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# Keeping up with the times

**Times are changing. Marel Food Systems and Stork Food Systems are changing, too. Change brings new demands with new thinking and together Marel and Stork are responding with new, innovative machines and systems for our customers. Marel Food Systems and Stork Food Systems can provide just that - whatever the time zone.**

Our internationally renowned brands – AEW Delford, Carnitech, Marel, Scanaevagt and Stork, including Townsend – offer the most comprehensive range of products and systems for the global meat, fish and poultry industries. While Marel and Stork will each retain their individual identity and character, joint efforts in engineering and design will allow our customers to think in terms of the total process. However, autonomy will also remain for those customers who prefer to work on a more one-to-one basis.

## Kakugiri processing

**The competitiveness of the Brazilian poultry industry is well recognized internationally. With a market share of more than 50% in the field of processed poultry products, Brazil is by far the world's largest exporter – and still has considerable growth potential, based on low production costs and an expanding domestic market.**

Japan is a major poultry meat importer and one of the most demanding markets in the world, because of the high degree of standardization as well as stringent health criteria for imported products.

One of the poultry products that is very popular among Japanese consumers is "kakugiri", which can be translated as

"square cut". Kakugiri consists of "cubes" of chicken leg meat, which is considered to be more tasty than breast meat. Kakugiri cubes are widely used in both soups and fast food.

However, the Japanese market demands that these kakugiri cubes are cut to very accurate weights, such as 15–20g/20–25g/25–30g. Orders for each weight range are placed in terms of tons.

Brazil exports kakugiri to Japan in very considerable quantities, and it goes without saying that the manual processing of such orders requires a large labour force. It is estimated that more than 100 people are normally needed to carry out all the work involved in the deboning, cutting and

# Expanding private label business

**Established in 1892, Joseph Robertson of Aberdeen is Scotland's oldest seafood processing company. The family business is now in its fourth generation, owned and operated by Simon Robertson and his brothers James and Michael, with the bulk of its fish still haddock and whiting caught locally.**

Some 70% of its business is in the food service sector, supplying restaurants, schools and hospitals with a variety of coated fish products and fish-based meals. The remaining 30% is accounted for by Swankies – Robertson's own regional retail brand – private label packs and exports to Europe.

## Expanding private label business

In May 2008, Robertson launched a new venture, supplying chilled fish products in to the retail sector.

James Robertson explains. "Our ambition has long been to increase our retail business by supplying the major multiples with innovative private label products inspired by our success in the foodservice sector.



## AEW Delford labelling installation

The new business has created a demand for the fast, efficient application of wrap-around labels. As a result, Joseph Robertson has installed an AEW Delford C3 Panel Labelling System on the private label packing line.

As all the current packs are fixed weight, the C3 Labeller is used to apply pre-printed labels to the top, side and

base of each pack. However, the unit also has the facility to provide variably printed labels through a second print head if required.

Angie Berry, Joseph Robertson's Factory Manager, was responsible for selecting the C Labelling system.

She explains, "We looked at a number of C Labelling units before deciding on the AEW Delford. It was not the cheapest but in this business you can't afford unreliable kit."

She adds, "Ease of use is also very important, especially as we use largely unskilled labour on the factory floor. My staff had never seen C labels or coding but were able to operate the C Labeller with very little training."

Following the successful operation of the C3 System, Joseph Robertson has invested in a second AEW Delford Labeller for the same line. Fitted to the outfeed conveyor prior to the final packing station, the LS40 Label Applicator will be used for the automatic application of secondary product description and promotional labels.

