

Insight

Poultry processing, June 2022, English

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**A new generation
of Marel solutions**
Nuova-i, IMPAQT, Spectra
and more...



A world of change



In 2022, we all have come to realize that in one way or another Covid-19 is here to stay. Dealing with this new reality, the poultry industry has started investing again in further automation, in safe workplaces for people, in more flexibility and in the highest levels of food safety. We see these as being the most significant drivers behind the projects we are now completing at Marel Poultry.

Apart from all the other disruptions, a worldwide labor shortage is a big hurdle for the poultry industry to clear. The obstacle was there pre-Covid, during Covid and will still be around post-Covid. It applies to people in the production process as well as technical staff. It is only logical that poultry processors are looking at automation and data-driven solutions to solve these issues. Marel is committed to supporting processors in their efforts to make most of the processes considerably less labor-dependent.

Not without reason, the digitalization of processes is clearly accelerating. Digitalization allows for higher predictability and reliability in the processing plant. An example of this is IMPAQT being able to give advance notification of problems such as a drop in performance, even before the issue occurs. Marel has been moving in this direction for several years. The development is ongoing and now getting a real boost. This is confirmed by our respected customer Master Good in the article about their experiences with IMPAQT.

The pandemic has resulted in consumers having a higher awareness of the nature and quality of food on their plates. That's why poultry processors are looking for ways to increase the overall food safety of their products. Besides our well-respected SensorX system, Marel can now proudly present the revolutionary Spectra solution for detecting unwanted soft material on poultry meat. This is not just about food safety but also about brand protection.

We see people and companies adapting to a post-Covid-19 world. Our Marel employees can now travel to customers in large parts of the world again. Poultry processors such as Atria in Finland express an optimistic outlook by planning major projects, about which you can read in this issue of Insight. Trade shows are on again too in 2022. IPPE in Atlanta, USA was the first carefully organized event where people could meet. At the VIV Europe exhibition in Utrecht, we hope to have the opportunity of meeting you again in person. Your visit will certainly be worth it! We have prepared for many innovations to be on display. You can read about them in this issue of Insight.

Have a pleasant read,

Roger Claessens
EVP Marel Poultry

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"We are increasing our yield and efficiency every day"

Laurent Jodoin, Plant Manager Olymel Saint-Damase

The values of Olymel, Canada, line up perfectly with those of Marel

Feeding the world sustainably and responsibly

Olymel is on a mission to feed the world in a sustainable and responsible manner, to preserve our world for future generations. Their core values are integrity, respect, and trust. The company has a specific focus on animal welfare and believes that the humane treatment of animals is a fundamental value. Another specific focus is the environment. They have a main objective to reduce consumption of resources and ecological footprint. The values of Olymel line up perfectly with those of Marel, making this a perfect partnership.

Olymel and Marel have a long-standing relationship, so when Olymel decided to expand their operations in Saint-Damase, they turned to Marel for solutions. The Saint-Damase facility is a producer for a large retail service group in Canada. At the

time, much of the cut-up, deboning and packing was being outsourced to a contractor and this affected shelf life and yield and was much more difficult to control.

A proven solution

Marel invited Olymel to see an already proven solution for the retail sector in the US at Lincoln Premium Poultry in Fremont Nebraska. According to Laurent Jodoin, Plant Manager at the Saint-Damase facility, an in-line solution was very important and bringing this operation in-house was essential. "We have a shorter time now in processing, so the shelf life of the product is better and the customer is happy," comments Jodoin.

A complete cut-up line with two AMF-i breast cap filleting machines and two RoboBatcher Flex machines for boneless fillets and drumsticks was the final solution. Along with that, Olymel also has two SensorX systems for detecting bones in breast fillets and thighs and two Multihead Weighers all as part of this final solution.

Transferring knowledge

The equipment was totally new for the Saint-Damase facility, so training from the Marel team was a high priority. From operators to maintenance to production, the transfer of knowledge was critical. Having technicians and a project manager that spoke French was a big help. "Everything went really smoothly, was organized, and was on time," Jodoin

says. The line startup was September 2021 and Olymel had three-quarters of the staff to start the line; getting it right was imperative. It took a few months, but Olymel is now running the line at almost full capacity.

Labor challenges

As with the entire world, Olymel also faces labor challenges. Expanding the facility required them to hire 80 additional people, however, having automation on this line saved them staffing costs. "Without the RoboBatcher, we would have had to hire an additional 20 people," comments Jodoin. Labor savings can also be seen with the semi-automatic AMF-i breast cap filleting solutions versus a manual cone line solution.

Every minute counts

"We expect Marel to be adaptive to our needs, fit into our plans. This was a beautiful project for Olymel and Marel," Jodoin continues. "Having a supplier understand that every minute counts is important. Being easily reachable and listening to our needs and helping us obtain our goals are all important aspects. And we are happy that we have found this in Marel. In Olymel, we look at the numbers and we are very pleased with what we have done with Marel and the partnership we have formed."



About Olymel – 30 years of tradition

As a leader in the agrofood industry, and proud of its Quebec roots, the superior quality of its products and its 15,000 employees, Olymel has a single motivation and mission: together feed the world.

These last decades have been a period of continuous growth for Olymel. Through several acquisitions and business partnerships, they are now the Canadian leader in producing, processing, and marketing pork and poultry meat. With revenues of \$4.5 billion, they have 27 plants in four Canadian provinces and export to over 65 countries. Olymel constantly strives to modernize its equipment, improve efficiency, and invest in research and development to better serve consumers as dining habits change. They were awarded on their initiatives in sodium reduction, and they have implemented allergen control in their facilities. The research and development team are dedicated to continuous improvements of products and processes all while keeping a focus on performance and navigating through changing consumer eating habits.

olymel.ca



PMJ and Marel synergy results in a full-line modular duck portfolio

Integrated duck processing solutions



The successful integration of PMJ into the Marel organization creates added value for duck processors around the world. They can benefit from Marel's polyvalent duck processing portfolio, which has been considerably overhauled. Marel will be their one-stop full-line supplier for processing Pekin Ducks, Barbary, Muscovy, Mullard and other duck types as well as geese.

In the primary process in particular, Marel has revamped its duck program by adding several automated solutions 'powered by PMJ'.

In-line and off-line plucking

After the stunning and scalding processes featuring dedicated solutions for the different species, there's a wide variety of plucking solutions available, which can be combined to suit most situations: in-line, off-line, drum pluckers, counter-rotating. An individual mix of technologies can be tailored to the species being processed to ensure high efficiency.

