



PIZZA SINCE 1974



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KEEPING UP WITH THE MANUFACTURERS' NEEDS

The potato industry continues to be one of the most active, so it comes as little surprise that the technology involved keeps improving on an almost day-to-day basis. Manufacturers strive to obtain the perfect balance between quality and cost reduction, also having in mind efficiency, durability, and also sustainability.



Photo: Urschel

As parts are interlocked to become components in subassembly and finally all components are incorporated into a final machine, quality checks continue until the machine is crated and shipped.

Mike Jacko, vice president of Applications & New Product Innovation at Urschel

When it comes to cutting, the DiversaCut line remains the go-to choice for the potato industry, according to

Mike Jacko, vice president of Applications & New Product Innovation at **Urschel**. It is not uncommon to find Urschel machines in plants that are over 30 years running strong. "Today's Urschel machines are manufactured to easily switch over from the older equipment, so processors can seamlessly connect a new machine into an existing line. Many new designs include integral conveyors. Newer cutting methods provide unique potato products to capture niche markets in chips/crisps and french fry sectors," Jacko adds. Urschel potato reduction machinery delivers boundless styles and a full range of sizes from large cuts down to micro-dimensions. "Dicers, including those in the popular

DiversaCut line, provide 1-, 2-, or 3-dimensional cuts from slices, strips, or dices in flat or various crinkle styles. Slicers, including the most popular Model CC, produce thin to thick profiles in endless styles including flat, 'V' patterns, crinkle, Flat-V®, and others. Slicers also deliver various shreds and strips for products such as hash browns or rostis. Slicers may also be equipped with grating heads for additional versatility. Also available, the Model CCL delivers unique lattice style slices from fine, coarse, or wide lattice patterns." Hydro-cutting options include heads and knives for existing systems. These provide slabs, strips, segments, and spear cuts. Urschel manufactures thousands of different knives and blades, and many of these are used in hydro cutting systems. The Comitrol® Processor line of milling equipment is defined as finest 'particle' size reduction. Oftentimes, Urschel dicers are used as

precutters to models in the Comitrol line. Comitrol models offer the smallest reduction down to micro-dimensions. The Comitrol Processor Model 3600 and Model CC Shredder produce the majority of the hash brown/rosti products in the marketplace. Some different models have been introduced within the DiversaCut line. Built-in takeaway conveyors offer a great way to dispense into totes or connect with other conveying systems. This includes the DiversaCut 2110A® Dicer and the Sprint 2® Dicer – both are now available with built-in discharge conveyors. Built-in takeaway conveyors also ensure the controlled exit of smaller cuts to capture as much end-product as possible. "Great strides have

been made within the CC and DiversaCut lines to create increased shapes and specific cuts. Urschel continues to partner with leading processors to assist with niche, custom shapes often on a proprietary basis," Jacko says. In addition to the growth in the DiversaCut line, Urschel continues to expand on the evolution of MicroAdjustable® SL- & SH-14 Model CC Cutting Heads. Shapes and built-in quick changeover clamping systems advancements are continuing to be introduced and are continuing to improve production lines. Replacing an 8-station cutting head with a 14-station cutting head nearly doubles capacity without the additional expense of purchasing a second Model CC Slicer. The user-friendly MicroAdjustable heads offer ease of adjustment with minor operator involvement reducing labor and technical resources.

CUSTOM-MADE TO SUIT EVERY NEED

Fabcon Food Systems is a company that provides complete, British-built seasoning systems to customers across the world. "It is important to note that our seasoning systems can be operated in a conventional <kitchen> style or the increasingly popular On Machine Seasoning option which is mounted on

a platform and where each weighing and bagging station has its seasoning system. This allows for different flavors to be applied simultaneously and eliminates the need to clean elevators when a flavor change takes place. This helps greatly when manufacturers require short production runs, often at short notice, particularly to satisfy hard discount retailers," Trevor Howard, managing director, Fabcon Food Systems says. As far as adapting to the processors' needs goes, Howard points out that this is one of Fabcon's key USPs: "Our equipment is custom-made and sized to suit throughputs, space availability and any other criteria. All our design work is done in 3D and we can design lines either to take account of current product and seasoning flexibility requirements or to provide adaptability for possible future layout changes." Trevor Howard believes the market is evolving in many ways and there is ever-increasing importance placed on quality, accuracy, flexibility, and ease of cleaning. "Adaptability is also a major consideration which will only become more important," he concludes.

