

POTATO PROCESSING

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Precision Cutting as a Pathway to Sustainability

Scott Klockow, Director of Applications and Product Development, Urschel shares his perspective on how Urschel's latest cutting technology advances efficiency, precision, and sustainability in potato processing. Speaking from both his engineering and customer-focused experience, Klockow outlines the company's newest developments - including the CC Laser Frame 32" enclosure, the CCLL Large Lattice Slicer, and the patented RockRepeller™ impeller - and explains how these solutions help processors improve yield, reduce downtime, and stay competitive in a demanding marketplace. What follows is his detailed expert view on the innovations shaping Urschel's approach and the benefits they deliver for food processors worldwide.

By Scott Klockow, Director of Applications and Product Development, Urschel

Urschel is continuously designing new cutting methods and improving on existing designs. With the MicroAdjustable® SL-14 & SH-14 CC cutting heads, customers are able to process so much more product than ever before. With these improvements, many customers are upgrading from the standard 22-inch (559 mm) cutting enclosure to the larger 32-inch (813 mm) enclosure. If a processor is running a routine chip line, a 22-inch works great, but if a processor is running big sweet potatoes and larger size chips at higher capacities, the better set-up would include the 32-inch (813 mm) enclosure to ensure a consistent flow of product. The beauty of the new laser frame, modular design is that a customer may start out with a 22-inch and is then able to move easily to a 32-inch enclosure by replacing the hoop and enclosure sheet metal. This is a design that is set to grow with the processor. Before moving from the 22 to a 32, processors should make sure they have the space. In designing a new line, processors may want to consider allowing for future growth and 22 inchers being replaced with the 32's. The modular design is easier to clean and offers sloped sheet metal and open corners on angled support sides for faster, more effective washdowns.



Hoops, electrical boxes, and motors are all field replaceable for maintenance or future upgrades. An ideal CC Slicer build would be the laser frame, 32-inch cutting enclosure, a 2- or 5-horsepower stainless steel motor, any of the SL-14 MicroAdjustable® Heads, depending on the style and size slice a customer is going for, and the grooved, patented new RockRepeller™ Impeller. The knives are also crucial. If I was making my own potato plant, that's what I would choose. The CC operating principle remains

the industry standard for many reasons. It's ideal because other methods may actually beat up the product. The CC keeps the potato consistently in the pocket, avoiding random, unnecessary movement that has the potential to rupture cells and increase miscuts and potentially create misaligned cuts which could vary the ideal targeted slice thickness. Leading processors prefer the Urschel CC over non-Urschel brand slicers. Leading processors who have tested and compared non-Urschel brand slicers to the CC, tend to have inconsistent fry times and burnt chips/crisps due to extra variation in slice thickness. The key to the performance of the CC is that it works in the rigorous environment of a potato chip/crisp factory. If the head gets hit or knocked out of adjustment, Urschel supplies gauges and training to allow the end user to readjust the head and get it back into production back on track producing perfect chips within minutes. With the entire production line in unison. The CC harmonizes with the entire line upstream and down to produce precision, consistent cuts. Model CCs are easily installed into an PLC controlled system to run automatically allowing processors to fully monitor the production line and gather key data including amperage. From an Urschel standpoint, we've

chosen our speed for cutting to maximize capacity, while minimizing damage and cell rupturing. With the grooved RockRepeller™, we are securely holding that potato in place as it's being cut, while sifting out rocks in the process, and maximizing capacity. It's all about delivering the total package to the customer – meeting capacities and meeting expectations – ensuring each processor that we are setting them up for success.

Rocks and stones in potato processing cause expensive, lost production time. Urschel customers implementing the new, patented RockRepeller impeller have identified many benefits: less downtime, increased production, and increased line flow rates. In addition, customers have reported a reduction in parts with three times fewer knife holder and spare replacements; minimized damage to knife parts and cutting heads to promote overall increased cost-savings. The impeller works with centrifugal force to filter out rocks. Impeller paddles move rocks out and away from the cutting zone to exit the machine.

Urschel recently introduced the CCLL (Chip Cutter Large Lattice) Slicer. The machine features a 10 horsepower (7.5 kW) stainless steel motor, large 32 inch (813 mm) cutting chamber, and 5-tube cutting stations. Depending on the feeding method and product characteristics, a processor may get more than double the capacity versus the previous CCL Slicer which has a smaller build overall, 5 horsepower (3.7 kW), and 4-tube cutting stations. The patented impeller featured on the new CCLL offers a larger central feed opening, 5 cutting stations with longer tubes, plus hybrid, extended-life ceramic bearings. Built-in lower slicing angle leads to less fracturing, increased slice quality, and more complete slices for increased productivity and yield. The overall expanded area within the cutting chamber leads to a gentler cutting action. Another bonus is knives can be easily replaced without removing the head from the machine.

