

HCI NEWS

ISSUE 1

Stronger Together

SNACKEX 19

HEAT AND CONTROL

 **ISHIDA**

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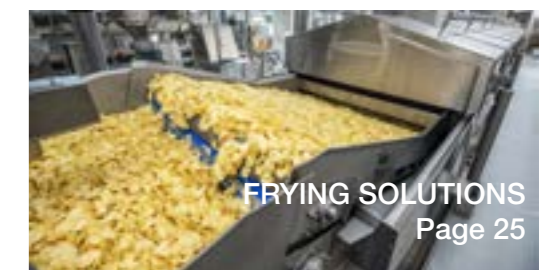
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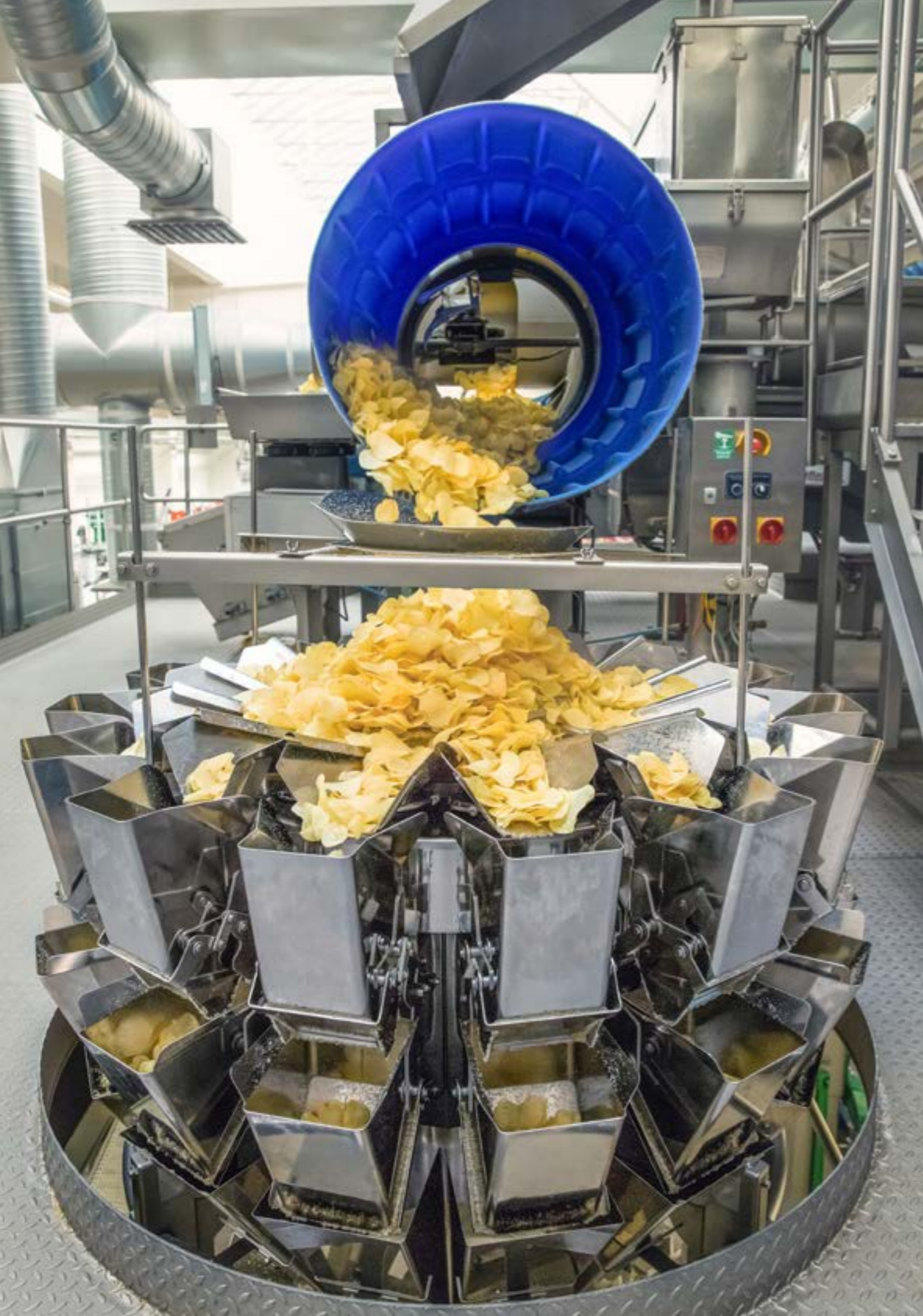
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WHY CHOOSE A HCI SNACK SOLUTION?

Heat and Control and Ishida have unique experience in the processing and packaging of snack food products and an associated broad array of machine capability that covers the entire process from unloading raw product to case packed retail ready product. Both businesses have and continue to work with existing snack equipment suppliers but optionally the solutions from both providers can be combined to form a full snacks processing and packaging line.

In combining our capability we are able to deliver full, bespoke snacks solutions that perfectly match your chosen applications and production goals. Heat and Control, global manufacturer and supplier of snacks processing, product handling and seasoning solutions, and Ishida, global manufacturers of snacks weighing, packaging and quality control solutions, can achieve this in combination.

Shared innovations for greater efficiency

Our shared focus is on innovations in processing and packaging, to help you operate faster, more accurately and more efficiently than ever before. All producers can benefit from our innovations in food manufacturing. No producer is too big or too small, too niche or too broad.

We believe in pushing the boundaries of what is possible and exploring every new idea. For snacks solutions that demonstrate progress, excellence and finesse, look to the future of snack food manufacturing in the Heat and Control-Ishida alliance.



Stronger Together

The **Heat and Control and Ishida (HCI) Alliance** is delivering on the promise of a 'one-stop-shop' for integrated processing and packaging snack solutions. Talk to us to learn what your snacks factory should be focusing on right here and now, and how a Heat and Control-Ishida complete line solution can make a difference in these four key areas:

1. Productivity

Industry 4.0 technology, monitor line performance, minimise downtime + increase efficiencies.

2. Food safety

Invest in machinery designed for hygiene, to protect the quality of your products + the end consumer from contaminants and foreign bodies.

3. Labour

Reduce labour costs + optimise your output speeds with the next generation of automation.

4. Value

Choose a single source supplier to minimise downtime, maximise OEE + get the best of every single machine on your line.

In the fast-paced snacks sector it's a case of getting ahead or falling behind.

To find out more, visit www.hcisnacksolutions.com

Stronger Together



FOCUS ON

The **Ishida Inspira** is the next generation of vertical form fill seal (VFFS) snack packaging technology, with some of the fastest and most accurate packing speeds available to snack food operators. Inspira brings a new level of automation and efficiency to consistently produce quality bags and increase production, no matter what type of sealing your bags require. There is a wider choice of bag sizes, with a minimum bag width reduced to 50mm. The Inspira works in tandem with existing models of Ishida multihead weighers, sealtesters, checkweighers, X-ray and case packing to produce perfect packs ready for shipping.

Maximise your bagging speeds

The Inspira rotary-motion bagmaker delivers some of the fastest speeds possible within a snack foods environment, achieving mechanical speeds of up to 250 bags per minute. An intermittent-motion Inspira machine offers forming/sealing speeds of up to 120 bags per minute. Overall performance has been improved by a factor of ten for both intermittent and rotary models with the introduction of new motor and drive technology to improve positional jaw control at the point of sealing.

Increased automation for bagging quality

The Inspira brings new levels of automation to reduce the opportunity for human error. Some of the new features include:

- Automated centring and tension adjustment of the film
- Auto-splice film management
- Automated air-fill technology
- Automatic optimisation of nitrogen flow
- Automated printer positioning
- Automatic positioning of the former-rollers
- Product-in-seal detection located at the jaws
- Pack print verification

Easier to operate

The new, open-frame Inspira structure gives operators easy access to all parts of the machine, and has an improved, more user friendly interface. Changing a forming tube has been made particularly simple, involving locating one corner on the support frame and swinging the former around the location pins until it locks into place. The film feed is simpler as it contains fewer rollers, while dedicated LED lighting within the splicing table makes the operator's task easier, by allowing the quick and precise location of the registration mark needed to achieve an accurate film splice.