**"I have had extensive experience with AEW Delford weighing and labelling systems and consider them to be the 'Rolls Royces' in their field."**

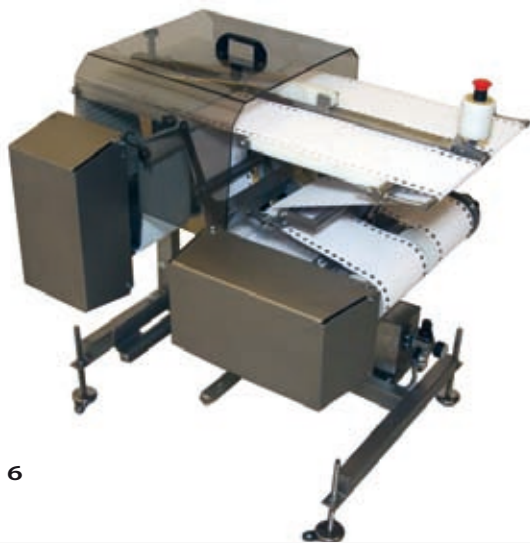
Angie Berry, Factory Manager



# SpeedSort retraction conveyor

## – why didn't we think of that before?

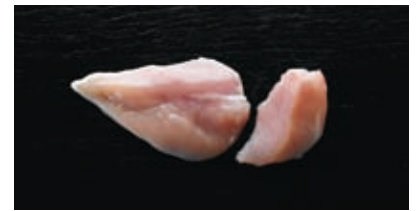
**The ultra-fast SpeedSort retraction conveyor is an ingenious piece of equipment which is able to reject trim or sort products at speeds that will amaze you.**



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The SpeedSort can be used in many of the processing lines that Marel Food Systems provides to food industry companies. Examples of installations to date include placing after a portion cutter, where it rejects trim before infeed to a RoboBatcher, and after a SensorX bone detection system, where it sorts out chicken fillets that contain bone fragments. The possibilities are many.

The SpeedSort retraction conveyor is labour-saving as well as efficient and versatile. It can do away with operators normally employed to do some of the sorting jobs described above. This manpower saving can often amount to 1-2 operators per processing line. This means that the SpeedSort retraction conveyor has an extremely rapid payback rate.

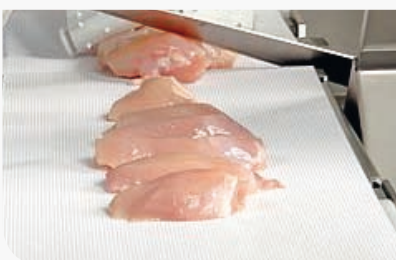


## Top performance made better

**Based on the ideas and requirements that customers have put forward to us, we have redesigned the B22 dual lane portion cutter. A more hygienic construction and better protected vision system for accurate scanning now give processors an even better machine for perfect fixed-weight or length-specific products.**

### More accurate scanning of products

The B22 portion cutter is designed specifically for poultry processing. The portion cutter uses a servomotor driven



knife in each lane and a high-speed laser vision system to maintain very high accuracy – while still providing top performance with up to 1500 cuts/minute per knife per lane. In our latest upgraded model, the vision system is mounted away from the area where the meat is cut which means that no stains blur the camera, ensuring accurate scanning of the product.

### Hygiene improvements

A new frame construction and redesign of several parts on the machine meets some of the feedback we have received from customers regarding hygiene. The amount of time needed to clean the machine is reduced considerably.

### Rapid changing of cutting angles gives flexibility

The B22 portion cutter is more than a very fast, accurate portion cutter –

it is also extremely flexible in use. It only takes seconds to switch the knife set back and forth between different cutting angles. This makes it easier to achieve the natural look on products such as fixed-weight chicken breasts.

### Innova inside

The B22 portion cutter is prepared for use with Innova – Marel Food Systems' intelligent production control software. With Innova it is possible to fully control the portion cutter, e.g. program set up and download, data collection, etc.