It is common knowledge that when dealing with variations in weight, size and shape, off-line rotary drum plucking delivers the best possible result. It can process almost every bird size. Head and feet are plucked too and drum pluckers can easily handle bigger in-flock weight variations while



Vice-president Reijo Áijó looks forward to a high-capacity, data-driven process

A 15,000 bph greenfield for

Atria Finland has started the construction of the largest investment in its history: a new 15,000 bph poultry processing plant in Nurmo mainly featuring Marel solutions. Since Marel installed Atria's current Nurmo poultry process some 20 years ago, Atria and Marel have been long-term partners. Reijo Áijó, vice president of Atria, talks about the greenfield project which is due to be complete in 2024.

In the greenfield plant, the primary process features a high-speed Marel line with a capacity of 15,000 bph. Processing starts with ATLAS live bird handling and CAS SmoothFlow anesthetization, followed by Marel's scalding, plucking and evisceration solutions. This includes the brand-new,

revolutionary intelligent Nuova-i eviscerator, one of the world's first ever. As for chilling, Atria has opted for advanced Marel air chilling technologies. The same goes for the cut-up and deboning lines.

Why did you decide to build a greenfield, right next to your existing plant?

"Like elsewhere around the world, poultry consumption is growing in Finland. We foresee our factory capacity being challenged in the coming years. Secondly, our current Marel line and the equipment in our poultry process date back to 2003, so they're at the end of their life cycle, although they are still in quite good shape thanks to proper service and maintenance."

Who are your customers?

"Our customers operate in the Finnish retail and foodservice markets, so export has not been a big share of our sales. That's why reacting to increasing domestic poultry consumption is the main reason for building the greenfield. But of course, once we have our 15,000 bph processing plant up and running, we will have more possibilities for the expansion of our export plans."

"It will be a big step if we can immediately pinpoint the reason with IMPAQT."

Reijo Áijó, vice president of Atria

What are your main end products?

"In Finland, fresh fillet is the main article and I'm sure it will remain like that. The whole natural fillet itself is not an important article, but when it has been cut into slices, cubes or stripes, it becomes a major seller. Compared to other markets in Europe, Finland stands out for its marinated fillets. Around 75% of products are marinated or brine salted before being put into the tray. We're applying all those different marinades in our own processing plant."

On the other hand, sales of thigh fillets have become quite big too in Finland. Marel's Thigh Fillet System will certainly do well in the new Nurmo plant.

"In our new factory we will have a Marel feet processing system as well but feet are for export only, they're not sold on

still maintaining good plucking quality. Marel solves the typical disadvantages of conventional rotary drum pluckers by loading and discharging them automatically as well as making pluck cycle and speed settings easier.

Handling a wide range of sizes and weights of ducks, geese and other waterfowl.

Waxing

Waxing ducks is essential for perfect skin quality, as it removes small feathers and down. By using more waxing cycles, the Marel modular waxing process can be tuned to all types of duck and any combination of market and product. The waxing line comprises multiple phases featuring immersion tanks, wax removers and a wax recycling system. It starts with the 3-point suspension system to position the product ideally for the application of a high-quality waxing layer around each product. The skin quality required

determines the thickness of the wax layer and the number of dipping cycles.

Transfer

The duck Transfer Machine from kill line to evisceration line features a unique feet-to-feet transfer. It strictly separates the two processes, preventing contamination and lifting food safety standards to higher levels. The automated transfer process doesn't need human input.

Polyvalent evisceration

Marel evisceration solutions are not just for Pekin Duck but can be set to handle a wide range of sizes and weights of ducks, geese and other waterfowl. Their performance is outstanding, with the highest percentage of complete packs removed. Once separated from the carcass, the viscera pack is transferred directly to a tray on a separate pack conveyor belt to minimize the risk of contamination. The conveyor with the drawn packs is synchronized with the product conveyor to make veterinarian inspection easy and effective. The drawing operation is done very carefully, effectively removing hearts, resulting in minimum liver damage and minimum skin contamination. For each type of duck, goose, the eviscerator uses a dedicated spoon which are easily

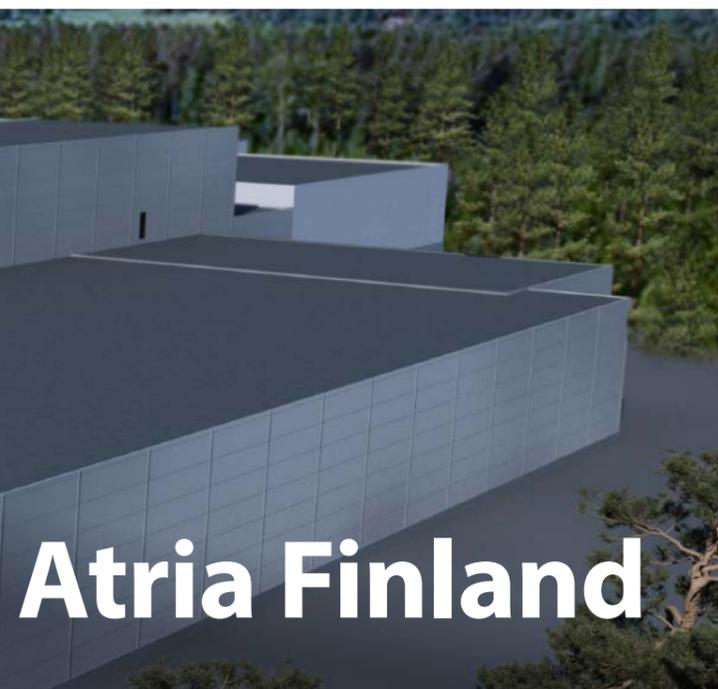
interchangeable. This is a practical solution for processors in Poland or Hungary, who handle ducks for most of the year but also have to deal with seasonal geese.

Neck handling

In the duck industry, careful handling of the neck and neck skin is crucial for the end product. Marel uses four machines to ensure the best possible effective neck process: Neck Skin Slitter, Head Cutter & Tongue Harvester, Neck Skin Inspection Machine and Neck Cracker. Performance of this four stage neck process is independent of the killing method used after stunning. The combined system performs better than any other when it comes to the removal of esophagus and trachea. All neck processes aim to get a higher neck skin yield and better neck skin presentation.

Together, all these specialized duck processing systems represent a state-of-the-art solution carefully handling each detail of the primary process and providing high-quality duck meat at the end of the line.

marel.com/duck



Atria Finland

the domestic market. As for the giblets, they are not eaten in big volumes in Finland, they are going to pet food."

Why did you choose ATLAS live bird handling?

"Animal welfare is a hot topic in Finland and it was one of the major reasons for choosing ATLAS. When automatically loading the birds at the farm with a catching machine, ATLAS is quite efficient and humane. It is more gentle because a SmartStack has only one compartment per layer. No need to keep repositioning the feeding conveyor as with other systems.

ATLAS also lowers the cost of our logistics. We can load more birds on the trucks than with other systems, giving them even more space than before. We also expect to have a much more hygienic system as every SmartStack layer is washed

"We want to take data-driven action and control the whole process."