ISHIDA INSPIRA, THE NEXT GENERATION BAGMAKER



FOCUS
ON



Complete end-to-end nut snack solutions with the Heat and Control Rotary Dryer Roaster.

ROTARY DRYER ROASTER (RDR)

CREATE PRODUCTS SUCH AS JERKY | MEAT CHIPS | PET PRODUCTS | NUT PRODUCTS | AND MORE

The latest innovation in nut roasting technology from Heat and Control, the Rotary Dryer Roaster (RDR), provides snack food operators with a superior end-to-end solution for the dry roasting of nut and seed products.

The RDR advances Heat and Control's snack line capability, enabling food manufacturers to take advantage of the cost saving benefits a single source supplier can offer with a complete solution for seasoned and coated nut snacks, including frying, dryer/roasting, seasoning, coating, conveying, weighing, packaging, case packing, inspection, and controls.

"This latest addition to Heat and Control's catalogue reinforces our strength in thermal food processing technology and provides snack manufacturers with even more options, as well as confidence, that they can consistently produce high-quality product," affirms Tony Caridis, Heat and Control Inc. President.

The RDR multizone convection dryer/roaster system uses the latest technological advances in dry roasting so food processors can continuously process high

volumes of snack foods, such as nuts, seeds, and protein/meat-based snacks.

The RDR gives operators complete control to dry or to roast in a continuous, gentle, and sanitary manner with optimal quality and uniform results.

Along with nut products, the RDR is also ideal for applications such as the drying of meats and poultry to create jerky and meat chips, as well as drying pet products to create food and treats.



PACKING AUTOMATION

The snack industry can now realise the benefits of more efficient case packing for small and large bag sizes and multiple pack patterns with Ishida's new Snack Food Case Packer. With toolless three-minute changeovers and zero change parts, Ishida significantly improves production output.

The system includes an integrated case erector and closing mechanism and features a large colour touch display, making it a highly efficient system that is easy to operate. Bag handling is vacuum-free, and the system has the smallest footprint available. The snack industry can rely on Ishida's high quality and performance coupled with complete support and expertise.

The Case Packer is a compact case packer that can be set-up in an existing or a small space, making it attractive for customers looking to improve their boxing process. This fully automatic case packing system ensures correct bag count in the case and accurate case-packing of mass-produced products, with a capacity for boxing up to 150 packages/10 cases-per-minute.

With the Case Packer's controls system's feed forward and feed back features, the flow of bags is more measured and controlled. This reduces bottlenecks by continuously adjusting settings as bags are running through the system. The Case Packer provides unmatched packing performance, such as toolless 3-minute fully-automatic pushbutton adjustment changeovers, and includes more standard features (e.g. case erector, closing mechanism, large 15.3" colour display, predictive maintenance tools) to make it a highly efficient system that is easy to operate. Another key design improvement is the removal of the troublesome vacuum system typically required for bag handling.

The Ishida Snack Food Case Packer will open the corrugated blank carton, put bags into the carton in a desired pack pattern, and close the carton. Offering snack manufacturers, the benefits of leveraged automation and dependable case packing:

- Fast and efficient changeovers
- Integrated case erector & closing mechanism included
- Vacuum-free bag handling
- Small and large bags capable
- Multiple pack patterns
- Seamless integration with other Ishida equipment
- Smallest footprint



Case Packing Automation for your Snack Food Line

Ishida ACP-700 Automatic Case Packer



MAKE MASA IN MINUTES

HEAT AND CONTROL

Corn Masa Maker System



Masa Maker is a patent-pending, new and efficient way of producing fresh quality masa from corn to fresh masa in just minutes instead of the hours-long simmer and soak process that is traditionally used. It uses only a fraction of the water required by the traditional process and produces zero waste water.

Historically, a significant investment in time and resources is required to make masa, which pushes many manufacturers to use the much quicker method of rehydrating outsourced pre-cooked corn flour. Though this method eliminates much of the costs generated by cooking corn, it also eliminates central control of the traditional process.

Masa Maker gives the manufacturer a significant time saving over the traditional process where the cooked corn needs to be soaked for a full 8 - 16 hours before being ground into masa.

While traditional systems create significant waste water, the Masa Maker creates none and requires little water. No waste water, not only positions the manufacturer as a champion of green technology, but significantly reduces waste water treatment requirements and the risks of associated monetary penalties.

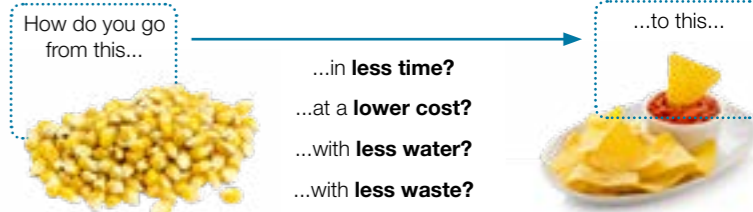
This gives manufacturers a tremendous operational cost saving, a quality finished product and a truly environment-friendly system.

The Corn Masa Maker System provides operators a superior return on investment through:

- **Increased production flexibility:** Significantly reduce processing time to 8-16 minutes, using corn grain
- **Water savings:** Reduce water use to only what is needed as a recipe ingredient and sanitation needs – eliminate your water waste
- **Operational savings:** Reduce production and sanitation costs
- **Energy savings:** Eliminate steam generator, simmer kettles and soak tanks

Making Masa in Minutes

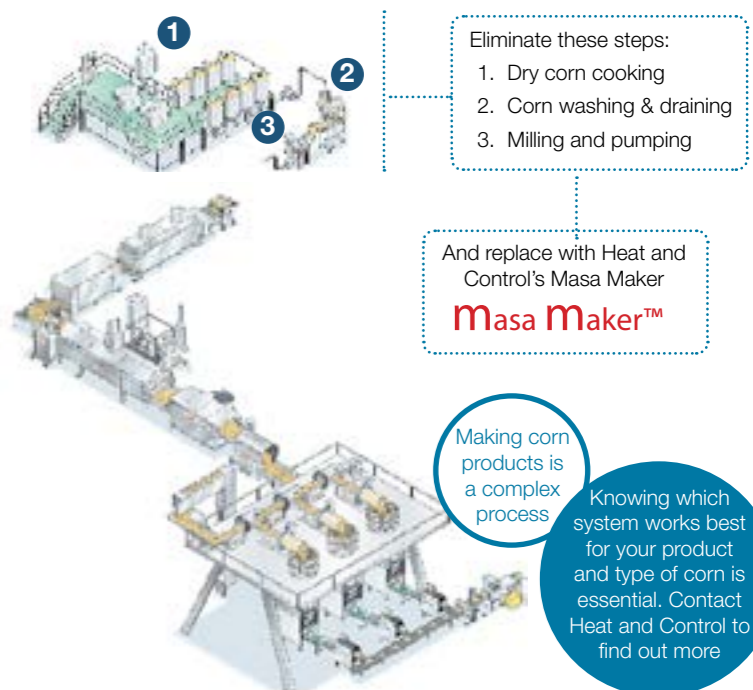
Corn product formulations in less time, with less water and with less waste



The answer: use Heat and Control's Masa Maker™

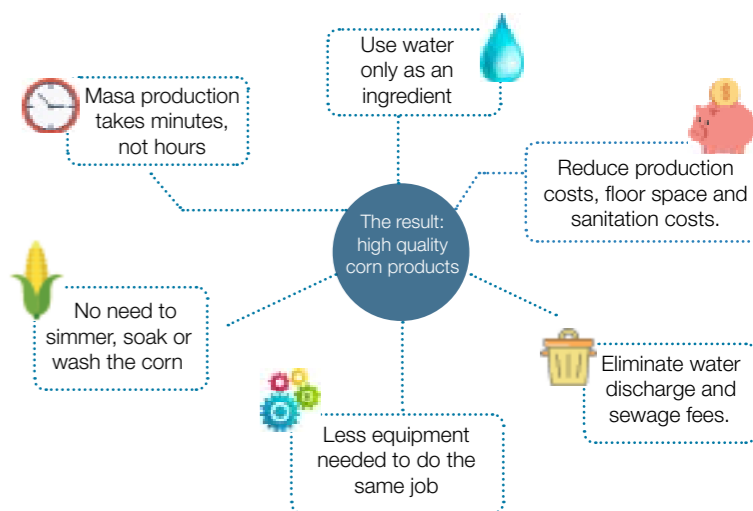
Making corn products, such as tacos, tortillas and chips, can be a complex process. The first thing that needs to be made is corn masa (meaning 'dough' in Spanish). Producing large quantities of masa requires a number of steps, such as dry corn cooking, corn washing & draining, and milling and pumping.

