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NEWS

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Read the full story on page 2

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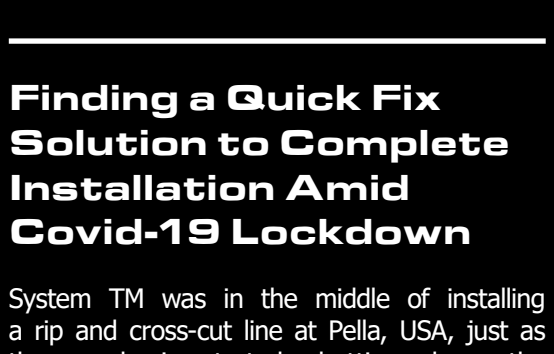
Read the full story on page 3



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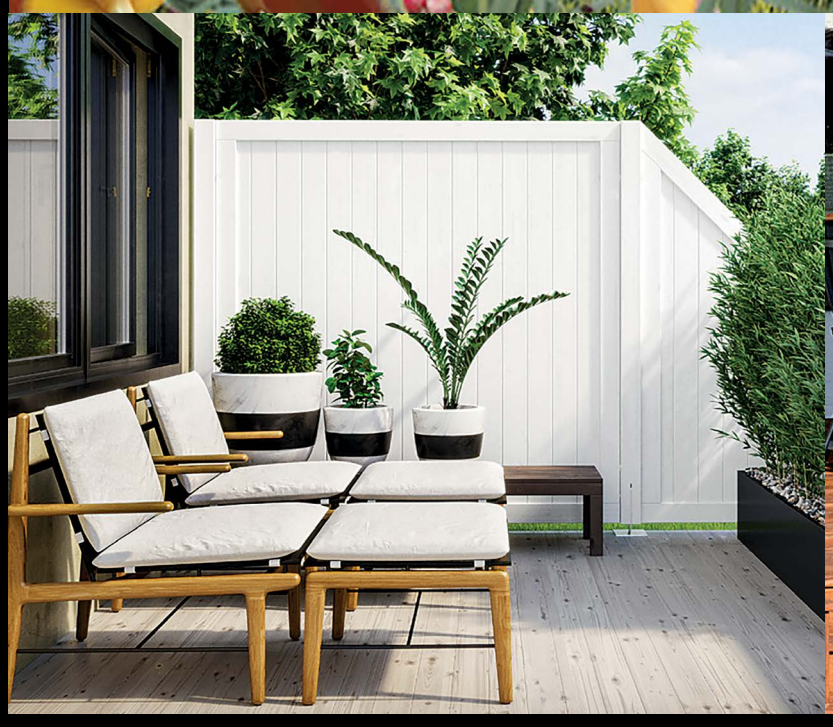
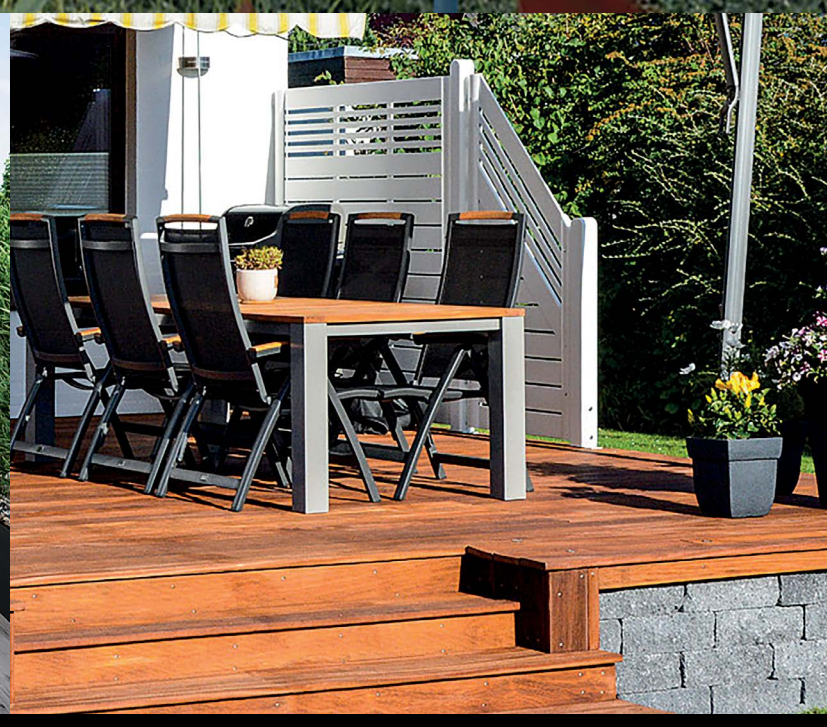
Read the full story on page 6-7

