

INNOVATION

- Partners in product development
- Extend shelf life
- Hygienic design matters



ADVANCED

PROCESSING

IN THE FISH INDUSTRY

**Espersen invests
in the future**

**HB Grandi:
Information is power**

**EU catch certificates
Marel makes IUU compliance simple**

**Black tiger shrimp
Automatic grading and packing**

**New one of a kind
fixed-weight salmon slicer**



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Information is POWER
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Fish – We Know How!



Marel's roots are deeply embedded in the fish industry and we are fortunate to have had the opportunity to work side-by-side with some of the most forward thinking processors in our industry. Along the way, we have built up an unrivalled wealth of know-how and experience.

In order to further strengthen our ties to those roots, we established a new Fish Industry Center last year as part of the reorganization of the company. Similar centers were established in the other three industry segments that Marel specializes in – poultry, meat and further processing.

This change is a sign that we have now gained the critical mass needed to divide and run our business along the same industry lines that our customers are in.

I see the new Fish Industry Center as a great opportunity to get even closer to our customers and to understand their businesses even better, from A to Z. Because that's the key to everything we do. We would not have gotten anywhere sitting in an office somewhere trying to invent some great new technology on our own. Our customers have to guide us. We may be good at fulfilling processing needs, but they are the experts in defining them.

That's why we want to build on our long-standing partnerships and establish new ones. And we want to put the know-how we offer at the service of our customers. Our Fish Industry Center team is made up of experts who come from the industry, who have first-hand experience of the challenges that processors face on a daily basis. These guys smell of fish, as I like to say. And they are there to help you take your processing to the next level.

We hope to have the opportunity to put our know-how to work for you.

*Jon Birgir Gunnarsson
General Manager, Fish Industry Center, Marel*

Making IUU compliance simple

Vessel: James Kerlin 1/7/2009

Order: Jack Miriklis PTY Ltd

Cuttlefish	Whole	No Grade	1	23.00	23.00
Flathead Tiger	Whole	Small	2	32.00	64.00
Grey Spotted Catshark	Headed & Gutted	No Grade	1	29.00	29.00
Grey Spotted Catshark	Headed & Gutted	No Grade	1	28.50	28.50
Gummy Shark	Headed & Gutted	No Grade	2	33.00	66.00
Mixed Fish	Headed & Gutted	No Grade	1	26.00	26.00
Mixed Fish	Headed & Gutted	No Grade	1	23.00	23.00
Mixed Fish	Whole	Extra Large	1	34.50	34.50
Mixed Fish	Whole	No Grade	1	19.50	19.50
School Shark	Headed & Gutted	No Grade	1	22.00	22.00
Silver Warehou	Whole	No Grade	4	32.00	128.00
Silver Warehou	Whole	No Grade	1	23.00	23.00
Silver Warehou	Whole	No Grade	1	22.00	22.00
Totals For Order			18		508.50

Order: Southland Fish Supplies

Flathead Tiger	Headed & Gutted	Medium	1	17.50	17.50
Flathead Tiger	Headed & Gutted	Medium	1	32.00	32.00
Flathead Tiger	Headed & Gutted	Medium	2	25.00	50.00
Flathead Tiger	Headed & Gutted	Small	4	32.00	128.00
Flathead Tiger	Headed & Gutted	Small	1	19.00	19.00
Flathead Tiger	Headed & Gutted	Medium	2	28.00	56.00
Gummy Shark	Headed & Gutted	Medium	1	16.00	16.00
Gummy Shark	Headed & Gutted	No Grade	1	5.00	5.00
Hopkirk	Gilled & Gutted	No Grade	1	7.00	7.00
Jackass Morwong	Whole	Small	1	3.00	3.00
Minor Dory	Whole	Medium	1	29.00	29.00
Minor Dory	Whole	Medium	1	19.00	19.00
Minor Morwong	Whole	Medium	1	19.00	19.00



With its vast experience and expertise in the field of traceability, Marel is making it easy for companies to comply with new EU regulations on illegal, unreported and unregulated fishing (IUU).

Today's consumers pay increasing attention to the origin and safety of the food products they buy. Reflecting this growing awareness, the European Union introduced new regulations at the beginning of the year to prevent the importing of illegally harvested seafood into the EU.