While this process is very effective and necessary for certain types of corn and corn products, it uses a lot of water, produces a lot of effluent, needs large floor space and takes a lot of time. For specific types of corn product formulations, Heat and Control's Masa Maker is ideal in eliminating these steps.



Benefits of the Masa Maker

The Masa Maker can save money and time while ensuring your final product maintains the highest quality.



EFFECTIVE WEIGHING PUTS SNACKS ON THE FAST TRACK TO SUCCESS



Continual new product development in the snacks sector means that the days when the market was just potato chips (crisps) and roasted peanuts are a distant memory. As well as the many different types of potato chips and nuts now available, there is a whole variety of specialist products, everything from salt and bread sticks to novelty extruded snacks.

All of which adds up to an extremely competitive market place – and for equipment suppliers, this means the focus is more than ever on high speed packing to maximise throughput.

Ever since the introduction of its first multihead weigher for potato chips in the 1980s, Ishida has continued to respond to the challenges of the snacks industry in order to continue to deliver fast and accurate weighing solutions.

The minimisation in giveaway that the multihead weigher brings tends to be taken for granted these days but the focus on higher and higher speeds means weigher manufacturers have to ensure that accuracy is not sacrificed in the quest for speed. Certainly this was one of the key drivers behind Ishida's development of its latest RV technology, which has managed to maintain pinpoint accuracy while achieving a fifteen per cent increase in speeds over previous weighers.

With these models, all heads are capable of being used in a single combination calculation, and the unique triple combination calculation software can calculate optimal weight combinations, double check them and then select the one nearest to the target weight, all in a single cycle. This minimises missed cycles and increases efficiency, while also enhancing weighing accuracy and consistency. Anti-floor vibration removes background vibration from the load cell output signal, improving signal stability and machine accuracy.

RV technology is a key feature of Ishida's Sector Solutions range of application-specific multihead weighers that provides manufacturers with an off-the-shelf cost effective and high-performance solution. For the snacks sector, 14, 16 and 18 head models are available which, in addition to faster processing speeds, include advanced software, more precise feeder control and enhanced average weight control to deliver increased packed product yields. A robust construction ensures long-term reliability and an easily accessible design and auto-clean functionality provide ease of access for servicing and cleaning for maximum uptime.

Ishida's new product development programme has also focused on the introduction of specialist models to handle particular product types. A recent innovation is a new multihead weigher to handle the challenges of stick snack products, whose fragile nature makes them particularly difficult to pack in an automated weighing system at high speeds.

The Ishida stick weigher has been designed for gentle handling of the snacks to minimise potential breakages. It ensures optimum flow of the sticks, with reduced angles throughout, a low-profile inlet chute, convex dispersion table, and waterfall ends for smoother transition of the long products into the pool hoppers.

To enable flexibility in handling different pack sizes the weigher is supplied with special hopper inserts aligning the sticks to keep them upright, ready for a clean transfer.

Ishida has also recently launched 10 and 14 head weighers for the fast and accurate weighing of other fragile snacks products. The design of the new Ishida CCW-RV 10 and 14 head GS weighers incorporates gentle slopes and reduced angles throughout the weigher to ease the passage of delicate products. Unique curved pool and weigh hopper designs deliver controlled deceleration further minimising the potential for breakages.

Another early Ishida innovation for the snacks sector was the company's mixed weighing technology. This offers several benefits. One weigher can effectively do the work of two or more, saving on costs and significantly reducing space and manpower requirements in the factory. Each section is dedicated to a different product and these can be set precisely at individual target weights, ensuring that the right mix of items is included in each pack and that the more expensive items tightly controlled. This helps to ensure product consistency and quality for consumer reassurance and brand integrity.

Again, Ishida has continued to develop and enhance this technology over the years. Today the company offers a range of high-head models – from 16 to 32 heads - which can mix up to eight different products simultaneously for discharge into the same pack. Machines can even be linked together to handle a virtually limitless number of products within one line.



TEST YOUR
PRODUCT WITH
HCI SNACK
SOLUTIONS

SINGLE SOURCE SNACK SOLUTIONS SHOWCASED AT THE HEAT AND CONTROL + ISHIDA OPEN HOUSE.

Since announcing the HCI Snack Solutions partnership in 2018, Heat and Control and Ishida have invested in establishing a state-of-the-art demonstration facility to showcase their complete solutions in snack food production.

Centrally located for snack processors in the EMEA region, the demonstration centre at Ishida's Birmingham, UK facility recently hosted an Open House event. Over a two week period around 100 snack food producers visited the Demonstration Centre to see a live snacks factory setting in action, with lines of Heat and Control and Ishida snacks equipment in operation.

Snack food manufacturers were able to participate in a series of information and training sessions, a factory tour and see live product demonstrations from leading Heat and Control and Ishida snack food experts. Customers could also visit the Ishida Quality Control display room and view the latest in product integrity technology with demonstrations of X-ray machines and checkweighers.

HCI Snacks Solutions – providing complete snack food solutions

"The Open House has been a fantastic way for customers to interact with snack food experts from both Heat and Control and Ishida", said Bobby Kane, Heat and Control General Manager for East and West Europe.

"Given the automation benefits of Industry 4.0, engaging with a single source supplier like HCI Snack Solutions can add value through increased connectivity levels and digital data exchange, along all stages of the processing and packaging production lines," said Bobby.

"Working with one supplier like HCI is a far easier and cost-effective process, as customers only need to speak to one team. We are like a one-stop-shop for snack solutions," said Simon Ruffley, Ishida Business Manager EMEA – Snacks Packaging Systems.

He adds, "the HCI demonstration facility is a great way for customers to evaluate our technology and know-how first hand. Product testing can be arranged by contacting HCI Snacks Solutions."

How to reduce seasoning loss during snack food production

The seasoning coverage on a snack food product is an important aspect of the quality a consumer sees, and determines the overall flavour and taste a person experiences. The high cost of seasoning and increased application rates are placing more importance on how seasoning is applied and determining the best way to ensure it stays on the end product.

With more people travelling than ever before, consumers are being exposed to different foods and flavours, placing additional demand on snack food manufacturers to provide a broader range of snack foods. This has seen seasoning application rates increase from 5% to more than 12% in some instances. **On Machine Seasoning (OMS)** systems which can increase productivity and seasoning accuracy are now considered to be standard equipment in the snack food industry.

Heat and Control's range of FastBack® OMS systems can offer manufacturers the most economical and accurate means of delivering consistent seasoning coverage with the lowest usage rates. The Revolution™ On-Machine Seasoning Systems (OMS) can reduce product breakage and seasoning loss and allows for different flavourings to be applied at each weigher/bagmaker system. Combined with reduced seasoning loss as product moves through the system, reducing

seasoning usage by as much as three percent when compared to traditional in-kitchen applicators, the OMS offers more efficient application and uniform coverage. The FastBack OMS system accomplishes this in three stages: product flow control, seasoning flow control, and seasoning coverage.

To be truly effective, an OMS system must continuously condition the product stream to ensure long, uninterrupted bagger runs, improving both output and seasoning quality. Patented FastBack® Revolution® Proportional Gate and WeighBack loadcell-based technology work together to achieve **precise product flow control**, producing a product stream that is continuously proportioned per weigher-bagger demand even before seasoning is introduced.

A steady, unwavering product stream is critical to accurate seasoning interpolation so that neither too much nor too little seasoning is introduced into the product stream.

Equally important is seasoning flow control, which seeks to meter seasoning in a continuous and proportional manner. The FastBack OMS system accomplishes this with a highly accurate feeding auger, which meters only the seasoning needed into the tumble drum.

