

# INSIGHT

VOLUME 1

## MEAT PROCESSING



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# We 'meat' your needs



Meat is one of the most valuable and demanding food products. Worldwide meat consumption is growing and the variety of products available as convenience foods is on the increase. Meat processing in the East European countries, Asia and South America continues on an upward path. These are all factors that contribute to the need for efficient, fully optimised meat processing.

The continuously growing focus on automation along the entire meat processing chain is closely linked to the growing use of information technology. Hygiene and traceability are of crucial importance, requiring full monitoring of all processes along with the continuous documentation of origin and production data, in the interests of consumer protection.

### **Marel Meat Industry Centre**

For many years, we at Marel have been working closely with some of the most forward-thinking meat processors and, over the years we have built up a wealth of know-how and practical expertise in this field. With the setting up of a Meat Industry Centre, we aim to stay at the forefront of providing innovative technologies for the meat processing industry – including our unrivalled Innova production control software, state-of-the-art deboning and trimming systems and automatic high-speed slicing, loading and packing lines – to name just a few.

Our Meat Industry Centre team consists of industry experts with first-hand experience of tackling the challenges that meat processors face on a daily basis. We may be good at 'meating' processing needs, but you are the experts in defining them. Our meat industry consultants are here to work with you and help you take your processing operations to the next level.

I hope you will enjoy reading about our highly advanced meat industry equipment and systems.

*Sigsteinn Gretarsson  
Managing Director, Meat Industry Centre*

# SensorX fat-lean trim management system

Marel's trim management system is an integrated solution of SensorX Fat Analysis and StreamLine red meat trimming line. The system is designed to analyze red meat trim for fat/lean ratio and give processors the ability to manage their trim and hit target fat percentage. The system is based on Marel's extensive knowledge in X-ray technology, which provides the most accurate way to determine fat content in meat.

## Perfect beef trim for further processing

Knowing the accurate fat percentage of incoming product is valuable, but controlling what actually comes out of the process will give processors even more added value. The SensorX scans batches of beef trim from the StreamLine for accurate chemical lean ratio and density variations. The fat analysis function is a software module that is added to the SensorX bone detection system. Products are scanned by the SensorX for density variations. These variations enable SensorX to detect presence of hazardous contaminants or decide precise chemical lean ratio. The results are sent to a grading/batching system where



batches are collected to a target chemical lean ratio. This provides customers with the exact fat-lean ratio they require for further processing (for example 50/50, 75/25 or 80/20). This will take the guess work out of mixing and grinding.

- 1 Batches of trim and fat from the StreamLine enters the SensorX.
- 2 SensorX scans each batch for contaminants, chemical lean ratio and weight
- 3 Results are sent to a Marel Trim Grader which distributes according to specifications
- 4 Batches of precise chemical lean ratio are formed based on processor's requirements



# I-Cut 10

## the no-fuss portion cutter

**Marel's family of portion cutters for the meat industry now has a new member. The I-Cut 10 portion cutter is a high-speed portioning machine designed to easily cut products such as pork loin, pork neck, entrecote and strip loin.**

Portioning Division Manager Johan Enevoldsen explains: "The I-Cut 10 enables smaller meat producers to move away from inaccurate cutting by hand to accurate fixed-weight portioning. It also allows for substantial savings on labour because of the speed and versatility of the machine. A machine like this often saves as much as 6 people cutting by hand".

### **Designed for easy use**

By selecting only a few parameters on the user-friendly touch screen, the I-Cut 10 is ready to start producing fixed weight portions. Furthermore, the design of the machine makes it very easy to clean and the small foot print means it will fit into almost any plant layout.



### MAIN BENEFITS

- Great accuracy, resulting in minimal giveaway
- Yield improvement and increased production secures fast payback
- Open construction providing high hygienic level
- Maximum flexibility – easy to use with different types of products
- Full connectivity with Innova – Marel's intelligent production management software



Go to:  
[www.marel.com/I-Cut10](http://www.marel.com/I-Cut10)

# Accurate portion control with I-Cut 55

**A lack of skilled butchers, a need for consistent weight and quality and a desire for greater flexibility led Adelaide-based Austral Meat to purchase an I-Cut 55 portion cutter for its beef processing operations. It is a decision they have not regretted.**

As Darren Lamp from Austral Meat explains, “We were looking to automate our portion cutting both as labour replacement and because we wanted to ensure accurate portion control. 90% of the time we cut fixed-weight beef steaks for food service customers – so accurate portioning is paramount.”

#### **Positive experiences with portion cutter**

“When looking for a portion cutter to replace cutting by hand, we looked at various possibilities, but the alternatives were nowhere near the I-Cut 55 in terms of accuracy and technology,” states Darren Lamp.

He continues, “Since installation, we’ve experienced a significant increase in yield and bigger throughput, which together result in a very good return on our investment.”

#### **Taking responsibility for equipment**

Right from the day of installation, Austral Meat has put a couple of operators in charge of the I-Cut 55. This has given positive results because these operators then take on responsibility and feel a sense of “ownership” for the machine. Operator Mark Strudwick is happy with what he considers “his” machine. “I have to make sure the machine is always ready, and is fully operational in the mornings and after breaks. That’s no problem, because the I-Cut 55 is easy to work with. It doesn’t involve a lot of difficult programming to run it, and we can change the programs very quickly.”