Reijo Áijó, vice president of Atria

separately, creating more opportunities to deep clean all surfaces.

We have very strict animal welfare rules and our veterinarians follow them precisely. They will see that the CAS SmoothFlow system, when combined with ATLAS, is probably the most humane system, leaving broilers in their trays and guiding them smoothly through the chambers."

What do you expect from the IMPAQT software package?

"We want our processes to be more data-driven than before. We expect IMPAQT will be a big help with maintenance, at the same time helping improve evisceration and bird quality. We have high expectations, for example, of how hygienic the process can be.

We're also keen on having the information in real-time, so we can react immediately if something is wrong. Until now, we can only see that yesterday or during the last two weeks, something was wrong. We might be forced into an extensive overhaul without knowing the exact reason for the issue. It will be a big step if we can immediately pinpoint the reason with IMPAQT. We really look forward to seeing what we can gain from that."

Why do you have multiple weighing and assessment systems such as IRIS and SmartWeigher?

The aim is to have good process control at all times. By weighing and assessing the products at different points in the

line, we can see how well our process is performing from start to end. By using data from IRIS and SmartWeigher, we can also anticipate customer orders at an early stage and distribute products accordingly. We want to be able to react appropriately if results deviate from our predictions. We want to take data-driven action and control the whole process. For example, fillet yield figures are very important for us. We really have to know what is happening in the various process steps and what is affecting the yield.

Is sustainability a strong theme in Finland and for Atria?

"Yes, we have our own sustainability policy and that affects everything in the project. We ask our suppliers for the building to act sustainably. We try to find the most environment-friendly ways to produce. Energy use, ventilation and most of all, heat recovery are major themes. In a processing plant, many machines, compressors and other equipment produce heat. We also have to take heat out of our cold rooms. All this heat is reused, an example being warming up water for washing."

Water use is also part of our sustainable policy. Although we have plenty of water available, we want to reduce the amount. We have our own water treatment plant, where we use a combination of technologies to clean waste water. Then it goes to the community water provision where final treatment is done."



About Atria

Atria is a leading food company in Northern Europe. The Group's net sales exceed EUR 1.5 billion, and it employs about 4,440 people. The operations are divided into three business areas: Atria Finland, Atria Sweden and Atria Estonia & Denmark.

Atria's strategic goal is to become the winning northern European food company. Renewal of the company's operations and offerings, profitable growth and the increase of ownership value support the three pillars of Atria's operations and culture: commercial expertise, efficient functioning and responsible and sustainable values.

atria.com



Atria
PERHEILÖILTÄ VUODESTA 1902

Eva van der Velde (Marel) about the Nuova-i eviscerator

“Nuova-i brings lots of added value”

Eva van der Velde, Product Technologist at Marel, evaluates Marel’s brand new Nuova-i eviscerator, which has been in operation in a real production environment for several months now. “The Nuova-i certainly brings lots of added value. It brings peace and quiet in both production and technical departments, because performance figures are consistent, meaning consistently high.”

“With Nuova-i, evisceration performance is known at any moment and more stable than ever before. People on the factory floor know exactly what to do and they need to do much less than they’re used to. So they can work in a more structured way.”

Flock control

Poultry processors usually process various flock weights, from 1,700 to 3,200 grams [3.7 to 7 lbs] average live weight, for example. The art of evisceration is having consistently high performance on all weights and performing well in the gible pack harvesting line too. The combination of both skills makes it tricky, but Marel comes out best in any comparison. Correct handling of flock weight variations is one of the most important aspects of evisceration. Until now, evisceration settings were for a given flock weight. Processing a lighter flock with these same settings would compromise performance. On the other hand, adjusting the machine for a

different average flock weight required precise intervention by experts who knew what they were doing.

Eva van der Velde comments, “With Nuova-i, every operator knows what to do with each flock. When a heavy flock arrives, you simply select the right program on the touchscreen. The machine settings then adjust themselves. When light birds come in, you press the icon with the small chicken to activate the corresponding program; it is as simple as that. This works wonderfully. Performance stays incredibly stable.”

“Evisceration performance is known at any moment and more stable than ever before”

Eva van der Velde, Marel Poultry Product Technologist

Data-driven

Nuova-i gives confidence in the production line, because it is data-driven and depends less on human interpretation. Eva van der Velde continues, “Previously, when something seemed to be wrong, an emergency call went out immediately to Technical Service. Then the technical guys started rechecking everything, because they didn’t know where to look for the cause. That would cost a lot of unnecessary hours, especially if, in the end, nothing was wrong. With Nuova-i, the figures are consistent and uptime is close to the maximum. There aren’t unexpected incidents any more and there’s no reason to panic or make an emergency call to the Technical Department. The screen shows in real-time when one of the evisceration units tends to underperformance or needs maintenance. There’s plenty of time to take preventive action.”

With Nuova-i, processors will have more reliable and relevant data at their fingertips, which certainly provides a lot of added value. They can be more data-driven than ever, allowing them to predict even what their yield is going to be.

Real-time performance

The integrated Nuova-i software package in its most complete form is combined with the overarching IMPAQT software for the primary line. This software cooperation brings up additional real-time data on Nuova-i’s HMI display, such as information about ‘one-leggers’ and shackle performance. The new HMI screen is very straightforward

Czech Processor sees cut-up business growing in the future

Vodnanska Drubez renews se

“Last year, together with Marel, we significantly renewed the secondary process of cutting, deboning, calibrating and batching chicken at our plant in Vodnany,” the words of Milan Riha, Managing Director of Vodnanska Drubez. “We needed to increase capacity and were looking for ways of enhancing performance and product quality.”

“Czech supermarket chains are moving increasingly to unit-weight-unit-price packs. We were keen to automate this labor-intensive process and reduce giveaway. Another supermarket priority is ensuring that their fillet products do not contain bone fragments or any other contaminants. We wanted to address this too.”

For the renewal, Marel supplied an all-new ACM-NT cut-up line, two AMF-i semi-automatic breast cap filleting lines, a whole leg deboning line, SensorX bone detection equipment, a grader, a Multihead Weigher, a RoboBatcher and an I-Cut 122 system, when put together becoming a ‘Robot with a Knife’. At the same time, Marel was able to incorporate Vodnanska Drubez’ existing Marel equipment in the new process.

Growing cut-up business

Vodnanska Drubez already had many years’ experience of Marel automatic cut-up and breast deboning systems.

Mr. Riha continues, “with our new ACM-NT system, cut-up capacity is now considerably greater. We are also able to cut wings into their individual joints, which increases the range of wing products we can offer our customers. We have left space for a second ACM-NT system, as we see our cut-up business growing in the future.”

