

INSIGHT

VOLUME 1

FISH PROCESSING

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At Marel, we are proud of several things

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We are proud of the strong team we have built to serve the global fish industry, a team that not only has strong ties to the industry but also has a longstanding relationship with it.

Many of our key people are raised within the industry, while others have decades of experience serving it. This gives us both strength and a better understanding of what the challenges faced by it are all about.

We are proud of our strong international sales and service network that has been built up over a long period of time to serve local markets. We have global knowledge and expertise, and at the same time a local presence where it matters. This combination delivers an unparalleled level of service to our customers.

We are proud of our heritage in the fish industry. Marel in the past has played a major role in increasing efficiency in fish processing around the world, and our pledge to serve fish, meat, poultry as well as further processing comes a promise to each of those industries.

We in the Fish Industry team take this commitment very seriously, and promise the industry to continue leading it to better yield, throughput and product quality with innovations that will shape the industry at present and in years to come. In fact, we are already seeing the results from putting strong focus on the industry once again.

We are proud of the work we have done in the last decades, of our huge installation base and of the experience we have gained in grading, portioning, batching, flowlines and the other equipment that we provide.

Not least, we are proud of the benefits we are able to bring to our customers, benefits that help them achieve their goals and lead to increased bottom-line profits.

We are proud of the leading-edge technology on which we build our equipment and systems, technology specifically focused on the needs of the food industry and which allows us to maximise the potential for fish processors.

Above all, we are proud to be Marel and to be serving the strong and growing global fish industry of which we are an integral part.

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

Chill factor

The latest chapter in a 15-year partnership between the two companies, a new Marel system and SuperChiller have revolutionised processing at Norway Seafood's Stamsund plant

When Norway Seafoods decided to embark on a redesign of its Stamsund processing plant early in 2010, the company turned to long-time technology Marel partner to spearhead what was effectively a revolution in the facility's operations.

A wholly owned subsidiary of Aker Seafoods, Europe's largest whitefish harvesting group, Norway Seafoods operates five whitefish and two saltfish processing plants in Norway, two processing plants and a fish reception facility in Denmark, and two processing plants in France. Set amid the starkly beautiful surroundings of Arctic Norway's Lofoten region, the company's Stamsund facility consumes some 9,000 tonnes of cod, haddock and saithe annually, offloaded straight from trawlers at a quayside only a few metres from the plant's entrance.

This raw material is processed into fresh and frozen fillets, loins, portions and tail pieces, all destined for markets in Scandinavia, France, the UK and rest of Europe, where the company's customers include some of the continent's largest and best-known food retailers.

Founded in 1864, the factory has seen many changes during its 146

years in operation, none more so than in recent times.

"When I started working here in 1992, we produced only wet salted fish and fillets," says Claus Schive, the plant's managing director.

"In 1996, we installed a new Marel processing system which created the opportunity to process fresh and frozen portions, and we began doing so in 1998. Recent years have seen a marked increase in market demand for fresh product, and the installation of our latest Marel production system with the SuperChiller comes as a direct response to this trend," he adds.

Rapid installation

"Planning on this latest upgrade of Stamsund plant began in conjunction with Marel in early 2010, and installation began in the autumn," says Aker Seafoods executive vice-president, production, Johannes Palsson.

"Looking back, it was a massive undertaking involving a complete physical and logistical renovation of the plant, as well as the installation of a new production system," he continues.

"Effectively, what we did was build a new factory in only six weeks," agrees production and quality manager Paul Hauan. "Before embarking on the project, we'd looked at the newest technology and were convinced of the potential benefits for ourselves.

"Among other things, the project involved the replacement of our existing equipment with a state-of-the-art integrated processing



"In essence, the system has exceeded our expectations."

**Johannes Palsson,
executive vice-president
production, Aker Seafoods.**



Claus Shive, managing director, Norway Seafoods Stamsund.



Production and quality manager Paul Hauan.



Johannes Palsson, Aker Seafoods executive vice-president, production.

system, which includes a SuperChiller, a new type of skinning machines, new pre- and post-portioning machines, and a new trimming flowline.