Heat and Control's patented **AccuFlavor™ tumble drum** improves seasoning coverage with its two-stage dynamic design. The cylindrical first stage exposes product in the seasoning zone for a consistent time. The cone-shape and flight profile of the second stage gently tumbles product for twice the time of traditional drums. Dynamic tumbling action uses the FastBack's horizontal motion, not gravity, to convey product consistently while it is being seasoned. The result is superior seasoning adherence and coverage with less fall-off waste even under frequent start-stop conditions.

These critical FastBack OMS system features work in tandem with Ishida weighers and baggers through advanced integrated controls, incorporating the entire packaging line to yield product with flawless seasoning coverage.

When it comes to dry and liquid application of coatings, Heat and Control has it covered with the **Spray Dynamics® Slurry On Demand**, the most innovative solution for slurry coating on snack foods.

The Slurry On Demand continuous mixer allows for coating application with minimal downtime for ingredient mixing or flavour changeover. For the first time, snack companies can apply a recipe driven workflow that includes faster changeover of recipes; just flush with oil, change the dry ingredient and start-up. The superior mixing capabilities for the Slurry On Demand ends the waste and delay normally required to produce pumpable slurries of oil-based seasonings, chocolate, and other coatings.

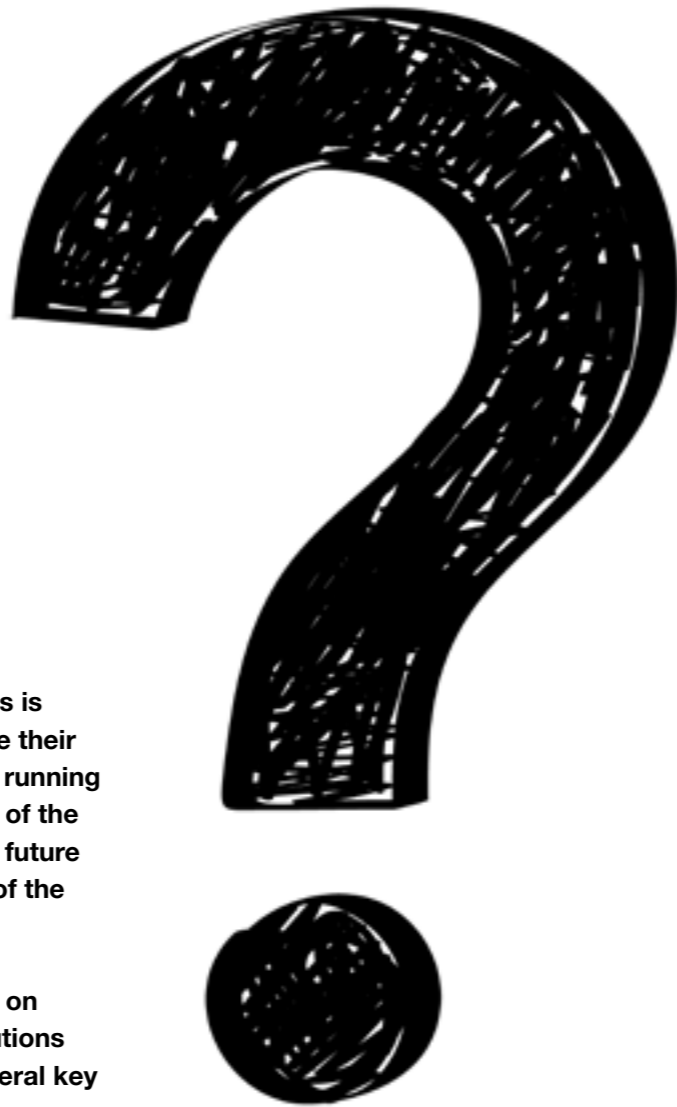
For products that require both oil and dry applications, the **Spray Dynamics® Two Stage Coating System** provides consistent, uniform application of liquid and dry coatings on extruded, baked, frozen or fried products. The gentle folding action of the Soft Flight® coating drum ensures that each piece of product is presented for seasoning application. Accurately metered and sprayed liquids, and precisely measured dry powders, provide reliable and even seasoning coverage.

Between Spray Dynamics liquid and dry application and FastBack on-machine seasoning, Heat and Control has the widest and most accurate range of coating, seasoning and flavour application available to the snack food industry.

WHAT'S YOUR FLAVOUR?



HOW TO STAY AHEAD IN SNACK FOOD PRODUCTION



One of the biggest challenges for snack food manufacturers is to access to the right equipment and machinery to produce their desired product to a consistent standard, while decreasing running costs and increasing productivity. In the fast-paced market of the snacks food sector, it is important for brands to look to the future and see how they can optimise their factory to stay ahead of the competition.

The Heat and Control and Ishida (HCI) Alliance is delivering on the demand for a 'one-stop-shop' for integrated snack solutions from processing through to packaging, and focuses on several key areas for greater efficiency.

Value add through productivity improvements

Get ahead of your competitors with the latest **Industry 4.0 technology**, to monitor line performance, minimise downtime and increase efficiencies on the go with single source suppliers. It all comes down to improving your bottom line and looking for ways to automate time consuming processes where possible.

Given the importance of frying during the processing stage, looking at ways to automate and simplify frying control has become a priority. Heat and Control fryers have automation controls, which use feedback from a moisture meter after the fryer to control frying temperature and dwell time to meet moisture targets, improving final product quality and increasing shelf-life.

Our product handling solutions maintain complete automation from start to finish. By allowing for multiple processes to occur at one station, our conveyors ensure your products move efficiently from

machine to machine, with minimal giveaway. Ishida checkweighers have helped to improve overall efficiencies as they automatically verify correct product weight or count, eliminate underweights, and protect profits by reducing costly product overweight giveaway.

Food Safety

Invest in machinery designed for hygiene, to protect the quality of your products and the end consumer from a growing list of contaminants. With food producers looking to avoid downtime and costly product recalls, ensuring operations meet strict safety and hygiene regulations has become a matter of great importance. Heat and Control brings hygienic design into play for the food industry by investing in continuous product development to make the highest levels of food safety standard features for our equipment.

To meet safety standards, where equipment must be able to withstand sanitary high pressure wash down and steam cleaning to eliminate harmful bacteria, it needs to

be manufactured using a particular type of stainless steel, to resist corrosion when exposed to a high pressure wash down. An example of this is Heat and Control's FastBack® 260E-G3 Horizontal Motion Conveyor, designed and manufactured for wash down environments and simple sanitation.

Airborne seasoning dust can create a hazard during the production process due to the danger of cross contamination, which can become a sanitation nightmare. Many of Heat and Control's range of FastBack Seasoning Systems contain integrated dust control units which can pull air from the discharge end of the tumble drum to prevent them from escaping into the atmosphere, spreading contamination.

Ishida's IX-GA range of X-ray machines can detect unwanted objects like metal, plastic, glass, stone, rubber and bone, draw attention to under filled or damaged packs, hence maintaining our customers highest brand quality. This range of X-ray machines has the capability to ensure traceability for packaged products, by providing an image associated with each individual package which can be used in any future disputes over the contents. More intelligent monitoring systems can also record the exact gas mixture received by each modified atmosphere pack, and the temperature at which sealing took place, thus further ensuring product integrity.

Labour

Reduce labour costs and optimise your output speeds with the next generation of automation. The HCI Alliance is always looking at ways to automate manual tasks to improve accuracy through the latest technology in process, packaging and foreign object detection.

In previous years, manual lifting of seasoning into systems was commonplace. Heat and Control's Powder on Demand (POD) uses energy-efficient dense phase conveying processes to gently lift and move powders to seasoning applicators, mixers, and other processing and storage equipment, eliminating the need to manually fill seasoning hoppers and removes the risk of physical injury. They can run unattended and allow longer equipment operating times.

The preparation of snack products like potato chips has also come a long way in reducing manual tasks. Now the automation process starts from the unloading of raw products, through to washing, peeling and slicing, without any manual labour, handling large volumes of potatoes with ease.



The job of the Ishida Checkweighers had previously been completed manually by operators who would manually check the weight of each batch of packs. The DACS series of checkweighers can now check up to 440 items per minute, with easy to use data management control to boost productivity and reduce operator errors often seen with manual processes.