All harvested seafood products now have to carry a label that guarantees that they were obtained legally, responsibly and without harming the marine environment. A catch certificate provided by the vessel operator or seafood exporter must accompany every shipment entering the EU, and has to be validated and countersigned by a government authority.

Marel provides the solution

With its vast experience and expertise in the field of traceability, Marel is helping companies to adapt their procedures to the new regulations. With as little as one single Marel scale to weigh and register purchase orders, combined with an Innova software packing module, fish exporters can easily document every catch and ensure the traceability required by the EU.

The fish landing system that Marel supplied to Southland Fish Supplies, an Australian fish wholesaler and processor, is a perfect example. "The challenge was to find a registration

and monitoring system that could cope with a multi-species fishery," says Managing Director Steve Buckless. "We land up to 170 different species of fish throughout the year in numerous grades and forms." The Marel solution consists of a single M2200 packing scale and printer, along with the Innova software which registers data such as vessel, species, grade, weight and form.

The benefits of traceability

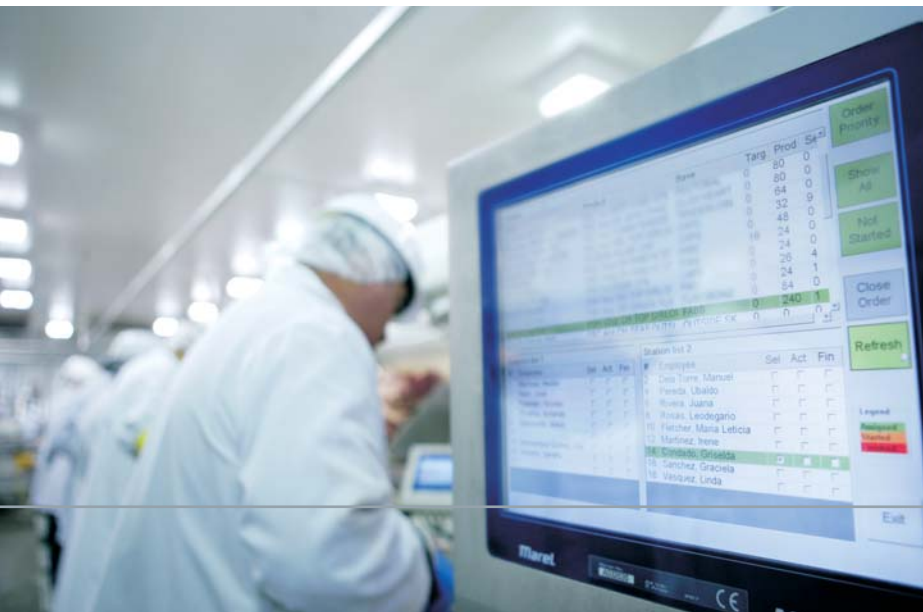
Apart from meeting the EU requirements, the implementation of a traceability process provides an array of benefits, including improved supply chain management and easier compliance with labelling laws.

Traceability may start onboard fishing vessels where information on the catch and location is registered, followed by in-weighing to the auction or processing plant. From there, data capture at each stage of the process that the fish undergo can be registered and monitored, all the way through to order handling and dispatch.

Marel is one of the major suppliers of traceability and control systems specifically developed for the food industry. Marel's production control system, Innova, is the perfect tool for data collection and monitoring. Innova covers the complete value chain in the production cycle from reception of supplies to product dispatch. Systems vary in size and complexity, ranging from small packing stations to large plant set-ups.

GO TO:

www.marel.com/eu-import



HB Grandi: Information is POWER



Dadi Hrolfsson

**“Yield is where
the money is
today”**

Installation of the largest and most advanced processing line ever assembled in Iceland was completed at the beginning of the year at HB Grandi’s plant in Reykjavik, the largest groundfish processing plant in Iceland.

“What we wanted to do was to improve the yield and quality control in our saithe processing. Yield is where the money is today, not in massive throughput,” explains Dadi Hrolfsson, Plant Supervisor.

HB Grandi is one of the largest fishing and processing companies in Iceland and markets its groundfish and pelagic fish products worldwide. The saithe that is processed on the new 24-station Marel trimming line is destined for both wholesale and retail outlets in Europe, primarily in Germany and France.

You have to be able to trust the information

“The most significant benefit of the new line is that with Innova, it provides much better information than we had before,” says Hrolfsson, referring to Marel’s state-of-the-art Innova production management software, which is fully integrated with the line.