“To maximise our investment, we initiated an extensive programme of staff training on subjects ranging from microbiology to the practical aspects of processing, in an effort to prepare our workers for what was effectively a completely new way of working.

“At the same time, we also introduced new staff rotas and working practices, meaning that production now continues uninterrupted throughout the working day,” he says.

Optimised product mix

Before entering the filleting line, fillets pass through the Marel SuperChiller for 8-10 minutes, where they are cooled to a constant temperature of between -1°C and -1.5°C through skin-side contact with the Teflon belt and the cooling airflow. When they emerge, they are firm, elastic, robust and ready to proceed through the rest of the process without losing their natural juices.

Specially made for superchilling, the new Marel skinning machines are also designed to gently handle several different species of fish.

However, the SuperChiller is about much more than producing a more aesthetically pleasing product. After separation from the fillets by a pre-cutter, the valuable tail pieces move on to an inspection line before being graded and packed.

“The pre-cut has helped us very much both in terms of being able to create new products,” explains Paul Hauan.

“Under the previous system, the whole fillet, tail included, went straight to the trimmers. When you consider that the tail accounts for about 30% of the total weight of each fillet, you see how valuable it can be.

“Using the old equipment, it was almost impossible to process tails as

we do today. Our older skinning machines almost destroyed the tails, and we had to perform the tail cut manually. We also missed the target weight, because we didn’t have the necessary equipment to measure it. Controlled by Innova software, the new Marel I-Cut portioning machines have taken care of this, and the results, particularly with regard to haddock, have been nothing short of amazing

“At the same time, we’ve increased the volumes of the trimming lines by 18-20% through an optimised product mix and greater product quality. The system is also highly flexible, allowing us to change and run several products at the same time.

“In fact, I would describe this new technology and the equipment delivered by Marel as more or less a revolution,” he adds.

Temperature control

Hauan is equally enthusiastic when discussing the effects of the Marel SuperChiller.

“I would also call it a revolution,” he says. “It keeps the fillets, especially the loins, together in a much better way than before, while product shelf life is increased by 1-2 days, a huge consideration given that all our products are transported entirely by road.”

“Under the previous system, fish sometimes sat on the trimming line when workers went on a break, meaning that the temperature of the fillets could rise, especially in the summer months. Now we’re achieving a constant temperature of around zero and below. In fact, tests we ran recently showed fillet temperature levels to be consistently between -0.7 and -1.0°C .”

As the man responsible for the daily operations of the plant, Hauan is equally enthusiastic about the Innova production software which forms the brains behind the Marel system.

“I use Innova every day, and we’re now about to add another module to include stock control in our warehouse. It allows me to sit in the



office and monitor the operations of the entire plant, and also send messages to individual trimmers if their performance isn't up to scratch. Thankfully, the communication is only one way," he laughs.

"The amount of information generated by Innova is massive, and one of the biggest challenges is actually learning how to use it to maximum effect," he adds.

Hands-on support

One thing on which all three men agree is that implementing so many changes at the same time was a process that brought with it its fair share of challenges.

"As you'd expect on a project of this scale, there have been a number of teething problems," says Johannes Palsson. "The last few months have definitely provided a stern test of cooperation between Norway Seafoods and Marel, a test I believe

that we've both passed with great success. A Marel specialist has been on hand to support us throughout every stage of the planning and installation process, and continues to provide us with hands-on support today.

"In essence, the system has exceeded our expectations. We purchase around one-third of our fish from Aker Seafoods, and the integrated Marel system is now playing a key role in making Stamsund an active link in the company's value chain of harvesting, processing, sales and distribution. As a result, we're entering 2011 with a strong sense of optimism and anticipation," concludes Aker Seafoods executive vice-president production, Johannes Palsson.

GO TO:

www.akerseafoods.com

Superchilling

– how it works

Fillets pass through the Marel SuperChiller for 8-10 minutes, where they are cooled to a constant temperature of around -1.5°C through skin-side contact with the Teflon belt and cooling airflow. When they emerge, they are firm, elastic, robust and ready to withstand skinning and other handling during the rest of the production process.

As the cooling energy is contained inside the superchilled product itself, much less ice, if any, has to be added for cooling during transportation. Following successful installations at a number of whitefish plants, this innovative process is currently being tested for use in processing several farmed species, such as salmon, catfish, tilapia and pangasius.