CASE STUDY SNACKS WEIGHER/BAGMAKER COMBINATION

An Ishida iTPS (Integrated Total Packaging System) is delivering a fast payback on investment at leading Italian dried fruit and nut supplier Madi Ventura.



“ We have practically eliminated film waste, the Ishida simply stops when the film needs changing. With other machines, if the operator does not spot the need for a film change, then valuable product can be lost. ”



Challenge

Dried fruit and nut products are expensive so accuracy is particularly vital, all the more so with items such as almonds and walnuts where the piece weight of each nut can be high (as much as 3g for a walnut).

Solution

The new Ishida multihead weigher and bagmaker combination at Madi Ventura's factory in Chieve, which was supplied by Ishida's Italian agent Itech Italia, has replaced two packing lines for the company's ranges of pine kernels, shelled and blanched almonds, hazel nuts and walnuts, delivering speeds of up to 140 packs per minute for pillow bags in 50g, 75g and 100g sizes.

The Ishida iTPS comprises Ishida's latest 14-head RV multihead weigher, integrated with the company's advanced Atlas-204 snack food bagmaker.

The Atlas incorporates an innovative double rotary jaw motion and superior control technology, which minimises raw material waste, film loss and downtime for film changes.

Key benefits of the Ishida system, according to Madi Ventura, are its accuracy, consistency and ease of operation.

Just as important are other cost-saving benefits of the iTPS thanks to its user-friendly operation. The machine requires just one person to operate it and changeovers and cleaning are fast and easy.

“We have practically eliminated film waste,” says Mr Calvini. “The Ishida simply stops when the film needs changing. With other machines, if the operator does not spot the need for a film change, then valuable product can be lost; however, this means that inevitably the machine is stopped early, which over the course of a production run can lead to a lot of good film going to waste.”

Together with its reliable and consistent operation, and reduced manpower requirements, this all adds up to increased efficiency, which amounts to important cost savings given that during the course of one day, the line is capable of producing up to 88,000 packs.

“Naturally we looked at alternative systems for this line, and Ishida was certainly not the cheapest option that we considered,” says Mr Calvini.

“However, when you take into account the overall savings the iTPS offers and the increased production that it delivers, the purchase price is more than justified by the fast payback.”

All of which explains why the relationship between Ishida and Madi Ventura dates back to 1993, why there are six other Ishida weighers in the factory, and why the company remains, according to Mr Calvini, “the first supplier I would call for any new project.”

“ Naturally we looked at alternative systems for this line, and Ishida was certainly not the cheapest option that we considered, however, when you take into account the overall savings the iTPS offers and the increased production that it delivers, the purchase price is more than justified by the fast payback ”

FASTLANE

Easy, safe, cost-effective delivery of a singulated stream of potatoes to multiple slicers.

Slicer infeed conveyors reduce plugging risk and amounts of slicing scrap while improving slice quality and have helped many potato processors optimise quality with quantity. However, some potato processors are unable to use slicer infeed conveyors due to factory space and cost limitations. In response, Heat and Control created the space-saving FastLane which combines the gentle horizontal motion of the FastBack Model 260E-G3 with a multi-lane pan that singulates product for delivery into multiple rotary slicers. This ensures that only available slicers receive successive product while unavailable slicers remain unfed.

Safety

With typical slicer infeed conveyors, when certain slicers require service or blade changes, product flow to those slicers is blocked by using overhead paddles, which are forced down into the lanes feeding those slicers, cutting off their product stream. However, this forceful downward motion creates pinch-points. The FastLane eliminates hazardous pinch-points by using basal-mounted, air-actuated paddles which use upward motion to dam lanes and which descend without a mechanically applied force.

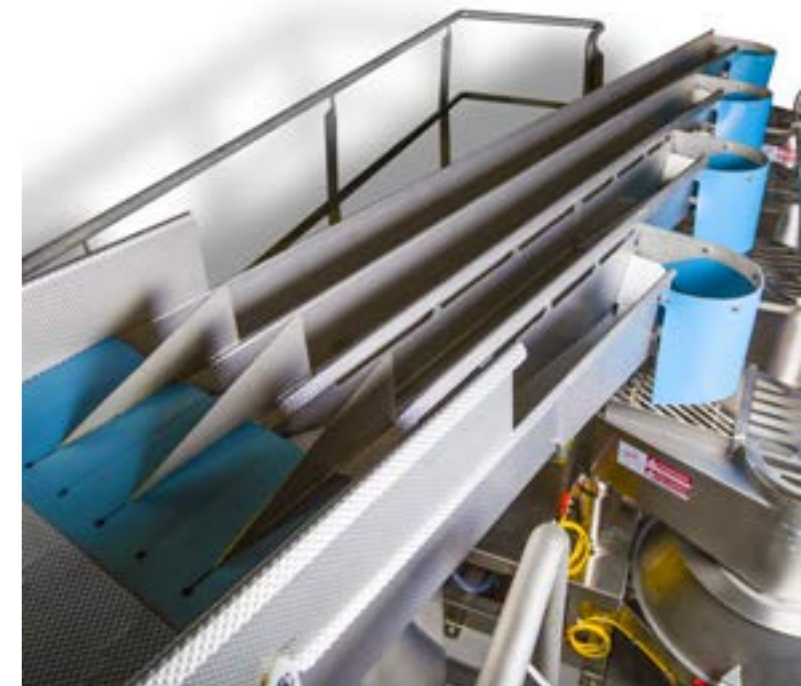
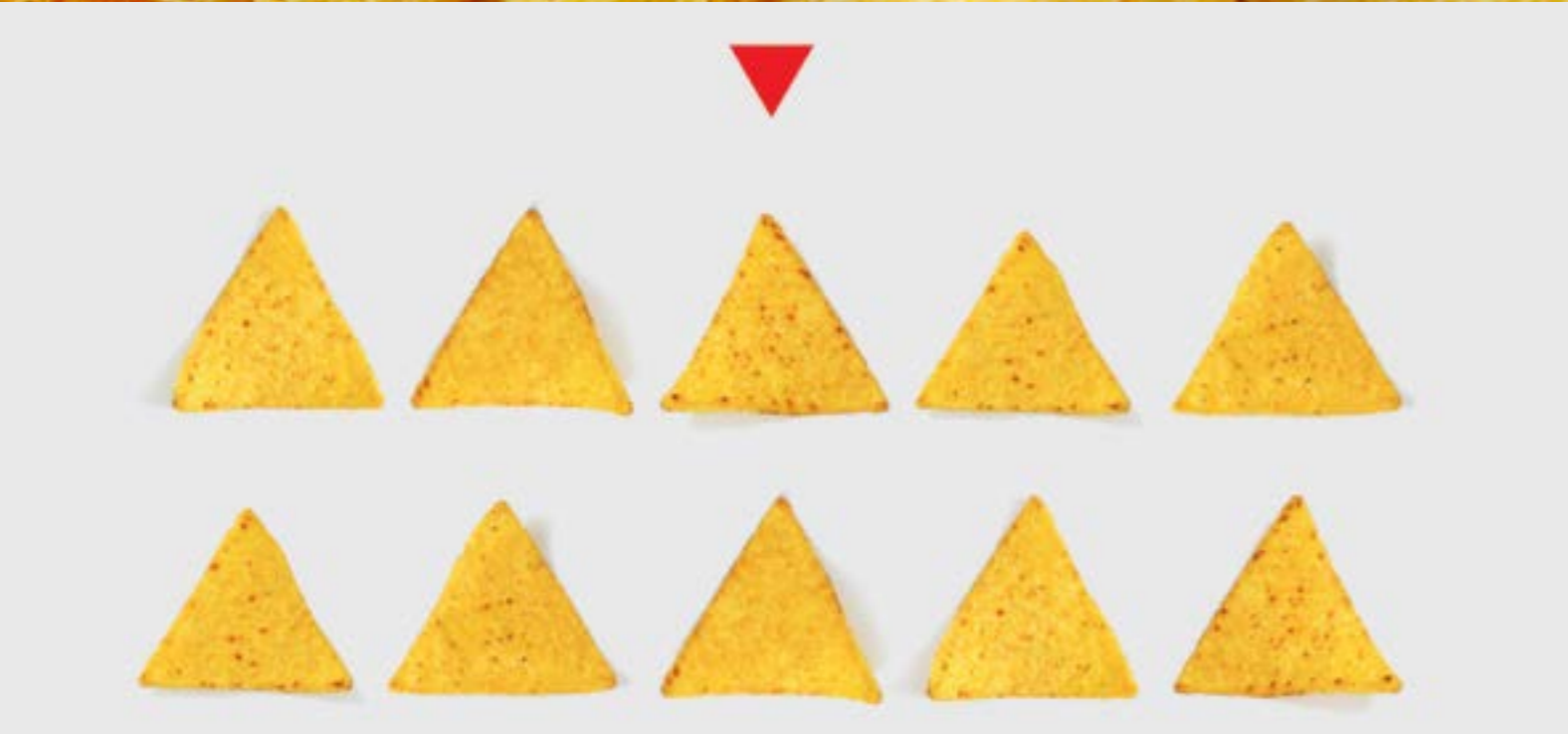
Sanitation