Breast and leg deboning

Milan Riha is particularly enthusiastic about Vodnanska Drubez’ new AMF-i breast cap filleting systems. “We can produce a wide variety of breast fillet products on the two systems. We particularly like the system’s ability to adjust its modules to each individual breast cap. We now have even higher yields and even better product quality.” SensorX bone detection equipment finishes off the breast fillet operation, guaranteeing that all fillets are free of residual bone and other contaminants.

Vodnanska Drubez debones some 30% of its legs on a new whole leg deboning line. Much of the leg meat produced goes into the company’s wide range of tasty further processed products.

Minimal giveaway

Vodnanska Drubez already knew the value the I-Cut 122 system could bring to their operation. The decision to buy a second system speaks for itself. Mr. Riha comments, “We have always wanted to produce various products from fresh deboned meat of a uniform shape and weight, which is what our retail and catering customers expect from us. With the second I-Cut, we have effectively doubled capacity in an area important both for us and our customers.”

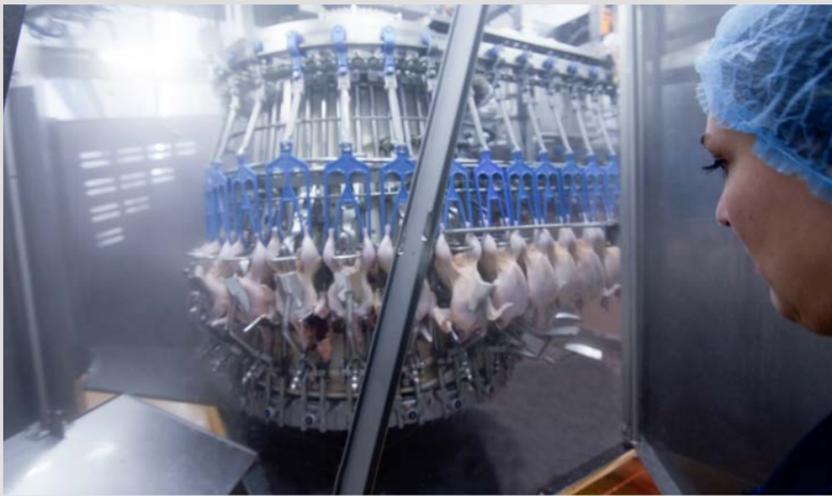
Creating fixed-weight packs by hand is labor-intensive and can result in unacceptably high giveaway, two good reasons



for automation. Vodnanska Drubez now operates a ‘Robot with a Knife’, for fresh fixed-weight fillet packs and a Marel Multihead Weigher for fixed-weight packs of fresh or frozen bone-in and boneless portions.

Innovative technologies

Milan Riha comments, “We are delighted with our Robot with a Knife, which has saved us a lot of labor and significantly reduced giveaway. We like the intelligent way Marel has combined two technologies, RoboBatcher and I-Cut, to give us exactly the pack weights we want. If incoming fillet needs



to use. "It doesn't require much training. Half an hour's instruction will do. Operation of the machine is that simple."

Hygiene and pack shackle

"The new technological improvements of Nuova-i, such as the new spoon, have definitely made the whole operation more hygienic. Due to improved viscera pack separation, the process is much cleaner. The pack is also more compact. Intestines hang out less, so there is less soiling and less chance of cross-contamination. No intestinal remains are left behind in the evisceration line."

Eva van der Velde also talks about the new pack shackle, "The connection with IMPAQT enables processors to see specifically the performance of the new pack shackles. They perform more stably and more durably, because they wear out less and are more robust. Another advantage of the new shackles is that they drop fewer than 0.5 percent of the packs."

Giblet harvesting

Giblet harvesting can't be adaptive; it's a uniform way of working and the same for all incoming products. Therefore, it is logical that the giblet harvesting process benefits greatly from the consistent and compact viscera pack produced by Nuova-i. "There are no longer different types of packs, like the one that is a bit torn or another that has long strings of guts. They are all the same, so there is virtually no loss during harvesting," concludes Eva van der Velde.

marel.com/nuova-i



condary process

trimming to fit the pack size we are producing, TrimSort ensures that this trim is kept separate. The packs look good too, as this clever machine also arranges fillets neatly on their trays. With RoboBatcher, Multihead Weigher and our new Marel grader, we are extremely flexible and can now satisfy automatically virtually any customer demand for sized or fixed weight packs using one of these automation systems."

"We can satisfy virtually any customer demand for sized or fixed weight packs"

Milan Riha, managing director Vodnanska Drubez

Successful implementation despite Covid

The upgrade took place last year during the first Covid wave. Milan Riha continues, "Covid made life difficult both for us and for Marel. We were very happy with the way Marel dealt with this difficult situation. Their back-up both from Boxmeer and on-site in Vodnany was first-rate and gave us all the confidence we needed. We are happy with the performance of the equipment. It has most certainly met our expectations." Vodnanska Drubez aims to update its primary process in Vodnany next year. There are also plans to buy new equipment for the broiler processing plant at Modrice near Brno. Marel is confident that it can expand a relationship, which goes back many years.



About Vodnanska Drubez

Vodnanska Drubez is the largest broiler integration in the Czech Republic and the country's only volume duck producer. The company makes a wide range of fresh and frozen broiler and duck items ranging from fresh and frozen whole birds and portions to a comprehensive selection of further processed ready-to-cook and ready-to-eat products. Vodnanska Drubez has two processing plants for broiler products and one for ducks.

vodnanskadrubez.cz



Hungarian processor Master Good benefits from Marel IMPAQT software

“Thanks to IMPAQT, we have no more miscommunication”

Master Good is a forward-thinking poultry enterprise in Hungary, processing about 260,000 birds per day, working in two shifts, six days a week. The primary processing line runs at a speed of 15,000 bph [250 bpm], which makes it impossible for the human eye to measure efficiency. The help of Marel’s unique and intelligent IMPAQT software is needed. Nóra Moldvai-Villányi, Master Good Production Controller, tells how the implementation of IMPAQT has benefitted the primary process.

Why did you feel you needed the IMPAQT software package?

“We didn’t have a clear view of the performance of our equipment. The technical department and the production leaders of the primary line often had different opinions about the efficiency of the process. With performance changing from flock to flock, even from minute to minute, their judgments were subjective and depended on when they looked at the process. Now that IMPAQT checks every shackle individually, our reports are objective, based on a well-defined interval and on overall production. Therefore, we have no more miscommunication.”

What kind of issues did you want to solve by implementing IMPAQT that couldn’t be solved before?

“IMPAQT gives us a realistic, real-time overview of the performance of the primary line. But it is more important that it can also help us focus on a certain problem, gather all the necessary data and thereby find the root cause of the problem in real-time. Having several product detection points in the line, we can see where most product losses occur. We can decide how to prevent this loss. We can verify the results of our preventive measures.”

