

RevoPortioner

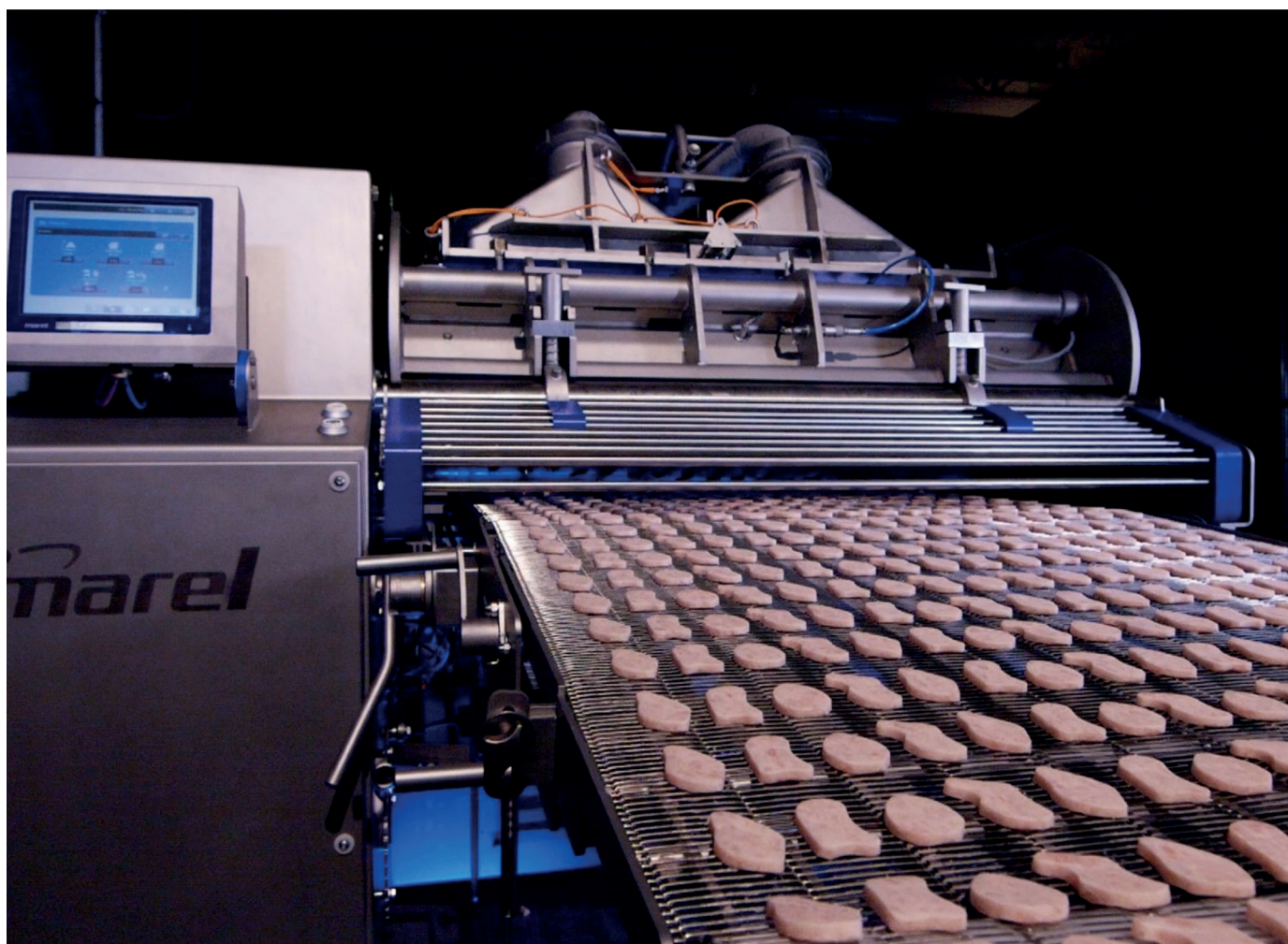
Taking low-pressure forming up a level



- Unbeatable product quality and consistency
- Endless variety of 2D and 3D product shapes
- Maximum 0.3% raw material waste
- Preserved structure and texture
- Belt widths to fit any food production line