### Highlights

- High speed – 3000 cuts/minute
- Phenomenal accuracy, resulting in minimal giveaway
- Flexible use – cutting angle can be switched in seconds
- Hygienic design and easy to clean

# ValueDrum, marinating the smart way

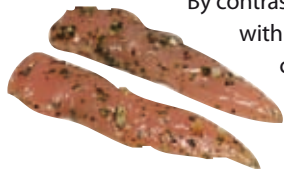
**Marinating, dusting with herbs, coating ... these are all classic ways to give meat extra taste and improve presentation. This kind of thing was usually done by hand at home. However, the modern consumer devotes less and less time to preparing meals – which means that food products must be faster and easier to prepare.**

To help tackle this trend, Stork Food Systems has developed an advanced in-line marinating and massaging system known as ValueDrum.

## In-line concept

Conventional tumblers and marinating systems mean a lot of product handling: loading product into crates or containers, interim cold storage, the creation of buffers and bringing product back in line for additional process steps or for packaging. Such product handling costs time and money, and also has a negative effect on the appearance and bacteriological quality of the end product.

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By contrast, ValueDrum is an in-line concept that does away with the need for many of the handling operations associated with traditional marinating and massaging processes. Adopting the principle of working with small batches directly on the processing line makes ValueDrum more efficient than traditional tumblers.

## Slimmed-down logistics

The in-line concept used in ValueDrum does away with any need to move products around in crates or containers during production. The first-in, first-out principle used in ValueDrum concept results in a simplified logistical environment, which

in turn makes it easy to ensure that products can be monitored and traced reliably.



## Small batches, good mixing

Small batches consisting of no more than 15 kg at a time, combined with a more efficient massaging technique, ensure the best possible product contact. It also helps avoid product damage.

The mixing and massaging elements of ValueDrum ensure good distribution of the meat products while the additives are introduced, resulting in an even covering.

## Short processing times

Because of ValueDrum's in-line principle and the short processing times involved, the meat products being processed arrive quickly in their final packaging. This actually means that marinated products are delivered to the packaging station almost as quickly as raw products, with important benefits for product shelf life.

## The benefits – in brief

- Additives get distributed uniformly
- Less damage to the meat products
- Savings in labour costs
- Savings in product handling costs
- Improved product shelf life
- Easier, more effective tracking and tracing



**For more information about ValueDrum please see [www.storkfoodsystems.com](http://www.storkfoodsystems.com)**



# New flowline was an enormous leap

**“It was an enormous leap when we received the new flowline in May 2008. You could say that with its arrival we were transported into the present,” says Gudmundur St. Jonsson, Managing Director of Nordurstrond in Iceland.**

“The Marel flowline clearly handles the raw material better than the old line and as a result the product is both more attractive and better in quality. Less raw material goes into frozen blocks and the product price is therefore higher,” says Jonsson. “The speed of the processing is also faster”, he adds, “and the flow of raw material to the trimming stations is steadier than before, resulting in an increase in throughput. With the old line, the operators often had to wait for the raw material.”



Increase in throughput exceeds expectations Nordurstrond also acquired a new Dantech IQF freezer from Marel Food Systems, along with a grader with automatic infeed from the freezer. “The freezer has completely transformed our freezing,” Jonsson enthuses. In addition, the Innova software system from Marel Food Systems makes it possible to closely monitor the flow of the entire production process, as well as keep track of the quality. A stock registration system may be added later.

“The flowline has performed very well for us from the moment we received it,” says Jonsson. Installation did not take long and employees quickly adjusted to the line. On the very first day the throughput was equal to that of the old line and has been going up since then. “It has been a big jump and the throughput has exceeded our expectations. Our competitive position has improved accordingly,” Jonsson says in conclusion.