**GO TO:**  
[www.marel.com/I-Cut55](http://www.marel.com/I-Cut55)



*Operator, Mark Strudwick is the happy “owner” of the I-Cut 55 which he keeps running at all times.*

**“Since installation of the I-Cut 55, we’ve experienced a significant increase in yield and bigger throughput, which together result in a very good return on our investment.”**

**Darren Lamp**

## AUSTRAL MEAT AT A GLANCE

Austral Meat is a privately owned company that has been in business for 22 years. The company supplies fresh beef, pork and lamb products to other Australian food processors, wholesalers and food service companies, using brands that include Austral Meat and Strath Pastoral. Approximately 120 people work at the company’s two sites.



BRODERNA NILSSON

# SAME AGAIN, PLEASE!



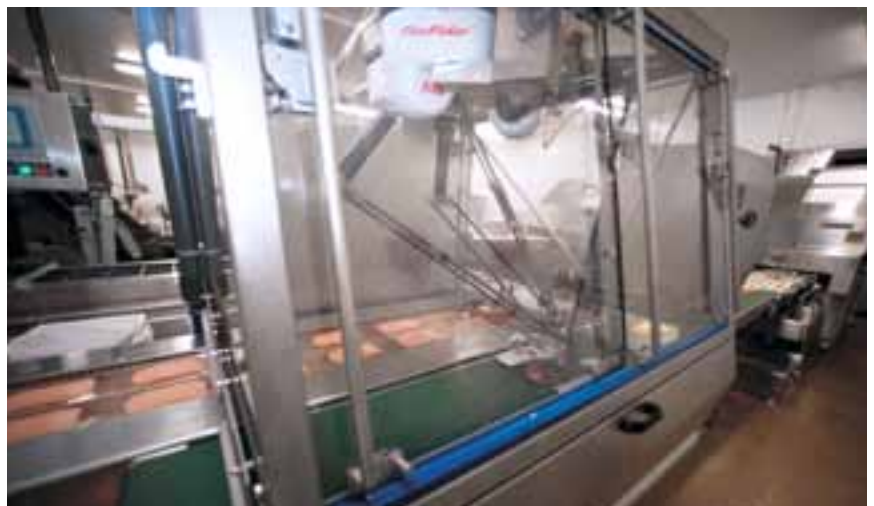
*Marketing Director Magnus Nilsson*

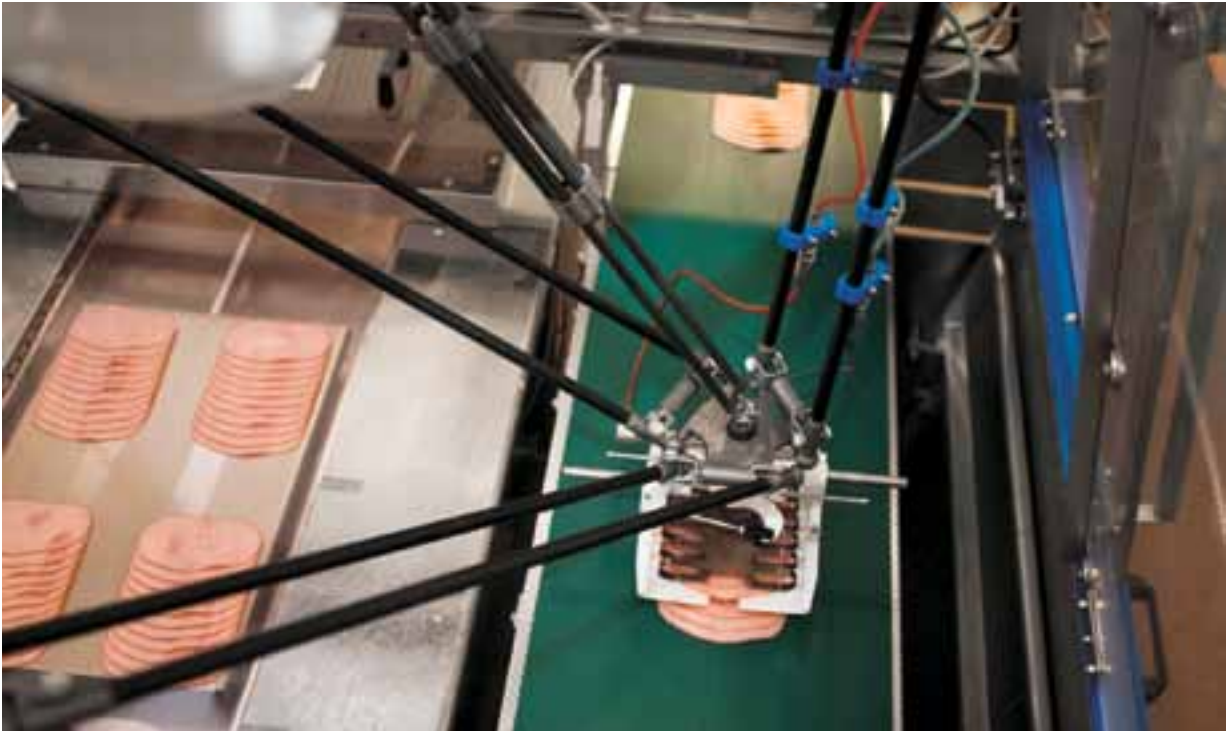
**Three years ago, cooked meats specialists, Broderna Nilsson of Gothenburg, Sweden, invested in a PolyLine to help them meet the increasing demand for their wide range of high quality beef, turkey, chicken and ham products. At that time we reported that the challenging economic climate was benefiting Nilsson as increasing numbers of consumers spent more on eating at home.**

