, SUHNER developed the UKC 3-R tool for polishing, cleaning and grinding. The tool features a long neck to allow easy access, has a slow speed variable of 1400-3200 and is lightweight. The UKC 3-R also features sun press unitised wheels that offer 3 or 6 mm edge polishing. This allows for easy profiling of internal fillet welds including weld removal, and weld polishing to a high standard. It also permits the use of abrasive bristles, which clean a weld quickly without the use of dangerous acids and ensure that the weld burn/stain does not return.

The tool cuts the time required to finish internal welds and makes the likelihood of 'undercutting' far less.

**SUHNER Australia Pty Ltd**

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



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## Hot oil cookers and fryers for vegetable chips

FOODesign has launched its automated, hot oil batch-pro 12 series of cookers and fryers. The system is suitable for cooking root and other vegetable products, such as potato, carrot, taro, beetroot and parsnip chips.

The batch fryer has heat capacities ranging from 90-272 kg/h and features a high-efficiency burner design, which enables production to be increased while maintaining consistency via precise temperature profiling and quick heat recovery.

The cookers incorporate a continuous oil filtration system to help remove both fine and large particles. For example, during cooking, potato slices take on 23% of the oil, meaning 77% remains after batch frying. The remaining oil is filtered out and blended with fresh oil to return levels to 100%.

The machine's mechanical components are easily accessible and can be serviced quickly. Available accessories include steam hoods, oil demister units, potato slicing and slice infeed equipment and seasoning machinery.

**TNA Australia Pty Ltd**  
www.tnasolutions.com

## Hygienic servo motors

Kollmorgen stainless steel AKMH motors are constructed to provide long-life operation, even with daily exposure to chemical cleaning agents and high-pressure washdowns. The use of highly corrosion-resistant 316L stainless steel, along with the thermoplastic elastomer cable jacket, allow both motor and cable to withstand high-pressure spray or low-pressure hose down without restrictions. The vented cable design prevents ingress of water or cleaning agents into the motor during heating and cooling cycles and extends the life of the motor, even in the toughest environments. The motor requires no additional protection and can be sanitised without covering or removal from the machine.

The AKMH conforms to EHEDG, NSF, BISSC, and 3-A design guidelines to reduce the risk of food recalls and minimise machine cleaning time in food, beverage, packaging, medical, pharmaceutical, and converting applications.

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## Quality control for baked goods

In the production of baked goods, higher brand awareness and customer satisfaction are an increasingly important factor for the manufacturers of baked goods. That's why these manufacturers are looking to make detailed improvements to the pre-packing quality control process for goods such as bread, cookies and doughnuts to enable the rejection of items which lack the proper shape or colour, before they are packed. Together with additional demands for cost efficiency, this means that optical quality control must be automated and performed at high speed.

### Food measuring in 3D and colour

These improvements have to take a wide range of quality aspects into consideration, such as product shape, thickness and colour. Additionally, the presence and amount of topping, as well as the presence and quality of imprinted patterns and logos, must also be monitored. The level of completion of the baked goods and any foreign objects they may contain both need to be identified. In order to take all



these attributes into account, the control system must have the capability to measure both 3D and colour attributes at a high resolution. Moreover, the system needs to analyse the measurements and make the correct grading or sorting decision within a limited window of time. The sorting station also needs to include a device for rejecting inferior items.

### The need for high speed

System integrator Adbro Controls developed a high-speed rejection system that handles quality control in the food industry. It works with conveyor systems and is designed for integration into existing production lines. The application is built around the ColorRanger E 3D camera from SICK, which provides simultaneous 3D and colour images at high speed. It also features two light sources: one white light source for colour recognition and one line-projecting laser for 3D measurements according to the laser triangulation method. The camera offers a high degree of flexibility, which means that the measuring speed, resolution and field-of-view size can all be adjusted.

Image data from the camera is sent to a PC (host), where software performs image analysis and compares the scanned data with a pre-programmed range of ideal data in order to either feed the item to the next process step or reject it. HALCON's camera support enables quick software development in the machine vision library. The system tracks the exact position of goods on a conveyor belt and sends the grading decision to an array of pneumatic nozzles mounted in slots above the belts. The nozzles then use compressed air to blow the inferior item off the belt.

SICK PTY LTD  
[www.sick.com.au](http://www.sick.com.au)

## Gear motors for washdown food applications

The Kollmorgen AKM41E-BF06 and AKM62K-BK17 are gear motors developed as washdown versions for transport and rotation applications in the food industry.

The product is the combination of an AKM servomotor with highly efficient gearheads and the AKD servo drive with Ethercat. The drive units offer reduced cleaning times due to smooth and water-repellent surfaces and low energy costs from the efficient motor/gearhead combinations. Simplified design options are available using space-saving assembly without additional stainless steel casings.

**Motion Technologies Pty Ltd**  
[www.motiontech.com.au](http://www.motiontech.com.au)



## Detectable plastic spherical bearings

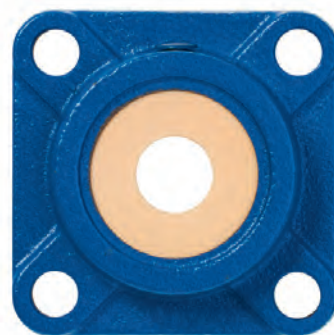
The igubal range of self-aligning bearing elements, completely made of plastic, has been extended to include spherical detectable bearings.

Both the housing and spherical ball are detectable by standard metal-detection systems to pick up even the smallest particles of the bearings if failure was to occur.

The bearings are easy to install, adjust to all angular misalignments, and can replace traditional metal bearings, which can weigh up to 80% more than igubal.