BENEFITS:

- Optimised yield management
- Increased primary product ratio
- 18 – 20% increase in trimming volume
- Better product mix
- Shelf life extended by up to 2-4 days
- Reduced transport costs

GO TO:

www.marel.com/superchilling



Full ahead for Europe

With catch registration and traceability now inescapable realities following EU regulations on illegally harvested seafood, Innova MarinePack software from Marel makes compliance simple, reliable and easy to implement

With regulations on illegal, unreported and unregulated (IUU) fishing now a reality facing every exporter to the European Union, the pressure has never been greater on operators to ensure that catches are registered and recorded in full compliance with the legislation.

To help skippers and vessel operators deal with this, Marel has developed Innova MarinePack, a purpose-built registration and packing system designed for use aboard any vessel that has to comply with EU regulations on fishing control and traceability.

Introduced at the beginning of 2010, the regulations are based on two main principles. While the so-called 5% rule stipulates a maximum of 5% overweight for each box of fish landed at auction, its 10% counterpart allows for a maximum deviation of only 10% between the reported total live weight for each species caught and the actual weight found by government control officials.

At the same time, all harvested seafood products must now carry a label guaranteeing that they were obtained legally, responsibly and without harming the marine environment, and a catch certificate to this effect provided by the vessel

operator or seafood exporter must accompany every shipment entering the EU, validated and countersigned by a government authority.

The product of several years' experience and expertise in the fields of catch registration and traceability, Innova MarinePack is a complete plug-and-play hardware and software system for registering information about all fish species and grades, along with additional data such as point and time of catch, harbour, fishing gear and other relevant information.

Innova MarinePack also supports and complies with the e-logbook requirements currently in force for vessels longer than 24 metres, which will be extended to cover vessels longer than 15 metres in July of this year.

As you need it

At its most basic, the Innova MarinePack system requires nothing more than a scale, a Marel M2200 indicator and an Innova MarinePack software module. Thanks to its modular design, users only pay for what they actually need, and the system can readily be extended in keeping with the size of the vessel and nature of on-board operations to include a raft of other data, all of which is recorded and stored in real time and printed out on labels for attaching to boxes.

Information on the catch and location is registered on-board, and recording continues during in-weighing at the auction or processing plant. Depending on the type of system chosen, data capture can continue through each stage of



processing, all the way through to order handling and dispatch.

Supporting up to five packing stations, the system also comes with automatic tare setting and a pre-set language feature.

Apart from meeting EU requirements, the implementation of a reliable traceability process provides fisheries operators with an array of additional benefits, including improved supply chain management, potentially increased catch values, and readier compliance with labelling laws.

Stable, reliable, flexible and cost-effective to implement, Innova MarinePack is being adopted as the on-board catch registration and packing system of choice by increasing numbers of operators worldwide.

GO TO:
www.marel.com/innova

“The best investment in years”

Throughput and yield have increased at Vega Salmon's Haderslev factory following the installation of four Marel Geba SC 250 salmon slicers

When Danish manufacturer of smoked fish products Vega Salmon invested in four Marel Geba SC 250 salmon slicers to boost capacity, the effect was remarkable. Having tested the slicer at their factory in Haderslev, the company's management was convinced that this was the right machine to increase their capacity.

According to Vega Salmon owner Roald Vedelgart, purchasing the machines has been the best investment in years for his company. “The Geba slicers have increased our throughput and yield” he says.

“The fillets are measured at the in-feed to optimise the slicing programme”



Prior to installing the machines, the company sliced its salmon frozen. But with the new Geba fresh slicers being capable of slicing 350-400 kg per hour, the resulting throughput has exceeded the capacity of frozen slicers significantly.

In addition to the improvement in capacity and yield, Vedelgart considers the Geba slicers as being of great benefit that when slicing at 0° C as the slices are much easier to handle for the operators at the packing line.

Workers at the Haderslev factory are also very pleased with the machines' performance, singling out their easy operation as one of their main benefits. And as the workforce consists of five different nationalities, the multilingual touch screen is a great advantage, ensuring safe and easy operation.

