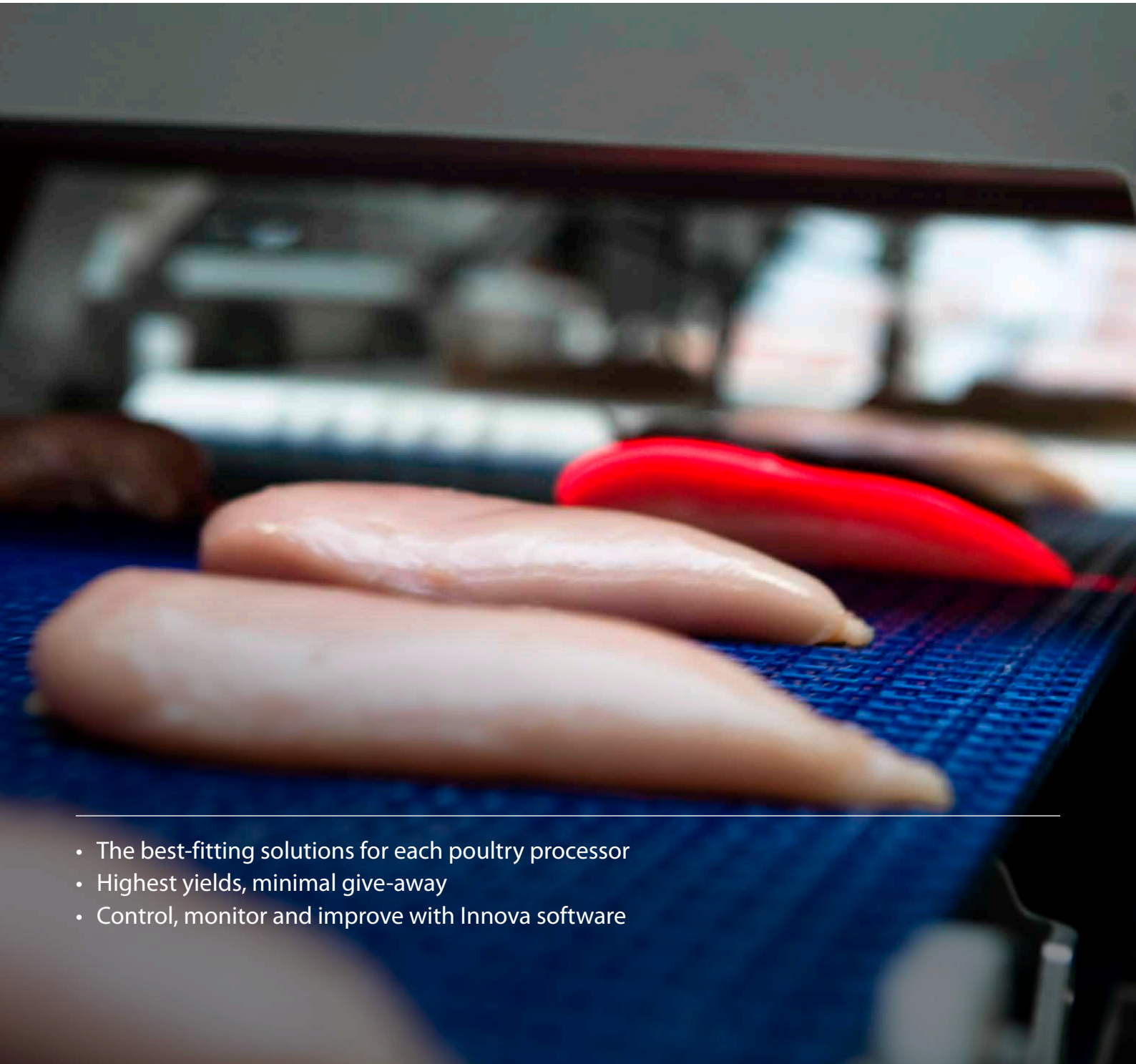


Grading & batching

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# Gain more, give away less



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- The best-fitting solutions for each poultry processor
  - Highest yields, minimal give-away
  - Control, monitor and improve with Innova software



### Fixed-weight batching

There are many benefits to be gained from fixed-weight batching. It keeps giveaway as low as possible when packing products while the exact target weight is delivered to customers.