“The line weighs everything that comes from each individual operator, showing very precise yield figures for primary and secondary product and trim. And the quality control is extremely good. We immediately saw a big increase in



the proportion of primary products, with much less going to block and trim.”

Four QC M6000 quality control stations were installed with the new line, making the quality control process entirely electronic and offering easier access to quality control records.

“We have much more information to base our decisions on and that is exactly what we were after. You have to be able to trust the information.”

Individual monitoring: the key to success

The ability to monitor each individual operator also really made a big difference in getting the best possible performance out of each employee.

“The yield and quality have improved significantly,” says Hrolfsson. “There are employees who have worked here for many years who have improved tremendously since we installed the new line. Just because now we can call them over and show them in what areas they can improve.”

With monitors installed at each trimming station, the operators can now see with their own eyes where they stand in comparison to the average. “It motivates people because

everybody is eager to do well,” adds Hrolfsson.

A Christmas miracle

With the plant in full operation for 50 weeks out of the year, the window of opportunity for the installation was small. So when production came to a halt for the holidays on 18 December, the Marel team immediately got underway. Apart from a few days off for Christmas and celebration of the New Year, work continued non-stop until the line was started up on 11 January.

“It went really well. The Marel team was a great group of guys and they worked very fast. The atmosphere was very positive and it was fun to see,” recalls Hrolfsson.

“All our interaction with Marel concerning the line has been exceptionally positive. This is one of the more complicated systems that Marel has installed and it’s been a success in every way. We are very pleased. And throughout the process, if any questions or issues have come up, we’ve been able to sit down with the Marel team and find a solution.”

Partners in processing

The new line replaces another 13-year old 20-station line also supplied by Marel and is just the latest chapter in a long and fruitful partnership between HB Grandi



and Marel, which Hrolfsson sees as a key element in the company’s success.

“Our production process for saithe is large and complex. We are processing maybe 100 tons per day and producing dozens of individual products. It’s challenging but that’s also what makes it so much fun. It wouldn’t be possible without the close cooperation with Marel. We have two processing lines from them, an IQF freezer, four portioning machines and several graders. I don’t see any other company out there that can supply the range of equipment for us that Marel can,” says Hrolfsson in conclusion.

Training: An investment that pays

HB Grandi has placed a great deal of emphasis on training in the past couple of years, particularly in the area of hygiene. And in preparation for working with the new line, many of HB Grandi’s staff took part in training courses offered by Marel. The goal was to motivate staff and prepare them for the changes in working procedures to ensure that the system would bring highest possible efficiency right from day 1 of the installation.

“We sent our maintenance department, QC operators, and senior and middle management. In addition to that, Marel conducted a half-day training session for all the employees here in the plant, which was extremely beneficial,” says Hrobjartsson.

The courses were held in both Icelandic and English and lasted from four hours to two days. They included a general introduction of the new line and the Innova software system,

information on how to identify errors, technical servicing of the line, quality control and much more.

“It really pays to have your people trained. They were much quicker to adapt to the new line and that showed very quickly in the production. There’s no question that it’s an investment that pays.”

GO TO:
www.hbgrandi.is

Partnerships with industry help Marel to lead the pack



Marel's position as industry leader is due in no small part to its emphasis on innovative product development. Marel invests 5-7% of revenues in research and development annually, far above the industry average. The company's strategy for development centres on "market-driven innovation", a philosophy which means new product ideas and incentives come from the customers and not only the engineers.

"Our customers have a big role in deciding which way we go," explains Kristinn Andersen, Senior Research and Technological Development Manager at Marel, and an employee of the company for almost 20 years. "They know what is needed in the market and they share those thoughts with us."

"Our customers have a big role in deciding which way we go"

**Kristinn Andersen,
Senior Research and
Technological Development
Manager at Marel**

Technological advantage

The process is an exciting one. "The biggest part of innovation for us is how we solve things," explains Jón Birgir Gunnarsson, General Manager of the Fish Industry Center. "We apply different technological solutions depending on the demand from the customers. Marel's ability to create these solutions using the cutting-edge technology we have available is unique in the industry."

Customers are constantly suggesting new applications and one challenge for Kristinn and his team is to determine how to select the ones to develop. As a part of this process, monthly I2M (Innovation to Market) meetings are held with key Marel personnel to brainstorm new ideas based on customer input.