The bearings are dry running, unaffected by dirt and dust, operate well in liquids and a variety of chemicals and are corrosion resistant. They are suited to run in temperatures from -20 to 80°C and are able to absorb very high forces due to their vibration-dampening properties. They also possess high levels of compressive strength and elasticity.

**Treotham Automation Pty Ltd**  
[www.treotham.com.au](http://www.treotham.com.au)





## Bench checkweighing scale

The Adam Equipment GBK bench checkweighing scale is suitable for verifying the weight of packaged fruits and vegetables or batching operations during food production. Capacities on the scale are between 6-150 kg, while readabilities range from 0.1-50 g.

The scale has dynamic weighing capabilities, making it suitable for measuring liquid ingredients. Other features include checkweighing to monitor the final product and automatic accumulation to provide totals for weight readings. An adjustable indicator rotates and angles to adjust the viewing position, while the large, grade 304 stainless steel pan is easily removed for cleaning.

**Adam Equipment (SE ASIA) Pty Ltd**  
[www.adamequipment.com.au](http://www.adamequipment.com.au)

## Vegetable polisher

The Wyma Vege-Polisher, available to growers throughout Australasia, is smarter, safer and more hygienic and maintenance friendly than the previous model.

The design enhancements of the Vege-Polisher are a result of over 20 years' refinement based on customer feedback. Vegetable growers and packers from around the world gave their feedback on Wyma's current design.

The enhancements have resulted in smart, automated machine operation via touch screen and improved access for maintenance and cleaning, with no tools required to access the drum and brushes.

The polisher is a turnkey electrical solution - no more on-site wiring required. The water application has been refined to improve water distribution and hygiene, while safety compliance has been increased with RFID safety switches.

It includes automatic brush reversal to extend bristle life, and an isolated wash zone for improved hygiene - more water and debris are contained within the wash zone. It also includes automated water recycling - a turnkey water management system to reduce water consumption.

**Wyma Engineering (NZ) Ltd**  
[www.wymasolutions.com](http://www.wymasolutions.com)



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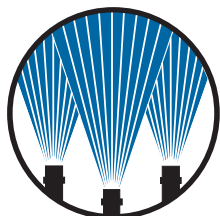
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# Where is production line technology headed in the food industry?

With the advent of the fourth industrial revolution, exciting things are happening in the manufacturing industry.

**T**he first industrial revolution in the 18th and 19th centuries was the mechanisation of production using water and steam power. It was followed by the second industrial revolution (over the late-19th and early-20th centuries), which introduced mass production with the help of electric power, followed by the digital revolution of the last few decades, with the use of electronics and IT to further automate production.

Now we have the fourth industrial revolution - or Industry 4.0. It started as part of a German government strategy to develop the 'smart factory', which is characterised by flexible production in which highly networked plants become self-optimising, self-configuring and self-diagnosing.

Essentially this turn of events will enable first-world manufacturers who cannot compete with low-cost, high-volume production of developing countries to reinvigorate their manufacturing industries. Wage costs will become less of an impediment as the smart factory will require significantly fewer employees. And those required will be highly trained, tertiary qualified specialists whose contributions to company profitability will be via research and development, engineering and design.

But in the food industry most product is low cost, high volume, so how will food manufacturers benefit from Industry 4.0?

The answer will lie in the strong individualisation of products under the conditions of highly flexible (large series)

production. Variability, complexity, extensive customisation plus high value add will all be features. Production operations will be more efficient and flexible with rapid innovation cycles. This will lead to improved economies of scale and faster speed to market.

Modern, integrated communication systems will enable the integration of customers and business partners in business and value-added processes. This will mean that foods and drinks that have been tailored not just for a specific vendor's shelf size but even for demographics within the vendor clientele can be made and packed automatically. If a locality has a particular interest in kosher foods, the appropriate logo can be applied specifically for that particular store while another store may prefer to have halal certification more prominently displayed.

The 'intelligence' of the smart factory will be made possible by the use of networking technology, sensors and transmitters that will be embedded in nearly everything, and business-to-business communication will be endemic. All of these innovations will enable products and machines to communicate with one another and exchange commands. The factories of the future will optimise and control their manufacturing processes largely by themselves.

Production facilities will be able to coordinate their work steps and exchange information with one another, and there will be no need for technicians to set foot in the production halls for servicing, with machinery inspections carried out remotely instead.





© SemA/Dollar Photo Club

Today, entire production and logistics processes have to react dynamically. In the future, the reality in manufacturing will be that products along the production line will know where they are, which steps they have already completed and what they still need to become a finished product for a specific client. For this to be possible, facilities will use a data network to communicate with one another, and even the products themselves will have to 'log in'. Human beings will use this network connection to control and monitor production too - to keep an eye on plant operation even if they don't happen to be in the production hall.

Currently, most processes are controlled centrally. Future requirements will call for production systems that are steered by cyber-physical systems (CPSs). These operate using intelligent sensors to perceive their environment and actuators with which they can influence this environment. CPSs can be integrated in products, machines and plants, which can adapt to changing tasks and operating conditions by means of self-optimisation and self-configuration.

These systems have the potential to significantly increase productivity in manufacturing and in the supply chain. The result will be more autonomy and smart production processes that can control and regulate themselves. The advantages include manufacturing process optimisation that goes beyond 'lean manufacturing', along with the avoidance of damage and accidents due to the timely detection of problems and risks.

This is already a familiar concept in IT with self-healing systems, in which any errors that arise are detected and resolved by the system itself. The Industry 4.0 initiative is designed to carry this concept over to things like production processes on the meta level and to products themselves.