**“The new line weighs all the products from the trimming stage, which allows us track precisely the throughput and yield of each operator.”**

Gudmundur St. Jonsson, Managing Director of Nordurstrond

## Profit and productivity analyses

**Many food processing companies often need to address a number of key issues before they make the big decisions about whether to change or renew their processing facilities or production methods.**

Marel Food Systems has therefore teamed up with Thomas Løth CEO of ProActive Food Consulting, to provide customers with a range of consultancy services in this specialist field, including

- Overview of current and future product mix and the processing capacity needed
- Methods to reduce labour costs
- Ideas for improving product mix,

especially on value-added products

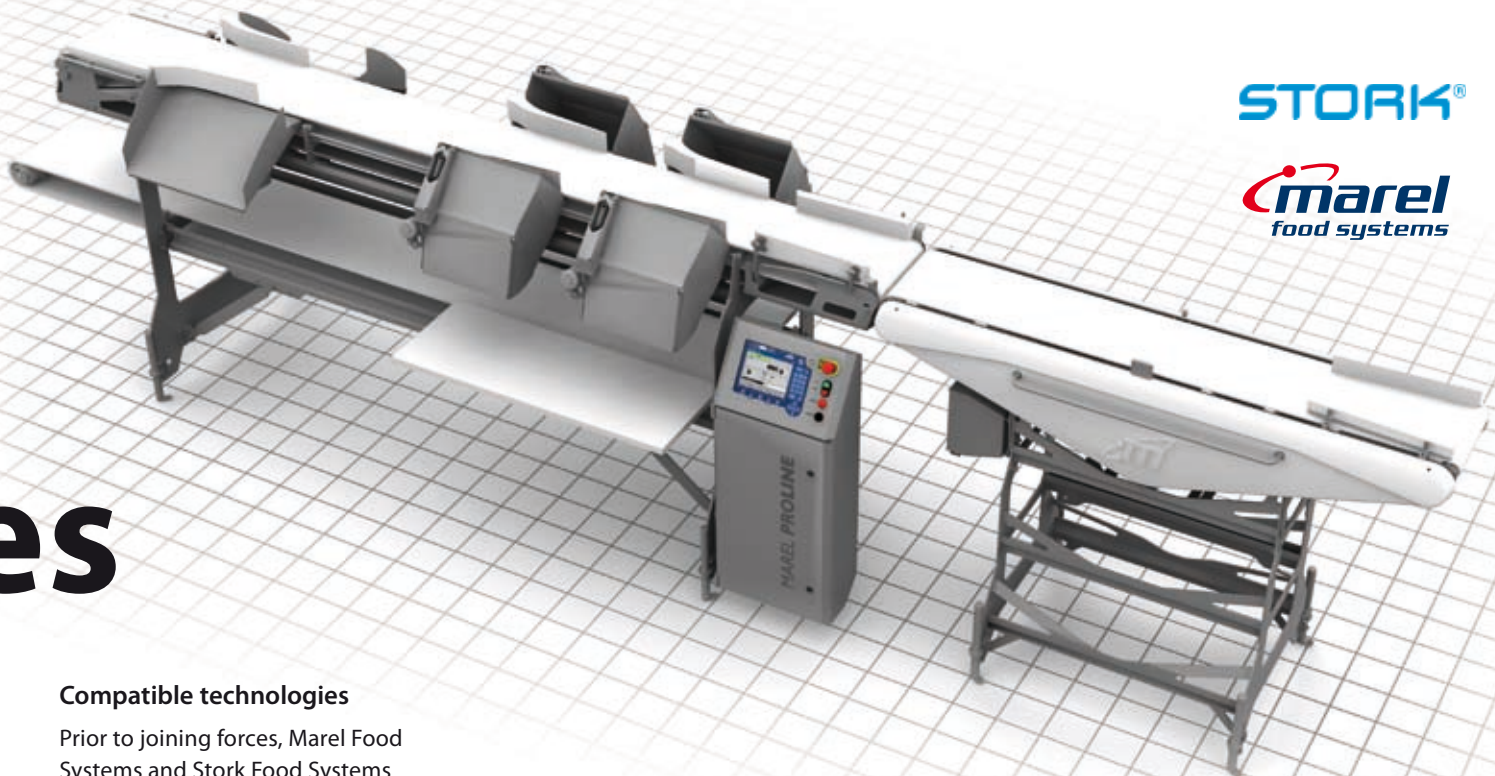
- In-depth analysis of new profit opportunities and action plans.