Over the years, this customer input has led to the creation of some of Marel's most innovative products and solutions, including the Sensor X bone detection system, the Innova production management software, and flow line concepts that allow individual monitoring of the performance of each operator on the line. Hygienic design [see article on pg 8] also forms a key part of new developments.

The importance of partnership

The development process, explains Kristinn, is very much a cross-disciplinary approach, with engineers understanding market needs and cost constraints and sales teams learning about technical issues.

The company has people who have been working in fish processing for decades, who really "smell of fish," Jón Birgir admiringly notes. "The Fish Industry Center is a close-knit group who are in direct and good dialogue with customers and they hear about the daily challenges. One of our main strengths is the fusion of electrical and software engineering with fish processing specialists."

But what is perhaps most vital to a flourishing product pipeline are the partnerships Marel has cultivated with industry leaders to design and test its newest solutions.

"What's key in this context is that the customer does not come and say, 'we need a superchiller, for example'," explains Jón Birgir. "It's our ability to transfer processing challenges over to working equipment that is unique to Marel."

Listening to the customer

Kristinn believes that these partnerships are key to Marel's "visionary" approach to development. "If you want to be successful you need to listen to the customer first and foremost. Everything we do aims to help our customers strengthen their competitive position. That is always our goal."

"We want to be on the processing floor in the factories of our customers to understand their daily challenges," adds Jón Birgir. "Once we have done that, then we are almost always able to help them."

Can you say no

to extended shelf life and a more valuable product?

Superchilling is an innovative process that allows for the core of the fish to be cooled without freezing it. The superchilled product is firmer and more resilient to processing, resulting in a more attractive product with greatly increased primary product ratio and shelf-life.

The handling of raw material in whitefish processing has often left a lot to be desired, in particular when handling sensitive species like haddock or cod. By superchilling the product before processing, the yield and quality is maximised, in addition to which shelf life of fresh products can be extended by as much as three or even four days.

A more valuable product

Superchilling allows for the core of the fish to be cooled down to a sub-zero state without freezing the surface. The fillets become firmer and more elastic and much more resilient during subsequent processing stages.



In addition, the cooling energy inside the superchilled fish reduces drip loss during processing. The outcome is a much more attractive product with greatly increased primary product ratio, compared with conventional methods. Higher product value and price is therefore a key benefit of the system.

Extended shelf life

Superchilling has the added advantage that the fresh fillets remain cold through the processing and are still cold when they are packed, which contributes to greatly improved conditions during transport. Since the cooling energy is contained inside the superchilled product itself, much less ice needs to be added, if any, for cooling. This can result in big savings on transport costs.

Even more importantly, the shelf life can be extended by at least two and as much as four days, depending on conditions. This is extremely valuable when the fresh product needs to travel long distances to the customer. A longer shelf life also translates to increased sales (since the product can be sold for a longer period of time), higher product quality and value, and greater customer satisfaction. In addition, it allows exporters to choose a more economical means of transport, i.e. sea freight instead of air freight.

The cooling process

In superchilling, the fillets are first passed through a cooling tank containing a weak brine for 7-8 minutes. This step is essential in order to be able to then chill the fillets down to -1.5°C without freezing the product. The method allows the liquid inside the fillets to go 25% into the freezing phase without any



Fresh fillets are often literally torn apart when they go through the skinning machines. The superchilled product is firmer and more resilient, which minimizes damage.

damage to the fish meat due to ice crystal formation. The cooling tank has the added benefit that blood spots are washed away giving the fillets a whiter and more attractive appearance.

The fillets then pass through the Marel SuperChiller for 8-10 minutes where they are cooled down through skin-side contact with the Teflon belt and the cooling airflow. The fillets emerge firm and robust and ready to withstand the skinning machines and handling throughout the rest of the production process.

Following successful installations in whitefish plants, this innovative new process is now also being tested for processing of farmed species like tilapia, pangasius, catfish and salmon.

GO TO:
www.marel.com/superchiller

Marel to host seminar on hygiene in fish processing



Hygiene is a central concern in the production of food. And hygienic design (also known as “cleanability”) of food processing equipment is one of the most important factors in ensuring a high level of hygiene in the production process.