A Cross-Cut Line That Works in Perfect Synergy With Existing Machinery

Read the full story on page 4-5





optimization of staff and wood resources

Boosting Vertical Finger-Jointing Productivity to Satisfy Increasing Demand

System TM has recently had the pleasure of equipping Jeld-Wen with yet another production line – an Opti-Joint V-8 finger-jointing line. The Opti-Joint V-8 boosts Jeld-Wen's production capacity of vertically finger-jointed components, and helps the company respond to a rising demand for vertically finger-jointed components when it comes to manufacturing door frames.

Product of Jeld-Wen, Estonia.

"Once again, I'm impressed by how well System TM manages its projects, even during these trying times. It's great to work with such a motivated tech team at System TM, and System TM's online support never fails to amaze me!"

Mr. Erik Fogtmann, Production Specialist at Jeld-Wen

Jeld-Wen

Jeld-Wen is one of the world's largest doors and windows manufacturers in the world, and has earned numerous awards and endorsements for reliability, innovation and excellence. Founded in 1960, Jeld-Wen operates more than 120 manufacturing facilities in more than 20 countries, including Estonia, which is where the new Opti-Joint V-8 finger-jointing line has been installed. Jeld-Wen is a very resourceful company with an ambition to use every bit of raw resource. Therefore, it comes as no surprise that Jeld-Wen has decided to invest in System TM machinery which is known for minimizing waste and maximizing input material usage.

Responding to capacity challenges

In 2020, Jeld-Wen witnessed a growing demand for vertically finger-jointed components in the production of door frames. However, at the time, Jeld-Wen's vertical finger-jointer had served its purpose and was nearing the end of its life cycle. This, combined with Jeld-Wen's need to increase the production capacity of its vertically finger-jointed components, lead to the decision to replace the previous finger-jointer with the new Opti-Joint V-8 finger-jointing machine.

Exceeding expectations despite pandemic

Jeld-Wen has once again expressed high satisfaction with the way System TM has handled the Opti-Joint V-8 project. *"Some of Jeld-Wen's decisive factors in rechoosing System TM were the Opti-Joint V-8's impressive production capacity and uptime, but also System TM's project management and ability to consistently meet all deadlines despite the global pandemic"*, says Peter Simonsen, Area Sales Manager at System TM.

Boosting production of door frames

The Opti-Joint V-8 has enabled Jeld-Wen to achieve a significant increase in production capacity and automation levels of its vertical finger-jointing process of door frames. Thanks to the new finger-jointing machine, Jeld-Wen now also profits from manpower savings and input material savings.

Using available floor space effectively

One of the biggest challenges manufacturers face today is fitting their unique production line into their available production facility space. Using the available space wisely is important because an inappropriate and insufficient amount of space may lead to a reduction in line throughput.

To conserve valuable square footage, Jeld-Wen and System TM worked closely together. *"Designing the line in collaboration with Production Specialist at Jeld-Wen, Erik Fogtmann, was highly constructive. We successfully designed and adapted the Opti-Joint V-8 line to fit into Jeld-Wen's production facility layout"*, says Peter Simonsen.

