

# INSIGHT

EDITION 8 | EN

## MEAT PROCESSING

### Expanding the product portfolio

Marel and MAJA join forces

### Innova software

Digitalization

### M-Line robot

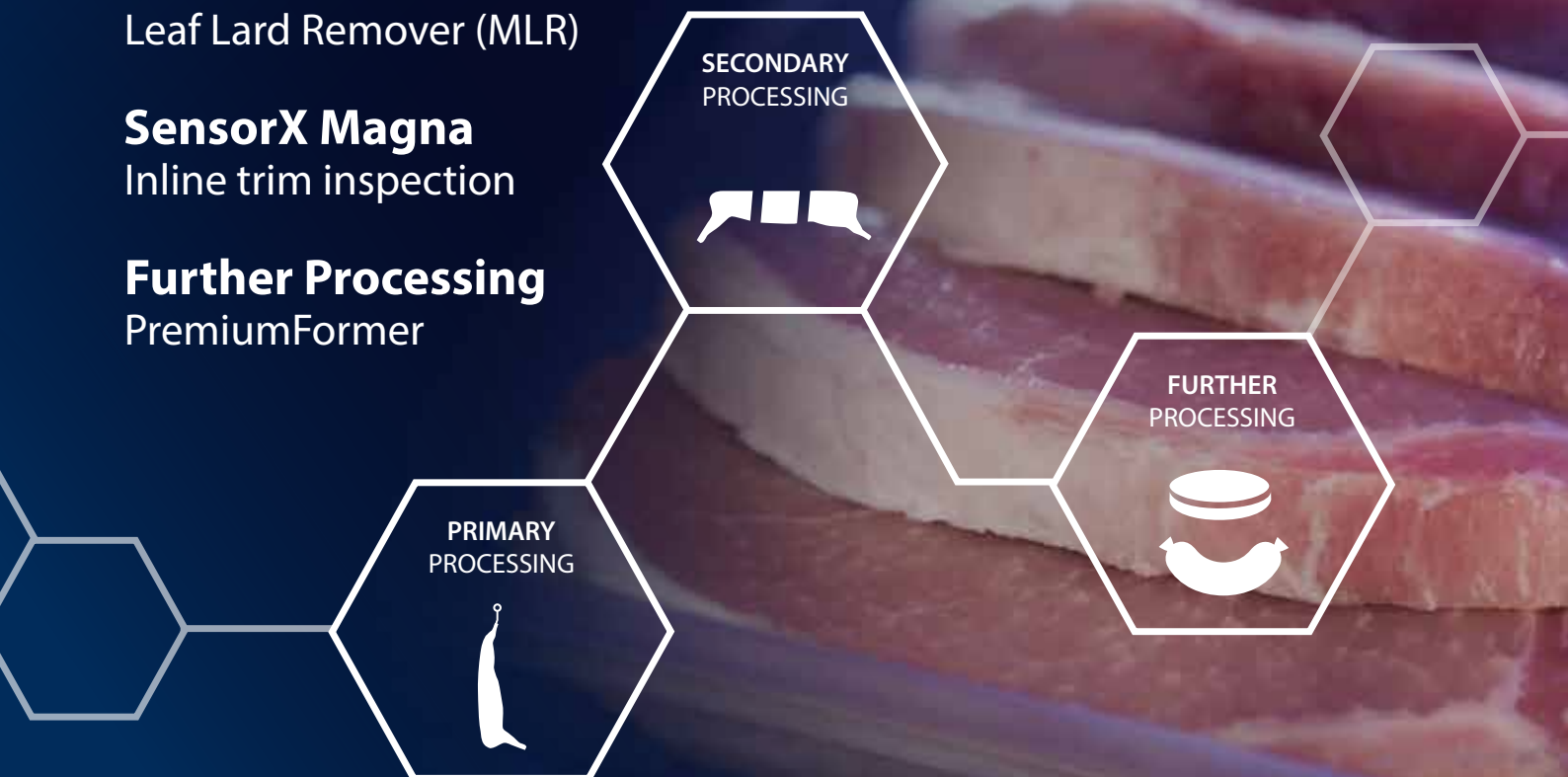
Leaf Lard Remover (MLR)

### SensorX Magna

Inline trim inspection

### Further Processing

PremiumFormer



A **SMART** MOVE



## A SMART MOVE



When you google "A Smart Move" you will get several results for moving truck companies and chess game actions.

For us A Smart Move is not about moving things around and it is not about winning a game. A Smart Move is about doing things in an optimum and intelligent way, and taking actions to advance something based on known information.

A Smart Move in the meat industry is about automating and optimizing the processes through the value chain – from live animal to finished product at the supermarket. A Smart Move is also about flexibility

and diversity. Processors are challenged amongst other by consumers wanting variety in food items – and so they need to work with many SKUs (stock keeping units) and production change-overs during the day. This requires flexible system configurations and efficient logistics.

In this volume of Insight Meat Processing we look amongst other at a number of new developments within primary processing as well as integrated, yet flexible, systems for case ready and convenience products.

Enjoy reading

**DAVID WILSON**  
Managing Director  
Marel Meat

[marel.com/meat](http://marel.com/meat)

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## Expanding the product portfolio | Marel and MAJA join FORCES

In August 2018 Marel acquired leading German food equipment manufacturer MAJA.

Headquartered in the village of Kehl-Goldscheuer, Germany, MAJA was founded in 1955 by Hermann Schill. Grandsons Reinhard and Joachim Schill became the managing directors in 1997 and have steered the company to this day.

MAJA's core competencies are categorized into three main groups: skinning equipment, ice production machines and slicing and portioning solutions.