### Analysis and recommendations

The Corporate Director of Sales for Marel Food Systems, Lárus Ásgeirsson, explains, “A number of our customers have benefited immensely from

the feasibility studies carried out by ProActive Food Consulting about whether or not it would be a viable proposition to undertake investments in new products, facilities and production methods. In addition, these studies have





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**Compatible technologies**

Prior to joining forces, Marel Food Systems and Stork Food Systems worked together for almost a decade on individual projects and product development. Marel Food Systems' integrated systems for the food industry include deboning and trimming lines for yield and portion control, grading and batching systems, several packing systems, as well as intelligent production control software. These technologies will soon be compatible and able to commu-

nicate with, for example, Stork Food Systems' poultry processing lines and Stork Townsend's further processing systems. Slicing technology, weighing systems and raw materials equipment from Marel Food Systems – along with several other options from both companies – will also feature in the integrated systems we will offer.

**The future**

Complementary product lines will enable Marel and Stork to bring real value to our customers. A shared culture of innovation allows us to focus on the key issues in the industry, such as food safety, automation, yield, traceability and product inspection to name but a few.

weight classification of a single ton of deboned chicken legs.

**Automatic cutting of kakugiri**

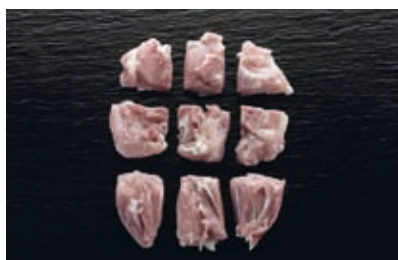
Naturally, there are considerable opportunities and benefits to be had if some of these processes can be automated, either wholly or in part. After almost two years of intensive R&D work, Marel Food Systems devised a way of tackling this need, using portion cutter equipment from the company's portfolio. These portion cutters scan the input flow of chick-

en legs to determine the best cutting ratio for the meat. The actual cutting involves two portioners – a portion cutter B36 that cuts the meat into strips and a portion cutter B22 then cutting these strips into cubes. This line can process as much as one ton every hour, and it reduces manpower requirements by as much as 35 persons per shift.

There are now 15 kakugiri lines of this type operating in Brazil, most of them running in three shifts, 21 hours a day and six days a week. Using Marel

portion cutters in this way means that daily production can reach as high as 300 tons, replacing the efforts of up to 1400 people.

"The key to this exceptionally high yield lies in using contact freezers. These create a 'crust' on the surface of the deboned leg meat, resulting in a cleaner and more accurate cut. This kind of focus on the details is really the key to our success here," explains Sven Petersen, responsible for sales of poultry processing equipment at Marel Food Systems Brazil.



# Knowing your beef by the number

**The high-tech processing line at the Himmerlandskød meat-cutting company in Denmark traces each cut of meat back to the farmer it came from.**

Big strong men wearing aprons and steel mesh protective gloves quickly cut up beef and veal carcasses, with their knives slicing through the meat as if it was butter. Two independent slaughterhouses supply these carcasses for Himmerlandskød to cut up. Himmerlandskød can trace the individual cuts of meat right back to the individual farmer that raised the animal.

An advanced cutting and deboning line supplied by Marel Food Systems takes up most of the space in the Himmerlandskød cutting halls. Each cut of meat is assigned an identification number, scanned and can then be tracked throughout the entire process in order to provide reliable identification of which animal it came from, the farm that supplied it, the operative who cut the meat into steaks, and so on. "We were the first in Denmark to install an advanced, high-tech cutting system of this type, which ensures 100% traceability right from the individual animal and farm all the way to the meat counter and refrigerated display. It brings a high degree of



security and reassurance for buyers of the meat products, something which is in great demand from both consumers and – not least – the supermarkets," says managing director of Himmerlandskød, Søren Andersen.