Convenience food preferences

Consumer demand for convenience products continues to increase. In addition to traditional products such as nuggets, burgers and schnitzels, there is a focus on innovative, new products with a more modern style and international flavors that follow the latest trends in global cuisine. The influence of healthier, more sustainable lifestyles also means that new and alternative products are becoming more and more popular. In response, retailers, restaurants and QSRs are all expanding the width and depth of their convenience product range. To respond to this market demand, convenience food processors worldwide can benefit every day from the innovative RevoPortioner forming solutions that Marel has been developing for more than 25 years.



Industry leading with 25 years experience

The Marel RevoPortioner is the industry leading low pressure portioning system that enables the production of a consistent flow of high quality products. The RevoPortioner will guarantee the same uniform shape, weight and size of the products created. The system retains the whole muscle meat structure and texture as much as possible, with virtually no waste of raw material or downgraded products.

Over 25 years of research and knowledge, based on the wishes and requirements of a loyal customer base, form the foundation of the success of the RevoPortioner. Some examples of the products that can be made with the RevoPortioner are burgers, nuggets, schnitzels and 3D products such as tenderloins, steaks and fillets.

Laying the foundation for quality

Forming is the base upon which product quality is built. A repeatable process is key to achieving the three elements that are essential to forming quality products.

- Uniform appearance
- Accurate weight
- Texture, bite and juiciness

Establishing efficient, cost-effective processing

Four key elements will help ensure high-quality products are produced at the most economical cost and the lowest cost per product achieved.

- Increasing flexibility
- Maximizing uptime
- Reducing waste
- Minimizing resources such as labor and utilities

A unique distribution design



Pressure controlled forming

The forming process starts with a positive displacement pump, which transports the meat mass through the RevoPortioner's manifold. The manifold has a unique design, which ensures optimum flow of meat to the mold. A pressure sensor is strategically positioned to regulate the pump and secure a consistent pressure. This results in optimum filling of the individual molds in the drum.

The RevoPortioner 1000 has a double manifold that combines the same basic design principles with a minimized volume to secure an even meat flow over the width of the entire 1000 mm drum. At the same time, it ensures the meat mass remaining after production is minimized.

Shoe plate functionality

The RevoPortioner series has a unique shoe plate design with multiple air bellows that give precise control over the stability of the meat going into the forming drum. It allows the weight and the shape of the final product to be determined with great accuracy.

This unique design of the side air bellows inside the shoe plate helps to always keep leakage below 0.3%. It ensures that almost every part of the meat mass in the hopper ends up as products on the belt, without spoilage or leakage.

The level of control this RevoPortioner technology gives over the filling of the forming drum results in a higher quality product and financial gains through the reduced giveaway. In addition, waste can be virtually eliminated, ensuring enormous savings on raw material.

Meat mass flexibility

The unique shoe plate technology, combined with the pressure-controlled meat flow, allows the RevoPortioner to work with meat masses in a wide range of temperatures, reflecting the viscosity of the meat mass to be formed.

The processing time to prepare the blend is reduced, which means less degrading and maintained integrity of the meat mass. The RevoPortioner works with all kinds of protein and blends of meat mass.

Endless shape possibilities

Forming meat masses at higher temperatures allows for better preservation of the initial meat structure. The sintered stainless steel forming drums provide the flexibility to produce a wide variety of unique shapes that do not have an industrial appearance. These shapes feature natural contours, textures, surfaces, and tastes. The sintered material allows the mold design to incorporate extremely fine details in the shape, and even 3D forms are possible.