However, there is a long way to go before we achieve Industry 4.0 - experts are predicting 10 to 20 years. There are still difficulties in mastering security and managing the volume of communications and data.

Security is a top priority - the embedded software will have to be completely reliable and the entire system safe from hacking.

### **Making more products with the same resources**

Technology can play a significant role in equipping manufacturers and their workforce with the modern production systems that will enable them to create flexible, complex and responsive solutions that enhance their international competitiveness. Developments in information technology mean companies can change from their 'make to sell' system to 'sense and respond'.

To do this company's need an efficient and reliable way to 'sense'. Luckily the combination of declining prices for sensors, cameras and control systems and their increased reliability means that manufacturers can now economically justify mobile technology in many applications.

CPSs are becoming increasingly important in this context; that is to say, the networking of embedded ICT systems both with one another and with the internet. Along with increased automation, the development of intelligent monitoring and autonomous decision-making processes is particularly important in order to be able to steer and optimise both companies and entire value-adding networks in almost real time.

All of these sensors, checking temperature, pressure, power, energy use etc, create huge amounts of data. If you're scanning to the nearest second, it's easy to rack up several terabytes of information in under a week; but just collecting data is not enough. You must have suitable methods to evaluate the information. It is currently estimated that operators are only using about 7% of this data for maintenance or protection from breakdowns.

A wide range of sensor types can be used to develop measuring systems that are adapted specifically to the respective process or production machine. To achieve high signal quality with the utmost sensitivity, it is generally necessary to place the sensors as close as possible to the process area. This can be achieved through specific integration of miniaturised sensors into the relevant mechanical components.

By applying sensors close to the process area in combination with adapted monitoring and measuring systems, the manufacturing quality and the stability of the manufacturing process can be increased significantly.

To obtain meaningful results, data has to be recorded and evaluated in a suitable way. When high manufacturing speeds are involved, recording data with high signal quality is a challenging task. This necessitates powerful hardware

in combination with intelligent analysis algorithms for data acquisition.

We're still a long way away from the vision of Industry 4.0, in which smart machines automatically report of their own accord when they need maintenance or spare parts.

Some of the challenges to be addressed include:

- **Interoperability** - Standards for the secure communication within the factory are required to ensure consistent data exchange between machines and IT systems. The manufacturing sector will need methods, tools and software components to synchronise products, production plants and processes and the supporting IT systems, namely PLM, digital factory and MES.
- **Data mining** - The volumes of data resulting from shopfloor-related IT systems and the operation of plants, both of which are supplied by sensor data, open up potentials for cost efficiency and improvement. However, most of these gems are still hidden within the data and are waiting to be discovered.
- **Use-centric** - To prevent individual users from being overwhelmed by all the information provided by the individual systems of a factory, the information must be made available as role-specific information and must be distributed accordingly.
- **Security** - Data must be protected against attacks by interception and modification.
- **Plant-wide condition monitoring** - Many companies use technology of this sort already but usually they only

*We're still a long way away from the vision of Industry 4.0, in which smart machines automatically report of their own accord when they need maintenance or spare parts.*

monitor individual components and not the entire facility. This is especially true for continuous manufacturing processes, where creeping change can suddenly cause a breakdown unless operators have their eye on all the variables. One example could be a pipeline blockage as a result of a gradual build-up of liquid or viscous material deposits on the pipe's inner walls.

### Implications in the food industry

Food and beverages have to comply with strict requirements when it comes to safety, quality, shelf life and compliance. Industry 4.0 can impact the food industry by allowing it to become more flexible without affecting any of these parameters.

Production flexibility can be seen in product batches. By focusing on small batches, companies will be able to react better to customer demands and drive their production towards a make-to-order system. But smaller batches lead to more changeovers in production - this is where Industry 4.0 will deliver significant enhancements. 🐮



As used in UK and European hospitals, and now fast being adopted in food preparation areas, commercial kitchens, and the food manufacturing industry as well.

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## Disposable filtration device for bioburden testing

The EZ-Fit Filtration Unit is a ready-to-use, disposable filtration device for bioburden testing. The unit, which conforms to international standards (EP/USP) and water-testing regulations, can be used for filtration of liquid samples including water, raw materials, in-process samples and final products.

The filtration unit delivers optimal microbial recovery and reliable results. The shape of the funnel and the plastic material minimise sample residue to ensure that the complete sample volume reaches the membrane surface. The design reduces the risk of leaks and prevents sample from bypassing the membrane to allow filtration of the entire volume. Following sample filtration, the membrane is perfectly flat; when transferred, the entire surface of the membrane is in contact with the culture media. Alternatively, liquid media can be added from the top and once the funnel is removed, the device converts into a petri dish for faster, more convenient incubation.

The unit is pre-sterilised and the lid remains in place during filtration to prevent contamination. To further maintain sample integrity, a rim prevents forceps from accidentally touching the membrane filtration area during transfer.

The unit allows one-handed funnel removal, and the clear funnel with a large diameter enables easy sample pouring and visualisation of the end of filtration. Level indicators on the funnel eliminate the need to turn it when placing on the filtration support.

The units are available in 100 or 250 mL funnel sizes and are stackable to save space in the laboratory.

**Merck Pty Limited**

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



## Digital alcohol meter for micro-distilleries

Anton Paar has developed the Snap 50 digital alcohol meter for use in small distilleries. The meter checks the alcohol content of two-component mixtures made of water and ethanol over the whole relevant measuring range from 0-100% v/v. It can therefore replace glass hydrometers at small distilleries.

The sample is taken directly from the storage vessel, the influence of temperature on the result is automatically compensated and the alcohol concentration is displayed within seconds.