*– based on an article by Lotte Gyldenvang in the Danish Nordjyske newspaper, October 2008*

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## Broad smiles all round

– improving the working environment for cutting-line staff



**A Marel cutting and deboning line at the Himmerlandskød facility in Denmark takes the weight off staff.**

**"It's no secret that cutting up meat is a very tough job, but with this new system the hardest part has been done away with, because we no longer have to carry the 45-kilo slabs of meat ourselves. And that has been really good for my back," says Himmerlandskød employee Michael Hansen with a smile.**



He is extremely positive about the new cutting and deboning line that Marel Food Systems recently installed at the Himmerlandskød facility. "I have never seen anything like it. The new system actually prompted me to change jobs and move to this new cut-up facility from the slaughterhouse where I used to work. For me, it was basically a question of whether to stick with a traditional job for another five years and then find something else to do – or to go for a job that meant I could stick with this trade for a long time. Thankfully, I chose the latter," enthuses Michael Hansen.

Amidst the many smiles from the cutting-line staff, there is now an optimistic bustle of activity in the company's cutting halls although it does take quite a bit of concentration to get completely familiar with the new system. A small screen placed next to each individual worker registers everything that is done and lists what has to be done. "I cut the meat in the same way I've always done. Now it's just a matter of doing the cutting in a certain pre-defined sequence. The screen guides me through what to do, which has made the entire cutting process much easier," says another employee, Kim Jensen.

*– based on an article by Lotte Gyldenvang in the Danish Nordjyske newspaper, October 2008*

# Order out of chaos

## Achieve higher throughput with fewer machines and less manpower

Recent studies have revealed lower than expected levels of efficiency in packing and labelling lines – mainly due to frequent line stoppage. In some cases, effective running time was found to be as low as 40% - revealing huge potential for improvement and increased throughput. AEW Delford has responded to the challenge by developing 'Chaotic labelling'; a technology that significantly reduces and, in many cases, eliminates the need for stopping lines. "Chaotic Labelling" allows greater throughput and flexibility of labelling lines from higher efficiency, reduced labour cost and better utilisation of capital investment.

A number of AEW Delford customers have proven that Chaotic labelling technology can handle virtually any amount of chaos on a typical labelling and packing line, typical examples of which are:

- Change of label information (price, lot, text, etc)
- Changeover of products
- Replacement of empty label roll
- Change of product code
- Change of tray height
- Change of tray size (other than height)

- Stop of upstream equipment (packing machine)

Chaotic Labelling enables the process to be continuous rather than fragmented with stops and setup time between several actions that happen several times per hour in most factories. This is achieved in three stages, the infeed that identifies what pack is coming, the weighing and labelling machine itself and the out feed and sorting options.

### Identifying incoming products

When using "Chaotic labelling", the incoming products vary and need to be identified pack by pack to enable the next steps in the Weigh Price Labelling process to handle each pack accordingly. To allow the running of several different products simultaneously, the systems are equipped with one of the following methods to identify packs.

- A scanner reads a product code that has been applied to the pack upstream
- Control buttons on infeed allow operators to identify each pack

In addition to this, a "Multi" product feature is available which uses the following methods to identify incoming products.



- Using a signal from a product conveyor where each channel is assigned to a specific product
- Different height of packs is used to identify different products
- Different weights of packs are used to identify different products
- A colour sensor sensing the side of the tray

The most widely used method is the reading of a barcode that has already been applied to the packs. This allows accurate reading of the product code and an immense number of products to be run simultaneously. The most frequent SKUs/PLUs are kept in a quick access memory to allow fluent change of product parameters at speeds up to 100 packs /min.

For more information about Chaotic Labelling please see [www.marel.com](http://www.marel.com)



# Chasing perfection in bone detection

**“It was really the demands of our customers for lower bone content that led us to buy the SensorX,” says Hans van Norden, Production Manager of Dutch poultry producer Storteboom.**

The company recently decided to add the SensorX to its arsenal of equipment from Marel Food Systems at its poultry processing plant in Nijkerk, the Netherlands – the biggest filleting factory in Europe.