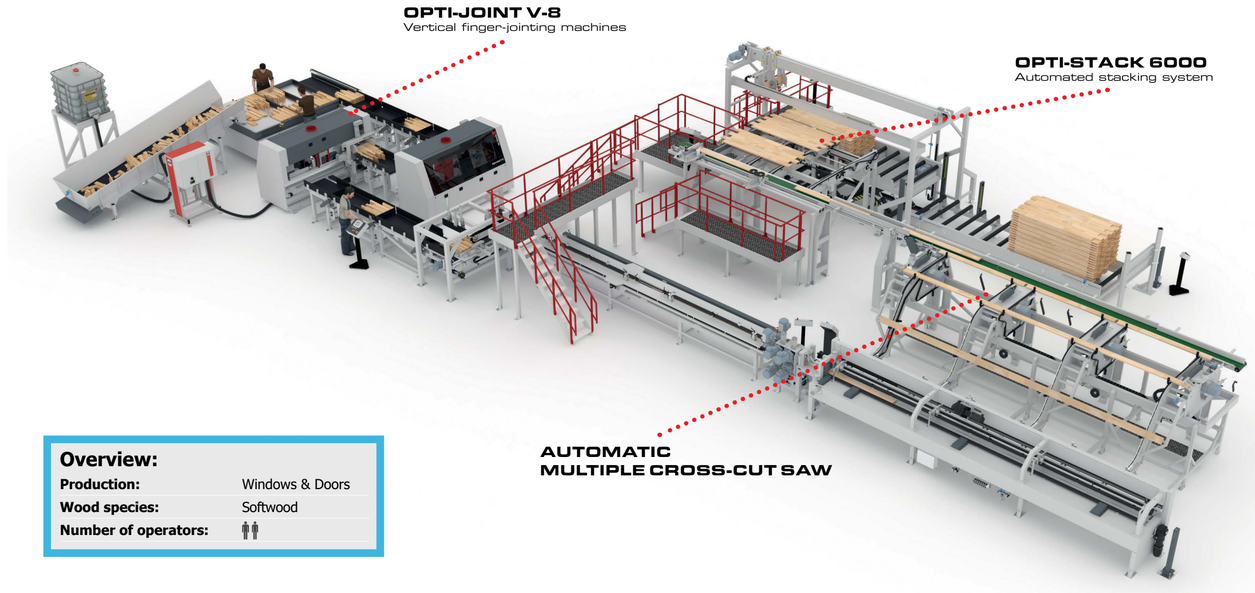
The Opti-Joint V-8 line

The Opti-Joint V-8 vertical finger-jointing line starts with a compartment table where operators organize workpieces before the workpieces enter the finger-jointer. After they exit the finger-jointer, an automatic crosscutter chops the workpieces into three pieces, cutting them according to Jeld-Wen's door frame dimensions. Finally, an automated Opti-Stack 6000 stacking machine stacks the workpieces in a double even-ended fashion.

This System TM solution consists of the following:

- *Vertical finger-jointing system Opti-Joint V-8*
- *Automatic multiple cross-cut saw*
- *Automated stacking system, Opti-Stack 6000*

JELD-WEN DOOR SOLUTIONS

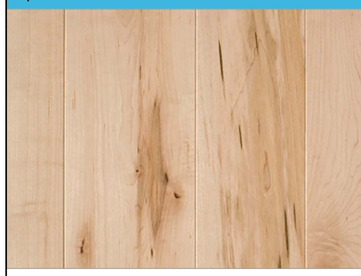


Overview:	
Production:	Windows & Doors
Wood species:	Softwood
Number of operators:	

How Teamwork Makes the Dream Work at Missouri Hardwood

Missouri Hardwood is currently enjoying improved production yields after recently investing in a System TM line. At System TM, customer involvement is highly welcomed when it comes to designing production lines. Thanks to Missouri Hardwood's active participation in the design process with System TM and Stiles Machinery, the three companies have collaboratively designed a line that has surpassed Missouri Hardwood's expectations.