Lattice, corrugated cuts, are a niche market. The CCLL has a very unique operating principle with potatoes being turned and cut at 90° angles and being propelled in and out of



tubes as the lattice slices are cut and released from the machine. Coarse to deeper lattice configurations are available on the new CCLL.

Potato processors are continuously looking to stand out from competitors with new cut styles and may benefit by exploring options via Urschel free-of-charge sample test cutting. Urschel offers test cutting facilities around the globe where customers may compare Urschel models and gain assistance and knowledge in future R&D.

Related to sustainability and potato processors, food processors in general are looking for ways to reduce water usage overall. Another pathway to sustainability is improving the precision of their slices, so there is less wasted product. By Urschel offering gauges and other tools specifically matched to their machine, processors are able to make sure their cuts are consistently hitting their targeted specs. Of course, cost-savings and time consumption are always a priority, and processors appreciate the ease of maintenance and operation Urschel builds into every machine. Processors are also actively adding SKUs with value-added products they are able to produce, like tator tot or hashbrown flakes. Oftentimes, processors turn to the Comitrol®



Processor line, manufactured by Urschel, to develop new flake cut or flour-like coating products. In the engineering and manufacturing of the many Urschel cutting heads and parts – whether it's the MicroAdjustable® SL-14, SH-14 CC heads, impellers, the new 5-tube CCLL impeller and slicing head, or the many knives, Urschel finds the balance between ideal tolerances, longevity, durability, and the accuracy and precision needed. Coming into the sales department after years of managing part of our engineering department, gives me a great insight into how and why Urschel produces different parts. For example, our CC heads are about 35 lbs. (16 kg). They are designed to be durable in a production setting to survive potential mishandling. We are aware sometimes parts are accidentally dropped, and the heads are also designed for years of wear from the ongoing centrifugal force and product load from both potatoes and occasional rocks. There are a lot of potatoes consistently, continuously traveling through these heads at high speed. Capital equipment is an investment, and processors should be secure in the parts and support behind the purchase of their cutting machinery, and that's where Urschel comes through. Urschel works with processors in some cases who have taken a chance on equipment, other than Urschel, where promises have been made but not delivered upon. Initially their line is humming along, but a few months in they begin experiencing issues with inconsistent cuts. Worst case scenario is that their line is completely stalled while they try to figure out the issues with little



guidance or support from the purchase company. The processor is stressed, and they call Urschel for solutions. We do our best to help them. This leads to purchasing Urschel machinery on top of the expenditures for other equipment that they've already endured. This is particularly painful in today's world related to the ongoing labor shortage and rising operational costs. In my new role, I am partnering with major food processors around the world. Food processors can connect with me via their local sales contact which they can find on the Urschel website. With my previous role in engineering, I would travel to many customer plants in the development and testing of Urschel cutting machinery. I have developed a number of Urschel cutting machines over the years and have learned a lot in the process. Now that I have moved from engineering to sales, I feel like I can take a few steps back and listen from a sales perspective. I feel open to completely assessing the plant/production aspects, and I am fully confident in realizing the competency of our Urschel engineers. I relay and discuss processing information with our Urschel teams. I can sit down with the engineering managers and readily troubleshoot active issues that a customer may be facing or gain insights on ways we can continuously improve. The ability to lean on our dedicated teams and brainstorm alongside the strong capabilities of the entire engineering team including the electrical and manufacturing departments leads to great outcomes for our customers and for the future of our company. With manufacturing and engineering under one roof, Urschel

can continue to grow and change with the needs of the potato and food processing industry. The company continues to make bold moves including opening a direct office in Canada and ongoing manufacturing expansions at our global headquarters in the U.S. to continuously improve cell manufacturing and part production technology. Urschel offers complete support over-the-phone, in-person plant visits, or live remotely. Urschel's significant ongoing investment in the global infrastructure of the company give clients peace of mind knowing their local office is there for complete support in terms of maintenance and training for the long life of their cutting equipment. Urschel speaks the language of food processing and the local language, so important details in customer expectations are met. Free-of-charge test cutting services are available to assist customers in identifying the right machine for their line. As the Global Leader in Food Cutting Technology, Urschel global personnel possess the highest degree of knowledgeable food cutting expertise. Urschel is the number one best-selling provider of industrial food cutting machinery because the company partners with customers to increase their productivity and profitability. Customers embrace Urschel advantages. Urschel designs new patented cutting methods and discovers new shape cuts to assist processors. Urschel continues to develop new knives, parts, components, and machinery to expand and grow with the everchanging demands of the food industry. Discover more at www.urschel.com.