Continuously forming – continuously performing



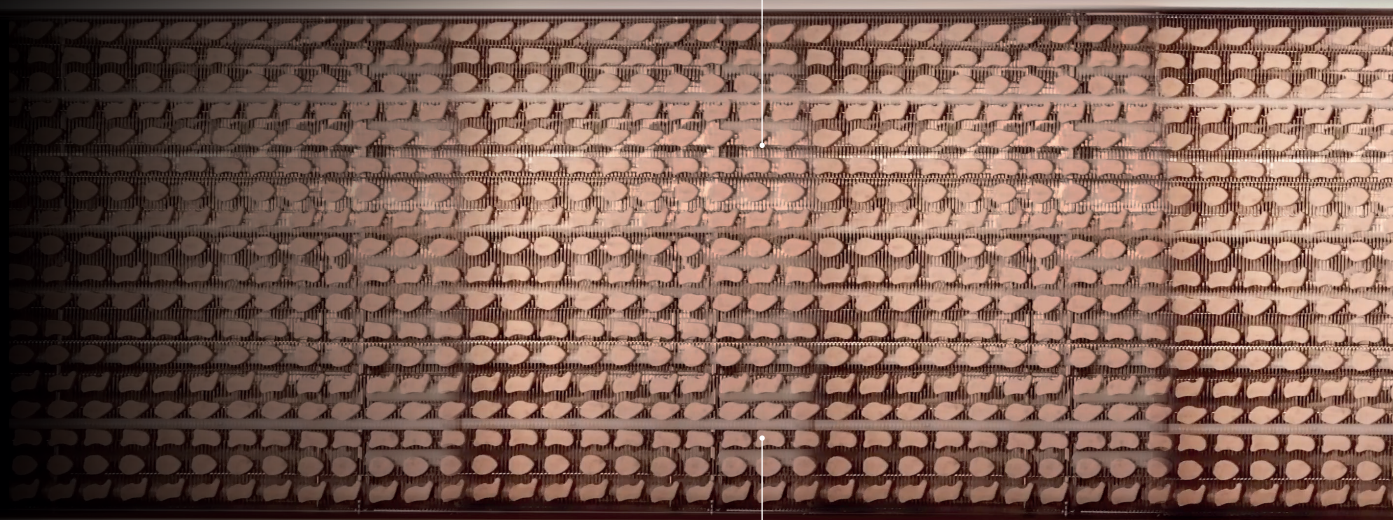
Low-pressure forming

Products such as nuggets and tenders are formed at low pressure, ensuring the texture and structure of the raw material are retained and that every product has a uniform shape and accurate weight.



Increased capacity and quality

Forming drums are available with innovative Helix Drum technology to increase production capacity. They also ensure a more controlled filling pressure with a more constant flow of raw material, which further improves product quality.



A RevoPortioner for any capacity

With belt widths of 400, 500, 600, 700 and 1000 mm, there's always a RevoPortioner to fit any food processing production line, from the smallest family-owned business to the largest processors supplying the world's leading QSR chains. The production capacity can reach up to 8,000 kg of formed raw material per hour.



Preserved structure and texture

Unique air-release function preserves structure and texture of raw material and guarantees 16 hours of high-level performance with one drum.



Air release – no water

Air, instead of pushers and water, releases products from the rotating drum. The drum's sintered material allows air to permeate through the molds and gently releases the products. The ultra-low force needed for the efficient ejection of products from the forming molds puts minimal stress on the meat mass and maintains product integrity. This method ensures significantly better product shape accuracy, reduces rework and maximizes the sustainable use of the raw material.

Smearing is prevented, resulting in a much higher quality finish and less need for cleaning. 16 hours of high-level performance is guaranteed with just one drum. The unique air release design also has huge benefits for downstream processes such as flouring, battering and breading and guarantees a clean working environment.



Sustainable, cost-effective processing

0.3% maximum raw material waste.
40% less compressed air usage.
0% water used during production.