Plant manager Ingi Ellingsgaard utilises to the full the slicers' ability to create and store several slicing programmes customised for the variety of different products produced in the factory. This makes it easy to switch from one product to another, creating high-quality end products that match the weight specifications.

As the Geba SC 250 also registers slicing performance, it is easy to monitor all key figures and adjust the settings if necessary. Ellingsgaard is also very happy with the machine's reliability, adding that the Marel Salmon service team does an excellent job whenever service or extra parts are required. At the same time, he is convinced that Vega Salmon will benefit of the new software updates introduced in 2011, including a new feature for spacing out slices.



Vega Salmon owner Roald Vedelgart

The four Geba SC 250 slicers operating at Vega Salmon are not only used for slicing smoked salmon. Vega Salmon produces and sells smoked fish products for both the retail market and catering business all over Europe as private label products, so they are also used for smoked trout and smoked halibut.

Since starting out in 2004 with a single plant in Esbjerg, Denmark, the company has gone from strength to strength, and today operates three factories in Denmark and one in Sweden. A new plant in Germany is scheduled to come on-stream in 2012, bringing Vega Salmon closer to its customers and even better able to meet future challenges and competition from within the industry.

GO TO: www.vega-salmon.dk

Red and white gold

When Icelandic fisheries operator VSV was looking to overhaul its langoustine processing operation, it turned to long-time partner Marel for a solution designed to boost productivity, raise quality and increase catch value.

With langoustine described by the country's Marine Research Institute as "the most valuable resource in Icelandic waters" in terms of price and a TAC currently running in the region of 2,100 tons per year, little wonder that Iceland's shellfish processors should be continually looking for fresh ways of exploiting this high-value crustacean to the full. So when a 22% rise in the company's catch quota for 2010 led Icelandic fisheries operator VSV to search for a means of overhauling its langoustine processing operation, the company turned to long-time partner Marel for a solution designed to boost productivity, raise quality and increase product value.

Based in the Westman Islands archipelago just off Iceland's south coast and close to the heart of its langoustine fishing grounds, VSV is one of the country's largest fisheries operators, with a fleet of 10 vessels and a processing operation covering both pelagic and groundfish. Some 95% of langoustine caught and processed by the company is exported frozen as whole product to the shellfish-hungry markets of Spain and Italy, or as tails across the Atlantic to Canada.

Installed in time for the start of the 2010 season, the Marel system incorporates two main elements

operating simultaneously – premium grade and tail processing. At the same time, it provides synchronised production on three levels for infeed, packed boxes and rejects. Before entering the processing line, the langoustine are separated from the ice in which they have been stored and are washed. Whole langoustine are placed on a conveyor, while secondary product is sent directly to the tail processing line. The langoustine then pass through a Marel vision system, which identifies those with a missing claw, the proportional weight of which is added to the overall product weight.

Next step is a Marel weight grader equipped with 24 ergonomically designed packing stations and controlled by Marel Innova intelligent production management and monitoring software. This collects real-time data on factors such as

yield, size distribution and individual worker performance, and reports directly to the Innova inventory system.

Integrated scales in each packing station recognise target weights, and any reject is dropped and conveyed for tail processing. Different weight grades are automatically sent to pre-defined packing stations, where sensors in each bin ensure a seamless product infeed. Finally, the packed boxes are then conveyed to the packing station, a label containing full product information is printed and attached to each box, and the langoustines are now ready for export to the tables of southern Europe and beyond. Across the production floor, tails and reject are fed automatically into the tail processing system, where operators separate the tails and place them on a 20-gate Marel tail grader. Each is then weighed



Each Marel weight grader is equipped with 24 ergonomically designed packing stations controlled by Marel Innova intelligent production management and monitoring software.



VSV production manager
Anna Sigríður Hjaltadóttir.

individually and placed in trays for packing. Integrated scales in the packing tables recognise the target weight, and the packed boxes are then automatically conveyed to the packing station for wrapping and distribution.

For VSV, the overall improvement in performance since installing the Marel system has been little short of spectacular.

"In 2010, we processed more langoustine than ever before and we could not have achieved this without the Marel system," says VSV production manager Anna Sigríður Hjaltadóttir.

