Portioning with highest precision and speed
Poultry portion cutting solutions

- Optimized utilization of raw material with lowest give-away
- Accurate portioning with maximum yield
- System integration
- Intuitive software
Automation brings top speeds and impressive accuracy

Global demand for sliced, diced, split and portioned deboned breast and thigh meat is increasing all the while. To satisfy this demand, good portion cutting is all about automation, speed and precision. Marel portioning systems allow users to keep pace with the ever changing and ever more challenging demands.

For more than twenty years, Marel has been the leading innovator in automatic portioning equipment. With more than 2,200 machines installed worldwide, Marel systems can now claim to be the industry benchmark. Marel portioning equipment uses the very latest hardware and software technology. The result is superior accuracy, optimum raw material usage giving a very attractive return on investment.

Best raw material use
The very best use of the raw material means adding value not just to the main product but to the off-cut as well. Minimal giveaway means higher profits; automation means top productivity; full traceability means enhanced food safety.

Standard cutting patterns
The equipment’s integrated software features a number of preprogrammed standard cutting patterns. Special cutting programs are also available, an example of which is “Cut ‘n Batch”. This sets a target weight for a whole batch rather than for individual pieces.

Hygiene
All Marel portioning solutions have been designed to meet the most stringent food safety regulations. Easy access for cleaning means that this job can be done quickly, thoroughly and efficiently, a top priority in today’s high throughput, multi shift operations.

Marel’s portioning solution can also process duck and turkey meat.
Portion cutting

The I-Cut family includes single and dual lane portioners. This program enables Marel to find a solution to any portion cutting issue; this can be a single set-up or a custom-made configuration with multiple machines.

All portion cutters use the very latest laser vision system to scan the incoming raw material, a high resolution precision job. Advanced interactive software guarantees the very best results. Operation is via new generation touchscreens, which are easy and intuitive to use.

Single lane portion cutters

I-Cut 11 portion cutter

The Marel I-Cut 11 is robust, easy to use and is ideal for processors just starting up, for medium size operations and even for those large companies needing to make a niche product. It is particularly suited to those situations, catering, fast food and further processing, where the final product will be cooked, fried or breaded and where the actual cut will not be seen.

The I-Cut 11 offers straightforward basic cutting performance and will cut its infeed material into fixed weight, fixed length portions. Its limited number of standard cutting patterns, accurately executed, guarantees a job well done and an excellent return on investment.

- Precise operation ensures minimum giveaway
- Self-explanatory user interface
- Smallest footprint in the market
- Single 90 degree cutting angle
- Up to 480 cuts per minute
**I-Cut 130 portion cutter**

Whether cutting product for the supermarket, for restaurants or for fast food, I-Cut 130 is a flexible tool suitable for all needs and throughputs.

I-Cut 130 cuts fresh deboned poultry meat into fixed weight and/or fixed length portions. It offers a large number of innovative cutting patterns. These are displayed real-time, allowing users to change or adapt cutting programs during production. I-Cut 130 will also calculate the optimum cut in a given situation. Cutting and batching is made easy; high value cuts can be prioritized and orders controlled.

A combination of intelligent spacing between individual pieces or batches of product and automatic belt adjustment optimizes throughput levels. I-Cut 130 will usually be installed as an offline machine fed manually by one or two operatives, but it can of course be part of an in-line portioning set-up.

- High yield and extreme precision
- Minimum waste means maximum profit
- Wide variety of innovative cutting patterns
- Swiveling 15 inch touch screen
- Adjustable cutting angle; 45, 55, 65 or 90 degrees
- Up to 1,000 cuts per minute

### Examples of cuts

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 g butterfly</td>
<td>2 fillets to fixed weight range, 1 middle trim</td>
</tr>
<tr>
<td>200 g thigh with skin</td>
<td>Fixed-weight thigh piece and side trim</td>
</tr>
<tr>
<td>230 g fillet</td>
<td>1 natural-looking fillet to fixed weight range and 1 nugget piece, knife angle 45°</td>
</tr>
<tr>
<td>230 g fillet</td>
<td>1 natural-looking fillet to fixed weight range and 1 outside side trim (false tender), knife angle 45°</td>
</tr>
</tbody>
</table>