This June, for the third time, Marel will be hosting a seminar on hygiene in fish processing at its headquarters in Iceland. The seminar is organised by Aquatic, a leader in consultancy and the development of hygienic solutions for the fish processing and fish farming industries.

„Marel is today one of the leading actors in developing new solutions with improved design“

Elvin Bugge, Aquatic

The seminar has been well received and around fifty participants from the fish processing industry are expected to attend.

Huge advantages for the industry

“Since 1999, Marel and Aquatic have been working actively together on hygienic design and Marel is today one of the leading actors in developing new solutions with improved design,” says Elvin Bugge, owner and lead consultant of Aquatic.

“Hygienic design provides the industry with huge advantages in terms of lower cleaning costs and better hygiene. Customers are now more aware of the importance of good hygienic design, and often they demand that the processors actively follow international standards on hygiene requirements of machines.”

Marel will contribute to the seminar with a presentation on the company’s philosophy and approach to hygienic design.



Participants in the 2008 Aquatic seminar hosted by Marel.

Weighs it labels it tracks it



Marel not only provides equipment for labelling of retail packs. Our new OCM 9500 automatic box/crate weigh price labeller for heavy products automatically weighs, prices and labels boxes or crates at speeds of up to 40/min. That's 3 – 4 times faster than a manual operator. This surely means it can do the work of three people (depending on your product or output) so the payback is equally impressive.

When linked to Innova, Marel's brilliant production control software, product is consistently and accurately tracked to meet your traceability needs, ensuring accurate labelling and avoiding double, misplaced, missed or repeat labels and costly double shipping.

OCM9500 can also handle irregularly shaped products and has the ability to apply labels to any face, including corners.

GO TO:
www.marel.com/box-labeller



Retail pack slicer gets a facelift

Since its introduction in 2005, the IPS 3000 has become one of the most popular party pack slicers ever thanks to its impressive accuracy, which helps to significantly boost yield and efficiency. An updated version, featuring several improved features, is now available.

With its advanced vision technology, the IPS 3000 can produce boards with a fixed weight and fixed slice count, or with fixed weight and a variable slice count. Further handling is limited thanks to the excellent slice placement on the boards.

New user interface

The IPS 3000 MK-II has a brand new user interface, developed on the basis of customer feedback, which

makes the operation of the slicer easy and safe for all employees. The operations have been simplified, and it is now possible to instantly switch between multiple languages to suit the multinational character of the salmon processing industry today. The slicer is compatible with Innova – the perfect software package for monitoring the production process.

Integrated pre-weighing & improved board dispenser

To facilitate cleaning and reduce the risk of water damage, the pre-weighing scale has been integrated into the slicer. The new flexible board dispenser is designed to handle various types of boards and trays used to package the product.



HIGHLIGHTS:

- Fixed weight with high accuracy
- Better utilization, less give away
- Perfect placement of slices, less handling required
- Operator-friendly user interface
- Compatible with Innova

Espersen invests in the future

Espersen's investment in a new Marel trimming flowline delivers not only increased throughput and efficiency but also a higher quality product.

"The future belongs to those who prepare for it today," reads the Malcolm X quote that adorns the notice board by the desk of Reidar Inselseth, Managing Director of the Lithuania plant of whitefish processing giant Espersen.

You could say that these words have been the guiding light in Espersen's total overhaul of the plant, which began more than two years ago, and which included investment in a large Marel trimming flowline. The investment dramatically increased throughput and efficiency, in addition to which the plant can now deliver a higher quality product. "The processing time is now much shorter, which means that we can now supply a fresher product," says Inseth.

The wisdom of Malcolm X's words and Espersen's foresight has certainly been borne out by recent developments. Having made an investment in the future, the company is now in an ideal position to capitalize on the increase in Baltic

cod quotas for 2010 and is gearing up to increase its supply of products to European markets. Specifically, Espersen's aim is to increase its sales of lightly salted IQF cod fillets from the Lithuania plant to the southern European food service industry.

With the plant's increased production capacity, the plan is to process 7,600 metric tons of fish in 2010, half of which will be fresh, up from a total of 6,800 metric tons in 2009, of which 3,000 was fresh fish. In the future, Espersen Lithuania plans to make a bigger commitment to fresh products.