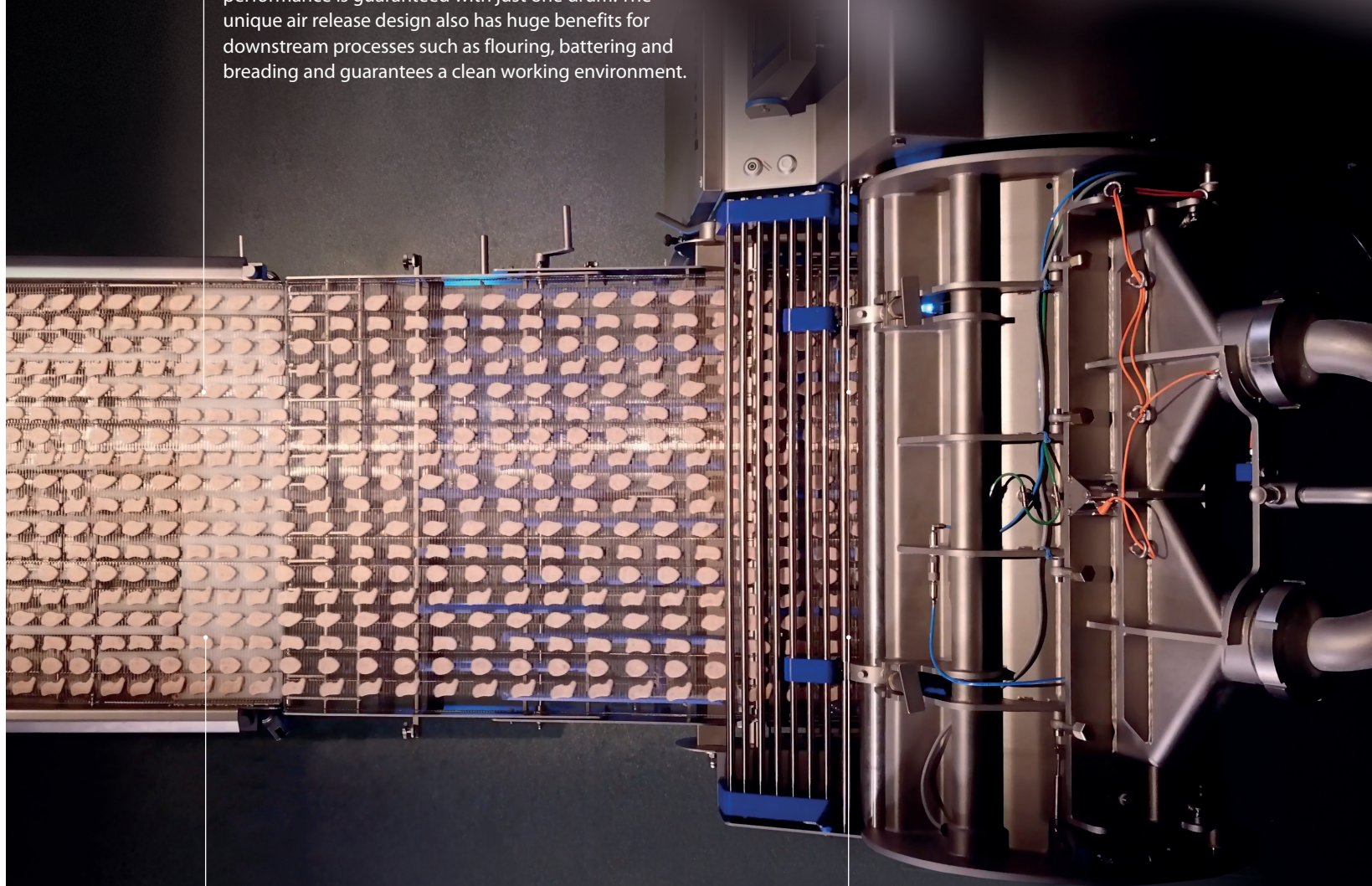
Superior consistency

Innovative low-pressure forming technology gives unbeatable consistency in product shape and weight across the entire belt width.