"Under optimum conditions, we can process up to 10 tonnes of whole langoustines per day" she continues. "Whereas in the past tails would have been stored or frozen until all our premium product had been processed, the Marel system enables us to perform both operations at the same time, resulting in significantly improved quality and higher product value.

"Processing time from infeed to packing has been cut to only 3-5 minutes, resulting in a 20-25% increase in throughput using exactly the same number of staff. What's more, the twin benefits of increased efficiency and improved output have also led to shorter working hours," she adds.



Under optimum conditions, the VSV plant can process up to 10 tonnes of langoustine every day.

"Increased streamlining has also resulted in better use of available space and a 14% increase in production of whole product. At the same time, the Marel vision unit ensures that 100% of the whole langoustine will be graded correctly, whereas without it, 10% would wrongly drop a grade.

"In addition, the computerised precision offered by the Marel grading system has resulted in a significant improvement in product value. Whereas in the past, langoustine missing a claw would have brought

a lower price due to reduced weight, the Marel system solves this by ensuring consistent target weights," she concludes. But the benefits of the Marel system are not only seen on land. The total traceability afforded by Innova software allows shore-based VSV personnel to monitor product size by point of catch, thereby enabling them to direct the company's skippers to the fishing grounds most likely to contain larger langoustine, a win-win situation in the on-going quest for red-and-white gold.

Marel/VSV langoustine processing system at a glance

- 14% more premium product
- Vision unit ensures that 100% of product is correctly graded
- Fresher product – higher quality
- 20-30% more volume using same workforce
- Whole product and tails processed simultaneously – more product value
- Increased automation – less manual handling
- Streamlined processes – 3-5 mins from infeed to packing
- Complete production overview

GO TO: www.vsv.is

Keeping it fresh

Continuous research and innovation enables Marel to help fish processors freeze products without freezing profits

Today's consumer profile has resulted in profound changes in food processing. Consumers today demand foods off the shelf that are excellent in all respects – appearance, texture, taste, nutritional values – and freezing is one of the most convenient and commonly used methods of achieving this. To meet these conditions, Marel provides a wide variety of freezing solutions using the latest advances in technology, in order to meet industry demands for higher quality end-products. Today, Marel offers freezers ranging from upwards/downwards running spiral freezers to Superflow Easyclean tunnel freezers with impingement technology.

Among the many innovations introduced by the company over the years is the impingement freezer, which uses a high-velocity vertical airflow (Superflow®) of up to 35 metres per second (m/s) to freeze product uniformly in the fastest time possible, ensuring that colour, flavour and nutrients are locked in with minimal drip loss.

By comparison, a conventional tunnel freezer provides an airflow over the product of only 8–12 m/s. By utilising high-velocity impingement airflow in its freezers, Marel is able to match the speed and capacity of a cryogenic freezing system, without the additional operational costs of purchasing cryogenic gases.

For processors, the added advantages of a shorter freezing time and minimal drip loss result in a larger production capacity and maximum profits with minimum wastage.

Maximised investment

In order to help fish processors further maximise their investments, Marel has incorporated adjustable perforated plates into our patented freezer design, enabling customers to freeze multiple different products using the superior high velocity Superflow® without incurring additional costs.

Rapid horizontal airflow — Arcticflow® — is another Marel innovation. Using this system, product is led past a high horizontal airflow which directs the air over and under the product and continuously through the evaporators. The low temperature associated with Arcticflow® ensures a rapid and homogenous freezing resulting in a fine quality end-product. The Marel range of freezers makes it easier for fish processors to select the configuration most suitable for their production environment. By using the high velocity vertical Superflow®, processors benefit from the fastest freezing time and lower power consumption compared to other impingement freezers.

By contrast, the rapid horizontal airflow Arcticflow® enables processors to benefit from a fast freezing time and the lowest power consumption. And should they require all

these benefits, a simple change of air plates easily adapts the Superflow® Easyclean Tunnel Freezer for both high speed and a vertical or horizontal airflow, providing even greater flexibility in minimising costs.

Reduced power, water and labour costs can also be achieved by using customised component designs on Marel freezers, which run for longer periods without the need to defrost. This translates directly to lower freezing costs with maximum output, helping processors gain an edge in today's increasingly competitive market.