Marel's wide range of batching systems and multihead weighers batch fresh or frozen poultry items of almost any size into fixed-weight packs. All Marel batchers meet the most stringent requirements in the food industry, thanks to their versatility and easy-to-clean design.

### Powered by Innova

By intelligently integrating Marel's own Innova food processing software, every grading and batching operation can be controlled, monitored and improved. Every piece of equipment in this batching and grading brochure is so to speak 'powered by Innova'.

### Integration

Marel batchers can operate as stand-alone units or can be integrated into a complete packing line.

Integrated batching and grading has many advantages. Systems that used to be independent of each other start to work together

to compose one, integrated solution with a high degree of intelligence, thereby optimizing yield and minimizing give-away.

### Stay in-line

By keeping the entire batching and grading process inline, manual labor is reduced to a minimum. Besides this cost-saving aspect, human error is excluded and replaced by robotic precision.

Another benefit is the higher level of food safety which can be achieved by automated grading and batching operations. Intelligent logistics ensure maximum hygiene and reduced human contact with the product.

### Grading and product distribution

Marel graders are ideal for sizing and distributing raw material to different locations. Sizing can be beneficial when distributing raw material to further steps in the process where each line is optimized for a certain size. It is also possible to distribute a given number of pieces per minute to each location, ensuring that full use is made of the equipment receiving the raw material (e.g. cut-up line).



## Compact Grader

### Features

- Easy installation
- Accurate performance
- User friendly and easy to clean
- Small footprint and easy to move
- Typical applications: fillets, whole birds, legs, wings, thighs and drumsticks

**The Compact Grader is designed for simple grading and batching and can also be used for temporary or seasonal overflows. It comes in a strong and compact design and is suitable for a variety of products. The CompactGrader is also popular as an inline solution when only calibration is needed.**

When optional automatic batching bins and tables are added to the system, the Compact Grader becomes a batching solution that ensures best fit batching with minimal giveaway.

*"The Compact Grader has just one conveyor belt which needs cleaning. That's all. Such short cleaning times of course add to the maximum uptime."*

**Borgmeier, Germany**



## Custom Graders

### Custom made grading systems can comprise:

- Automatic infeed
- Grading
- Single lane, dual lanes or twin lanes (combining two lanes)
- Flow control
- Batching
- Packing
- Label printing
- Takeaway

**Marel Custom Graders are tailor-made for each customer. They can come in a virtually limitless variety of configurations and sizes. Graders can range from simple weight graders to highly sophisticated grading systems that include infeed and batch takeaway systems. Together with the customer, the best solution can be configured, customized to individual requirements.**

All belt grading systems comprise two essential components:

### Dynamic weighing unit

An ultra-robust, high-accuracy weigher, which can be customized to handle various weight ranges and throughput.

### Discharge unit

Tailor-made to fit customer requirements. Many accessories are available such as bag holders, batching bins and chutes. Marel custom belt graders are equipped with a user-friendly graphical interface that greatly reduces the possibility of human error.



*“The SmartLine Grader fits perfectly into our production; we already have decided that we need a third one.”*

Broviand, the Netherlands

# SmartLine Grader

The SmartLine Grader range offers the highest levels of speed and accuracy, with utmost attention to hygiene and serviceability.

Available with single lane, dual lanes or twin lanes (combining two lanes), and developed as a modular design, the SmartLine Grader can be configured to most grading and batching needs.

- Unique hygienic design with an IP69K rating
- Speed and accuracy combined
- Real time reporting
- Automatic batch take away
- Ideal for retail, catering and bulk applications
- Typical applications: breast fillets, whole legs, whole birds, thighs, drumsticks, wings, inners.
- Various infeed and take-away solutions available

1. Small nose rollers ensure a smooth product transfer.

2. Protection cover for weighing unit.

3. Belt lifters ensure optimal access during washdown.

4. Easy-to-operate user interface. Innova controlled operation possible.

5. With their special non-stick surface, the machine's hoppers are ideal for handling sticky, fresh poultry products. They are available for releasing products into boxes and trays or into bags.