Product of Missouri Hardwood, USA.



"When I met with Missouri Hardwoods, they knew they needed to control their production cost at their cross cut saw area. They had seen other solutions on the market but felt confident in the support network with Stiles and System TM."

Mr. John Barnes, Product Specialist at Stiles Machinery

Missouri Hardwood Flooring's company history

Missouri Hardwood (Hardwoods of Missouri, LLC.) traces its roots back to 1888 when six brothers from Denmark moved to Birch Tree, Missouri to establish one of the nation's largest pine sawmill and kiln-drying operations. The mill had over twenty miles of its own railroad complete with a steam locomotive engine. A steam turbine generator provided the first electricity to the town along with the first telegraph and telephone service. After the turn of the century the mill changed it's focus to the production of hardwood flooring. Missouri Hardwood survived the Great Depression and ceased flooring production during WWII to make hardwood products for the war effort. As one of the founding members of The National Oak Flooring Manufacturers Association, Missouri Hardwood is one of the nation's oldest and most respected hardwood flooring brands.

Missouri Hardwood Flooring's products

Missouri Hardwood has been known for over a century for having carefully manufactured flooring from lumber harvested in the Missouri Ozarks and neighboring regions. The company has state-of-the-art equipment and takes great pride in its attention to detail when it comes to producing finely manufactured products.

The challenges of recruiting and retaining manpower

At Missouri Hardwood, cross-cutting was previously performed by manual labor. In the residential hardwood flooring market, it is a common challenge to recruit and retain manual labor, as the jobs require operators to be highly accurate and thorough when it comes to defect detection and removal. As high labor turnover was constantly keeping Missouri Hardwood from producing efficiently, the company eventually decided to reassess its production methods. As a result, Missouri Hardwood set out to increase yield through the application of scanning optimization technology, and asked System TM and Stiles Machinery to take on this task for them.

Why Missouri Hardwood chose System TM

Many American producers of residential hardwood flooring have formed a tight-knit group in which they share their experiences regarding production machinery. Many of these companies are happy customers of System TM who have spread positive word about System TM to each other. *"One of the main reasons why Missouri Hardwood chose to collaborate with System TM was because of our strong position and reputation in the American residential hardwood flooring industry"*, says Jean-Luc Croteau, Area Sales Manager for North America at System TM.

The fruit of great teamwork

At System TM, we welcome the active participation of the customer in the project design phase. In this project, Missouri Hardwood was given the opportunity to present a plant layout of the line they were looking for. *"Their strong involvement in the project combined with System TM's expertise enabled us to design a production line that surpassed Missouri Hardwood's requirements. Two of our guiding principles at System TM are teamwork and flexibility, as we believe they generate greater value, both for our clients and ourselves"*, says Jean-Luc.