GO TO:
www.marel.com/freezing



Fresh impetus at Marel China

Marel operations in China have taken on a new look, with the arrival late last year of Henry Hsieh as sales manager of the company's Fish Industry Centre, China.

Based in the port of Qingdao (pop 7.5 million), Henry heads a team of three Marel employees at the centre, which works closely with the company's main office in Beijing in its on-going efforts to establish Marel as a centre of excellence in the fisheries sector and partner of choice for processors operating in the burgeoning markets of China and the Far East.

"With China's economy growing at its present rate and the accompanying rise in labour costs, there is an ever-increasing demand for greater automation in most industry sectors. Coupled to a growing consumer demand for more sophisticated products, I believe that this represents a clear opportunity for Marel both today and in the future," he says.

"My role covers two main activities, sales and customer service and support," he continues. "From a sales perspective, we'll be concentrating initially on promoting the use of Marel solutions and equipment in the whitefish industry," he adds.

Henry Hsieh will be available for meetings, along with other members of the Marel Fish Industry team, in Hall 4, Stand 6227, at the Seafood Processing Europe exposition, Brussels, from May 3-5.



Marel introduces new advanced filleting machine

Marel has introduced a new filleter, the MS 2730, a machine with several great new features designed to take salmon filleting to a new level in terms of yield rates, throughput and automation.



GO TO:
www.marel.com/filleting

Launched at the International Seafood Show in Brussels, the MS2730 is capable of filleting up to 25 fish per minute, with automatic adjustment for a variety of sizes between 2-10 kg. All operations are executed via a multilingual touch screen which is both easy and safe to operate.

One of the unit's new features means that fish are placed belly-down at the in-feed, making the in-feed much faster and easier. At the same time, a new set of circular knives cuts the fish from the gut to the tail, which provides additional yield as the meat close to the centre bone is included in the fillets. The result is high-quality fillets with improved yield and increased throughput.

BENEFITS:

- New cut ensures improved yield
- High capacity, 25 fish/min
- Automatic adjustment for sizes ranging from 2-10 kg
- User-friendly interface
- Multiple programme storing
- Variable pressure on fish during the process
- Communicates with Marel trimming robot

Two new Geba multi-angle slicers launched

The Geba slicer series now includes two multi-angle models in the form of the Geba SC 250 MA, a dual-lane edition for high-speed slicing, and the Geba SC 125 MA V, a single-lane vision-based edition cutting fixed weight slices and portions to high accuracy.

Both slicers were introduced at the Marel Salmon Showhow in Nørresundby, Denmark, in February 2011, where the audience was impressed by their precision, speed and the quality of the end product.

Great versatility, high capacity
With a cutting angle interval ranging from 10-68°, Geba slicers

can be used for producing a wide range of high quality salmon products including standard D-cut slices, bacon cuts, sushi slices, hot smoked portions or escalopes of raw salmon.

The Geba SC 125 MA V is capable of achieving up to 125 cuts/min, while the Geba SC 250 MA can produce up to 250 cuts/min, making it the fastest salmon slicer on the market today.

Fixed weight slicing – How does it work?

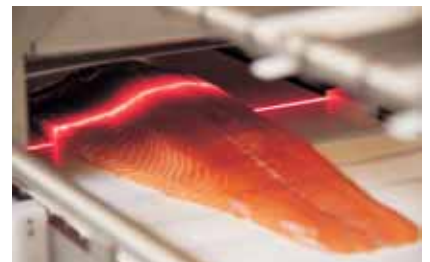
The fixed weight is achieved by using a weighing and laser vision technique that measures the volume and size of the fillet. Based on this data and the weight of the fillet, an in-built computer calculates the cutting profile required to meet the defined specifications.

Easy to operate

Geba slicers come equipped with a new user interface, making them easy and safe to operate by employees at all levels. Operations have been simplified, and it is also possible to switch instantly between multiple languages tailored to suit the needs of the many different nationalities working in the salmon processing industry today.

Software options includes several great features such as spacing out the slices/portions for easier handling during product packing, or achieving an even length of each single slice/portion throughout a whole fillet.