### SKINNING

MAJA's product line up in the field of skinning include derinding, membrane

skinning and defatting machines. From craft butcheries to industrial processors, MAJA offers open membrane skinners for manual and fully automatic skinning solutions. There are conveyorized derinding machines for automatic operation and manual (open) derinders for processing round-shaped cuts and combo machines for a wide range of applications.

### ICING

MAJA's ice machines are designed to efficiently produce consistent, clean and attractive ice for the refrigeration and presentation of fresh foods. MAJA ice

machines are also used in a variety of production processes for meat.

### PORTIONING

At the end of the 1990s, MAJA developed and launched its portion control and slicing systems. These solutions provide more economical meat processing and offer a variety of value-added, prepared, self-service meat products.





# AUTOMATIC leaf lard removal

Leaf lard removal (flare fat removal) is one of the “toughest” processes in the slaughtering of pigs. The process is physically demanding to do manually and complicated to do with hand-tools. With Marel's new M-Line Leaf Lard Remover (MLR), robots are now able to do the job precisely, efficiently, and without damage of carcass surface.

The most challenging aspect leaf lard removal is in gripping and pulling the leaf lard in the right direction upwards from the lower part of the lard inside the belly.

Performing the job manually by gripping onto the edges of the lower leaf lard is very rugged on the hands. Conversely, pulling the leaf lard off the carcass in an

upwards movement repetitively is straining on the operator's body. Semi-automatic solutions are currently available. However, they typically require an additional pre-cutting operation to enable the pulling tool to accurately grasp the leaf lard. This may actually also cause damage to the inner belly and rib cage.

### THE ROBOT IS THE SOLUTION

The new robotic solution M-Line Leaf Lard Remover (MLR) eliminates the steps of manual processing and the need for any pre-cutting. There is no need for manual scarfing or scraping of the lard tip end, neither a need to protect the diaphragm from being damaged. Even kidney offal may remain inside the

carcass while leaf lard pulling if the customer's process requires so.

The system bases the pulling process through accurate 3D scanning of inner belly of each half carcass. Two independent robots work together on each carcass, respectively pulling the left and right sides of the leaf lard off the carcass.

### HANGING INSTALLATION

New to the M-Line Leaf Lard Remover lineup is a hanging version of the robot installation. The hanging version simplifies hygiene and increases floor space, which can instead be used for Dolavs or logistics conveyors.

The M-Line Leaf Lard Remover has a capacity of 650 carcasses per hour.



# Avoiding clean meat contamination



Bung cutting (anus drilling) is a complicated process in the slaughter line because it requires a lot of precision and concentration to avoid potential contamination of clean meat.

The risk of contaminating clean meat with bung fluid material makes the bung removal a critical process. It is, however, not a job, which just anybody can do. It requires expertise to position the removal tool accurately in the bung area to avoid not making perforations or damages. However, even the best of experts cannot keep concentration for many hours at the time – and so slips in concentration may result in inaccuracy and meat spoilage.

For that reason, Marel has developed a robotic bung remover, which eliminates

the need for persons to perform the precision job. The new M-Line Bung Remover (MBR) scans the pig carcass and identifies whether it is a female or a male. Based on that identification the robot performs the bung removal operation in different ways.

### TWO REMOVAL METHODS

If the pig is a female, the robot enters the bung area from the front of the carcass and pulls the bung to lay with the white organ package. This hugely reduces the risk of contamination of clean meat.

If the scanned carcass is a male the robot enters the bung area the same way but leaves it in the bung channel.

### STERILIZING TOOLS

Because the process of bung removal takes place in the production area before clean inspection – there is a need to sterilize the tools after each operation. This means that the operator has to sterilize the bung remover in hot water after each individual bung removal. With the M-Line Bung Remover this sterilization operation has become

automatic. The robot incorporates Marel's patented “Twin Tool”. The twin tool works with a cabinet in which the bung removal tool gets sterilized while a second tool is in use. That is smart!

**GO TO:**  
[marel.com/m-line](https://marel.com/m-line)





## Flexible hanging deboning with DeboFlex

The pork industry has embraced the groundbreaking method of hanging deboning offered by the DeboFlex.

The DeboFlex uses an overhead conveyor fitted with special rotatable carriers to transport pork fore-ends and legs in a controlled flow past workstations where individual deboning tasks are carried out.

Hanging deboning of pork fore-ends and/or legs using DeboFlex means lower labor costs, higher yield, better product quality and longer shelf life. It also enables processors to optimize carcass utilization.

### A SYSTEM WITH NUMEROUS BENEFITS

In the DeboFlex system, there is no product-to-product contact and far less cross-contaminating hand-to-product contact than in table deboning systems.

Product moves through the system in a controlled way and primals and trim fall into bins or onto a takeaway conveyor system. As the primal is firmly gripped in the shackle of the system minimal effort is required from the operator to separate meat from the bone. Combined with ideal product presentation, this ensures maximum yield.

The DeboFlex system optimizes logistics and intelligently helps processors maximize added value of the different

products. Perfect positioning, attention to operator ergonomics and more “knife in meat” time translate into higher yield, improved product quality and greater line efficiency.

### INTRA-LOGISTICS FOR EFFICIENCY

As part of the DeboFlex it is also possible to integrate an intra-logistics system for easy and efficient product and crate distribution. Open floor space is valuable for processing purposes and for operator efficiency. Hence an integrated crate logistics system and supply of empty crates via overhead conveyors is often a clever solution to a limited floor space availability.