6. Open frame design for maximum cleanability and easy access.

7. Stainless steel motor enclosure ensures the highest hygiene levels.



*"Marel multihead weighers have made it easy for us to increase capacity within the same floor space. They are highly accurate, easy to operate, and have not only reduced labor costs but also increased volume and made our business more flexible."*

Rainbow Farms, South Africa

## Multihead weighers

### MHW IQF Poultry – Multihead weigher for IQF products

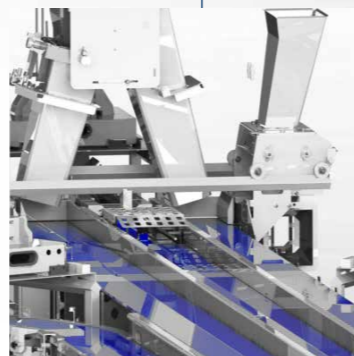
The MHW IQF Poultry multihead weigher for frozen poultry products is perfectly fit for the automatic batching of a wide variety of products and batch sizes into bags or boxes at high capacities. Ideally suited for tough, cold and moist environments, it is robust and stable.

- High capacity
- Low give away
- Easy to operate
- All-time low maintenance costs
- Open, easy-to-clean construction
- Optional video camera
- Typical poultry products: breast fillets, wings, drumsticks, thigh, inner fillets and nuggets

### MHW Fresh Poultry – Multihead weigher for fresh products

The MHW Fresh Poultry multihead weigher range has been designed specifically for batching various types of products and batch sizes at high capacities into trays or bags, or on a pace pack line (drums, wings).

- Advanced software options allow six jobs to be run simultaneously
- Minimum giveaway and high throughput
- All-time low maintenance costs
- Easy to operate
- Open, easy-to-clean construction
- Typical poultry products: breast fillets, nuggets, stripes, inner fillets, drumsticks, wings, thighs, legs and giblets



Multi-job solution with three jobs.

## Multi-job options

**The Multi-job option is an add-on that enables Marel MHW series multihead weighers to batch up to six jobs simultaneously. Additionally, processors can prioritize jobs depending on processing needs.**

### How it works

With steadily increasing birdsize, some batch sizes are now difficult to create on a standard multihead weigher. A 400g tray job of chicken breast fillets, for example, can result in a high giveaway and high reject rate, as larger fillets force processors to pack trays with overweight and some do not fit at all. However, if a second tray job, for example 650g, is batched simultaneously, the result improves significantly.

With two jobs, the multihead weigher has suddenly more options open to it and is able to make much better use of incoming product. Every time new products reach the weighing hoppers, the multihead weigher calculates all options for combining the available products and matches the results with the two target weights. The best option is then chosen. The batch will be created and released into the correct tray.

Additionally, a processor can choose to prioritize jobs. This is done by using the option of allocating a certain percentage of the incoming products to the jobs being handled on the machine. Looking at the example already given, this means that 60% of the products could be used for the 400g job and 40% for the 650g job. In this way, processors can fine tune output to their needs.



*“The RoboBatchers have made us more efficient and reduced give-away.”*

Cargill, UK



# RoboBatcher Flex

**The RoboBatcher Flex is the paramount system for the inline batching of either breast fillets, drumsticks or whole legs. Besides its main function as a fixed-weight batching system, the RoboBatcher Flex can be used as a distribution center. Optionally, integration of the RoboBatcher Flex and the I-Cut 122 portioner results in an intelligent ‘robot with a knife.’**

- Optimal batching performance with minimum giveaway
- High product utilization
- Maximum flexibility
- High throughput
- Labor saving
- Typical applications: whole legs, drumsticks or breast fillets with or without tenderloin and sliced fillets

### Breast fillets/ sliced fillets solution

Using integrated logistics between our breast filleting systems, the RoboBatcher Flex ensures the best product distribution. This enables high product utilization and excellent batching results with minimum giveaway.

### Whole leg/drumstick solution

When combining an ACM-NT cut-up line with the RoboBatcher Flex, Innova PDS production management software enables the RoboBatcher Flex to deliver whole legs or drumsticks of a certain weight and quality range, and at a certain speed, resulting in optimal product utilization.

The Marel LegPositioner NT positions the legs directly from the ACM-NT cut-up line to the infeed conveyor belt of the RoboBatcher Flex.