CHOOSING THE RIGHT PRODUCT IS KEY

Heat and Control also offers a variety of coating drum styles/designs, liquid applicator designs, and dry seasoning applicator designs to optimize the end-product and processes. The company uses a combination of PLC control logic and a multitude of manual or automatic rate verification methods to ensure that it is applying only the correct amount of seasoning/coating per the base product rate traveling through the Heat and Control systems, according to Lucas Bell, Spray Dynamics Group general manager. "All of our equipment models (i.e., coating drums,

liquid applicators, seasoning applicators) have multiple options to customize a design solution specific to each customer's application. We can offer a wide range of solutions, from a very manual operator interfacing system through to a fully automated system that requires minimal operator interaction," Bell says. Based on the different base products and processes at hand, Heat and Control carefully selects the correct coating and seasoning equipment for the job. "Oftentimes, depending on the rates and the base product/liquid/seasoning type, we work through our catalog of equipment offerings to ensure we choose the correct applicators for the process. Oftentimes, coatings (i.e., water, oil, slurry) require different handling and application methods, and our equipment can cover any of these scenarios."

TAKING A DIFFERENT ROUTE

Spice Application Systems is different than most suppliers of coating and flavoring equipment as they use electrostatics. According to Peter King, founder of Spice Application Systems, electrostatics works across powder, oil and oil-based seasonings by applying a static charge to the flavoring or coating as it is being sprayed onto the base product, such as potato chips and other

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Peter King, founder of Spice Application Systems



Photo: Fabcon



Photo: Spice Application Systems

potato products, as they travel along the processing line. As the flavorings and coatings become 'negatively' charged, they adhere automatically to the 'positive' base product, which makes sure there is all-round coverage, improving quality and taste. "There will be times when electrostatics are not suitable for the materials or production conditions, so we also offer non-electrostatic alternatives, such as our Slurry Mix and Scarf Feeder Application Systems. For example, our SAS ISC Scarf Feeder provides an alternative powder application method. It is designed to work within our flatbed systems and can be combined with other SAS system components, such as the Twin Screw Feeders." For the non-electrostatic application of mineral-based oils, the company offer a Spinning Disc system which works with its Flat Bed Wire Belt System. It allows oil to be applied either as just a top coating with two contra-rotating disc heads, or from above and below with four pairs of spinning discs. It's excellent at providing consistent and accurate spraying and any excess oils are collected and recycled to minimise wastage, King concludes.

FOOD SAFETY IS AN ESSENTIAL PART OF THE FRYING PROCESS

Food safety should be a top priority for any processor, according to Valeria Lucinschi, business development manager at **Kuipers**. "For example, by ensuring that our fryer achieves the optimal frying oil turnover time, we help our customers operate for longer durations without compromising oil quality. Maintaining frying oil quality is one of the key elements for food safety.



Photo: Heat and Control

We constantly perform R&D to improve existing equipment designs, as well as to integrate breakthroughs from white space designs of new products for the industries.

Lucas Bell, Spray Dynamics Group general manager

Poor quality will lead to acrylamide formation, as well as high levels of FFA and TPM. Shelf life is also affected by the quality of the oil absorbed by the product. This oil continues to degrade even during storage which can consequently cause health problems upon consumption." Lawin Saleh, sales manager at Kuipers explains how the optimum oil flow is ensured: "By the required amount of energy, we make the precise oil flow calculation which is then divided into multiple injection points from the beginning of the fryer until the end. Most of the flow is injected into the first two injection points because in the front area we have the most water content in the

product which must be released. By inserting enough flow wheels and immersion belt and side frame we can ensure that the flow will stay in the product area all with the same velocity. Therefore, we can ensure that every chip exiting the fryer has the same color and texture." Water reduction throughout overall production is also an important aspect for processors, Valeria Lucinschi adds. This aspect is also reinforced by government regulation in some countries. For potato chips, producers need water at various stages in the line. Being able to recycle this water is a huge advantage in terms of sustainability as well as costs. In most countries, factories have to pay for both the supply of fresh water and the drainage of wastewater. Kuipers water treatment system combined the usage of water over the entire plant. The only time freshwater is supplied is for a last cleaning action to the slices before frying. The same water is then re-used backward in the previous processing steps, each having its cleaning system. ■



Photo: Kuipers

Although the frying system is one of the main components, its efficiency and operational capabilities can be significantly affected by the line overall. This is one of the reasons that many technology suppliers will choose to deliver turnkey projects.

Valeria Lucinschi, business development manager at Kuipers