“Our technical department benefits most from IMPAQT. They are really enthusiastic and use it frequently.”

Nóra Moldvai-Villányi, production controller Master Good

How do you use IMPAQT in your processing plant?

“IMPAQT is not a tool to solve sudden incidents. We prefer to use it as a monitoring tool for trends, which alerts us if performance drops in a particular area. This means we can react faster and more efficiently. At the moment, our technical department benefits most from IMPAQT. They are really enthusiastic and use it frequently. The Nuova, LineLink DE and EC dashboards are a continuous help for them. They constantly keep their eyes on these dashboards, spot the issues and can react quickly if the performance of any unit drops. But as IMPAQT can monitor many other things, we are still creating processes that will lead to higher uptime. For example, the line-stop report we use now is not 100% accurate. We would like to use IMPAQT data to restructure this report. The Event Editor enables us to see the exact time and length of each stop and the reason for it. In this way, the

unit is not performing well and needs to be repaired or replaced as soon as possible.”

Is IMPAQT making your life easier?

“Yes, it is. Especially when I look at maintenance. Besides the dashboards already mentioned, the Bad Shackle report is also a ‘must see’ report. Every shackle transfers many birds every day. One defective shackle will cause a loss of product each time the conveyor goes round. It’s therefore important to recognize which shackles are broken or damaged. In the so-called Bad Shackle report, our maintenance department can easily identify bad shackles in the line and replace them as soon as possible.”

Do you have some wishes for the future?

“There are still areas of IMPAQT we don’t use yet, while in other areas, we’d like to have more options. For example, it would be useful to see whether a one-legger is missing its left or right leg. Thanks to fruitful meetings with the Marel team, we have already been able discuss our wishes. We hope they will be granted soon.”

mastergood.hu



line-stop report will be more accurate. It will take less time to record downtime. We will be able to see downtime statistics too.”

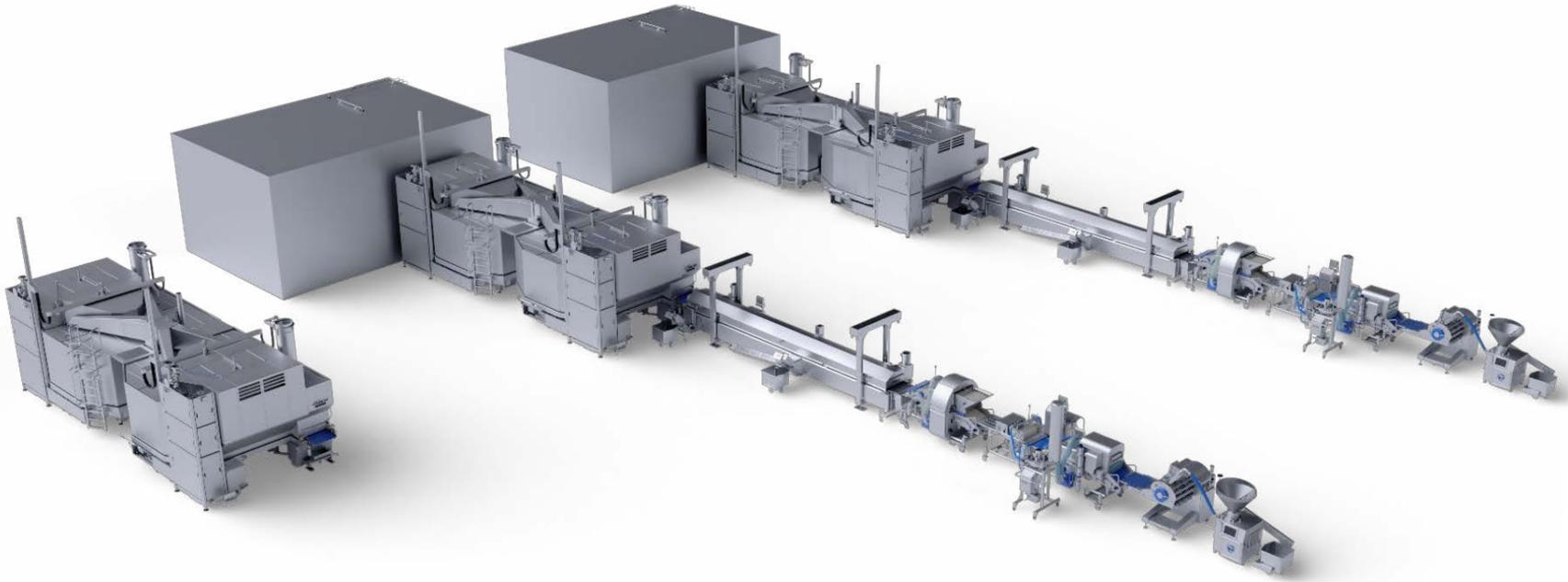
Has IMPAQT already resulted in a better performance?

“Yes, definitely. Gizzards, hearts and livers are very important products for us. We always pay a lot of attention to preventing the loss of these products. As this process starts with the Nuova eviscerator, it is crucial that we can closely watch its operation. With IMPAQT, our technical team can keep a constant eye on this machine by checking the Nuova performance dashboard. This screen not only shows them overall performance but also tells them straight away which



“IMPAQT helps us find the root cause of the problem in real-time”

Nóra Moldvai-Villányi, production controller Master Good



Setting the technology and production reference for prepared foods

Aurora Coop installs largest further processing greenfield in Brazil

At the end of 2021, Aurora Coop and Marel agreed to install the largest further processing greenfield in Brazil. The new facility, located in Chapecó (Santa Catarina), at the center of nine other poultry processing plants belonging to the cooperative, should start production in June 2023. The project, designed to serve domestic and foreign markets, will be a Latin American benchmark for both technology and production volume with its capacity to process more than 20,000 kg [44,092 lbs] of final product per hour.

With an investment initially budgeted at R\$ 550 million [US\$ 100 million], the industrial unit will cover an area of 40,000 m² [9.8 acres]. It will be installed within the Aurora Coop industrial complex, which spans more than 1.7 million m² [420 acres]. The new greenfield should generate 450 new jobs.

Coping with growth

According to Neivor Canton, CEO of Aurora Coop, the project is in line with the cooperative's strategic vision, which aims to serve an increasingly demanding consumer looking for ready-to-cook products, which combine practicality and flavor. "We know that people are eating more animal protein. We must therefore find a better destination for our raw material and add more value in our processing plants. We are aware of the growth both in home and export markets in the consumption of products with higher added value."