GO TO: www.marel.com/slicing



HIGHLIGHTS:

- High accuracy, less give away
- Improved slice quality and fillet utilisation
- High capacity, up to 250 slices per minute
- Reduced labour costs
- User-friendly interface
- Easy-to-clean design



Geba SC 125 MA V



Geba SC 250 MA

SpeedBatcher goes to sea

– Top performer handles multiple species such as pollock, herring, wild salmon and squid, with no modifications required

Fast, stable and highly accurate, the Marel Marine SpeedBatcher is a powerful innovation for any on-board processor

Highly popular for many years among land-based processors for its labour-saving qualities, flexibility and ability to create batches to high accuracy at very high speeds, the Marel SpeedBatcher has now taken to the waves, with the launch of an on-board version known as the Marine SpeedBatcher.

Initially installed for testing aboard a pollock vessel in Alaska, the machine performed so well that it was immediately purchased by the operator, whose requests included an output of 100 tons of product per day.

Having outperformed this figure by 20% to reach an impressive 120 tons, the Marine SpeedBatcher also eliminated the need for 4-5 workers, while achieving a much greater rate of accuracy in each of its 10kg pans than had been previously possible using manual labour.

As the only machine capable of batching multiple species without the need for modifications, the Marine SpeedBatcher is already arousing considerable interest in markets such as Russia, where the same vessel may be involved in catching species such as pollock, herring and wild salmon in the course of a single trip, not to mention squid, which cannot be handled using a conventional grader.

Like its shore-based stable-mate, the Marel SpeedBatcher outperforms all conventional hopper systems in terms of both speed and accuracy, by automatically weighing raw material into sub-weights which are then selectively combined to form the best batch weight. Customisable to suit virtually any vessel layout, the unit is available as part of a complete production line or as a standalone unit. At the same time, the Marel SpeedBatcher's well-attested qualities as a labour-saving device take on a whole new significance when applied to conditions at sea. While land-based processors may be able to take on additional workers to meet fluctuations in production or production parameters, this is not an option on board a fishing vessel, where there is no space to accommodate them.

Customised modifications

As well as the obvious need for the addition of motion-compensated weighing sensors to deal with conditions at sea, the Marine SpeedBatcher carries a number of other modifications when compared to its land-based counterpart.

With height an obvious constraint aboard any fishing vessel, and the marine version has been trimmed down to a height of only two metres, with in-feed and out-feed configurations also adapted to meet space constraints on-board.

As is the case ashore, each unit can be set up for semi-automatic or fully automatic filling of the pans, and



can be easily connected to Marel Innova production management software.

Providing full monitoring and control of the production process, including traceability of every fish from point of catch to point of sale, Innova also allows the user to log in directly to Marel for remote servicing of the unit, should the need arise.

FEATURES:

- Highly stable, highly accurate
- Customisable to suit any vessel layout
- Reduced giveaway
- Powerful control features
- Easy to operate, easy to clean
- Maximum batch size: 30 kg
- Throughput up to 23 batches per minute, depending on batch size

GO TO: www.marel.com/batching

FOCUS ON KNOWLEDGE

As a global leader in its field, Marel strives to offer customers the broadest range of professional services as possible.

From the outset, Marel has been committed to providing food processors with the complete set of tools required to enable them to take their operations to the highest level.

With a global workforce of highly trained professionals drawn from many different fields and disciplines, this commitment often extends far beyond Marel systems and solutions.

The broad range of expertise available in the company's workforce enables Marel to provide practical advice and consulting services on subjects ranging from operational logistics to all aspects of process-related issues.

Here, two Marel employees with extensive experience of very differing specialities share their views on two very different subjects – on-board processing and Lean Management.