**GOTO:**  
[marel.com/deboflex](http://marel.com/deboflex)

# INTRODUCING

## the Innova software module - Meat Performance Line

The Meat Performance Line is a new Innova Food Processing Software module for the deboning process. It is specifically for processors using traditional methods, such as Paceline or table deboning.

The Meat Performance Line software offers floor operators key information and instruction for every batch of meat during the deboning process. It does this using real-time monitoring of the production cycle. This key information includes yield, throughput and reports on lot traceability. All of which can be used by companies to increase productivity and reduce losses.

The software provides real-time status updates about the production, as well as the expected output of the current batch. It uses this data to create dashboards for real-time monitoring of production.

During processing of raw materials, Innova registers carcasses to provide essential information about the carcasses. The information gathered allows Innova to provide instructions on the dashboard or labels for how to best debone the carcasses.

### SIMPLIFIED SOFTWARE

At Marel we understand that for customers making the change to a new system can seem complicated, from the question of whether it can be used with their current equipment to how cost effective and easy to use it is.

We created the simplified Meat Performance Line software with the goal of making Innova software accessible to a greater number of clients by making it work with any standard scale or packaging hardware.

**GOTO:**  
[marel.com/software](http://marel.com/software)





Meat processors are dealing with an increasingly dynamic global marketplace.

# Fresh meat processing



## Efficiency, flexibility and traceability



Several challenges need to be addressed in processing to secure current and future business:

- Availability of labor force
- Tight profits with declining margins of commodity products
- Cost of labor
- Scarcity of skilled butchers
- Demanding physical labor
- Traceability requirements
- Increased quality requirements
- Greater demand for wider product selection

To keep pace with the ever-increasing demands of retailers and consumers for case ready products, fresh meat processors must continuously innovate and optimize their methods and processes.

### TAILORED TO INDIVIDUAL NEEDS

Marel's approach to fresh meat processing combines solutions to an integrated line to ensure maximum efficiency, maximum value creation, and process control while minimizing labor input.

Additionally, our lines are modular and designed to suit current and future production needs regarding capacity, processing flexibility and supply regulations.

### AUTOMATED CONTINUOUS FLOW

The lines provide an automatic, continuous flow, which results in an efficient, labor saving process and reduces processing time. These factors combine to help processors increase profits, improve product quality and produce products with a longer shelf life.

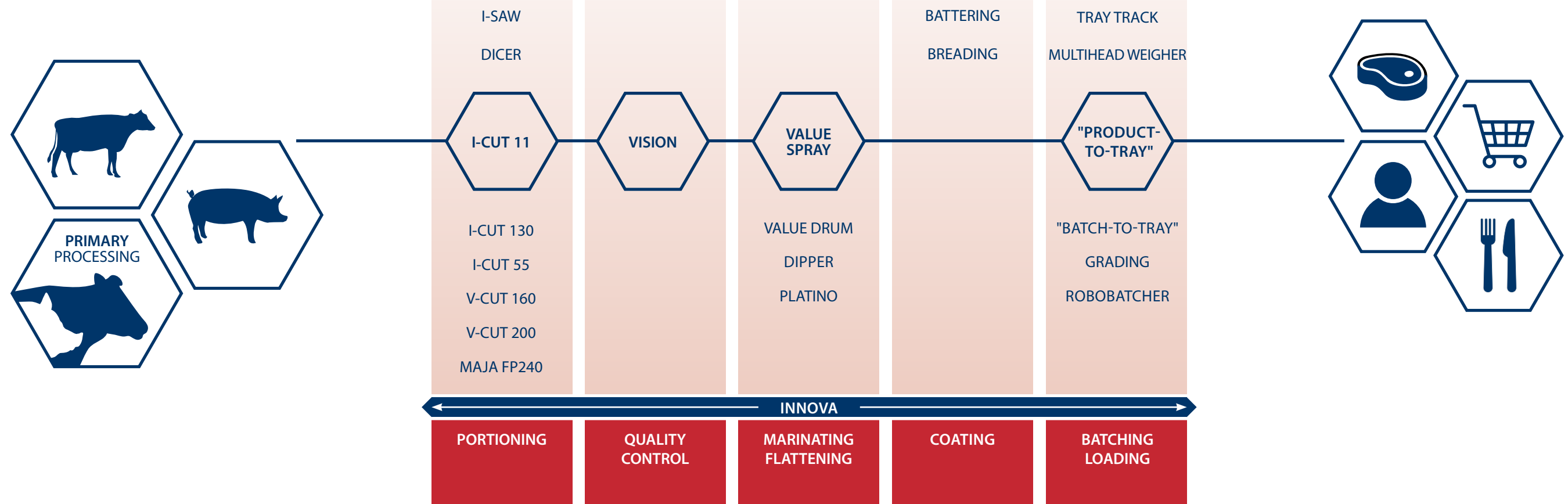
### MONITORING EVERY STEP

By also implementing Innova into processes the use of raw materials is optimized throughout the value chain. Innova Food Processing Software also streamlines order processing, increases shelf-life and is ideal for those retailers with just-in-time processing requirements. Innova software carefully monitors production efficiency, costs, and yields, and executes production orders.

### OPTIMIZING THE VALUE CHAIN

Marel's fresh meat processing solutions help processors to automate production and add value at every stage in the value chain, including:

- Receipt of live animals
- Slaughter
- Deboning and trimming
- Portioning
- Marinating and coating
- Batching
- Loading
- Packing and labeling



# Significant consumer trends

## 1 Food safety

Consumers around the world have become more suspicious of food processors due to high-profile meat scandals including, pink slime, horsemeat, and out-of-date relabeling to name a few. This presents opportunities for processors to restore consumer confidence by adding more transparency, traceability and by incorporating enhanced safety measures. Naturally, issues relating to bone fragments and foreign contaminants in the meat are concerning for consumers. Using technology and methods to reduce these incidents of contaminants goes a long way to maintaining a brand's reputation.