Endless product possibilities

Regardless of whether your raw material is poultry whole muscle or emulsion mass, interchangeable forming drums let you create practically any product 2D or 3D shape you desire. They are quick and easy to change, giving you a highly flexible production process.



Production insight



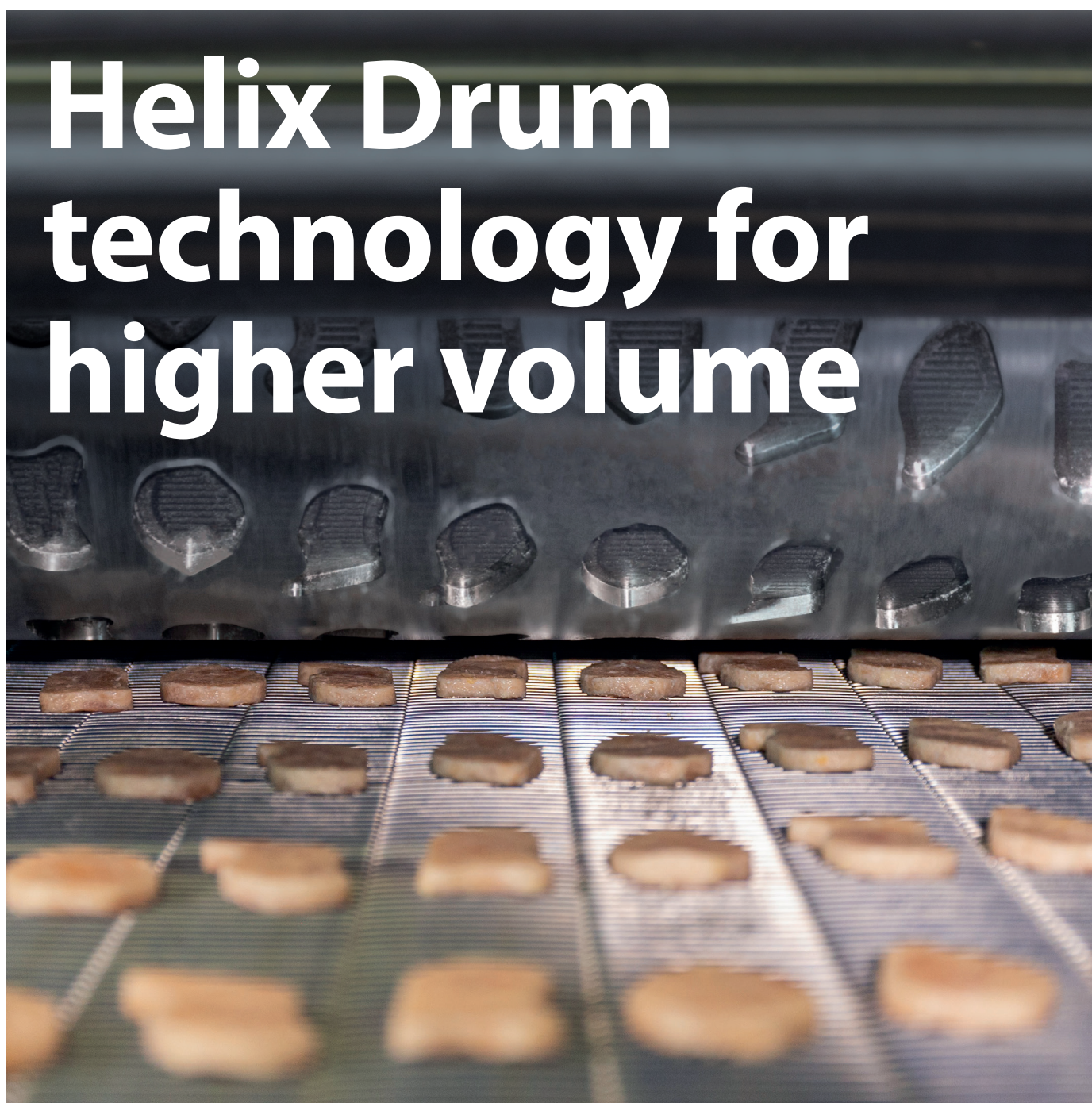
Specialized Innova software collects and collates relevant data, allowing food processors to improve performance and enhance productivity. The dedicated software package for convenience lines combines product, equipment and process data to help processors make smart decisions and prevent products from going out of specification.