Four lines

By building the greenfield, Aurora Coop revolutionizes further processing in Brazil and brings a new quality standard to the market. In this major project, Marel was chosen as the partner to supply all technology for producing a wide range of final convenience products. Aurora Coop has purchased four different convenience food lines with the option of adding an extra line in the future. The project includes Marel's latest, state-of-the-art equipment

complete with all options. Each convenience line will be equipped with the RevoPortioner 1000. This is the first time that this forming solution is to be installed in Latin America. With its low pressure forming technology, it offers substantial performance advantages over the competition.

First ModularOven

Among the premium solutions, Aurora Coop also chose to install the first ModularOvens in Latin America. These MOS ovens have many technological advantages and unique intelligence, ensuring gains in productivity and yield. One of the convenience lines will be fully equipped with Innova software for central Equipment Control. This will ensure a consistent and controlled production process, including OEE (Overall Equipment Efficiency) and real-time data insight for the processing line.

Redefining food production

Ruud Berkers, Regional Sales Director in Brazil, says, "With all these innovative solutions and Marel as a full-line supplier, Aurora Coop is redefining the way prepared foods are produced in Brazil."

Neivor Canton adds, "Aurora Coop is always looking for project partners providing the highest levels of reliability and safety, who can guarantee the quality and performance of our products. "Marel is a great provider of technological solutions for the food industry, exactly what Aurora Coop is looking for in a partner!"

Strengthened partnership

In early 2021, the companies signed a major contract that awarded the modernization of four Aurora factories to Marel. "Aurora Coop is growing continuously and counts on partners like Marel for the implementation of our projects," says Neivor Canton.

For him, Marel's new Progress Point Demonstration and Training Center, recently installed in Campinas (São Paulo), is strengthening the partnership. "Whenever necessary, we will make use of this facility for the development of our new products."

"Marel is a great provider of technological solutions for the food industry."

Neivor Canton, CEO of Aurora Coop

Consumer trends

In developing new products, Aurora Coop analyzes the behavior of the Brazilian consumer. "Fresh products are still very relevant for consumers. During the pandemic, we noticed an increase in the number of consumers who began to cook their own meals at home. Natural products requiring preparation and further processed products, which are practical and convenient, are eaten in most Brazilian homes, depending on the situation and the time available", says Aurora Coop CEO Neivor Canton.

In this context, he says Aurora Coop pays close attention to customer demand and is always looking for opportunities to be present at all moments poultry is eaten. A mix of diversified and tasty products will satisfy an increasingly demanding consumer.

auroraalimentos.com.br



Neivor Canton, CEO of Aurora Coop

Marel's I-Cut 122 TrimSort and RevoCrumb bring great added value

Stable process flows: the basis for Vosso's product variety

With plants in Ostbevern, Germany and Santa Catarina, Brazil, German processor Vosso produces high-quality frozen convenience products. Focus is on the processing of chicken breast fillets.

Vosso's customers are asking for an ever-increasing variety of end products. To ensure top quality end products, stable, constant and reliable processes are required.



Plant manager Alfons Wittkamp talks about the various factors that led to integrating three Marel I-Cut 122 portioning systems and a Marel RevoCrumb breading system in the process.

I-Cut 122 with TrimSort = 1st choice

The trend towards ever heavier chicken weights results in larger chicken breast fillets. The end customer, however, is demanding smaller portion sizes. Frozen convenience manufacturer Vosso has also noticed this trend. Raw material weights now no longer match the requirements desired by the end consumer, which is why Vosso needed a solution to process a variety of fillet products in a flexible way. Fillets should be cut into different portions in one operation. Portion weights should be very stable, so that downstream processes such as breading can be under optimum control.

Excellent performance

Alfons Wittkamp explains, "From the raw fillet, we cut up to three products that should automatically be assigned to different production processes. For us, accuracy of the new I-Cut 122 TrimSort combined with the Marel SpeedSort was decisive. The performance of the TrimSort, especially on very

small portions, is excellent. This gives us a reliable product for further processing. Two lines were installed at our Ostbevern site, another line at the Santa Catarina site in Brazil. The systems were installed in 2021 and they are running perfectly and to our complete satisfaction."

The entire portioning solution is connected to an overarching Innova software package, allowing Vosso to manage the desired portioning recipes from the control room.

RevoCrumb, a team decision

Breeding of meat products is one of Vosso's core activities. It is not without reason that the company was on the front row when Marel launched its new product range for wet and dry breading systems. "The high belt speed with improved breading is very convincing. The new RevoCrumb shows its advantages especially with coarse breadcrumbs. 'Crushing' of the breading is no longer an issue, compared to other breading systems on the market. Breading remains chunky, even after a long period of production, absolute added value compared to the RotoCrumb we had before." After another intensive test with Vosso's own poultry meat products, the Vosso team was able to take a unanimous decision. A few months later, the line including a Marel CrumbFeeder was installed. "The line is running perfectly. It was the right decision for Vosso."

End products

Vosso specializes in manufacturing high-quality frozen convenience end products. The raw material consists mainly of whole muscle meat, although meat formed in the Marel RevoPortioner is also handled.

With its focus on poultry, Vosso produces all conceivable products for the convenience sector. The company supplies a wide range of frozen products to the retail and foodservice markets, such as fillets, cordon bleus, steaks, mini schnitzel, medallions, nuggets, chicken wings and chicken breast strips.

Reliable and close

The first contacts between Vosso and Marel date from the early 2000s. In addition to I-Cuts, SpeedSorts, RevoPortioner, RevoCrumb and CrumbFeeder, Vosso also has weighing and sorting technology from Marel in its machine park.

When choosing a supplier, service is an important criterion for Vosso. "Service should not be neglected when making a purchase decision. The geographic proximity to the service locations in Osnabrück and Boxmeer is a strong argument. We are aware that sometimes we need fast and reliable service. If a machine supplier has just one service technician available for a region, then we cannot rely on that.

We need a well established organization like Marel, with a local presence and a local service network. If a problem occurs, Marel can quickly have technicians and specialists on site," reports Alfons Wittkamp, quoting his experience with Marel.



About Vosso

The Vosso headquarters in Ostbevern is around 20 km north-east of Münster. Bernhard and Maria Vosskötter founded the Vosso company here in 1982. The company's constant growth over the last 40 years has led to a continuous expansion of the production and office buildings. With more than 700 employees, the Vosskötter family's fast-growing company is the largest local employer. Vosso is a frozen convenience specialist for poultry, beef and pork, while vegetarian and vegan items are gaining in importance. Today, Vosso ships all over the world and is very well established in the European, North African, Canadian and Eastern markets. More than 15 years ago, Vosso built a plant in Lages, Santa Catarina, in southern Brazil. Today, Vosso employs more than 500 people there.

vosso.de



Left Thomas Heidenescher, Marel poultry sales manager, right Alfons Wittkamp, plant manager Vosso

Complying with strictest regulations, May Harvest uses unique wastewater concepts

First water treatment of its kind in the Philippines

May Harvest's new water treatment plant is the first of its kind in the Philippines. Fish swimming in the water basin, 'cleaning' a polluted creek and irrigation with recycled water are unique concepts in the country. Despite lockdowns and typhoons, the project was implemented very smoothly and very fast, supported remotely by Marel. Efren Martinez, president and chairman of the board of May Harvest Corporation, talks about the project.