## 2 Price

Today, 50% of households in developed countries are single households that have a low to moderate

income. As a result, new meat cuts and products such as prepacked flank steaks and variety-size packs are emerging in popularity. These cuts make meat eating more affordable for the consumer and the carcass more valuable to the processor.

## 3 Convenience

Convenience is crucial for the consumer. In developed countries, nearly one-third of consumers believe that 40 minutes, from start to table, is too long to wait for their meal. In addition to demanding easy-to-cook products, consumers are demanding a greater variety of food items, flavors, and preparations such as pre-marinated, pre-formed and coated products.

## 4 Quality

Meat quality is becoming a more critical parameter in people's buying behavior. Consciousness and knowledge of meat are rising with a growing number of consumers willing to pay a price premium for excellent quality. Consumers want to buy quality meat (cuts) but are also conscious about the specifics such as the source of the meat, breed, how it was raised, and what type of feed the animal was provided. Demand for transparency means that processors have to monitor and register all steps along the processing value chain.

# Case Ready Vision Line not only a vision

A significant benefit of Marel's Case Ready line portfolio is its flexibility for configuring in a variety of ways, depending on the need and complexity of the product packing.

We believe that the need for accurate portioning and vision scanning for sorting by quality, combined with automatic (robotic) packing is growing.

### • Portioning

The new I-Cut 130 Portion Cutter with Singulation delivers naturally shaped steaks from fresh meat separated one by one. The new singulation unit which has been added to the portion cutter, converts the I-Cut 130 Portion Cutter to a substantial unit for integrated Case Ready lines.

### • Vision

A central part of Marel's Case Ready Vision line is the newly developed QC scanner.

The QC scanner scans the individual product slices, and each is quality graded visually. Parameters and specifications to base quality grading may be, for example, fat content or color variations (e.g., blood spots, meat structure, or presence of spinalis). Information found at the

vision scanning combined with the weight of the product is used on the fly to sort and assign the individual products to the process downstream in the line. Those processes could include different types of packaging, marinating, product rework or removal.

### • Loading and packing

Another central part of the Case Ready Vision line is the RoboBatcher that is capable of gripping meat products and placing them into a variety of trays, or back into a re-work lane. Based on data from the portion cutter, the vision scanner and the in-weighing scale, the accurate tray packing of the RoboBatcher ensures minimum giveaway and enables a multi-output process.

A multi-output process means that the RoboBatcher can handle several requirements simultaneously. Not only product weight, but also additional product specifications and conditions that are part of the RoboBatcher algorithm ensures that products are placed in the right tray or outfeed line.

With multiple product outfeed flows (more stock keeping units [SKUs]), comes the need to connect products

to several follow up processes in a flexible approach. Marel's Tray Track is an example of how to connect and buffer products and then transfer them seamlessly to other product packing lines.

### • Logistics solutions

Sealed and labeled trays can be placed in crates or cartons by case packing robots. Subsequently, the logistics solution can be completed with a warehousing solution to deliver on-demand dispatches to retailers or other customers.

### • Line control

Innova Food Processing Software monitors all process data and visualizes current and historical data to clearly indicate strengths and where to fine-tune improvements.

The aforementioned vision approach introduces the option for a flexible multi-product or multi-line approach in addition to a dedicated line approach that is the current standard in case ready operations. With a multi-product or multi-line approach, Marel opens up the potential of handling the demand for an increasing variety of products to meet consumer demand.



# The making of a perfect schnitzel

Bringing vision and quality grading to retail packs is only one trend in the fresh meat processing sector, while convenience packs such as schnitzels is another. Schnitzels are produced in many ways; however, common among all schnitzels is a portioned and flattened meat, with a coating of batter and breading.

## DEBONING AND TRIMMING

Starting at for example Marel's StreamLine deboning and trimming system, operators debone and trim the pork loin from the mid-section. The loin is then conveyed to the portioning line, where it can go through an optional injecting and tempering process before entering the portioning process. Incorporating the process as an in-line operation means less product handling, better hygiene and the ability to monitor yield.

## PORTIONING

The pork loin is cut into portions, either on a conventional belt portion cutter, like the I-Cut 130 with singulation, or a volumetric portion cutter like the V-Cut 160 or V-Cut 200. The portion cutters deliver slices in a singulated row necessary for the subsequent batter and breading process.

## FLATTENING

A Platino Flattener then flattens the slices using rotating "knuckles," that simulate a meat hammer. The tenderizing effect on the meat provides better yield because less fluid is squeezed out of the meat.

## BATTERING

A battering unit is the foundation for a flawless layer of schnitzel crumb. Flouring is generally the first dry coating step. The fine layer of flour that is applied to the pork slice serves as an adhesive, allowing other coatings to adhere better. Subsequently, a layer of batter will ensure that breading adhere properly to the product.

## BREADING

The all-new RevoBreader guides the pork slices through a bottom bed of crumb while covering the top layer with a gently falling layer of crumb.

## PACKING

After battering and breading, the schnitzels are automatically, or manually, styled into trays that are then sealed, labeled, packed and ready for dispatch.



"We already had Sulmaq and Marel as equipment suppliers, Sulmaq for hog and Marel for poultry. Sulmaq is a benchmark in equipment supply and a great partner. As part now of Marel, Sulmaq strengthens its good quality standards on products and services."