By controlling and monitoring the recipes and production, Innova software ensures that the end product aligns with the customers' orders. The supplied real-time data for performance monitoring ensures better food quality and food safety.

The Quality Control module automates QC procedures. Innova's full traceability program provides an overview of the raw materials' journey through the processing plant. As a part of this, the traceability engine records every process step in the convenience line. Together with the Recipe Manager tool, it's easy to track systematically what has been made, when, where and by whom.

Digitalizing the process with Innova prevents operators from making mistakes in the forming process and creates a paperless working environment.

Helix Drum technology for higher volume



On the RevoPortioner's Helix Drum, product molds are aligned diagonally to enable a virtually continuous filling process that minimizes the frequent starts and stops associated with conventional drums. There are no 'dead zones' on the drum, resulting in a much more fluid production process. This eliminates variations across the width of the belt and ensures optimal uniformity in both weight and shape. The exceptionally constant meat flow of the helical system not only improves the consistent

and smoother filling process, but also boosts capacity, enabling higher production volumes. The Helix drum has financial advantages too - as it significantly lowers maintenance costs - as well as technological advantages. The continuous pump operation filling the molds maintains a more constant pressure in the system, reducing wear and tear on the pump and the RevoPortioner system as a whole. In this way, the Helix drum enhances reliability and robustness, making the entire process more efficient robust.

Fast and efficient drum changeover

Due to a simplified design, changing from one product to another is effortless. It takes just a matter of minutes and involves opening the shoe frame, together with the manifold, at the touch of a button. A dedicated lifting device is then used to remove the drum after use and safely transport it to the cleaning unit.

Now, another drum can take its place in the RevoPortioner. Mechanical adjustments are not needed during changeovers, just minor fine-tuning of pressure, depending on the actual viscosity of the meat mass.

A storage unit is available to store the drums securely.

Increase output and quality

Whether you're forming chicken nuggets, burgers or patties made with alternative protein, the RevoPortioner offers the highest levels of throughput with unrivaled product quality.

- Superior uniformity in shape
 - Highly consistent weight accuracy
 - Low pressure for texture and structure preservation
 - Unlimited 2D and 3D shape possibilities
 - Low pressure for best possible bite
 - Accurate product positioning on the belt
 - Virtually no leakage of raw product and no smearing
 - High capacities possible
 - Very low maintenance costs
 - Only air needed for product release, no water
 - Optimal product variety with exchangeable drums
 - Very low noise emission
 - Simple to operate and clean
 - One frame for 500, 600 and 700mm belt widths
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69%
less water
consumption

53%
less energy
consumption

Water and energy-saving drum cleaning

The RevoPortioner Drum Washer ensures robust cleaning with significantly reduced water and energy consumption, making it a highly sustainable and profitable solution. Its automated process meets top hygiene standards, guaranteeing optimal RevoPortioner performance with minimized downtime and maximized productivity. With up to 69% less water and 53% less energy usage, this unit achieves consistent cleanliness with the lowest water usage in drum washing technology. Backed by intelligent software, the user-friendly HMI screen allows for easy program control. It also shows the real-time progress of the washing process and the consistent results of smart water and energy management.

Your partner for convenience food processing

Every day, we help convenience food processors worldwide make the most of our innovative forming solutions and gain a competitive advantage. From standalone equipment to complete processing lines, we can provide all the support you need to get the best possible results from your raw material and ensure the highest quality products every time.

TRANSFORMING FOOD PROCESSING