Making the most of limited space

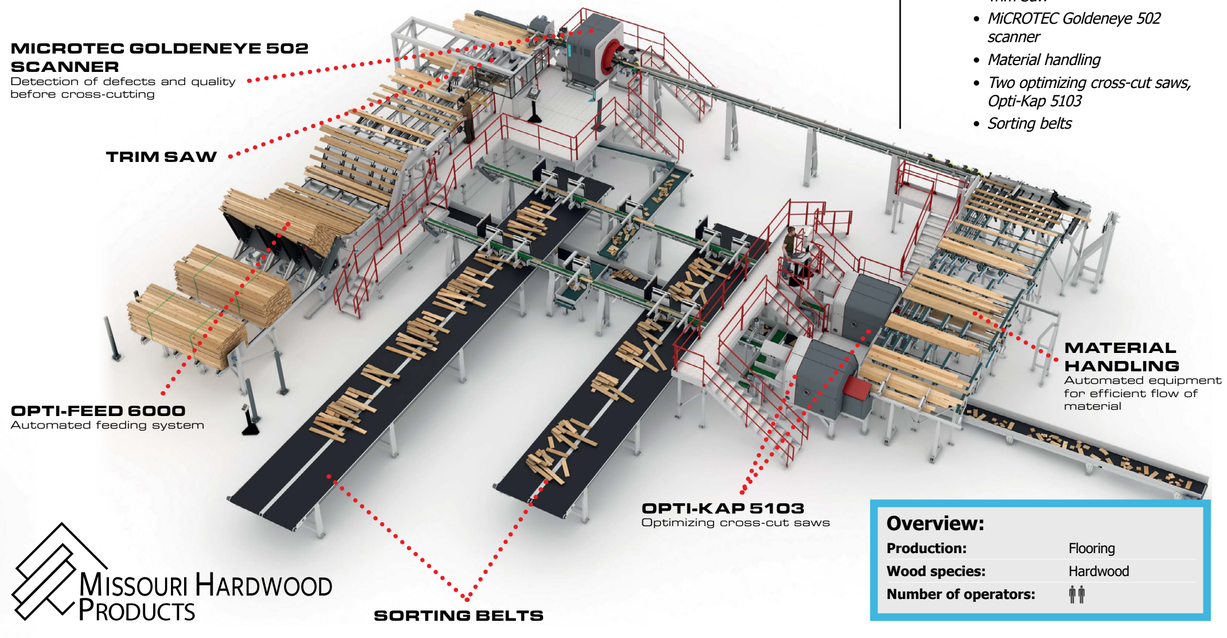
When putting in a new manufacturing line into an existing facility, square footage must be used wisely to maximize space without sacrificing production capacity. This requires System TM to get creative when it comes to plant layouts. *"With a bit of smart thinking, we were able to come up with a line with many capabilities that didn't take up too much of Missouri Hardwood's floor space"*, says Jean-Luc.

Technical description

The line starts with automatic feeding of workpieces using a tilt hoist. Then, workpiece defects are cut out by a trim saw with a small, narrow blade to achieve high quality cuts. Next, the workpieces exit the trim saw with random widths and run through a MiCROTEC Goldeneye 502 scanner with X-ray technology. The scanner's X-ray helps determine internal lumber structure and identifies wood defects which aren't visible on the surface. After the scanner, the workpieces enter two optimizing Opti-Kap 5103 cross-cut saws, after which they are sorted using two sorting belts. Finally, the sorting belts transport the workpieces onto two different moulders (side matcher 1 and side matcher 2).

This System TM solution consists of the following:

- *Automated feeding system, Opti-Feed 6000*
- *Trim Saw*
- *MiCROTEC Goldeneye 502 scanner*
- *Material handling*
- *Two optimizing cross-cut saws, Opti-Kap 5103*
- *Sorting belts*



MISSOURI HARDWOOD PRODUCTS

Overview:	
Production:	Flooring
Wood species:	Hardwood
Number of operators:	

Designing a Cross-Cut Line That Works in Perfect Synergy With Palmako's Existing Machinery

System TM is always up to the task, regardless of its complexity level. In the Palmako project, System TM was requested to adapt a cross-cut line to Palmako's existing moulder/band saw line to produce a combined effect – increased production capacity. Another delicate task was to design the cross-cut line to stack diverse workpiece profiles and dimensions, while also maintaining high uptime.

Palmako's production facilities in Kavastu, Estonia.

"Despite the difficult circumstances in 2020 due to the worldwide Covid pandemic, the installation of the System TM line took place according schedule. Notwithstanding small setbacks at startup, System TM's site manager quickly found solutions to handle complex tongue and groove profiles on the line. We even changed some of the conveyor belts several times during startup to find the best way to stack the cut parts. During the 8 months we have used the line on three daily shifts, we have always received remote assistance to solve any problems. Line management is quite easy to learn for new operators, all controls are easy to use and have been translated into Estonian for us.".