– Christian Aluis Klauck, Engineering Manager, Cooperativa Central Aurora Alimentos

## Marel & Sulmaq strong together

Sulmaq was established in 1971 as a tiny repair shop for meat processing plants. Today the company is one of the largest suppliers of equipment for the meat industry in South America.

Sulmaq is headquartered in Guaporé in southern Brazil, an area rich in natural resources. There is a plentiful supply of qualified labor and a regional desire to invest in research for the development of modern production techniques. Both Brazil and Sulmaq are in a unique position to develop the entire supply chain of agribusiness for the region.

Brazil is the largest pig and cattle breeder in South America and the leading exporter of pork and beef. Approximately 30% of the world's beef herd is raised on the continent. Mexico, Chile, Argentina and Colombia respectively round out the numbers as the largest pork producers in Latin America.

Fernando Roos, Commercial Director at Sulmaq, and grandson of the Sulmaq founder explains, "We have a very close connection with our customers in the Latin American region—and pride ourselves of being ethical and responsible in the provision of equipment and services for our clients."

Sulmaq will continue to offer their equipment portfolio in the Latin American market for the slaughtering and deboning of pork, beef and lamb. Now that Sulmaq has combined their efforts with Marel's innovative technology, software and know-how, together, both companies are ready to meet the demands of processors even more extensively into the future.

Fernando Roos enthuses, "We now have a unique possibility of supplying full-line solutions, through the involvement of Sulmaq Engineering Teams in the diagnosis and planning of the best cost/benefit ratio solution to the customers—and complementing it with Marel's INNOVA and automation technologies."

**sulmaq**  
PART OF **marel**



# The future of mixing and grinding

## Introducing the new SENSORX MAGNA

Processors who perform high-volume mixing and grinding, face an extremely competitive marketplace. It is essential that processors secure contracts by offering end-products that are the highest quality and meet the most stringent levels of food safety. At the same time, they need to protect their margins by seeking opportunities to save on material costs and streamline their processes.



SensorX Magna is Marel's newest high-capacity, inline trim inspection system designed to keep trim bone free and chemical lean (CL) ratio precisely on target.

Key features and benefits of the new system include:

- Higher quality, more consistent end products
- Precision CL ratio measuring and superior contaminant detection
- Advanced reject mechanism, minimal waste
- Processes both fresh and frozen, beef and pork, trim and muscles
- Compact turnkey solution

### CHANGING THE WAY MIXING AND GRINDING IS PERFORMED

The SensorX Magna enables processors to make vast improvements to their mixing and grinding operations, improve their efficiency for both product quality and food safety while maximizing the value of raw materials with the new features in SensorX Magna.

### PRECISE AND EFFECTIVE CL MEASUREMENT

What sets the SensorX Magna apart is its superior X-ray technology. All raw

materials are scanned for density variations and measured for a precise CL ratio. This gives processors maximum control over product quality and consistency.

The SensorX Magna is positioned directly before the mixing and grinding process where it delivers the most impact of monitoring and controlling the CL ratio as the raw material enters the system.

### SUPERIOR CONTAMINANT DETECTION

The SensorX Magna will identify, and reject, hazardous materials such as bone, metal or glass when they are detected.

Frequently, the solution for dealing with contaminants has been to grind the raw material more finely in conjunction with mechanical bone eliminators on the final grinders in an attempt to minimize the risk of bone contaminants. This influences the structure and texture of the raw material and the final product.

The detection and rejection of any hard contaminant before mixing and grinding allows the SensorX Magna to eliminate costly claims and product

recalls while ensuring a brand's reputation and providing a superior end product.

### STATE-OF-THE-ART REJECT AND REWORK

Unrivaled in the industry, the SensorX Magna has a state-of-the-art reject and re-work process that ensures the volume of meat rejected is minimized to approximately 300 grams for bones, and 1500 grams for hard contaminants.

### REAL-TIME MONITORING

Innova Food Processing Software monitors the SensorX Magna operations in real-time and collects historical data on CL ratio and the rate of hard contaminants. By doing this, it is possible to benchmark suppliers and make data-driven purchasing decisions.

Innova provides live dashboard views that allow actual performance to be monitored. By monitoring KPIs such as throughput and contaminant rate, opportunities can be immediately identified to streamline processes and enhance operational performance.

**GOTO:**  
[marel.com/trim-handling](http://marel.com/trim-handling)



# More than just a burger... a taste experience



**Butcher burger**

Interlaced fiber



**Home style burger**

Fine vertical fiber



**Tender fresh burger**

Vertical fiber

**Standard burger**

No fiber orientation



PremiumFormer is a unique solution for forming fresh burgers that ensures quality, flexibility and product consistency. The PremiumFormer system offers a variety of texture and shape possibilities while preserving product quality after cooking. Because of its compact footprint, the PremiumFormer will fit seamlessly into practically any production facility.

Soazig Pinheiro, product specialist from Marel explains, "Through the years, burgers have been going through various generations of burgers types. There's the standard burger, which is typically pressed and without a clear fiber orientation. Then you have the home-style and tender fresh burger, where the fibers are oriented vertically. In a butcher burger, fibers are interlaced, which creates angel hair burgers. Each burger type will give the consumer a specific eating experience and taste." PremiumFormer makes it now possible to create all these burger types in one flexible machine.

**DEVEILLE - PASSION FOR MEAT, VALUE FOR INNOVATION**

French company, Deveille know that they have to keep evolving their company to gain a competitive advantage. Mr. Jacques Meley, general director of Deveille, says, "In 2015 we started producing burgers and steak haché. At that time, we also started to work with Marel meat preparation equipment to grind and mix our meat and to form our products with the MasterFormer."