Faster production time

To go along with increased capacity, Espersen's margins have improved as a result of the increased yield and faster production time of the Marel flowline. Before, with the plant's old tray-based system, fish would be kept in trays for hours waiting to be processed, causing drip-loss and reduced yield.

No more. The production process is now a "seamless flow" with the Marel flowline automatically controlling the incoming traffic of untrimmed products, as well as the outgoing fillets, waste and by-products. Processing time has been



A man with a plan

When Reidar Inseth joined Espersen Lithuania in August 2007, his aim was to streamline and automate the production. "I had seen a couple of the Marel flowlines in other factories and wanted to know more."

Marel assigned a senior consultant to the job and the first plans were ready in December 2007. To ensure "seamless flow though the factory," as Inseth puts it, the plant was redesigned and the whole production process was streamlined in order to increase productivity, throughput and ergonomics.

The turmoil in global financial markets put the project on hold for a while but in early summer 2009 the company decided to proceed. Installation went smoothly and according to plan. The plant was closed on 18 November and all the old equipment was removed and processing functions were moved around. One week later, the plant was up and running again with the new lines. "On the second day after installation, we were already operating at the same throughput level as with the old line. And throughput steadily increased in the weeks that followed," Inseth concludes.

significantly shortened, resulting in a higher quality end product that is less vulnerable to bacteria and has a longer shelf life.

Cod fillets are automatically delivered to each of the 40 trimming stations on the line. Sensors monitor the flow and recognize whether a station is full or not. A full station will not receive more fish, but when the sensor sees that the buffer is getting empty, it orders more fish. This helps to stabilize the flow of raw material to the trimming stations.

"It's a much faster and more efficient system. It has also reduced the number of work hours behind each kilo of finished products since we have been able to do away with all the 'service' parts of the production process, such as manual weighing and the moving of trays back and forth," says Inselseth.

Hands-on control

Innova, Marel's state-of-the-art production management software, is at the heart of the new processing system. Innova gathers real-time information, allowing managers to monitor every stage of the production process and to make the necessary adjustments to optimize yield and throughput. The system also allows Inselseth to monitor the performance and efficiency of individual trimming operators in real time.

Innova also collects information on the product split and sends random samples to the quality control stations where defects are registered by the system.

With Innova, all the raw material that goes through the factory is digitally logged in, providing full traceability. "As a company, we are increasingly focusing on sustainability. That is a priority in everything we do. Improving our traceability is a big part of that."

GO TO:

www.espersen.dk



"The processing time is now much shorter, which means that we can now supply a fresher product"

Reidar Inseth



NEW

Fixed weight GEBA slicer

The new Geba SC 125V is a newcomer to Marel's leading range of slicers. It is a unique D-cut salmon slicer capable of producing fixed weight slices and portions. The slicer was introduced at the Marel Salmon Showhow in February 2010, where the audience was impressed by its precision and speed, and the quality of the end product.

How does it work?

The fixed weight is achieved by using weighing and laser vision technique that measures the volume, size and weight of the fillet. The computer – managed by an easy to use touch screen – calculates the cutting profile to meet the defined specifications.

Versatility and high capacity

With a cutting angle interval ranging from 8-45°, the slicer can be used to produce a wide range of high quality salmon products with fixed weight, including standard D-cut slices, bacon cut, sushi slices, hot smoked portions or escalopes of raw salmon. The single-lane slicer has a capacity of 125 slices/min, equivalent to 150 kg per hour.

GOTO:

www.marel.com/salmon-slicers



HIGHLIGHTS

- High accuracy, less give away
- Improved slice quality and utilization of fillet
- High capacity at 125 slices per minute
- Reduced labour costs
- Operator-friendly user interface
- Hygienic design



Efficient pinbone removal

It is a well known fact that the pinbones in the neck part of salmon fillets are very difficult to remove with a standard pinboning machine and have to be removed manually. To solve this problem, Marel has introduced the CT 2616 pinbone remover which includes additional heads designed specifically to get to those hard-to-reach pinbones in the front.

After passing the first pinbone head, the fillet passes another head at the end of the conveyor, which meets the front of the fillet and removes the bones from the neck part. This is achieved without any yield loss or damage to the fillet.

Vacuum system for better hygiene

The CT 2616 pinboner is made with a highly efficient vacuum system that instantly removes bones and surplus water from the surface of the fillets, ensuring a high level of hygiene. All waste is filtered in a stand-alone vacuum system unit where the bones are separated from the water and delivered onto a vemag trolley.