Overhead paddles are a sanitation hazard because debris can accumulate on the paddles or on any suspended support steel and can fall into the product stream. With the innovative FastLane control interface, an operator can push a button to select an air-actuated paddle which rises to impede product stream within the lane. It also eliminates overhead sources of contamination which can fall into the product stream.

The FastLane is built for washdown environments and simple sanitation. The stainless steel totally enclosed, fan-cooled motor package is IP65-rated, and the electrical cabinet and sensors are IP65 rated and designed to NEMA 4X standards. The drive and the electrical cabinet and sensors are protected against dust, corrosion, and strong jets of water from all directions to withstand the toughest washdown environments. With these key features, the FastLane's food safety-focused design reduces time and labour for sanitation.

Production

The FastLane increases production by yielding more quality slices and less scrap with a consistent, single stream feed to each slicer. It spreads potatoes evenly so there is no flooding or product damage. Because FastLane is a compact, light-weight solution which requires a minimal support structure, it requires less floor space and saves up to half the total cost of traditional infeed conveyors so additional equipment can be added in the same area when needed.



▶ Proven to deliver productivity

High speeds are a given with Ishida snacks packaging technology. Our lines are consistently fast, and you'll experience high levels of operational effectiveness and efficiency too. Delivering only the highest quality packs, in a fraction of the time.

Work in harmony with Ishida.

ishidaeurope.com



FRYING SOLUTIONS

SPECIALISED FRYER DESIGNS IMPROVE PRODUCTIVITY AND QUALITY

There are many factors to consider when determining the best fryer design for you. Ultimately your product quality will have the highest influence on your decision, however it is also important to consider floor space, production capacity, acquisition price, and the method of heating cooking oil. By working with a manufacturer with experience in custom-designing fryers for each customer's unique requirements, you can be assured productivity and product quality will meet your expectations and lay the groundwork for future growth.

Batch Fryers

Batch fryers are used exclusively for hard bite, slow cooked potato chips due to their unique temperature profile. The high-moisture content of potatoes requires a specially designed batch fryer. Potato-specific batch fryers use a kettle of static, hot oil – direct-heated by a gas burner firing under the fryer pan or by heat-transfer tubes immersed in the oil. These tubes can be heated by a gas burner, steam, or thermal fluid.

As each batch of potato slices enters the oil, the cooking oil temperature drops and then gradually increases as the burner fires to regain proper frying temperature. This “inverted bell curve” temperature profile produces the distinctive hard-bite texture that has made these chips the fastest-growing segment of the potato chip market.

The art of adjusting this oil temperature profile gives processors the ability to create subtle differences in chip texture. Once these cooking parameters are set, sophisticated batch fryers use a Programmable Logic Controller (PLC) to assure repeatable frying of each batch of chips.

Continuous Fryers

There are numerous designs of continuous fryers, varying in heat load, product handling, oil filtration, and production capacity, however all commonly cook a continuous flow of product.

Potato products such as potato chips and sticks require an externally-heated continuous fryer design due to the large amount of moisture that must be boiled off during the frying process. External-heat exchangers heat cooking oil using gas or light oil burners, steam, or thermal fluid. These fryers continuously circulate oil through a filter, an external-heat exchanger, and single or multiple inlets and outlets in the fryer. Continuous oil circulation provides multiple advantages:

- Maintaining a consistent oil temperature and temperature drop through the fryer
- Separating and advancing products through the fryer for uniform cooking without clusters
- Keeping product particles in suspension for more-efficient filtration and clean fryer operation

Unique characteristics and production capacities of different potato products have prompted the development of specially-designed continuous fryer systems, including Multi-Zone Fryers, Multi-Stage Fryers, Thermal-Fluid-Heated Fryers, and Vacuum Fryers.

Multi-Zone Fryers

In these fryers, oil is introduced and removed at different points along the length of the fryer pan to provide accurate control of the temperature drop that occurs during cooking, known as Delta-T. This enables processors to develop custom colour and texture characteristics for different products. It also permits frying at lower temperatures, which produces lighter colour product and reduces oil degradation.

Multi-stage Fryers

These are a variation of the multi-zone design and provide a greater range of frying temperatures. Each fryer stage uses a separate continuous oil filter, oil-circulation pump, and heat exchanger. Multi-stage fryer systems are especially useful for batter-coated fries, french fries, or fine particle-intensive co-products.

Thermal-Fluid Heated Batch Fryers

This direct-heated fryer uses a patent-pending thermal-fluid heat exchanger that heats oil uniformly throughout the fryer. A fines removal conveyor and spacing between the heat-transfer tubes prevent product particles from accumulating inside the fryer.

Vacuum Fryers

Operating at ten per cent or less of normal atmospheric pressure, a vacuum fryer boils off product moisture at a lower temperature than traditional fryers. This means high-sugar content potatoes can be fried without browning of finished chips. Formation of acrylamide can be controlled because oil temperature can be kept below the 248°F /120°C point at which acrylamide forms. Our advanced vacuum fryer design requires no external-vacuum enclosure and takes about the same floor space as a traditional, externally-heated, continuous fryer.





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Our insight into extrusion means no product is too challenging, from peas to pellet snacks.

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- Seasoning + Coating
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- Weighing + Packaging
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Understanding and providing solutions for weighing and packaging line challenges

The DACS-G is Ishida's most advanced checkweigher to date with standard built-in protection, multi range weighing and a highly flexible open frame design. Toolless cleaning allows for longer operational running times between easy to manage product changeover.

Ishida's range of Checkweighers offer advancement in technology to allow increased quality control, improved productivity and reduced maintenance.

Accuracy and speed are two of the fundamental demand requirements placed upon any checkweighing solution. The first helps to maintain and improve profitability by avoiding excess product giveaway whilst at the same time ensuring that the company complies with weight legislation.

The second minimises the cost (in production times) of those important safeguards.

The Ishida DACS-G range of checkweighers offer considerable improvements in speed, while using a variety of state-of-the-art technologies to maintain or improve accuracy. It features exceptionally fast and accurate weigh cell design, yet can operate in the harshest of environments with great reliability.



Intelligent

With the DACS-G you can choose between two quite different multilingual interfaces, depending upon your preferences with regards to hygiene and operator capabilities. A large, easy-read, colour screen interface makes operation and training easy.

Intuitive

With the Command Dial Model, all operators can be carried out by simply twisting the dial, enabling easy, ergonomic use by operators wearing gloves. The colour touchscreen offers simple, intuitive operation, with a broader range of features and options.

Flexible

At the touch of a button, the DACS-G-015 Model, can be switched between a maximum capacity of 600g (0.2g graduations) and 1500g (0.5 graduations), while the DACS-G 060 offers 3000g (1g graduations) and 6000g (2g graduations) ranges, which enables one machine to cover a very extensive weight range.

Durable

A solid robust design that is built to last. In contrast to many checkweighers, the DACS-G vital measurement unit is protected during operation and cleaning by a robust protective housing.

Versatile

The rounded stainless steel main body, with its open frame design, eliminates food and dirt traps and makes thorough cleaning simple and fast, reducing downtime. Conveyors and reject arms can be unclipped and removed without any need for tools.