**NEW DEVELOPMENTS**

Deveille has had a very good cooperation and close contact with Marel since they bought their first equipment. "Last year, the brand new PremiumFormer, was presented to us and we decided to work with Marel to support the further evolution of this development. We are pleased that we did so because today we get to work with an exceptional machine "that makes exactly the products that we desire."

**OPERATOR FRIENDLY EQUIPMENT**

Hedi Belkhir, responsible for maintenance and service at Deveille describes his experience of working with the PremiumFormer, "The machine is



**"We work with a strong machine that makes exactly the products that we desire."**

– Mr. Jacques Meley,  
General director of  
Deveille

straightforward to use because it has been well thought out and is logically set up. It is very easy to change the molds and to clean the machine. Because all the settings are programmed into the machine, changing the production type goes very quickly."

**MAXIMUM FLEXIBILITY**

Jacques Meley elaborates, "The machine is very adaptable, in the various shapes it can produce. Above all, what makes this machine so special is the flexibility in textures and fiber orientation of the products."

Each orientation gives each product a specific eating experience to meet shifting customer demands. For example, a burger with vertical fibers gives a very different taste than a burger where the fibers are interlaced. "Furthermore,

[the footprint of the PremiumFormer is minimal. This is an important feature for us since we need to make the most of the space in our production facility," says Mr Meley.

**ABOUT DEVEILLE**

Deveille is a family owned company that was established in 1981 when they took over the local slaughterhouse in Feurs, France. Thanks to continuous developments, the company is now vertically integrated into primary, secondary and further processing.

Deveille has 120 employees, all based at their facilities in Feurs.

**GO TO:**  
[marel.com/premiumformer](http://marel.com/premiumformer)



# CONVENIENCE PRODUCTS OF THE HIGHEST QUALITY

Marel has just launched its entirely new 700 mm Convenience Food Line, consisting of the RevoPortioner and brand new wet and dry coating equipment. The convenience line can create a wide variety of delicious added value meat products. Innova Food Processing Software guides the operator during set-up and change-overs, which ensures easy line set-up and an easily reproducible process.

## REVOPORTIONER WITH HELIX

The production of convenience products all starts with the RevoPortioner producing perfectly portioned products at low pressure while retaining the texture and structure of the raw material. Products always have the desired shape, weight and size, and are of consistent quality, and exactly according to the customers' specifications.

## LAYING THE FOUNDATION

Marel's Active Flour Applicator, Active Batter Applicator and Active Tempura Applicator are the ideal foundation for a

flawless layer of crumb. Flouring is a common first dry coating step. The fine layer of flour that is applied to the mass serves as a binder to allow other coatings to adhere better. Subsequently, a layer of batter will ensure that breading adheres appropriately to the product. Marel's Active Batter Applicator and Active Tempura provide an excellent distribution of batter, remove and reuse excess batter, and are suitable for a wide range of capacities.

Both wet coating solutions have the option to create an active bottom bed,

assuring that the product is directly placed in the batter when entering the machine. This results in a perfectly even coverage of both the top and the bottom of the products.

## REVOCRUMB—THE ART OF COATING

The new RevoCrumb produces perfectly coated products with optimum crumb distribution over all surfaces of the product. Thanks to an innovative crumb-management system, it is possible to control the flow of coarse and fine crumbs to the top or bottom bed. The crumb-management system ensures

optimum coverage that always meets the customers' requirements.

The crumb structure remains intact during processing, as the RevoCrumb doesn't grind or crush crumbs, which makes it particularly suitable for very vulnerable crumbs.

## DUAL MODE REVOBREADER

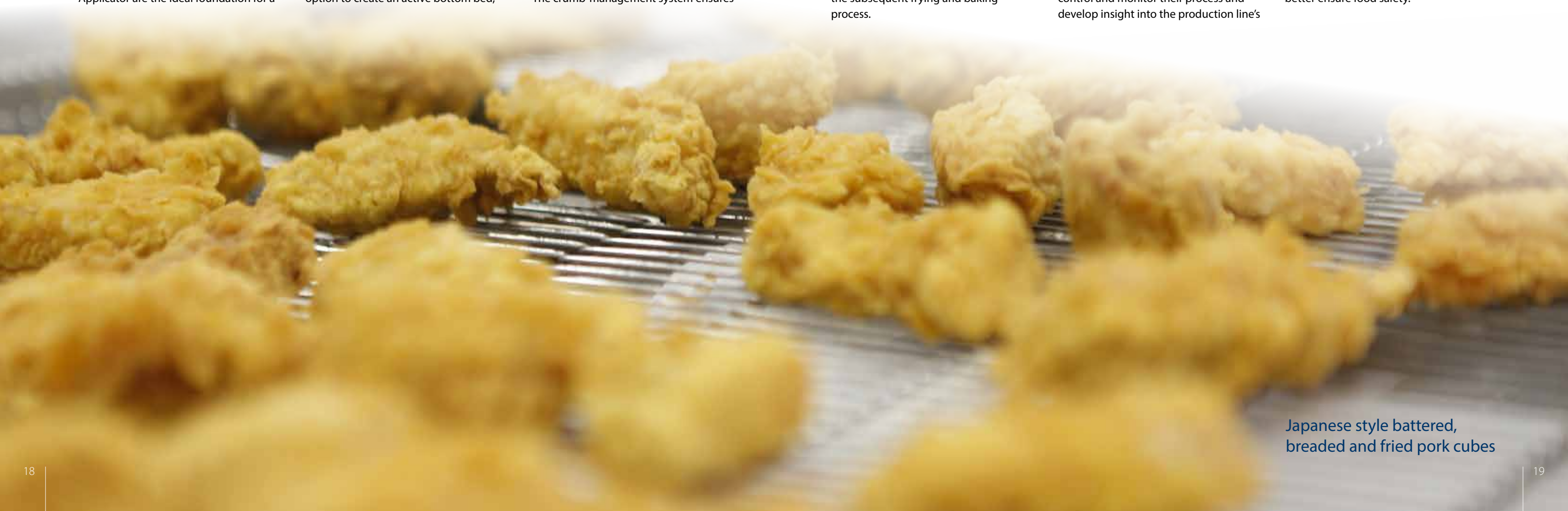
The all-new RevoBreader is a flexible machine that offers a flatbed and drum mode all in one enclosure. In the flatbed position, the RevoBreader guides products through a bottom bed of crumb, while covering the top layer of the product with a gently falling layer of crumb. The result is the highest quality, uniformly coated products. In the drum position, a high pickup of crumb and optimum 'home-style coverage of the product is guaranteed with high retention of crumb to the product during the subsequent frying and baking process.