Never a truer word was spoken! Demand for the company's range of 40 different products under 3 brand names that includes beef, turkey, chicken and 15 different types of ham, has soared – so much so, that production has had to be virtually doubled! Average output is now around 25 tons per week of fixed weight sliced product at an exceptionally high pack rate.

Thanks to the considerable expertise and support of I.O. Trading & Teknik AB, a second PolyLine has just been added which achieves this new goal easily and profitably with only two operators. To further increase line efficiency a new Colimatic thermoformer has been integrated. It features an integral device that folds the pack from flat presentation from the slicer to a folded pouch – the all important and now famous - Broderna Nilsson wallet pack.

Since its introduction in 2005, this highly attractive packaging has found great favour with consumers who are attracted to its traditional 'delicatessen style and feel'. The trend continues at a pace with demand from both home and export markets constantly exceeding targets. The bottom film of the wallet has the appearance of paper, but after packing in the thermoformer, the pack, with its shingled group of meat slices, is folded twice prior to an adhesive label being applied to keep it in place.





*Studies have shown that robotic handling can improve shelf life of sliced meat.*

The new PolyLine at Broderna Nilsson sits comfortably alongside its earlier and well proven counterpart. Some alterations to the building were made to accommodate the new system but they were minimal, thanks to PolyLine's small footprint that makes efficient use of available space. Output, yields, accuracy, low giveaway and reliability continue to be, well, taken for granted, and standards set by the original system are being easily achieved and indeed, surpassed.

A further important benefit is gained from the high performance, reliability and accuracy of the PolyLine's IPL Robot which greatly reduces the need for handling of product by the operators. Recent trials conducted by the FSA in the UK have concluded that 'The use of robotic methods to handle pre-sliced, ready to eat, meat products presents the user with the opportunity to reduce initial bacterial loadings and as a result it is possible to extend the shelf life of the product in food handling.' This will build yet further on the wallet's established success.

When we last asked Marketing Director Magnus Nilsson what he thought about all this he said he was most impressed with PolyLine and that the company was 'already considering the addition of another IPL Robot to fill even more wallets.' We celebrated when, 3 years later his company went one stage further and ordered this new PolyLine system. So, raise your glasses to Broderna Nilsson and look forward to the real and hopefully, early possibility of uttering that time honoured phrase, 'Same again please!'

**"This will build yet further on the wallet's established success"**

**Mr. Nilsson**



*The company range includes 40 different products*

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

# Beef boning hall system fulfils criteria at Marcher

**Four main criteria were set when in 2008 Austrian beef producer Norbert Marcher GesmbH looked at investing in a new deboning and trimming system.**

**The system the company was looking for had to be able to**

- Deal with 50–80 different lots each day
- Monitor yield throughout the production process, from input to output per operator
- Optimise cut patterns for the beef
- Monitor compliance with customer specifications.

**These requirements – and more – were met with a StreamLine processing system supplied by Marel. Marcher now has two such installations in operation at its slaughterhouse and processing plant in Graz, Austria.**

## **Lot control and traceability**

Lot traceability is a major issue for Marcher, because the company's production set-up faces the challenge of handling between 50 and 80 different lots daily.

As a result of its location in the middle of Europe, the company has a large number of suppliers of cattle from Austria and EU. Each combination of where the animal was born and raised e.g. Austria/Italy, Austria/Austria, etc. is considered a "lot".

In addition, Marcher operates with a sales strategy of being flexible enough to reflect customer demands and market trends. This involves processing many different kinds of cattle – including veal

calves, heifers and castrates – in addition to registering and dealing with multiple animal characteristics that include breed, geographical origin and raising and organic rearing.

A major part of Marcher's customers consists of large Austrian and international supermarket chains that market their products on the basis of a range of different criteria, rather than just price. These can include regional origin, quality, organic rearing, etc. This in turn places heavy demands on the information provided.

"To provide product information clearly and reliably, it is important to gather traceability data for the



*Plant Manager, Jörg Mai is satisfied with the StreamLine system which enables him to monitor processing information such as yield, throughput and cutting performance at any time.*

## MARCHER AT A GLANCE

Norbert Marcher GesmbH is a family-run business, with facilities in Villach, Graz and Klagenfurt in Austria. The company was established in 1929 and is now run by the third generation of the Marcher family.