With a measuring accuracy of 0.1% v/v alcohol, the company says it is the most accurate digital portable alcohol meter available. With its capability to identify sample names via RFID (radio frequency identification), store more than 1000 results, and print or export these to a PC, the meter provides complete traceability of the results.

**MEP Instruments Pty Limited**

[www.mep.net.au](http://www.mep.net.au)



## Temperature monitoring system

TempReport is a temperature monitoring system, directly from wireless T-TEC data loggers to the user's PC in real time.

No longer do data loggers need to be collected, connected to a PC, downloaded and put back in the place they monitor. They stay in place, logging temperatures versus time into a large memory and sending signals by RF to the gateway connected to a USB port. The loggers have a strong signal with a reach of 350 m in free air; longer with special antennas.

The product updates real-time temperatures to the PC screen at user-selected intervals. It also downloads the files automatically. No logs are lost - they are always retrievable from the logger, the database on the PC or, if required, from the cloud. Users have all the information at their fingertips as the system remembers to update and download. When real-time signals come in, any alarm messages are sent to the screen, by SMS and email, if required.

Signals are encrypted, so only the owner company can receive messages, and access control with passwords ensures that there is no unauthorised interference with the loggers. The system can keep track of storage temperatures, cool rooms, freezers, refrigerated trucks, hot water systems, air conditioning and computer rooms.

**Temperature Technology**

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## Microbial detection

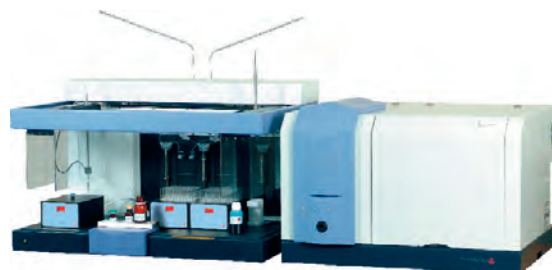
bioMérieux provides a range of systems for microbial spoilage rapid detection. Combining speed and sensitivity, Chemunex systems are used by food production facilities throughout the world.

Rapid microbial results for final product release and process control delivered by the products have a direct impact on the reduction of quarantine time, warehouse costs and production disruption. The systems can be implemented with relative ease into any laboratory performing direct quantitative and presence/absence testing of spoilage microorganisms and effectively improve the quality of testing for many product types.

They also improve laboratory workflow by reducing hands-on time and eliminate false positives, retesting, lengthy sample pre-incubation and instrument standardisation by product. There is no longer the need to run batch controls or to develop baselines to compensate for background readings. This can be accomplished without sacrificing accuracy and reliability.

**bioMérieux Australia**

[www.biomérieux.com.au](http://www.biomérieux.com.au)



## Chromogenic dry media sheets

Compact Dry chromogenic dry media sheets offer food microbiology laboratories a convenient, rapid method for counting bacteria in food products, pharmaceuticals, waters and environmental surfaces.

Supplied as sterile dry media sheets in foil packs of four, the sheets can be stored at room temperature for up to 14 months from the date of manufacture. Cross contamination, which is often a problem faced with other rapid methods, is eliminated as each sheet has a covering lid.

The incorporation of chromogenic and redox indicators allows easy interpretation of results as target organisms grow on the sheets as specific colours. This also means that too-numerous-to-count results are never mistakenly counted as a negative result. Colonies are easy to pick off the sheet for subculturing purposes.

Spreaders are no longer required when using the sheets, as 1 mL aliquots diffuse easily over the surface of the membrane.

Unlike traditional methods, there are no stacking restrictions during incubation when using the sheets, saving space within the incubator chamber.

Total count and *E. coli*/coliform plates are AQIS approved for meat and meat products/surface testing and have AOAC approvals for many types of bacteria test types.

The range covers a number of food pathogens and indicator organisms: total viable count, *E. coli* and coliform, *Enterobacteriaceae*, coliforms, yeast and mould, *Staphylococcus aureus*, *Bacillus cereus*, *Enterococcus*, *Vibrio parahaemolyticus*, *Listeria* spp and *Salmonella* spp.

**Arrow Scientific**

[www.arrowscientific.com.au](http://www.arrowscientific.com.au)

## Automatic pipette

The BagPipet from Interscience is an automatic pipette for reaching into the bottom of blender bags without contaminating the pipettor or workspace.

Bag Tips, which are designed for pipetting viscous liquids, are available in 19 or 24 cm sizes, making the BagPipet suitable for most bag types and sample sizes.

The pipette comes standard with three preset sample volumes of 0.1, 0.9, and 1 mL and a variable volume button (100-1000 µL) is also available.

**Australasian Medical & Scientific Ltd**

[www.amsl.com.au](http://www.amsl.com.au)

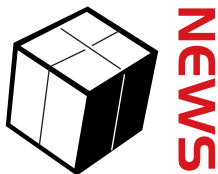




# packaging







## Processing machinery focus for AUSPACK 2015



AUSPACK 2015 will continue its focus on processing machinery. With less than five months until the 30th anniversary show, a host of companies have already signed up.

"Companies such as tna Australia, Heat&Control, Walls Machinery, Krones and JL Lennard are just some of the processing exhibitors returning in 2015," said Luk Kasprzak, portfolio director - industrial division, Exhibition and Trade Fairs.

"In addition we have international processing companies such as Daxner Pacific, Lothar A. Wolf Spezialmaschinen, as well as first-time exhibitors Viking Food Solutions and Summit Machinery also exhibiting next year."