## PRODUCTION INSIGHT

For a centralized process control solution, the Marel's new convenience line can be equipped with Innova Food Processing Software. With Innova, processors can control and monitor their process and develop insight into the production line's

effectiveness. Innova provides real-time data for performance monitoring and enables processors to maximize their yield and throughput while complying with quality and traceability standards to better ensure food safety.



Japanese style battered, breaded and fried pork cubes



The first automatic sausage linker, the original Frank-A-Matic, was developed by Ray Townsend in the 1960s. Marel is pleased to present the new Frank-A-Matic Linker. This is the fourth generation of very successful linking equipment for cooked and smoked sausages.

# Marel presents a **new solution** for sausage making

Frank-A-Matic Linker

The new Frank-A-Matic Linker incorporates over 50 years of technological expertise in equipment and processing knowledge. The Frank-A-Matic name honors the past while the state-of-the-art design embraces the future. The Linker offers the market's best performance in producing sausages with cellulose, collagen, or polyamide casings. Compared to its predecessors, the

linker has improved weight and length control in addition to increased throughput speeds. These improvements come from a highly sophisticated redesign of the metering pump, linking unit, hopper and stuffing system.

The Frank-A-Matic Linker represents the latest innovations and improved

performance. From simple adjustments during operation to easier sanitation and maintenance, the Frank-A-Matic Linker is setting new benchmarks for sausage production.

**GO TO:**  
[marel.com/frankamatic](http://marel.com/frankamatic)



Marel's new V-Cut 160 Portion Cutter is a highly flexible volumetric portion cutter designed to cut non-frozen boneless meat into fixed weight portions with uniform shape. It is exceptionally well suited for small to medium sized businesses.

# Volumetric portioning

## for optimal product presentation

### EFFICIENT AND FLEXIBLE

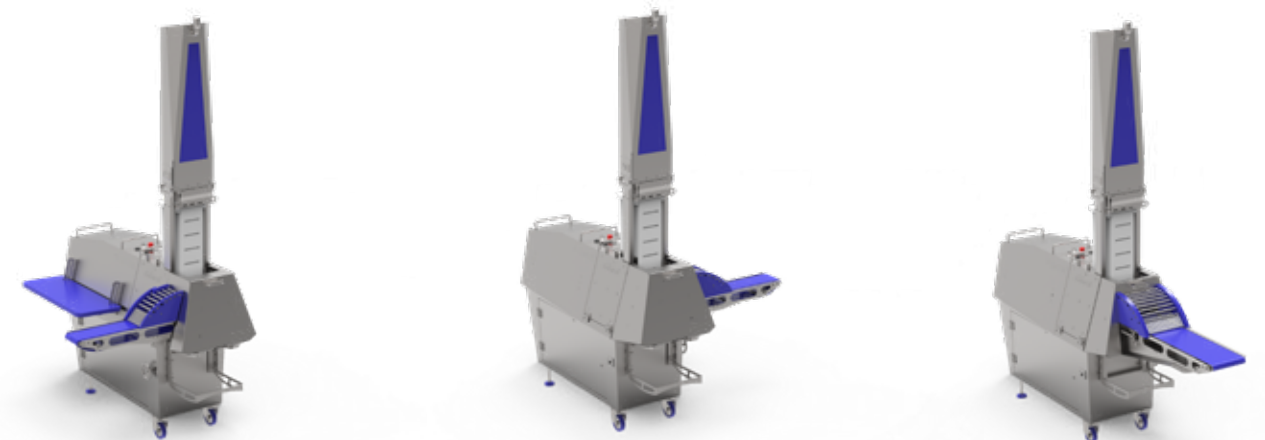
Meat products in their original shape are formed in a portioning template of a pre-defined shape and volume. The volumetric portioning method ensures maximum use of raw materials while

delivering accurate weight, equal thickness and uniformly shaped portions that meet target weights.

### PRESENTATION

The V-Cut 160 Portion Cutter unit is

capable of singulating portions and creating shingled portions for direct tray packing. The V-Cut 160, can produce – without crust freezing – single products, stacks, and fixed weight cubes.



Three options for out-feed conveyor setup





# Digital transformation in the food processing industry

Today you can hardly read or watch the news without seeing mention of Industry 4.0, robotics, and digitalization. You might wonder if and how this will affect your business or personal life. The answer is yes, it will affect you as a business and personally.

In recent years, we have seen several industries undergo major changes and disruptions. Industry examples include such as Airbnb and Uber. In the food retail industry we see early signs of transformation with services like Amazon Fresh starting to impact the farm-to-fork supply chain by shortcutting traditional "brick and mortar" retailers.