The company comprises three abattoirs and one specialised cutting facility, and employs a staff of more than 560. Each year approx 850,000 head of pork and 110,000 head of beef are slaughtered in the three facilities. Two thirds of the amount produced is exported worldwide to large supermarket chains.

label, as that is the customer's quality guarantee," points out company owner Norbert Marcher.

He continues his explanation of the importance of a traceability system. "The StreamLine works well with traceability and provides us with a system to organise our set-up with real-time processing information. With as many lots and types as we have, it would be difficult to handle logistics and product information with a conventional deboning and trimming system."

### Full control of deboning and trimming

The first deboning hall system was designed and set up early 2009 to register and monitor the deboning, cutting and trimming of hind quarters. Based on the positive results from this first line, Marcher chose six months later to install a second StreamLine system for the trimming and cutting of fore quarters.

### Carcass label information

After slaughter, the carcasses are registered, graded and labelled according to country of origin and quality, after which they are sent to chill stock. When the carcasses are taken out of the chill stock into the deboning area, the label – containing information such as type, place of birth, farm, age, grade, classification as well as in-house data such as the colour of meat – is scanned into a Marel M6000 terminal. Based on this information, the specific pistol, rib or other section is weighed in and allocated to a cut-down line for pre-break and deboning.

### Trimming according to set specifications

When registered into the M6000 terminal, a range of different cutting patterns are already specified for each particular product – i.e. how it is going to be deboned and trimmed on the StreamLine. The primals from deboning and break up are distributed, based on operator availability, to one of the work stations of the two StreamLine systems, where they are cut, trimmed and skinned according to specifications. The specifications are shown to the operator on a terminal by the trimming station. The weight of the trim, fat and finished product is registered and compared to the



*Scanning of carcass information such as type, place of birth and grade into Marel M6000 terminal*



*Approximately 100-125 carcasses are processed each day at the Graz facility.*



Automatic bagging and vacuum packing

incoming weight for throughput and yield calculation. The finished products are sent to labelling and automatic vacuum packing, after which they are led to a finished goods area.

### Online monitoring via Innova

Yield, throughput, cutting performance and other key performance indicators (KPIs) are automatically registered and monitored for the entire line as well as for the individual operator, using the Innova intelligent control software.

Being able to see and monitor information from the production line gives the management at Marcher a good overview of what is taking place, along with the opportunity to take corrective action and make changes to the set-up.

### Yield monitoring

Plant Manager, Jörg Mai was involved in the set-up of the Stream-Line systems from the start, and knows them inside out. "With the Innova reporting system we are able to monitor yield from input to output as well as individual operator performance. We use the daily reports to look at and analyse things like line and individual performance for the day and week, and to make changes if needed. Group yield like you see on traditional processing lines is OK, but individual operator monitoring is necessary to really optimise the utilisation of the many

products. You cannot leave it to the individual operators – no matter how good they are – to decide how to get the best from the incoming products. An intelligent, computer-controlled system is needed for that."

As Norbert Marcher adds, "We have seen major improvements and increases in both yield and throughput, and with the reporting system we are also better at producing special orders for customers because our sales department knows exactly what is available at all times. Without the Innova reporting set-up it wouldn't be possible to keep track of the many products in our production to the same degree. Now we get accurate real-time information in just one click."

**"We use the daily reports to look at and analyse things like line and individual performance for the day and week, and to make changes if needed."**

Jörg Mai

### Ergonomically correct work environments

Another highlight of the Marel deboning and trimming system is the very high standards of ergonomics built into the processing lines. With a bone-pull system, the deboning operators have been given a more ergonomically correct work position. At the trimming line, the operators no longer have to focus on what products are coming up, or to reach for products – instead they are automatically led to each operator's work station.

This means that the job is less hard and less stressful for the operators, and that repetitive strain injuries have almost been done away with.

### GO TO:

[www.marel.com/MeatStreamLine](http://www.marel.com/MeatStreamLine)



From the production control room it is possible to have an overview of the deboning hall system and at the same time monitor key performance indicators such as individual operator performance, yield and throughput.

# ValueDrum

## – Marinating the smart way

**In-line approach to marinating and tumbling is the smart way compared to batch tumbling.**

**Benefits include**

- automatic dosage of additives
- low mechanical stress on meat
- short process time creating unrivaled product quality
- constant high quality with minimum operator handling and logistics (no crates, bins, buffers)

### The ValueDrum In-Line Concept

The ValueDrum utilises an in-line concept that does away with many of the product handling operations surrounding a traditional marinating and massaging process. By adopting the principle of working in-line the ValueDrum works more efficiently than traditional tumblers. This has a positive effect on the distribution of additives, the speed of the process while reducing product damage and the chance of bacterial contamination.

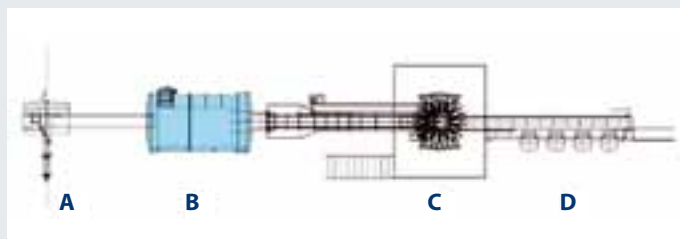
### Smart Marination

The unique design of the ValueDrum makes it possible to achieve the desired yield by first adding and massaging in brine in a single process step before adding flavor using a marinade. Finally, the product can be garnished or decorated with other material. Its extensive marination possibilities mean that ValueDrum is an excellent system for developing new products.