Name: Henrik Rasmussen

Position: President, Industry Centre Fish sales for onboard processing

Location: Marel Seattle, USA

Education: Mechanical Engineer

Previous experience

- 4 years studying as a tractor mechanic and blacksmith
- Engineering school
- Two years working in a machine shop/stainless steel welding shop for as a machinist, welder and installer
- G6 welding certificate for six years
- Five years as a service technician/lead installer of hydraulic systems onboard fishing boats in Scandinavia and northern Europe
- Began working as an installer with Carnitech A/S in Denmark early in 1986
- Spent three years in Norway with Carnitech installing factories aboard new factory trawlers
- Five-and-a-half years as manager of Carnitech US service shop in Dutch Harbor, Alaska
- One year as project manager, sales, at Carnitech US Seattle
- Promoted to President of Carnitech US Seattle in 1996, which last year became Marel Seattle Inc
- 25 years' experience in on-board processing and sales



Focus:

- Establishing and maintaining a close relationship with our customers, and understanding and providing the best solution for them at every given time.
- Creating value both for our customers and the Marel group.
- Keeping Marel and our customers on the same level. I see our relationship like a family, based on teamwork and open communication regarding both what is required today and where we want to be in five years' time.

HOW-HOW



Name: Karvel Brualla Hreidarsson

Position: Project Sales manager,
Industry Centre Fish

Location: Marel Denmark, Nørresundby

Education: Production/economic engineer

Previous experience

- Qualified as a fish industry manager, B.Sc in production/economic engineering
- Production/factory manager at fish processing plants in Iceland, Denmark and Germany.
- Managed production of whitefish, salmon and pelagic fish as fresh, frozen, salted, smoked products brined and canned products.
- Worked for five years aboard a freezing vessel, responsible for production quality.
- Studied Lean Management and worked as a consultant on Lean Thinking and Management

Focus:

- Like Marel in general, I like to focus on providing value for our customers, in keeping with the principles of Lean management philosophy.
- Marel provides several solutions that support Lean thinking, and I use my experience and skills to work with our customers to help them gain the full benefits of the system.

Lean thinking

Focused on optimising value to customers, Lean Management is an area in which Marel offers extensive expertise

Just like Marel solutions, Lean Management is all about delivering the value requested by the customer using the fewest possible resources.

As such, it focuses on providing value to customers in all internal and external processes employed by the company.

Known as Lean Thinking, the philosophy behind Lean Management centres, among other things, on minimising or eliminating waste in all processes of the value stream and is based on the following principles.

- Defining the value demanded by the customers
- Defining the value stream that creates the value
- Creating flow in the value stream
- Creating pull (based on orders)
- Continuous improvements

By providing solutions that increase throughput, quality and efficiency, Marel can provide the solutions and know-how necessary to support our customers in working with Lean.

Marel is also able to provide intelligent solutions to measure and visualize production performance, a vital parameter in Lean manufacturing.

Potential benefits of implementing Lean Manufacturing and using Marel solutions

- Shorter delivery time – increased product flow
- Improved delivery service – order-based production
- Increased capacity – reduced bottlenecks
- Increased productivity – reduced waste
- Improved quality – reduced errors and rework
- Reduced inventory – smaller batch sizes and quantity of goods in process
- Increased flexibility – reduced inventory, shorter throughput times
- Improved safety levels – less transportation and handling
- Improved ergonomics – better organised workplaces and methods
- Visual control – visibility in problem solving
- Increased job satisfaction – more employee involvement in decision making
- Continuous improvements – inherent in Lean culture

A Lean company will gain significant results, financially, competitively and in the working environment.

And because Lean is a permanent change, the results are visible every year, while the continuous search for improvement ensures that a company never rests on its laurels, a core part of Marel philosophy from the outset.

It's all about salmon



Each year at the beginning of February, Marel invites all salmon processors to attend our Salmon Showhow at the company's salmon division, in Nørresundby, Denmark.

For many Marel customers, attending the show has become a must, while several new faces also join us every year. Since the first event was staged in 2001, it has grown from being a small local exhibition for Scandinavian customers to become the salmon industry's largest event of its kind, with more than 200 people attending from over 100 companies worldwide.

The Showhow highlights all the latest Marel equipment and integrated solutions, as well as a wide range of standard machines, with live demonstrations held throughout the day.

In addition, leading speakers are invited each year to discuss salmon-related topics, with this year's guest list including Norman Van Vactor, managing director of Alaskan company Leader Creek Fisheries, and Lars Liabø, from international industry analyst Kontali.

So, if salmon processing's your business, make a date in your diary to attend the next Marel Salmon Showhow in February 2012.

GO TO: www.marel.com/salmonshowhow



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