We also have new generations of people who grew up using technology and are used to all information being immediately accessible.

## PROCESSING TRANSPARENCY

There is an increased demand from consumers, retailers, food services, and even government bodies for increased transparency and flexibility. The requirements for transparency are related to topics such as traceability, animal well-being, quality and sustainability in the process. The demand is increasing for flexibility in larger product mix, smaller series and shorter production runs, and last minute orders.

## NEW SET OF COMPLEXITIES

The demand for transparency, flexibility, and improving efficiency from throughputs to lower costs, is introducing a whole new set of complexities for monitoring and managing the processes in a cost efficient manner.

The speed in which processes are completed has become so quick that once a decision has been made, it is often no longer the optimal decision for customer satisfaction or financial

purposes. For instance, if a customer makes a last minute change to their order the raw material quality may have changed from when they originally placed their order.

This calls for changes in the mindset to view information technology as an invaluable tool rather than a cost.

Successful transformation typically comes from:

- Clear and honest assessments of the current state in terms of automation and organization
- Well-defined, realistic, and specific goals and sub-goals for the desired state and timelines

## SMART SOLUTIONS

We already see smart solutions based on

Artificial Intelligence and Machine Learning that can process vast amounts of data from multiple sources, learn patterns and logic, and make decisions in no time.

This technology will soon find its way to the food processing industry, and should be seen as an opportunity to increase profitability and customer satisfaction.

## AUTOMATION OF DATA COLLECTION

One of the food industry standards is getting well organized using the automation of data collection from the production process.

This is a vital step not only in transforming to a far more cost efficient and paperless process and in managing the processes and the margins tightly;

but also having fast and reliable production data as the very foundation of designing and reaching the end goal of a smart factory.

## QUICK ADAPTATION CREATES WINNERS

The future winners in this highly competitive market will be the companies that understand they must adapt to new technologies, innovate new products, and understand the market developments and opportunities offered for future growth and profitability.

## GO TO:

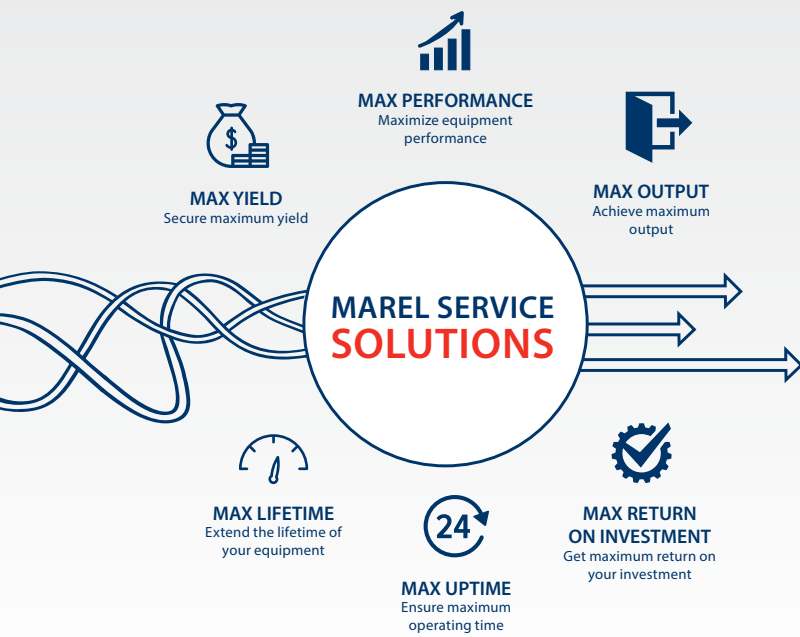
[marel.com/software](http://marel.com/software)

# INNOVA

Food Processing Software







## Services to suit your specific needs

Marel's Service Solutions are a range of tailor-made services to suit specific customer needs. Each Service Solution is carefully assembled according to the customer's priorities and preferences. The Service Solutions offer a range of benefits while providing customers with the peace of mind that their operations will run smoothly. In supporting our customers with the optimum service solution, we focus on matching the available services to the customer's specific requirements but also keep in mind that some services are subject to equipment compatibility or geographical availability.

**GOTO:**  
[marel.com/service](http://marel.com/service)

DISCOVER THE LATEST DEVELOPMENTS IN PROCESSING TECHNOLOGY

# MEAT SHOWHOW 11 MARCH 2020

Each year in March we host the Meat ShowHow, demonstrating our meat processing equipment and systems in our demo and training center, Progress Point.

- Discover the latest developments in processing technology
- See complete systems with ongoing live demonstrations in a hands-on environment

- Learn how automation can help optimize production and yield, increase food safety and innovate end-products
- Meet our specialists and network with colleagues from the global red meat industry

**Progress Point is located in Denmark, only 10 minutes away from Copenhagen's Kastrup Airport.**

### MEET US IN 2019 [MAREL.COM/MEAT-EVENTS](http://MAREL.COM/MEAT-EVENTS)

Exhibition	Dates	City	Country
TechnoCarne	6 - 8 August	São Paulo	Brazil
CIMIE	24 - 28 September	Chengdu	China
Polagra Tech	30 September - 3 October	Poznan	Poland
Saudi Agriculture	21 - 24 October	Riyadh	Saudi Arabia
Agroprod mash	7 - 11 October	Moscow	Russia
WorldFood/AgroWorld	6 - 8 November	Almaty	Kazakhstan



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Marel is the leading global provider of advanced equipment and systems for the fish, meat and poultry industries.