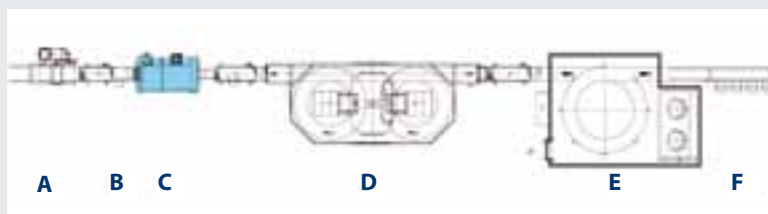
### Flexible Set-Up Possibilities

An in-line marinating and massaging system consists of product supply, a batch weigher and ValueDrum unit with integrated discharge belt.



**Example 1: In-line marination linked to multihead weigher**

- |  |                       |
|--|-----------------------|
| (A) Cut-up line with batch functionality | (C) Multihead Weigher |
| (B) ValueDrum                            | (D) Packaging Unit    |



**Example 2: In-line marination for further processing line**

- |  |                            |
|--|----------------------------|
| (A) (Manual) supply – Operational Injector | (D) Oven                   |
| (B) Batch Weigher                          | (E) Chiller and/or Freezer |
| (C) ValueDrum                              | (F) Packaging Unit         |

# Fixed-weight meat batching



## Why fixed-weight batching?

The benefits of fixed-weight batching are many. It is especially important for meat processors to keep giveaway as low as possible when packing their products, yet ensuring an exact target weight to be delivered to the customers. The wide range of batching systems from Marel will batch fresh or frozen meat items of almost any size into fixed-weight packages. All Marel batchers live up to the most stringent food industry require-

ments, thanks to their versatility and easy-to clean designs. Marel's fixed-weight batchers can operate as stand-alone units or be integrated into a complete packing line.

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

## Target Batcher - flexibility



The Target Batcher is a unique weighing machine that combines a predetermined number of fresh or frozen products into a package with an exact weight. With 7 high-accuracy individual scales and 14 holding bins, it only takes a fraction of a second for a Target Batcher to select the optimal combination of products to achieve any pre-set weight for the batch. Meat items ideally batched with the Target Batcher include marinated meat strips, cutlets and spare ribs.

### BENEFITS:

- Accurate fixed-weight batches – minimal giveaway
- Increased throughput – greater efficiency
- Equally suitable for small or large packages
- Easy to clean

Versions/ Specifications	TB-3000	TB-3000	TBL-3000	TBL-3000
Batch size	Up to 6 kg		Up to 6 kg	
Hopper volume (Liter)	1.3	0.4	2.6	0,8
Max item size	330 x127 mm	330 x 121 mm	330 x 178 mm	330 x 190 mm
Throughput	18-30 batch/min		18-30 batch/min	

# Speed Batcher - bulk packing

The Speed Batcher can create batches at very high speed. The Speed Batcher automatically weighs raw material into sub-weights that are then selectively combined to form the optimal batch weight. This capability means the Speed Batcher outperforms all conventional bulk packing systems in terms of both speed and accuracy. Meat items ideally batched with the Speed Batcher include, by-products such as tongues and ears as well as large shell frozen products.

## BENEFITS:

- Reduced giveaway combined with great accuracy
- Automatic weighing and registration of all packs
- Easy to operate thanks to the user-friendly M3000 graphic indicator
- Easy access for cleaning, ensuring excellent hygiene



Versions/ Specifications	SBS	SBM-3000	SB-3000	SBL-3000
Batch size	0.3 -2 kg	0.8-10 kg	4-30 kg	4-30 kg
Hopper volume (Liter)	1.8	4.25	12.9	18.8
Max item size	120-180 mm	180-270 mm	260-380 mm	380-500 mm
Throughput	23 batch/min	16 batch/min	14 batch/min	12 batch/min

# Multihead Weigher - retail packing

The Multihead Weigher deals with all infeed, mixing and weighing requirements. It automatically portions and packs food products into virtually any kind of tray, thermo pack, bag, can, glass or box. The products are dispensed into hoppers by vibrating feeders and weighed into exact portions. Meat items ideally batched with a Multihead Weigher include IQF meat toppings, meat balls, bacon dices and other retail products.

## BENEFITS:

- Specially designed to deal with wet and sticky food products
- Low maintenance costs – self-adjustment technology
- Very hygienic
- Extremely low giveaway
- Up to 3 years warranty on parts



Versions/ Specifications	MHW-5410	MHW-5414	MHW-5418
Batch size	30 g – 25 kg	30 g – 25 kg	30 g – 25 kg
Hopper volume (Liter)	2 and 5	2 and 5	2
Max item size	120-220 mm	120-220 mm	120-220 mm
Throughput	Up to 70 batch/min	Up to 120 batch/min	Up to 160 batch/min

# Meat harvesting

## – Inline bone processing



**After deboning residual meat is still left on the bone. The Marel DMM (Desinewed Minced Meat) technology harvests this residual meat, as high-quality 3 mm manufacturing meat.**

Under low pressure residual meat is scraped from the bones, resulting in high-quality trimmings, which cannot be distinguished from manually obtained trimmings.