Functionality without
compromise



Accurately control product feed for enhanced weigher operation

The **Left-Right-Center (LRC)** is a compact double multihead weigher feed solution, designed to provide a precise, consistent product stream to Ishida's patented back-to-back 218 twin weigher feeds. This ensures continuous, high-speed bagmaker runs for increased throughput on twin packaging lines.

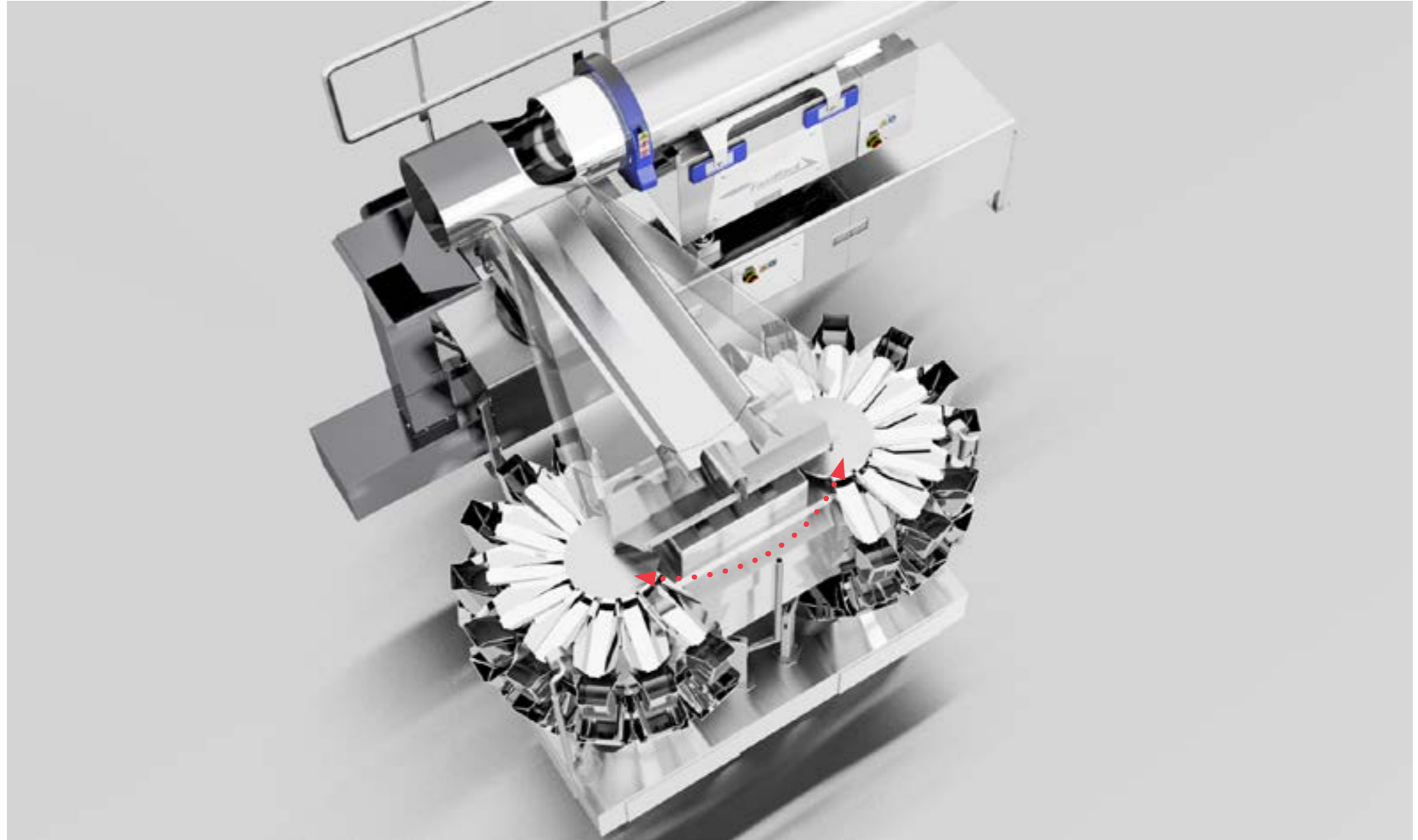
Heat and Control's patented FastBack® Revolution® Proportional Gate's advanced and integrated packaging controls combine with a pivoting weigher-feeder design which accurately delivers product streams to the weigher, whether feeding only one side of the weigher or both.

The LRC provides manufacturers with the flexibility of two modes of operation:

Discrete Feeding: When the weigher feeder pivots to the left, right, or centre based on call signals from the weigher.

Biased Feeding: Where the weigher feeder's initial position is determined by weigher and bagmaker set points and auto adjusts to bias the product flow to improve weigher performance.

Building a viable distribution and packaging system within budget that fits in a defined space and complies with regulatory standards can be challenging. Weigher centre lines (the required minimum distance between two weighers' centres) are often the primary limiting factor when it comes to arranging distribution and packing lines, with each weigher-bagmaker stack up designated as a position.



One solution that manufacturers can employ consists of two linked bagmakers fed by a two-in-one or 'twin' weigher, effectively combining two positions into the space of one. However, using a hopper to split product flow is usually imprecise and often results in unbalanced feeding and lost production time.

In addition to floor space limitations, ceiling height and operator access requirements are other key limitations because twin weigher-bagger stack-ups require more vertical space and makes maintenance access more out of reach.

The LRC solves these issues with the pivoting weight feeder design reducing stack-up height. This also simplifies sanitation as the equipment is more easily accessible for cleaning, resulting in increased time for production and a safer work environment for operators.

With no diverter to remove and clean, sanitation operations are reduced to a simple wipe-and-go process for a single FastBack weigher feed conveyor. With the reduction of required weigher feeding equipment for traditional twin packaging stack-ups, the return on investment starts immediately.

The LRC can be used across a wide range of applications and in combination with any product which readily conveys on a FastBack, including:

- Snack foods
- Bakery
- Frozen fruit and vegetables
- Confectionery
- Cereal
- Pet food
- French fries
- Meat and poultry

ISHIDA INSPECTION SYSTEMS ENSURE IMMACULATE PACKAGING FOR CRISPS

FACTS AND FIGURES

The Ishida sealtesters and checkweighers deliver a seamless, totally reliable quality control solution capable of operating at high speeds, for example up to 85 packs per minute for a 115g bag, with only the upstream systems preventing them from achieving even higher speeds.

The Ishida TSC-RS sealtesters are fully automatic inline systems that can detect leaks with diameters of just 3mm at speeds up to 150bpm.

The Ishida DACS-G checkweighers minimise product giveaway due to overfilling.



A specialist German potato chip brand is maintaining excellent quality control on its recently upgraded high capacity packing lines thanks to the introduction of sealtesters and checkweighers from Ishida Europe. Krosse Kerle potato chips from Johanning Snack are cooked with their skins intact and produced from potatoes picked from fields right next to the factory.

The company produces twelve different pack formats with fill weights ranging from 20g to 200g. When the end-of-line packing systems were automated in 2018, it meant upgrading to state-of-the-art quality control facilities as well. Employees had previously checked the density of the sealed packets by hand, and weight monitoring was a matter of spot checks.

The Ishida sealtesters and checkweighers deliver a seamless, totally reliable quality control solution capable of operating at high speeds, for example up to 85 packs per minute for a 115g bag, with only the upstream systems preventing them from achieving even higher speeds.

“Ishida was the only supplier to offer both sealtesters and checkweighers in one package,” explains André Wurz, technical manager at Johanning Snack. “Not only that, but our previous experience with Ishida for other packaging machines in our production facility had been excellent.”

The Ishida TSC-RS sealtesters are fully automatic inline systems that can detect leaks with diameters of just 3mm at speeds up to 150bpm. Because the packs are full of fragile crisps, the extremely careful way in which the sealtesters handle them is a particularly useful feature.

Crisps wedged at angles inside the packets can often create bulges, especially in smaller bags. Special brushes smooth out these lumps and bumps before the packets are inspected. This means that the packs are delivered to the sealtester’s inspection head in the most effective way possible, enabling it to test the seal integrity of every pack in line automatically. A servo driven pressure head allows the system to exert the ideal pressure without damaging the packaging or its contents.