Viking Food Solutions offers a range of food processing and packaging solutions from vacuum packaging equipment and materials, dip tanks and shrink packaging to tray sealers, trays and film and food labels. Viking services a range of industries such as fresh and processed meat, poultry, seafood, dairy and other chilled food products.

"The first impression is the last impression, and in a growing economy, no-one understands this better than owners in the food industry," said Stuart Mead, director of Viking Food Solutions.

AUSPACK 2015 will be held over 24 to 27 March 2015 at the Melbourne Convention & Exhibition Centre. AUSPACK is owned and presented by the Australian Packaging and Processing Machinery Association (APPMA). For more information about the event, visit [www.auspack.com.au](http://www.auspack.com.au).

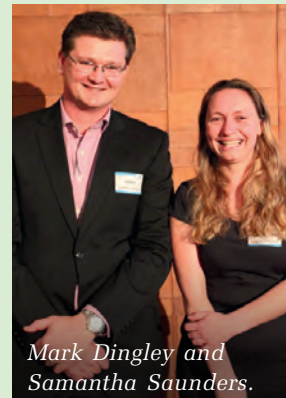


## New director for APPMA board

Samantha Saunders has been announced as a new director to the board of the Australian Packaging and Processing Machinery Association (APPMA).

Saunders is the general manager of Melbourne-based Integrated Machinery, a pallet-wrapping equipment manufacturer. With twenty years' experience in the packaging industry - 10 years at Amcor and 10 years with the Integrated Packaging Group - Saunders has held a number of commercial and management roles.

"I hope to encourage new members to join the APPMA, foster relationships between existing members and work with my fellow board members to strengthen the APPMA for the benefit of current and future member companies," Saunders said.



Mark Dingley and Samantha Saunders.

## High BPA? Could be the receipt, not the packaging

Research conducted at the University of Missouri (MU) is providing the first data that bisphenol A (BPA) from thermal paper used in cash register receipts accounts for high levels of BPA in humans.

BPA is used in a variety of consumer products, such as water bottles, dental composites and resins used to line metal food and beverage containers.

"BPA first was developed by a biochemist and tested as an artificial oestrogen supplement," said Frederick vom Saal, Curators Professor of Biological Sciences in the College of Arts and Science at MU. "As an endocrine disrupting chemical, BPA has been demonstrated to alter signalling mechanisms involving oestrogen and other hormones. Shop and fast food receipts, airline tickets, ATM receipts and other thermal papers all use massive amounts of BPA on the surface of the paper as a print developer. The problem is, we as consumers have hand sanitisers, hand creams, soaps and sunscreens on our hands that drastically alter the absorption rate of the BPA found on these receipts."

In the study, researchers tested human subjects who cleaned their hands with hand sanitiser and then held thermal paper receipts. As an added step, subjects who had handled the thermal paper then ate French fries with their hands. The result was that BPA was absorbed very rapidly, vom Saal said.

"Our research found that large amounts of BPA can be transferred to your hands and then to the food you hold and eat as well as be absorbed through your skin," vom Saal said.



© Brian Jackson/Dollar Photo Club



## Filler capper

Designed for the home and personal care (HPC) market, the filler capper from Serac tackles the issue of production downtimes by reducing the number of changeovers and speeding up those which cannot be avoided.

The machine integrates the Dynaflow nozzle monitoring system, versatile neck-transfer grippers and a capping turret capable of handling various models and achieving a wide variety of operations. The machine is associated with the FCS+v6 production management software, which simplifies monitoring operations.

**Tronics Pty Ltd**

[www.tronics.com.au](http://www.tronics.com.au)

## Inline tray sealer

The Mecapack 0<sup>2</sup> 7000 inline tray sealer range can be used in single- or dual-lane configurations which are easily interchangeable by the operators.

In addition, specialised tray format tooling can be utilised to work in multiformat non-simultaneous mode whereby two tray formats can exist on a single tooling and run one lane or the other - tray format A one can be used in lane A and tray format B can be used in lane B - all at the touch of a button on the large operator colour touchscreen interface.

Such a simple change of tray format eliminates the needs for time-consuming and difficult tooling changeovers and increases machine uptime and operational flexibility.

The 0<sup>2</sup> 7000 machines are constructed with a 10 mm stainless steel open frame design, allowing for quick and easy access to all machine areas for ease of cleaning and maintenance and tooling changes. Tooling and film roll changes and film waste removal can be accessed from a single side and the electrical and pneumatic compartments are segregated and located in the top section.

All conveyor sections are removable and washable.

The tooling is constructed to optimise vacuum times and reduce gas consumption, and the sealing processes available include VGS, sealing only, Skinfresh, shrink films, Mirabella and many more.

The machine is designed for ease of use and full flexibility of operation.

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## Biodegradable packaging range

Detmold Group has expanded its environmental packaging offerings with the launch of the I am eco range.

This range includes use of a bagasse sugarcane board material formed into food pails. Bagasse sugarcane board is a sustainable product and is made from 100% recycled content converted into solid board sheets for effective printing. As sheeting the product can be transported more efficiently, thus saving energy and carbon emissions.

With the introduction of I am eco, Detpak, Detmold group's specialist division for the food service industry, offers a large range of environmental packaging that is biodegradable and compostable.

All 52 items in the I am eco collection are made exclusively from plants, a renewable resource. These include sugarcane, corn and trees. Items such as Detpak's original ripple wrap cup are now available in the I am eco range as well as a suite of new products including smooth double-wall hot cups, plates, bowls, lunch boxes and pails that are available in numerous sizes.