### Examples of cuts

- **Input**: 45 g tender
- **Output**: Split tender

- **Input**: 45 g tender
- **Output**: Nuggets to fixed weight range

- **Input**: 230 g fillet
- **Output**: Strips of fillet

- **Input**: 230 g fillet
- **Output**: Split and diced fillet (2 runs)
I-Cut 122 portion cutter

The I-Cut portion cutter takes portioning to a whole new level. It is ideal for a high speed in-line process and can be used to portion non-frozen deboned poultry breast and thigh meat into the widest possible range of small to medium sized fixed weight and/or uniform dimension products with minimum giveaway. These products will be suitable for supermarkets, the retail trade, restaurants, fast food outlets and for use in further processing.

The intuitive software program developed by Marel in house makes programming easy. To save time, menus for specific customers can be stored and retrieved when necessary.

The I-Cut 122 can cut product to one of four cutting angles. After each change in angle, the system’s software adapts automatically. Apart from doubling potential capacity, dual lane infeed means that two different products can be made at the same time. The cutting pattern for each product can be seen clearly on the system’s touchscreen and can be changed on the fly.

- Supreme accuracy with minimal giveaway
- Wide range of innovative cutting patterns for current and future needs
- Two different products can be made simultaneously
- Choice of four knife angles on each of the two lanes
- Intuitive touchscreen for easy operation
- Up to 2,000 cuts per hour per lane
Sorting

SpeedSort

SpeedSort follows an I-Cut portioning machine, where it identifies and discharges offcuts. SpeedSort can also be used to sort larger from smaller portions produced on I-Cut equipment. It saves labor and pays for itself quickly.

SpeedSort consists of infeed and outfeed conveyors and a reject mechanism. The reject mechanism works so quickly that it can remove trim from both the front and back of the portioned product. SpeedSort is easy to clean. SpeedSort is available for both single and dual lane applications and will handle all I-Cut throughputs. It can also follow SensorX and checkweighing equipment.

- Ultra high speed trim removal/product sorting
- Labor saving
- Excellent access for thorough cleaning
- Rapid return on investment

“The demand for sized products keeps growing every day. As broilers get heavier, fillets also increase in weight. So we need more cuts which are accurately calibrated and sorted. These jobs require completely reliable machines and that’s why we have chosen Marel equipment such as the I-Cut in combination with the SpeedSort and the TSM Template Slicing Machine.”

Werner Borgmeier, General Manager H. Borgmeier GmbH, Germany
Splitting, slicing and profiling

Marel markets automatic splitting, slicing and profiling machines. These can be installed either stand-alone or as part of an integrated portioning system.

StripCutter/Splitter
StripCutter/Splitter, a compact machine, cuts deboned breast or thigh meat into fixed-width portions at high speed. These can be strips, splits, steaks or dices. Multiple products can be cut using the same StripCutter/Splitter configuration. The StripCutter/Splitter can be supplied with cutting blades at fixed or adjustable widths, giving processors more flexibility. This cutter/splitter system can also be used to remove the keelbone from butterfly portions and to split large tenders from heavier products into two equal portions.

- Versatile portioning machine for many applications
- Superb cutting quality
- High throughput
- Rapid return on investment

SmartSplitter
SmartSplitter slices poultry fillets horizontally into portions of uniform thickness. Both single and dual lanes versions are available for both breast fillets and whole butterflies. The dual lane version can handle up to 150 butterflies per minute.

The product infeed belt can be easily adjusted upwards or downwards to give the required thickness. SmartSplitter works extremely accurately; the dual lane execution can operate with different height settings on each lane.

- Produces uniform thickness products
- High throughput with accurate cutting quality
- Easy to operate with low maintenance cost
- Small footprint

“As products are getting heavier, we were looking for solutions to make convenience products. A Marel SmartSplitter will produce perfect minute steaks, a popular product in Belgium.”

Steven Jespers, General Manager Belki, Belgium
TSM Profiler
The TSM (Template Slicing Machine) Profiler is an innovative and cost-efficient solution for producing identical portions for the food-service industry. This fast machine makes the best use of the incoming raw material to produce uniform, value-added portions.