The quality and the legal status\* allow application of DMM in appreciative end products, such as burgers and fresh – or dry sausages.

#### Advantages include:

- Additional deboning yield
- Compared with traditional MSM
  - High-quality manufacturing meat
  - No restriction in meat applications\*
  - No declaration required\*
  - An extremely short payback time

In many countries the legal status of DMM meat is equivalent of that of standard manufacturing meat.

The meat harvesting is done with the right amount of gentle movement and pressure to ensure extremely high quality.

\* Legal status of application of desinewed minced meat.

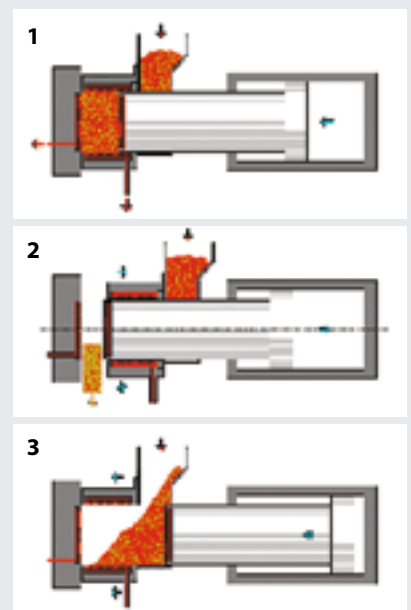


1. Bones of a specific size are automatically fed from the pre-sizer into the hopper, from which the main ram takes a portion into the pressing chamber. Inside the pressing chamber, the meaty bones are gently compressed, releasing the meat from the bones.

2. The set filter allows the meat to pass, as a result of the compression while retaining the clean bones. The meat is discharged through pipes while the bone-cake is discharged from the pressing chamber onto the bone cake discharge conveyor.

3. Returning the pressing chamber to its closed position and retracting the main ram, allows a new load from the hopper to drop beginning a new cycle.

#### Operating Principle



# Innovation in sausage making equipment



**Townsend Further Processing has added two new machines to the company's sausage linking product line – the iLinker and iConveyor – taking high speed sausage linking and smoke stick management to a whole new level.**

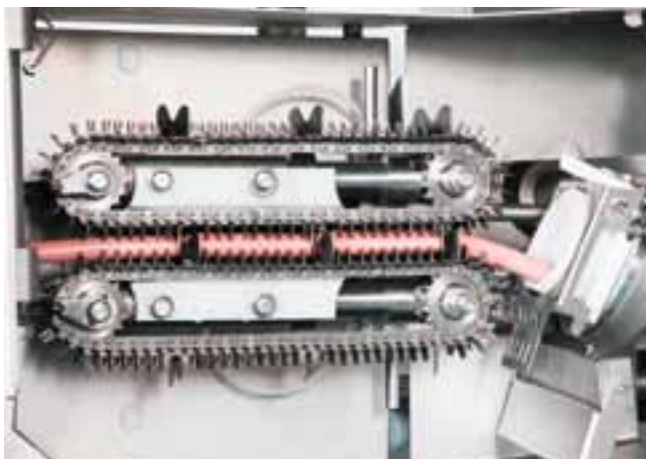
The iLinker maintains weight and length control unmatched in the industry. A link counting feature manages the number of links being produced on a stick-by-stick basis, notifying staff of any link count shortfalls. The iLinker's "Quick Jump" feature prevents loss of links because of untwisting, which dramatically reduces rework and provides better casing utilisation.

The iConveyor is the perfect connection to the iLinker. The system loads smoke sticks automatically according to the "moving drop point" principle.

## **Maximum smokehouse throughput**

Thanks to iConveyor's hook spacing innovation, additional loops per strand enables maximum smokehouse throughput. Processors can keep their tunnels and batch houses full, which means they are able to process and cook the extra links per strand practically for free.

Loops are evenly spaced on the smoke stick, eliminating the need for operators to "thread" smoke sticks through the loops. This creates more time to properly tie the front and end links, thus reducing rework. Compared with conventional systems, the combination of iLinker and iConveyor can load up to 20% more links per stick when longer casings are used.



# Automated data collection for solid decision making and full traceability



**Food processing companies are under constant pressure from many different stakeholders to deliver uniform, high-quality products as well as rapid, reliable traceability and consistent profits to investors and owners.**

Automation is one of the main ways to meet these requirements effectively, whether in terms of automating the actual process or automating the collection of production data that is critical for good decision-making.

## **Innova production control software**

Innova is the latest generation of production control software from Marel. Innova consists of a vast number of specialist modules that are easy to install in configurations varying from small stand-alone set-ups to complete plant-wide solutions. More than 400 Innova systems have already been installed worldwide.