**Detmold Group**

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

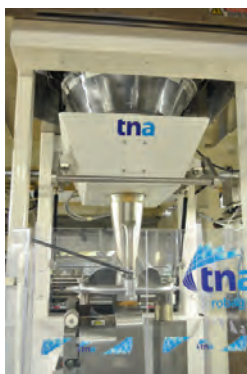
## Peelable lidding films for APET trays

Amcor has developed N-Gage, a range of high-barrier, peelable lidding films which seal directly onto APET trays. The films are lighter than current materials, which will reduce total pack weight by a minimum of 10%.

The mono-APET tray and lid can be fully recycled once the recycling stream is in place. The company claims the product offers equivalent performance to existing films and will produce savings in productivity, logistics and waste costs.

**Amcor Australasia**

[www.amcor.com.au](http://www.amcor.com.au)



## Integrated metal detector

The tna hyper-detect 5 metal detector is a non-symmetrical balanced coil metal detector with a conical aperture into the detector. While conventional 'throat' metal detectors have been used by manufacturers to inspect the product before it enters the bag to allow the use of metallised film, the company says these limit product throughput and packaging speeds. The integrated design of the metal detector allows it to be positioned closer to the multihead weigher, increasing the speed at which the bagger can produce finished bags.

With a high frequency function, the metal detector provides stable operation for good sensitivity and consistency when inspecting products. The integrated design does not increase the system's height, requiring minimal installation space.

The machine is able to detect ferrous contaminants from 0.8 - 0.9 mm, non-ferrous pieces up to 1.0 mm and non-magnetic stainless steel from 1.0 - 1.2 mm.

**TNA Australia Pty Ltd**

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

# 2015 APPMA INDUSTRY EXCELLENCE AWARDS



Australian Packaging and Processing Machinery Association Limited  
**2015 Industry Excellence Awards**

**Recognising Innovative & Outstanding Packaging & Processing Solutions**

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## Drinking-fudge dispenser gives Maxi-yum effect

UK fudge specialist Fudge Kitchen produces a Drinking Fudge product, which is added to hot, frothed milk to create an indulgent hot drink, or to cold milk for the base of a milkshake or frappe.

As one of Fudge Kitchen's most popular retail lines, it was being sold in many specialist shops which also feature cafes, and this led to demand for a catering version. Fudge Kitchen therefore needed a means of dispensing the product efficiently, accurately and reliably, and one which could effectively handle the highly viscous liquid fudge.

"We did a lot of research into a suitable way of dispensing our Drinking Fudge," explains Fudge Kitchen Managing Director

Siân Holt. "A squeezezy bottle did not provide the required portion control but it was difficult to find a pump dispenser that was able to cope with such a thick product."

The Fudge Kitchen ultimately chose the Maxi Dispenser from Rieke Dispensing. The Maxi is specifically designed to pump viscous products and those containing particulates. It features a robust construction, manufactured in food-grade materials, with a non-drip nozzle. It can deliver accurate individual doses between 5 and 30 mL.

"The Maxi has proved the ideal solution and indeed stands alone in terms of its capabilities for handling our Drinking Fudge. It is easy to use and reliable, delivers an accurate amount each time and thanks to its sturdy construction can be transferred between jars," says Holt.

The Maxi is being used in conjunction with a 1.3 kg jar. The dispenser delivers a 15 mL dose, with 2-3 pumps being required, depending on the size of the cup.

*Rieke Packaging Systems Australia  
www.english.co.uk*



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## Pouch form, fill, seal machine

The Effytec GPC60 Horizontal Form, Fill, Seal Pouch Machine runs both dry and liquid applications for gusseted reclosable pouches. The machine is suitable for dry applications including pet food, shredded cheese, confectionery, snacks, cereals, sugar, rice and biscuits. Liquid applications include detergents, oils, juices, sauces and soups.

The machine runs at 150 - 200 ppm, depending on the application. Other features include: automated format changeovers which can take only 15 minutes, automatic film splicer, ultrasonic welding of zipper and top sealing, product transition filling window of up to 2.5 s and a compact machine footprint for pouch sizes up to 200 mm wide x 300 mm tall.

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## Image analysis software

Eagle Product Inspection has made enhancements to its SimulTask PRO image analysis software. The software, which detects and rejects contaminants and product defects inside closed packages, now incorporates seal integrity, fill-level inspection, check weighing and component count features.

The software allows simultaneous X-ray inspection of different products within many formats and sizes of packaging. The system inspects for a number of contaminants, such as metal, glass, dense plastics and calcified bone, in packaged products on multiple production lanes at high-throughput speeds. The weighing feature examines the density of the product which is then used to calculate the total weight while also verifying the presence or absence of specific items and verifying count. The software can also weigh separate compartments in packaging such as ready meals, enabling automatic removal of packages that fall outside the pre-agreed limits.

Product defects can occur when the product and/or package is exposed to extreme conditions such as moisture, freezing, thawing and salinity. Varying atmospheric environments can also cause deformations in the packaging, affect fill levels and seal. The X-ray technology automatically identifies any abnormalities so the inadequate product can be removed from the production line.

The user interface provides access to statistics and reports. Data specifying the weight of products, number of products inspected, amount of rejects and the breakdown of the reject types between contaminants and other defects are all captured, allowing compliance with hazard analysis and critical control points (HACCP) principles and food safety regulations. The diagnostic capabilities of the software enable proactive maintenance to be scheduled.

**Food Processing Equipment Pty Ltd**

[www.fpe.net.au](http://www.fpe.net.au)



## Vertical and horizontal packing machine

HBM Packaging Technologies has available the Pearson Packaging Systems HV Module (horizontal vertical) packing machine, designed to offer flexible pack patterns and product configurations.