The TSM uses templates to ensure that products are cut to the required shape. Templates are available for different shapes and sizes of whole butterflies and half fillets. The machine can also be equipped with a rotating blade attachment to cut input material into equal width strips.

- Cuts products of uniform weight and shape
- Accurate performance means higher profits
- Saves labor

“The TSM Profiler is very important for us. We can undertake production in accordance with the demands of customers such as large food chains, and at the same time it leaves us with high-value trims that we can use for other products, such as shawarma.”

Salah Al-Johari, Production Manager at Al Nabil, Jordan
Integrated solutions

A cut above – Automated Nugget Line
The demand for whole muscle cubed products such as nuggets in the USA is truly enormous and has driven Marel Poultry to develop its high speed Automated Nugget Line. This cubing line is suitable for both water and air chilled product. Two dual lane I-Cut 122 portion cutters, which combine high levels of accuracy and minimal giveaway with high throughput and impressive reliability, are at the heart of the system. Besides the two portioners, the Automated Nugget Line comprises a SingleFeed, a StripPositioner and a SpeedSort.

Input material which can be deboned breast or thigh meat is cut into one fillet and several equal width strips in the first I-Cut 122 machine. The fillets are discharged separately by SpeedSort.

These strips are then automatically singulated, turned through 90 degrees and correctly orientated before entering the second I-Cut machine. The result is uniform cubes of whole muscle breast or thigh meat, cut to fixed weight and dimensions.
Robot with a Knife – intelligent fixed-weight portioning and batching

Robot with a Knife is an innovative combination of two Marel technologies, RoboBatcher and I-Cut, bringing together the high speed, superbly precise performance of I-Cut and the ability of RoboBatcher Flex to batch both extremely quickly and extremely accurately.

By linking the two technologies, I-Cut 122, the Knife, receives its instructions on how to cut each fillet from RoboBatcher, the Robot. As each fillet enters the I-Cut 122, it is scanned and its weight assessed. This information is passed to RoboBatcher which will then decide whether the fillet can pass directly into one of its recipes or whether it needs to be trimmed to fit.

This technique makes the very best use of incoming fillet, at the same time keeping give-away to an absolute minimum. Not all fillets will need to be trimmed. The technique is also particularly suited to the challenge, faced by today’s processors, of accommodating breast fillet from ever heavier birds into the lighter fixed weight retail packs demanded by the consumer.
Innova Food Processing Software

Innova food processing software monitors production real time, presenting its information on easy-to-read dashboards. It is a valuable management tool, giving detailed minute by minute analysis and allowing management to take in good time any action necessary to keep overall production performance at optimum levels.

Yield and throughput
Innova helps poultry processors maximize yields and throughputs, meet quality standards and safeguard food hygiene. Innova’s powerful food processing software is a unique management tool which monitors key performance indicators such as yield, throughput, capacity and the efficient use of labor.

To ensure top portioning performance, Innova provides a complete overview of all aspects of the portion cutting process and its results. Its graphical user interface lets the user see what is running on the equipment, allowing him to change both programs and products. It also generates reports on critical factors such as throughput, giveaway and overall efficiency.

Innova is not just about analyzing and controlling the portioning line. By ensuring communication between individual machines, it allows different systems to be integrated into a single process.

• Remote control of portion cutters
• Real-time monitoring for quick remedial action and a reduction in giveaway
• Fully comprehensive reports for accurate historical analysis of both raw material and results
• Full traceability
• Simple, quick and cost-effective implementation

Innova and portioning
Innova food processing software gets the very best out of portioning equipment. Its integral traceability engine means that every portion can be traced back to its source. Its easy-to-use software allows cutting programs to be set up and changed remotely. Cutting programs can be shared between two or more portion cutters.
Advantages at a glance…

• Full range of high performance cutting, portioning, splitting, slicing and dicing equipment
• Equipment can be stand-alone, inline or integrated into complete cutting and portioning systems
• Suitable for non-frozen boneless products
• Fixed weight products or products with uniform shape and dimensions
• Optimum use of input material with minimal giveaway
• Choice of cutting angles for optimum product presentation
• Control and analysis by integral Innova Food Processing Software
• Intuitive interfaces make for easy operation
• Easy access for routine maintenance and cleaning
• Small footprint