Mr. Martin Kabral, Manager of production unit Leakvere

The Palmako story

Palmako was established in 1997 in Kavastu, Estonia. Since then, Palmako has become one of the leading European manufacturers and exporters of garden log cabins, glulam and machine-rounded timber products.

Today, Palmako belongs to the largest Estonian forest and timber industry company, Lemeks Group, which allows Palmako to be part of a complete supply chain: from forest planting and timber sawing in mills to manufacturing final products. Palmako has branches in Sweden, Norway, the UK, France and Germany. The company's products can be found in more than 30 countries in the world, as 93% of production is exported worldwide. With 415 employees and over 45 million Euros invested in state-of-the-art technology, Palmako's business concept is to provide a wide range of high-quality wooden products to environmentally conscious people.

Project tasks to be addressed

System TM was presented with some challenging, yet educational tasks in the Palmako project – to adapt the new cross-cut line to Palmako's existing moulder/band saw line while at the same time securing high total production capacity and making the best use of space in Palmako's production facility. *"With a bit of smart thinking, we designed a cross-cut line that fits into a tight and narrow footprint and works in perfect synergy with Palmako's existing moulder/band saw line",* says Peter Simonsen, Area Sales Manager of Eastern Europe at System TM.

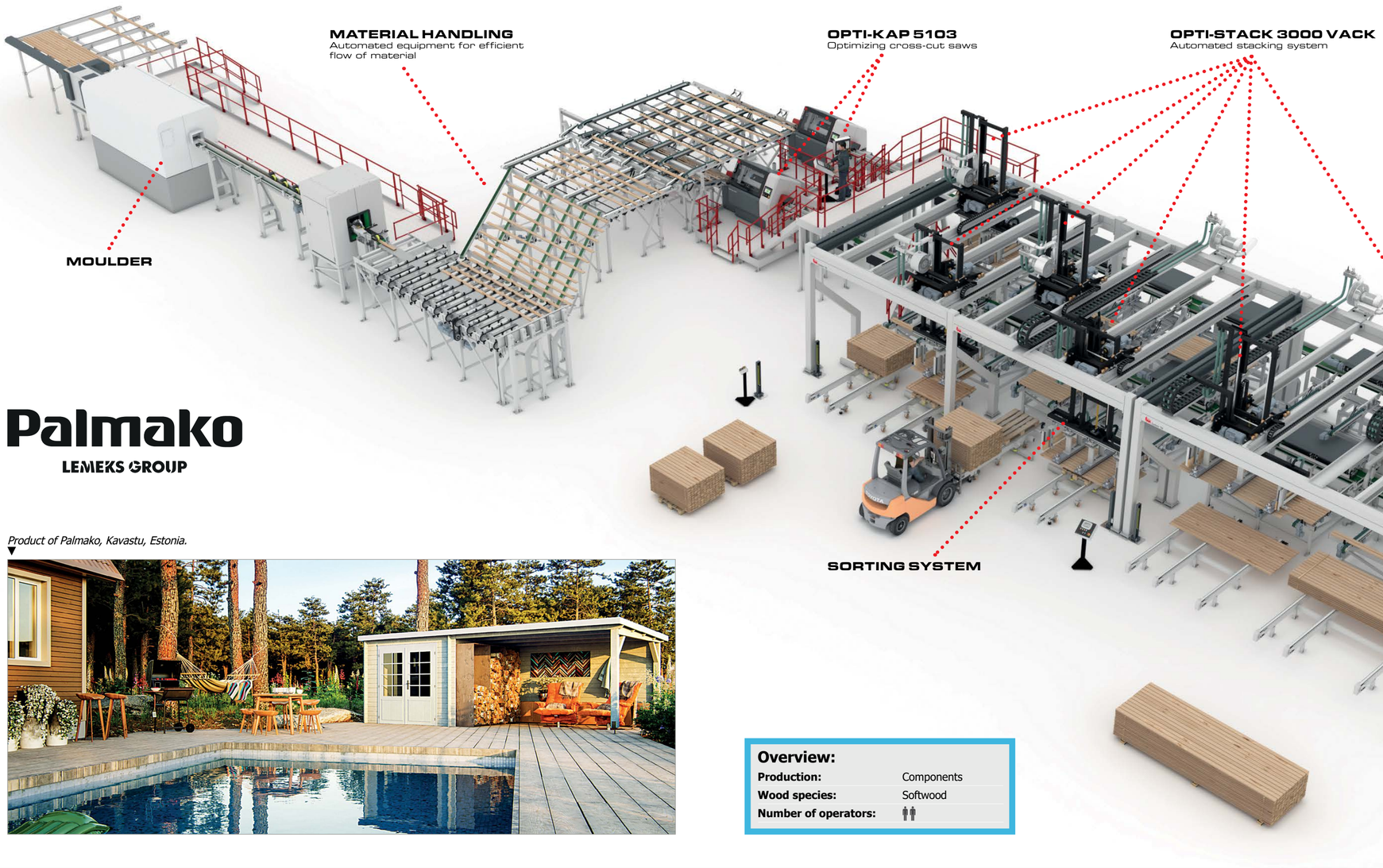
Another unique characteristic of this line is its ability to stack workpieces of different tongue and groove profiles and dimensions. The line must be able to run these workpieces with high uptime, which may be a delicate task when designing the line. *"The Palmako project was complex but at the same time highly educational for us. Our job was to design a line capable of safely handling unique workpiece profiles and dimensions at a high production capacity, and we proved to Palmako that we were indeed up to the task",* says Peter. The System TM line handles Palmako's workpieces by running them in small batches (two and two), which ensures safe transportation of workpieces, as well as high availability and uptime in manufacturing.