Storteboom, which operates advanced slaughter and production facilities in both the Netherlands and Poland, supplies large retailers in Europe, such as ASDA, Tesco, Marks & Spencer and McDonald’s. The Nijkerk plant alone processes between 140 and 150 tons of poultry per day.

## Customers demand fewer bones

Prior to acquiring the SensorX in October 2008, Storteboom had invested in 24 grader lines from Marel Food Systems, along with a TSM template slicing machine.

With the addition of the SensorX, isolating chicken pieces that contain bones is easy. Two AMF Stork filleting lines each feed the SensorX, using an infeed conveyor, with 110 fillets per minute. The SensorX checks the fillets for bones and a dual quality station removes those that contain bones. These fillets are checked by an operator, who then removes the bones. Meanwhile, the boneless fillets proceed directly along the conveyor to a grader before continuing down the line.

## Improved quality

“The SensorX is very important to us in terms of reducing risk and improving quality,” says van Norden. “It is now a key part of our entire quality process and it helps to prevent against claims. And as an added benefit, it is user-friendly.”

Storteboom is in no doubt that the SensorX has made a big difference to the production process. “100% bone-free is an illusion but the SensorX is very close to that,” says van Norden in conclusion.

**“We tested some X-ray machines and Marel’s was the best. It was the only one that could find the small bones and the deltabones.”**

Hans van Norden, Production Manager at Storteboom

For more information about SensorX please see [www.marel.com](http://www.marel.com)





“For us, hygiene is paramount. Because of the way the multihead weigher is designed and built, we are able to clean the system using only low-pressure water, which gives us a much better cleaning effect.

Helle Klitlund, Quality Control Manager

# Full system ensures increase in production

**Danish seafood company Chrisfish exports about 90 per cent of its production as private label seafood products, mainly to southern Europe. Chrisfish sells the remaining output on the Danish market, under its own label.**

Chrisfish has experienced considerable growth and in order to keep up with the demand, the company recently built a completely new facility to increase its processing capacity. The right combination of equipment for achieving this turned out to be a complete packing line from Marel Food Systems. The installation consists of a Carnitech dethawing system that feeds IQF shrimp into a Scanvaegt ScanCombinator multihead weigher, with superb accuracy.

“We considered quite a few suppliers when we decided to buy the new packing line. But Marel Food Systems’ ability to deliver the complete system, without needing to integrate third-party equipment from other sources, really decided it for us,” explains Quality Control Manager Helle Klitlund. The construction of the ScanCombinator multihead weigher means that Chrisfish is able to keep bacteria levels to the absolute minimum.

The low pressure means the water particles are not as atomised as when using high-pressure cleaning systems. This means we use less water and also get a cleaner machine, because the water and grime run off the machine faster,” points out Helle Klitlund.

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given our industry experts a valuable basis on which to design the optimal production layout and the best possible investment proposal.”

## New profit opportunities

Drobex in Poland has recently taken advantage of the resources of ProActive Food Consulting in working on increasing production by 50%. Among the work carried out by ProActive Food Consulting was an in-depth analysis of new profit opportunities, helping to define the current

and future product mix for Drobex and recommending potential suppliers. As CEO Agnieszka Frischke explains, “Working closely with our management team, ProActive Food Consulting was able to identify new profit opportunities amounting to as much as 2 million Euros per year. The payback analysis and payback times for each of these projects are very attractive, and we are going ahead in accordance with the recommendations.”

**For more information please contact [tlo@gvdnet.dk](mailto:tlo@gvdnet.dk) or [info@marel.com](mailto:info@marel.com)**



*Thomas Løth, has 14 years experience in the food processing industry. He has been responsible for investments amounting to more than 50 million Euros at the Danish company Rose Poultry, making it one of the most advanced in Europe.*