"When we started this plant in 1997, we already had our own small water treatment installation. We had plenty of capacity at the time but, after expanding our processing plant from 6,000 bph to 10,000 bph [100 to 166 bpm], the volume of wastewater increased considerably. That's why we needed additional capacity. We asked Marel to show us an operational site of this size in Europe and Mike Jansen (Industry Sales Manager Marel Water) invited us to see a wastewater treatment plant in Netherlands. This convinced us to partner up with Marel. Now our water treatment system is designed for 10,000 birds."

Regulations in the Philippines

The Department of Environment and Natural Resources in the Philippines requires every factory, especially manufacturing units, to have a wastewater treatment plant. "But only very few companies are able to comply with these regulations. I think we are the first and only company in the Philippines to run such a water treatment plant according to the strictest rules."

Configuration

John Fuentes, May Harvest project manager, says, "Fortunately, our chairman had the early foresight to install a big aeration basin right away. With a volume of around 6000 cubic meters, we did not need to reconstruct it. Based on our existing system, we installed two curved screens, an equalization tank, a pre-treatment facility with a dissolved air flotation unit (DAF) and a new Clarifier.

Water supply

For water supply, May Harvest pumps water from their own spring water well. But the company is keen on reducing the water consumption. It's not required by the government, but it's a company priority. May Harvest really is a front runner here. "Until now, we have been able to reduce our water requirement per bird from 18 liters down to 12. By recycling our wastewater, we will be able to even decrease that to 10 or 9 liters per bird. That's our goal," says Efren Martinez.

Fish tank

John Fuentes adds, "The water in the aeration basin has a brown color, which is a sign of very healthy bacteria cleaning our water. Actually, we have fish swimming in our clarifier. We want to show our visitors the high quality of our treated water, that livable species can survive in the water we are treating. If they can survive, it means our system is working. In fact, we're not calling it dirty water anymore. The only thing is we cannot drink it."

"We're not calling it dirty water anymore. The only thing is we cannot drink it."

Cleaning the creek

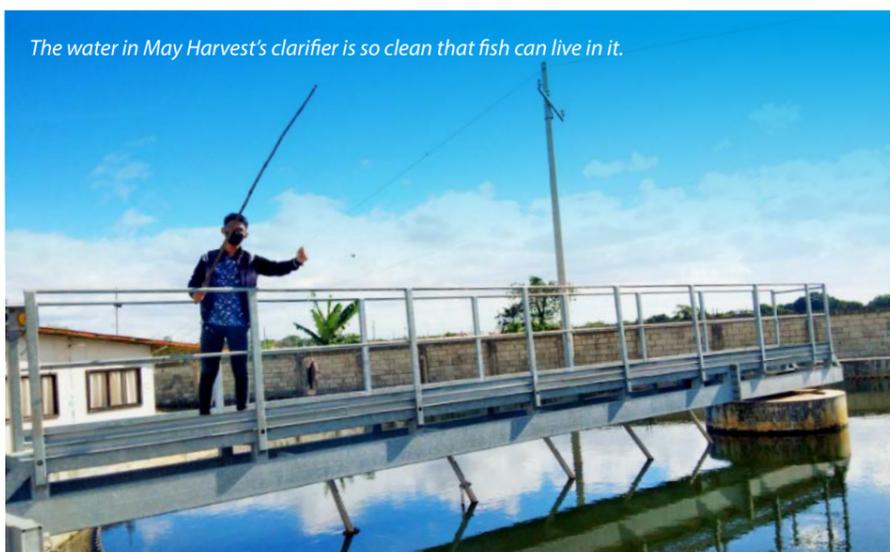
"We are recycling the water for irrigation of rice fields right beside our premises. We are also pumping it back to some dirty areas of the factory, to clean the floors, the coops and the truck tires. We are reusing 30% of the total water that we are treating. The other 70% is discharged to a pretty polluted creek. We're surrounded by other local farms that dump animal byproducts in the same creek. We took water samples before and after our plant to show that our discharged water volumes actually dilute the pollution and clean the creek."

Lockdowns and typhoons

Despite the lockdowns in the Philippines due to the Covid-19 pandemic, the construction continued. The difficult part, however, was the absence of the foreign Marel engineers. "But we found a way of working that was very beneficial for both parties. We had virtual meetings every other day and we were able to communicate transparently with pictures and videos. We could ask or post questions, followed by really quick replies from Marel. Eventually, one Marel engineer succeeded in coming over to us and it took him only two weeks to get the entire system in operation," says Efren Martinez.

"The construction process went very smoothly, without any delay, despite typhoons and other bad weather. Within eight months, we were able to build everything. We could even keep our existing processing systems in use during construction. All this was only possible through the efforts of our staff and Marel's remote support, which we really appreciate."

mayharvestcorp.com



The water in May Harvest's clarifier is so clean that fish can live in it.



The May Harvest team in front of the wastewater treatment plant. From left to right: John Fuentes, project manager, Efren Martinez, president and chairman of the board, James Daly, business development

Marel's new 1000mm Coating Line allows for flexible set-ups

All set for more diverse coating at higher throughputs

Global consumer demand for higher volumes, and more diverse convenience food stimulated Marel to develop its new 1000mm Coating Line. The Covid-19 crisis accelerated this process, causing sudden market trends such as increased dining at home and more takeaways. Convenience food is, therefore, even more sought after than ever before. Marel's new 1000mm modular Coating Line is the best possible solution to fulfill any demand for the widest range of top quality products at high volumes.

More products; more different products; mix and match products; fast-swapping from product type to product type; all these requirements only go to show that today, convenience food processors are challenged to offer greater production flexibility. They are asked to make a multitude of product types, all at higher throughputs than allowed by their existing solutions. Pressure from the market means downward pressure on labor and production costs. In addition, consumers accept only high-quality convenience food on their plates. Processors were having a hard time finding the right coating solutions that could deliver on the promise, fulfilling all requirements. That is until now! Marel's new 1000mm Coating Line ticks all boxes. Its high-quality coating abilities are unequalled in the market, be it homestyle, tempura, coarse or breadcrumb.