The machine allows for easy adjustments; from traditional horizontal pack patterns to vertical, stand-up patterns used in shelf-ready packaging. The system offers high-speed loading capability of up to 180 products vertically and 300 products horizontally as well as tool-free changeovers and easy access to load cells for size adjustments.

The load cell system uses a three-step move/hold/release motion that consistently maintains pack patterns during the product transfer. The ability to choose from multiple loading technologies such as gantry, articulated arm and delta robots accommodates a wide variety of products including oddly shaped or lightweight packs. Multiple product and case flow configurations including inline, 90-degree and inline cross flow accommodate most production line layout requirements.

**HBM Packaging Technologies**

[www.hbm.com.au](http://www.hbm.com.au)



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# The top three functional additives in the plastic packaging market

Smithers Pira

There is rapidly increasing demand for packaging materials that give even greater protection to their contents. Functional additives are an important technology in meeting this demand for greater product protection in the plastic packaging market. A functional additive modifies the properties of packaging to impart desirable or beneficial functions.

**M**any types of functional additives are used for plastic packaging, including antistatic agents, heat and UV stabilisers, impact modifiers, clarifying agents, blowing agents, brightness agents, impact modifiers, antioxidants, antimicrobial agents, oxygen scavengers, anti-block agents and various other processing aids.

## Oxygen scavengers

Oxygen scavengers are the largest of the functional additives used in plastic packaging, making up a 57% value share of the plastic packaging market. Oxygen scavengers help to extend product life and improve product appearance by absorbing and removing any oxygen left in the closed packaged product. In recent years, innovations have enabled oxygen scavengers to be impregnated into laminates, cards, films, bottles, plastic lids and closures.

The technology has been widely used in PET beer bottles, often incorporated into closures or barrier materials. The growth in ready meals consumption has presented further opportunities for oxygen scavengers, with Japan dominating the ready meals market for oxygen scavengers. Oxygen scavengers are also growing in pharmaceutical packaging, propelled by industry demands because of regulatory pressures, cost-cutting exercises and the need to enhance patient care.

## UV stabilisers

Following oxygen scavengers, UV stabilisers make up the second largest value share of functional additives in the

plastic packaging market, accounting for 12%. UV or light stabilisers are added to plastic packaging to protect the package and their contents from the damaging effect of ultraviolet and infrared radiation from sunlight. Protection from UV radiation can be important in plastic packaging as UV radiation can stimulate molecules to an extent so as to break their chemical bonds that can release highly reactive radicals, capable of destroying other molecules.

Demand for barrier PET bottles which offer protection against UV light is rising, as light in this range is harmful to many of the nutrients in a product such as vitamins, lipids and fatty acids. Milk bottles pose a particular challenge for PET when it comes to providing UV protection, as the vitamins in milk - especially vitamins B2 and B12 - are highly sensitive to UV light.

## Antistatic additives

In third place, antistatic additives account for 11.9% value market share of functional additives in the plastic packaging market. An antistatic additive is a chemical added to a plastic part for the purpose of eliminating or lessening static electricity. Antistatic additives act to permit the body or surface of the polymeric material to be slightly conductive, thus preventing the formation of static charges and deterring the fixation of dust.

Polymers can accumulate static charge on their surface as they move through shear-inducing production equipment. This positive or negative static build-up can hinder

*Plastic additive demand growth is rising faster than overall plastic packaging demand growth as converters look for lower cost solutions, which additives can provide.*

production operations and degrade final part performance for its intended use.

Antistatic packaging is a relatively mature sector in which demand tends to follow demand for electronics and electrical products.

Plastic additive demand growth is rising faster than overall plastic packaging demand growth as converters look for lower cost solutions, which additives can provide. As consumer demand for greater protection of products continues to rise, the market for functional additives in plastic packaging can be expected to continue to grow in tandem.

This research is based on Smithers Pira's new report *The Future of Functional Additives and Barrier Coatings for Plastic Packaging to 2018*. This report offers information about what the future holds for functional additives and barriers coatings in the plastic packaging market.

To access the report, visit [www.smitherspira.com](http://www.smitherspira.com).

Smithers Pira  
[www.smitherspira.com](http://www.smitherspira.com)

## Coca-Cola bottler reduces blowing pressure by over 50%



The Midwest Coca-Cola Bottling Company is located in Eagan, Minnesota. The company manufactures bottles and distributes Coca-Cola products throughout much of the Midwestern area of the United States. The company wanted to maximise its profitability by increasing its production efficiency and minimising its operational costs.

Yet, at the same time, the company was also looking to reduce the environmental impact of its processes and that of its resource use.

Midwest called in Sidel, a provider of PET solutions for liquid packaging, in the hope of achieving tangible cost and energy savings through a detailed overview of existing line conditions during full production.

Sidel's ECO Booster service analyses a line to identify potential opportunities for savings using production technologies. Efficiency measurement tools can be installed that automatically record the consumption of all utilities (air, water, electricity and carbon dioxide) by individual machines, lines, production zones or an entire plant. As well as measuring consumption and calculating energy costs per bottle produced, the service and tools provide the ability to facilitate correlation between consumption levels and different production procedures (start-up, shutdown, changeover and cleaning). This information can then be used by beverage producers to effectively support initiatives for reducing waste.

For Midwest Coca-Cola, the next step was a mechanical testing of the blow moulders' subassemblies. Because when it comes to the use of energy within busy production lines, the blow moulder is usually the main cause, often accounting for as much as 70% of overall energy consumption. Furthermore,



a sizable portion of that consumption can be attributed to the provision of compressed air during the blowing process.