GO TO:
www.marel.com/pinboning



Flexible and easy to adjust

The pinboner can be supplied in a two-lane version capable of handling up to 20 fillets per minute and a four-lane version for double capacity. All adjustments are easily done on the touch screen panel, with a selection of programmes for different sizes and quality of fillets. The CT 2616 minimizes production time, saves labour and ensures maximum yield.



Automatic grading and packing of black tiger shrimp

Black tiger shrimp are the single most widely distributed and marketed shrimp in the world. Asian producers of black tiger shrimp are starting to see the huge potential for increased profit and improved grading quality by changing from manual to automatic grading.

Grading of black tiger shrimp is today primarily done manually by hand picking one shrimp at a time and basing the size and grade on visual inspection. Once in a while the packer checks the weight of the shrimp on a bench scale. This kind of packing operation has a very low capacity and is inaccurate. By installing an automatic grader, producers are certain to obtain better grading results and higher quality.

Payback time of less than a year

Even small improvements in grading accuracy in the large product/high price category, can lead to a payback time of less than a year. In addition, processors will no longer have to contend with finding and keeping well-trained people for this operation, which is becoming increasingly difficult.

Exporting to Japan

Japan is the biggest market for black tiger shrimp and strict rules apply with regard to grades and sizes. If importers detect shrimps in a shipment that do not comply with the grading specifications, they may return the entire shipment to the producer, who would thus incur considerable extra costs. Therefore, many Asian producers compensate by underestimating the size instead of taking the risk of overestimating, in order to be sure to comply with the size specifications for Japan. Automatic grading, which is extremely accurate, practically eliminates this problem.



Precision Grader



Target Batcher



GO TO:
www.marel.com/grading-batching

Precision Grader

The easy way to reduce give-away

For grading jobs, Marel offers a static shrimp grader with +/- 0.2 g accuracy for 85% of the weighings. With the Precision Grader, which has 10 scales/work stations, it is possible to grade up to 750 shrimps per minute into predefined weight categories.

- Grading into six weight categories
- Increased throughput – more efficiency

Target Batcher

Fixed-weight batching

The Target Batcher makes batches of fixed weight, for example 450g of graded shrimps, thus reducing give-away. With seven high-accuracy individual scales and 14 holding bins, the Target Batcher selects the best combination of a defined number of shrimps in a fraction of a second.

It has a capacity of 20-30 batches per minute, depending on the number of pieces in the batch and the infeed speed.

The accuracy of the Target Batcher is subject to product, size, weight distribution, package size, etc. The weighing accuracy is +/- 2g for a batch of 5-7 weighings; scale division is 1g.

For batches from 300-500g the accuracy is +/- 2.5g.

For batches 500-1000g the accuracy is +/- 3.5g.

- Increased throughput – more efficiency
- Suitable for small batches of 10 or fewer items

The Target Batcher and Precision Grader are both supported by Innova, Marel's production control software, which makes processing data – including weight, throughput and operator performance – readily available in real time.