## **Innova Boning Hall solution**

The Innova Boning Hall solution is a highly versatile standard system specially designed and configured to meet the particular requirements of companies that process red meat. The aim is to ensure greater control over traceability, yield, giveaway, throughput and stock loss, via automation of data collection processes.

The Innova Boning Hall solution is configured within the framework of the standard Innova process control system, and is easy to extend as needed. Additional features and modules are constantly being developed and upgraded as integral parts of the standard Innova monitoring and control set-up.

## **Functionalities**

- Carcass receipt, with recording of information (such as 'Born-In' and 'Reared-In') relevant for effective batch management
- Dispatching raw materials to deboning line(s)
- Packing and labelling the products from all processes (both prime cuts and by-products)
- Dispatch and shipment
- Management of relevant inventories, including raw materials, maturation goods and finished goods
- Wide range of standard reports for yield, giveaway, inventory status and age, throughputs, etc.

## **Benefits**

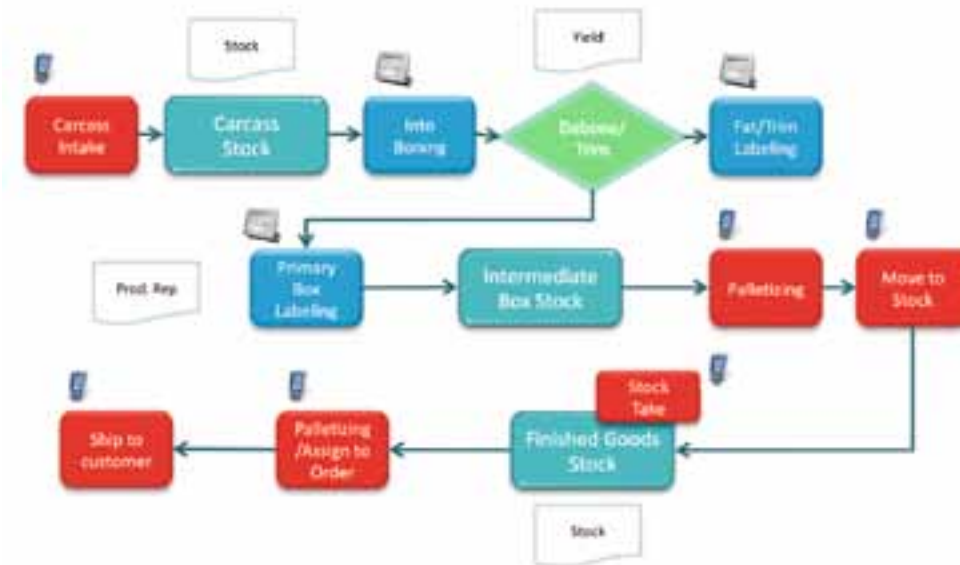
- Rapid, reliable data collection
- Improved stock control and management
- Improved yield as a result of better reporting and monitoring
- Full integration with other Innova modules, allowing for additional functionalities and support for other devices. This includes checkweighing, weigh price labelling, quality control, portioning, etc.

*The following modules and add-ons are available for the Innova Boning Hall solution:*



### Main and standard functionalities

The Innova Boning Hall solution is designed and configured to support the following main flows and processes.



### Upgrading to StreamLine System

The Innova boning hall solution can be upgraded to a StreamLine solution, if and when applicable. The StreamLine system provides traceability on each animal, as well as online monitoring of individual operator performance in terms of KPIs that include yield, throughput and quality throughout the process – right from carcass intake to dispatch of the finished product.

For more info – see article about Marcher on page 8

# Weigh it, label it, track it...

### The OCM 9500 Automatic Box/crate labeller is the simple way to weigh, label and track end of line packaging.

The labeller has been specifically developed to provide fixed or variable weight labelling of heavy products, such as eurocrates and boxes, or irregular retail products at speeds of up to 40 per minute – much faster than a manual operator.



What is more, when linked to Innova, Marel's dedicated production control software, the OCM9500 gives complete traceability. Product can be consistently, accurately tracked and labelled, preventing double, misplaced, missed or repeat labels and costly double shipping costs.

The OCM9500 is available with a selection of optional extras:

- Front & Side Labelling – optional attachment for applying labels to a crate or box
- Various Label Options – including top only, base only, front only, rear only, front corner and side. Combinations of these can also be achieved across up to eight labellers.
- Auto Infeed – for integration into a customer's existing system by the addition or removal of conveyors.



### An integral part of a series of complete production line

The OCM9500 Weigh Price Labeller can be part of a series of complete production lines designed to maximise yields and output, increase throughput efficiency, reduce labour costs and optimise product quality.

### A number of such lines are available for specific industries and applications, such as

- Polyline – for automatic slicing and packing of cooked meats and bacon,
- Portioning line – for automatic slicing and packing of meat
- Baconline – for automatic slicing and packing of bacon.

# We know skinning better than anyone...

**Ray Townsend invented the first pork skinner in 1946. It was the beginning of a great success story. Today, skinners are an integral part of almost any meat production and the Townsend brand is as popular as ever.**

Processors look to Marel for the industry's best and most innovative skinner solutions – including conveyorised pork belly, membrane and de-fatter skinners.