By implementing its ECO Booster service on four of Midwest Coca-Cola's SBO14/14 blow-moulding machines, encompassing various bottle formats, Sidel has helped the bottler to make significant reductions in both the blowing pressure and the blowing ovens' use of electricity. Across 10 different bottle formats, the average reduction in blowing pressure was 45.9% (the lowest being 19.4% and the highest 50.7%). The average reduction in the ovens' energy consumption was 22.3% (with the lowest saving being 15.7% and the highest being 38.1%).

Jim Tierney, maintenance manager of the Midwest Coca-Cola Bottling Company, explains: "Reduced resource use means reduced costs, which is a sustainability win-win for us. For this reason we are always looking to speak with our partners about new innovations that can help us achieve this goal. The Sidel ECO Booster is a great example of this, resulting in a significant reduction of our blowing air pressure and oven electricity use across four of our lines."

Sidel Oceania Pty Ltd  
[www.sidel.com](http://www.sidel.com)



## Hybrid ovenable packaging trays

DFC Packaging has introduced the Delight range of packaging trays that enable users to use colour and shape to enhance their brand image while still remaining environmentally responsible.

The trays are a hybrid package constructed of a renewable paperboard material, with a polymer coating and sealing rim. The strengthened rim ensures effective lid sealing and gives increased strength to the pack. Available materials include PET-based, PP-based and bio options.

The trays are suitable for temperatures between -40 and 200°C and can be heated in a conventional, convection or microwave oven.

The packaging material is printable in up to five colours and varnish, and it has good UV barrier properties. The trays are heat sealable with barrier films for modified atmosphere packaging.

**DFC Packaging Group**  
[www.dfc.com.au](http://www.dfc.com.au)

## Aseptic container station for beverages with a solids content

Krones has developed the DosaFlex aseptic container station for dosing of aseptic components in finished beverages with a solids content.

The container station is integrated between the units for continuous product treatment and the filler. The finished beverage is blended using controlled dosing in a double-seat valve with an adjacent vapour seal, designed to cope with aseptic processes. For low-acid products, a vapour seal is additionally provided in the condensate drain, to ensure a sterile production process even with sensitive products.

The rate of damage to particles that are larger than 3 x 3 x 3 mm is below 5%, while the dosing accuracy lies at  $\pm 0.3\%$  of the dosing quantity involved. According to the company, both of these figures are significantly lower than those encountered in classical single-flow processes.

The container station's good price-performance ratio and minimised footprint is suitable for beverage producers who want to try out new beverages with a solids content on test markets.

**Krones (Thailand) Co Ltd**  
[www.krones.co.th](http://www.krones.co.th)



## Universal scroll denester

Impact Automation's universal scroll denester offers a solution to placing food trays on a process line by using curved rollers. The denester is available with an autoloader option, which will stack 1000-1200 trays ready for processing.

It can run between 60 and 100 trays/min. The trays need to be of a design suitable for automatic denesting. Changeover is simple and can be carried out by an operator in 5 min.

The machine will also cope with a variety of trays on the same machine, such as foil trays, PET trays and rigid plastic trays for ready meal applications, seafood, red meat, poultry, bakery products, etc.

**Impact Automation**  
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# Sparkling success in the Hunter Valley



Ian Peterson's original vision was to produce sparkling wine from Hunter Valley fruit to mark special occasions in his own extended family. But since 1995, Peterson House has been producing fine sparkling wines for the wider commercial market.

When producing sparkling wine, variations in the final product exist for a number of reasons: the grape variety, fruit maturation and time of picking, the quality of the base wine, the winemaking methods used as well as the skills of the sparkling winemaker. The latter is an important element in the equation, for each winemaker develops expertise as they strive to achieve an average of 250 million bubbles in every bottle!

The ongoing investment in facilities by Peterson House now enables them to offer a range of winemaking methods for the production of sparkling wines to other growers across Australia. "We are now making sparkling wines for growers across the eastern states of Australia. From local Hunter Valley operators to Queensland and South Australian winemakers and vigneron, are using our services," says John Reid, Operations Production Manager for Peterson House.



While their facilities' capacity can handle large quantities of wine to cater to the bigger vineyards, they are also available to smallholdings.

Producing their own sparkling wine as well as fermenting and bottling for others, meant Peterson House had to provide not just a good-quality product, bottled and labelled, but they also needed to offer their customers the ability to trace every bottle throughout the distribution process right to the end consumer. Long journeys of this nature require permanent marking so John Reid turned to Raymax Applications to install a CO<sub>2</sub> laser for glass-bottle marking. The LINX SL301 is now installed on the production line where, after the drying process, each bottle is engraved with company information and Julian Code, leaving a permanent, traceable mark, while operating at a capacity of marking on 2500 bottles per hour.

The software used to program the LINX SL301 lets Reid make changes to meet customer requirements by simply entering the information on the handheld keypad. Information can be scanned in using barcode data, but Reid prefers data entry by hand, ensuring he is meeting his customer requests.

"Our strategy is to offer our expertise to others. So selecting a LINX SL301 to mark permanent identification codes provides our customers with traceability. It's yet another service we've added to our expertise in the production of quality sparkling wine."

Raymax Applications Pty Ltd  
www.raymax.com.au



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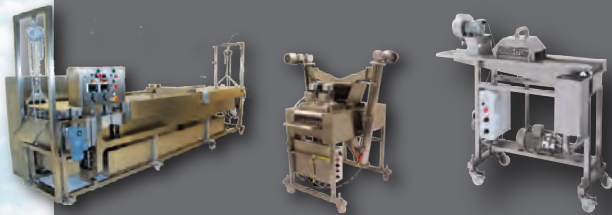


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