### Batch to belt concept

The RoboBatcher Flex can be used as a distribution center. With the batch to belt concept, the robot can batch products directly on the belt in fixed weight. The batch then can be distributed to, for example, an I-Cut portion cutter or SmartSplitter for further added value.

### A robot with a knife: intelligent fixed-weight batching

The interaction between RoboBatcher Flex and I-Cut 122 is an intelligent batching concept. It focuses on assessing each breast fillet individually, instead of cutting all fillets to one average. This means that give-away is reduced to a minimum, while minimal trimming ensures that processors achieve high product utilization with both fillets and trim as high value end products. This robot really does use its knife intelligently!



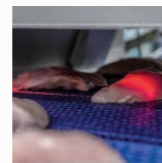
### 4. Common lane batching

Two or more robotic heads per system can work together on one tray, ensuring optimal batching performance and high product utilization. This simplifies the entire system and reduces the footprint.

### 6. Discharge

The RoboBatcher Flex has an optional integrated discharge for grading, catering or bulk jobs, controlled by the robot system.

**2. 3D Laser scanning**  
Products are scanned for length, width and position on the belt. The 3D laser vision system is the ‘eye’ of the robot gripper.



**1. Weighing units**  
Every passing fillet, drumstick or whole leg is precisely weighed individually.



### 3. Tray denester with high flexibility

The denesters put their trays on the high friction belt. The system can handle a wide range of different plastic and polystyrene trays. There is a buffer system for trays, and change-over from one type to another is easy and fast.



### 5. Simultaneous jobs

The RoboBatcher Flex can handle up to three individual tray jobs at the same time.



Gain more, give away less



## SpeedBatcher

The SpeedBatcher is ideal for creating bulk batches automatically for catering or export orders. There are two versions, each dedicated to different product sizes.



- Fully automatic from input of product to output of a precise batch
- Stand-alone or part of a complete bulk packing line
- Automatic or manual filling of boxes or bags
- Easy to operate and clean
- Typical poultry products: breast caps, fillets, whole legs, thigh, whole wings
- Fresh or IQF frozen

## TargetBatcher

The TargetBatcher is a compact, semi-automatic batching machine for making up small batches. The machine is perfect for different batching jobs, when fast changeover from one product to the next is crucial. Product mixing and pre-fill solutions are also possible.



- Small footprint
- Simple installation
- Easy to operate and clean
- Typical poultry products: breast fillets, leg quarters, wings, drumsticks, thigh
- Fresh or IQF frozen

# Innova software



## For batching and grading

Innova food processing software allows you to monitor and control every step of the production process, from receipt of raw material to dispatch.

It links together Marel Poultry's processing equipment and can communicate with other systems, such as an existing ERP system, to give a powerful interconnected management system. It can control single devices or a full range of equipment across the plant floor. Innova is built from separate modules making it highly flexible and able to support both large and small operations. The insight that the Innova software gives, enables processors to identify opportunities for improvements and ensure production conforms to quality and food safety standards.

- Real-time control of all types of graders and batchers in a single system
- Real-time monitoring enables quick intervention and a reduction in give-away
- Storage of lot/batch data for customer verification of batch results
- Reports enable historical analysis of raw material and results
- Built-in traceability support
- Easy, fast and cost-effective implementation

## Control and monitor your operation in real-time

### Grading

Innova Grading enables users to control and monitor all grading operations in a single system. The system can define an unlimited number of grading programs, which are tailor-made for each grader according to its capabilities and features, such as defining how the raw material entering the grader should be graded. Innova Grading allows for easy-to-use remote programming, control, real-time monitoring and reporting on actual performance. Users can monitor all aspects of the grading process including throughput, batch giveaway, weight distribution of input material and giveaway and size/quality breakdown. Batches from the grader can be labeled, palletized and assigned to orders and/or inventory. The system fully supports all the traceability features of Innova.

Innova Grading can generate reports that show grading results based on multiple grading parameters such as weight distribution, throughput, size and quality. This is convenient, for example, when payment to a supplier is based on a particular weight distribution.

### Batching

Innova is a great tool for managing the batching process. Information about batches produced is recorded in the Innova database in real time which enables the continuous monitoring of throughput and overweight. Innova gives a complete overview of the batching process per station. It informs on product distribution, pack size and packing throughput and efficiency.

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