## 1. Conveyorised pork belly skinner

The conveyorised system automatically skins pork bellies, providing the highest skinning yields on the market.

- Easy access to the electrical, air and drive systems
- Removeable (interchangeable) base

- Shoe can remain on the machine during cleaning
- Unique open-bite option ensures that bellies start right every time and finish with the highest possible yields
- Multiple height adjustments on the exit conveyor make it ideal for a multitude of line layouts

## 2. Membrane skinner

The Townsend open-top membrane skinner for high yield skinning of pork and beef provides effective membrane skinning, as well as reduced maintenance and operating costs.

- Easily rotatable, mechanically driven air manifold for sanitation and visibility
- Smooth side panel design for right or left-handed operators.
- Special one-piece locking tray uses a magnetic interrupt switch to stop the skinning mechanism if the tray is raised during operation



## 3. De-fatter skinner

The open-top de-fatter skinner removes fat sheets at the same time as it removes skin and is capable of adapting to different fat depths and product angles, end-to-end.

- The flat blade attachment makes it possible to easily control thickness from side to side.
- Ergonomic design to maximise operator efficiency

## Townsend skinning principle

The Townsend skinning principle is made up of three components: pressure applied by the shoe and blade clamp; pulling power provided by the tooth roll and a sharp blade. The three components work in unison to assure maximum machine performance and yield earning potential.



## Townsend history

Born in 1913 in Des Moines, Iowa, Ray Townsend earned a Bachelor's degree in Mechanical Engineering at Iowa State University in 1934. He then went on to found Townsend Engineering in 1946, a meat and food processing equipment manufacturer.

Townsend's company eventually became the largest designer and manufacturer of skinning, stuffing and injection machinery for meat, poultry and seafood processors worldwide. During his lengthy career, Townsend obtained more than 100 U.S. patents, plus more than 300 international patents, covering such areas as co-extrusion, skinning, trimming, linking, meat harvesting and curing and marination.

# Freeze your product - not your profit



**Freezing is one of the most convenient, commonly used and proven methods of food preservation. Meat contains enzymes, a form of complex protein which catalyzes chemical reactions. During freezing, the enzyme reaction that causes colour and flavour changes and loss of nutrients is slowed, allowing preservation of taste, texture and nutritional values for long periods of time.**

With today's increasing demand for higher quality end-products, further growth of the industry is largely dependent on the ability of meat processors to introduce better quality, not only to the end-products, but also the process techniques while keeping costs down. Marel – Freezing & Temperature Division provides a wide variety of freezing solutions using the latest advancements in freezing technology in order to meet the meat industry's demands for cost effectiveness as well as higher quality end-products. The portfolio of freezers range from upwards/downwards running Spiral Freezers to Superflow EasyClean Tunnel Freezers with impingement technology.

## SuperFlow EasyClean: One Freezer – Many Applications

The SuperFlow EasyClean freezer is ideal for IQF freezing but it also excels in many other applications.

### Crust freezing

Products can be crust frozen prior to the cutting, grinding, portioning process to improve yield, accuracy and to improve overall product quality.

### Increasing capacity of existing IQF machine

The Superflow EasyClean Freezer can be placed prior to an existing IQF Freezer to increase the freezing capacity of the processing line.

### Deep chilling of products

Products can be deep chilled with an equalized temperature of -1.4°C. The dehydration losses have been stopped at this temperature and the products are ready for storage and transport to the supermarkets or further processing. Chilled products will have a better appearance when arriving at the supermarkets.

### Hardening of partially frozen products

Certain products which have already been partially frozen in a prior process, such as ground meat, meat patties etc. can be fully frozen to the required -18°C before packaging and placement into the cold storage



GO TO:  
[www.marel.com/SuperFlowFreezer](http://www.marel.com/SuperFlowFreezer)

# All new Polyslicer 1000 with out-of-the-ordinary performance



With an involute blade for high speed slicing and an aperture that can handle three logs of product simultaneously, the Polyslicer 1000 produces well defined stacks, shingles or shaved products at speeds of up to 1500 rev/minute.

The machine has the flexibility to slice a very wide range of cooked meats, bacon and natural products – with the option of an orbital blade for accurate slicing of delicate or fragile foods such as cheese, or larger diameter products.

And, for maximum versatility additional options, such as checkweigher feedback or blade type, can be retro fitted at any time.

The Polyslicer 1000 can operate as a stand alone machine or be integrated with a range of manual, fixed or random weight production lines.

GO TO:  
[www.marel.com/Polyslicer](http://www.marel.com/Polyslicer)

## BENEFITS:

- Compact, versatile and easy to use
- Quick, assisted loading and a simple to adjust slicing head
- 100 programmes for fast product changeover
- Choice of pack presentation formats
- Pulsed feed for extra thick slices



# Global meat industry

- At Marel, our aim is to stay at the forefront in providing innovative technologies for the beef and pork processing industry.
- We have the expertise and extended sales and service organization to deliver advanced equipment and systems to our customers, creating maximum process performance and value.