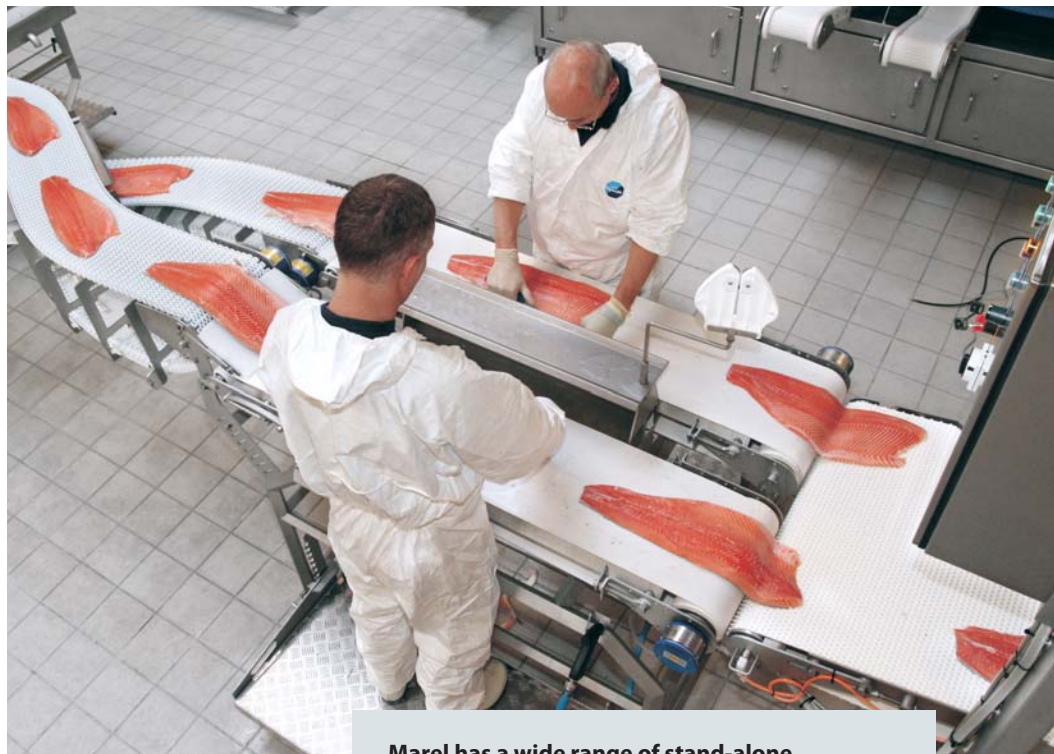


Start small, then grow with Marel !

Robert Townsend once said that “big companies are small companies that succeeded.” Marel is a case in point, having started as a small start-up company and grown into the global leader in fish processing solutions.

Mindful of Townsend’s words, we recognize the importance of serving customers of all sizes, big and small. That’s why we offer everything from stand-alone equipment and smaller applications to complex integrated systems.

Our experienced sales team works side-by-side with our customers to always find the right solution to fit their processing needs – big or small, simple or complex.



Marel has a wide range of stand-alone equipment well suited for straight forward applications where only a small investment is needed. Here are a few examples:

- Label application of pre-printed labels to packs is handled with the LS40 label applicator.
- Onboard weighing with motion compensation can be handled by our M1100e scale.
- Weigh Price Labelling of retail packs at lower throughput levels can be handled by our WPL9040.
- Fixed weight portioning of fillets has had huge success with our I-Cut10 portioning machine.
- Sawing fresh or frozen products can be done with our industry standard AEW400 bandsaw.
- Trimming salmon fillets with a simple and reliable setup is made easy by our Marel X404 salmon trimming line.
- Batching to fixed weight is very convenient with our flexible Target Batcher.
- Packing and process monitoring can begin with one scale and a INNOVA Packing Light software module.



TOWNSEND
FURTHER PROCESSING

SPOTLIGHT on further processing

Marel is proud to announce that after joining forces with Stork Food Systems and Townsend in 2008, we can now offer fish processors a comprehensive range of products for further processing.

With our range of sophisticated equipment and systems, marketed under the brand name of Townsend Further Processing, processors can capitalize on the continuing growth in the convenience and fast food market segments.

Townsend is one of the most reputable brands in the food processing industry, renowned for innovation and reliability. Under the new brand name, fish processors will find equipment and systems to meet all their further processing needs, such as for portioning, marinating, coating, heat treatment and sausage making.

GO TO:

www.marel.com/further-processing



Introducing the RevoPortioner

- Consistent quality through continuous portioning

The RevoPortioner is a revolutionary low-pressure portioning machine that provides an attractive alternative to the traditional high-pressure forming machines. High-pressure forming typically produces non-conformities in formed products with respect to the intended shape immediately after release and/or heat treatment. With the RevoPortioner, the structure and texture of the raw material is perfectly retained and the final products always have the same shape, weight and size, and uniform quality. Combine that with high process capacity, no leakage and very low maintenance costs, and you have a recipe for success.

GO TO:

www.marel.com/revoportioner

Marel is the leading global provider of advanced equipment, systems and services for the fish, meat, poultry and further processing industries. Our brands – Marel, Stork Poultry Processing and Townsend Further Processing – are among the most respected in the industry. United in one company, we offer our customers the convenience of a single source for products to meet their every need.

With offices and subsidiaries in over 30 countries and a global network of more than 100 agents and distributors, we work side-by-side with our customers to extend the boundaries of food processing performance.

Global leader



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