1000mm components

To enable higher throughput, the new 1000mm Active Flour Applicator, Active Batter Applicator and Active Tempura Applicator feature wider belts and more robust, fail-safe designs. These systems lay the perfect foundation for a good-looking end product, thanks to an unrivaled even coverage of both the top and the bottom of the products, virtually without belt marks. The most distinctive components in the new 1000mm line are, however, RevoCrumb and RevoBreeder. RevoCrumb gives supreme control over crumb distribution for accurately coated products. Using a unique crumb-management system, the RevoCrumb separates the coarse from the fine crumb and allows the independent adjustment of both top and bottom layers, ensuring optimum, all-round coverage.

RevoBreeder features both flatbed and drum breeder modes in one enclosure, allowing a quick and easy switch between homestyle products and standard coated products. The RevoBreeder's unique drum size gives a flaky homestyle texture that is second to none, perfect for both for retail and QSR restaurants.

Your end product is our starting point

When planning a 1000mm Coating Line, it's vital to start with the end products in mind. Each end product may require its own specific setup. To meet these needs, Marel's modular 1000mm Coating Line includes various building blocks. By allowing different combinations of modules, this flexible line can create a wide variety of end products. For quick change-overs from one product type to another, modules can be added, taken out or replaced by other modules. The final set-up of a 1000mm Coating Line in a processing plant depends largely on the end product. The double RevoBreeder set-up is ideal for bone-in bulk products such as homestyle chicken wings, for example. The first RevoBreeder acts as a pre-duster. The pre-dust coating is applied in drum mode and reaches every crevice in 'wrinkled' products, such as wings.

It distributes bulk product evenly over the belt, avoiding the need for manual labor. An Active Tempura Applicator and a second RevoBreeder – this time for dry coating in drum mode – complete the coating process.

Wider range

Changed market conditions caused processors to ask Marel for higher capacity convenience food-producing systems with at least the same coating quality as the 600/700 lines. That is why Marel's new Coating Line is 1000mm wide, allowing the increased throughput. What is more, coating loss is virtually non-existent and the working environment clean and free from dust, pollution and allergens. Compared to a 700mm line, Marel's 1000mm line will require a minimum of additional floor space.

Full control

When combined with Marel Convenience Line Software, the Coating Line gives even more control over the coating process. The process depends less on operators and allows data-driven decisions to be made for the achievement of optimal equipment uptime. Data from the processing line is collected and analyzed to give full insight into production. Enhanced process control will significantly reduce potential product recalls and costly customer claims for off-spec products. Once line efficiency has been optimized, processors can then realize their full production potential, thereby increasing profitability.

1000mm Convenience Line

The new 1000mm Coating Line is the final link completing Marel's full 1000mm Convenience Line. It fits in perfectly with RevoPortioner 1000 and existing 1000mm fryers and ovens. Marel always has a state-of-the-art solution available for the production of burgers, schnitzels, chicken wings, nuggets or popcorn.

marel.com/convenience



Unequaled coating abilities, be it homestyle, tempura, coarse or breadcrumb.

Minimizing food risks by consistently delivering an A-quality product

Spectra: detection of soft foreign contaminants

Today's consumers expect that the food they purchase to be of the highest quality. Food industry companies face a continuous challenge to prevent food contamination. Plastic, rubber and other types of soft contaminants aren't easy to detect during processing. In addition to posing possible risks to consumer health, such contaminants can cause significant damage both to the brand and the company. By minimizing these risks, Marel's revolutionary Spectra imaging solution will give peace of mind.

Spectra is an unrivaled, high-performance, in-line solution for detecting plastics and other soft foreign materials on deboned and bone-in poultry meat. As the first viable solution of its kind, Spectra features in-flight double-sided hyperspectral imaging, way surpassing the human visual range. It performs a near 360° surface scan during the free fall of the poultry meat with the same technology used by NASA for space exploration. The hyperspectral sensors are connected to an intelligent algorithm to detect and discard contaminated meat extremely effectively and precisely. Spectra is a robust in-line solution, easy to incorporate into your factory, because its design withstands the harshest of process environments and delivers accurate results throughout the production day.

What is spectral technology?

No matter how advanced or expensive, photography cannot capture anomalies in a product's surface structure. For example, detecting orange plastic on top of a poultry fillet is very difficult — or even impossible — with photography or the human eye, not to mention on a production line running at full speed.

How is it used?

Spectral technology is used when detailed information about the surface structure is needed. Via spectral imaging

technology, Spectra can detect foreign material, such as plastics, rubber, and wood, on the surface of a product, contributing to the continuous quest of the poultry industry to deliver A-quality products. A spectral image is created by capturing multiple images of a surface at various wavebands of the electromagnetic spectrum, both traditional images and invisible, infrared images. These images are captured using specific lighting and sensors. Next, advanced software combines and processes the information from these images. By analyzing the chemical structure of a surface, it can detect differences in this surface.

What does Spectra do?

A boneless or bone-in poultry product enters the Spectra system on an infeed conveyor. Inside the system, it drops from the infeed conveyor to a lower conveyor. During the fall between conveyors, the system captures spectral images of both sides of the meat. Specifically designed software processes and analyzes the images. The spectral technology determines whether any type of foreign material is present on the meat's surface. If foreign material is detected, a reject flap is activated, automatically diverting the contaminated product into a box. Spectra is fully automatic—no manual product handling takes place, thereby eliminating the inherent risk of human error. Automation speeds up the production process and guarantees a food product of a higher quality standard. Spectra has been designed to find the best possible balance between detecting the very smallest foreign materials and keeping a low false-positive rate, thereby minimizing rework.

"State-of-the-art value for the food processing industry"

Michel Picandet, EVP Tomra Food

A perfect match

Spectra is not meant to replace SensorX X-ray inspection. SensorX focuses on hard contaminants such as bone and metal inside the meat. Therefore, Spectra and SensorX work in harmony, each performing a designated purpose during processing — partners on a mission to provide a top-quality product.

Enabling processors to provide a superior quality product consistently, Spectra will reduce the chances of recalls, claims, and related costs. Spectra comes with peace of mind built-in! Consistently delivering on customer expectations will help you protect your brand.

marel.com/spectra



Images captured on multiple wavelengths, some not visible to the human eye



Images are combined and hyperspectral analysis performed, providing detailed analysis of product surface

A partnership of pioneers

Spectra is the result of Marel's rewarding partnership with Tomra, a leader in sensing and sorting technology. Tomra builds on decades of innovation and expertise within the food industry.

"We have known for a long time that Marel is leading the food processing industry in innovating solutions in both hardware and software. Combining that with Tomra's cutting edge technology in a partnership of pioneers certainly creates a lot of state-of-the-art value for the food processing industry," says Michel Picandet, EVP Tomra Food.

Roger Claessens, EVP Marel Poultry adds, "By being close and listening to our customers, we know how much of a challenge plastics and other contaminants are for them. This is why we are investing so much in developing Spectra together with Tomra."

marel.com/spectra

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