The TSC-RS sealtesters are able to detect a wide range of defects. For example, packing material or product residue burnt onto the sealing jaws of the bagmakers can sometimes result in pinholes in the heat seal. Bits of product can often also find their way into the bottom seals of the crisp bags during filling, preventing the packs from sealing correctly. The system will also identify packs with holes in the seal areas. In addition, packaging that has not been sealed correctly and has open seals, or those that are sealed but the pack thickness is outside the set limits will be rejected by the sealtester during inspection and the machine can identify faulty bags caused by problems in the upstream bagmakers.

The Ishida DACS-G checkweighers meanwhile ensure that all finished packs comply with relevant regulations, rejecting any that fail to meet specifications. At the same time, the checkweighers minimise product giveaway due to overfilling. The machines’ high-speed loadcell delivers accuracy to within 0.2 grams, while a special system compensates for floor vibrations.

Operators can switch between two settings at the touch of a button, which means that the checkweighers can be used for a larger product range. Together with their quick changeovers, this makes the Ishida DACS-G models ideal for Johanning Snack’s requirements. The robust design also features a ‘dislocating force limiter’ function, which disconnects the highly sensitive weighing sensor from the

belt before it can suffer any permanent damage from external impacts. It then immediately resumes operation. Equally important, the checkweighers incorporate Ishida’s IDCS II (Ishida Data Capture System) web-based software that collects a wealth of data about every single pack to provide valuable information that helps Johanning Snack boost productivity. IDCS can carry out real-time analyses based on product batches, shifts, operators, products, machines or lines, with graphical displays and reports that are user defined and can be customised. The parameters can be accessed online during production and direct process adjustments can be made. The Ishida software is compatible with systems such as SAP or SCADA, and data transfers can be carried out to programs such as Microsoft Word, Excel and Adobe PDF.

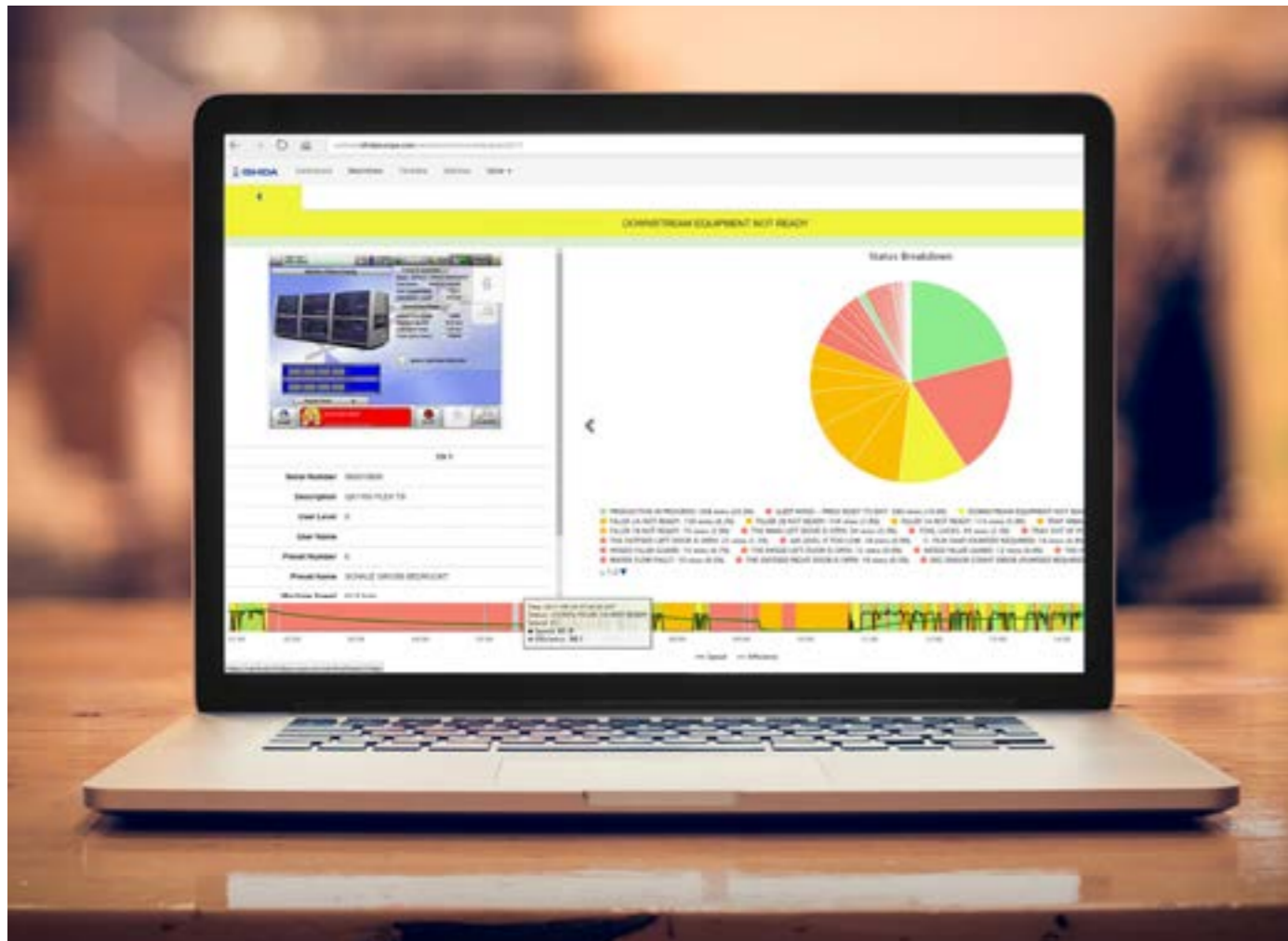
Such a combination of checkweighers and data analysis is a control function that Johanning Snack considers very useful from a business management point of view. If the figures produced do not match the targets, the operator can immediately make the appropriate adjustments. “IDCS II tells us what we need to know about line output,” confirms André Wurz, adding that the software is also “very interesting” for his colleagues in quality assurance. “With IDCS II, we can log every packet of crisps and then pass these logs on to our customers,” says Wurz, who is able to use the system on a mobile device even when away from the factory.

Johanning Snack is reaping the benefits of investing in fully automatic quality control. The Ishida systems work faultlessly in three-shift mode. Operators can carry out product changeovers, which usually take place twice daily, very quickly by calling up pre-sets. “We have maintained full and exceptionally reliable quality assurance while saving on expensive manual labour at the same time,” says Wurz, summing up the benefits of the new machines.



“ IDCS II tells us what we need to know about line output, with IDCS II, we can log every packet of crisps and then pass these logs on to our customers. ”

CONNECT-MONITOR-REPORT- INTERVENE-RESPOND-OPTIMISE



Sentinel™ from Ishida

Sentinel can remotely connect different machines along your production line to a centralised system, giving you secure, real-time data on machine performance. It helps identify faults and areas which are underperforming and enables you to make smarter decisions to rectify inefficiencies.

- Access your machine data anywhere in the world with the Sentinel™ Web Client facility. You can view interactive reports, graphs and charts using the functional and mobile responsive interface
- Improve your decision making by comparing reports from different machine lines to identify successful factors as well as areas for improvement

In addition and when requested, Ishida technical experts can gain a detailed overview of the machine status, allowing them to advise, guide and potentially repair remotely to reduce unplanned downtime.



Realise the automation and cost saving benefits of Industry 4.0, with data sharing and connectivity throughout the processing and packaging lines with HCI's cloud based data control systems. The ability for food operators to see real time information will provide highly attractive return on investment while providing key food safety, quality and efficiency enhancements for your facility.



New Horizon from Heat and Control

New Horizon is an automated line integration tool which provides operators with real time information on equipment diagnostics, machine performance levels and the ability to visualise live status of the production line. These additional business intelligence capabilities allow operators to see how well the current line is running, and to make more accurate decisions in implementing solutions to any production issues, all from the operator's fingertips. New Horizon is expected to increase your overall performance and provide a better return on investment through:

- Reduced downtime
- Reduced product giveaway in unpackaged product (over side)
- Reduced setup issues
- Improve utilisation of resources.



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