The Opti-Kap 5103 line

Palmako's existing moulder/band saw line and the Opti-Kap 5103 line are joined end to end. Palmako's workpieces are initially processed by the moulder/band saw line which includes a scanner at the end. After the scanner, the workpieces are introduced to the System TM cross-cut line.

In the cross-cut line, it is possible to transport the workpieces to a stacking machine (production mode 1) or into a buffer system (production mode 2) which handles the workpieces one by one or in small-sized batches, depending on their specific profiles and dimensions. Next, the workpieces move onto a sequence hook system which makes sure the workpieces are positioned correctly before entering two optimizing cross-cut saws, Opti-Kap 5103. After the saws, long scrap workpieces are discharged and unloaded onto the first kicker. The second kicker is for miscellaneous lengths, small-sized productions, etc.

Next, the workpieces move onto two sorting belts and then onto six vacuum stacking machines, Opti-Stack 3000 Vack, which can handle the workpieces using two options. In the first option, the stacking machines palletize the workpieces straight onto pallets which are then placed on a pack conveyor. In the second option, the stacking machines stack long workpieces straight onto the pack conveyor. It is also possible to place stability sticks in between the layers, especially when it comes to challenging workpieces profiles and dimensions which can be very diverse/thin. A forklift truck can then collect the workpieces without pallets and transport them safely around inside Palmako's factory thanks to the stability sticks.



Palmako
LEMEKS GROUP

Product of Palmako, Kavastu, Estonia.

Overview:

Production:	Components
Wood species:	Softwood
Number of operators:	

Product of Palmako, Kavastu, Estonia.

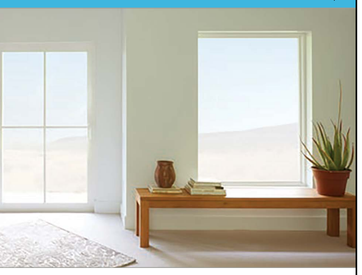
This System TM solution consists of the following:

- *Moulder*
- *Material handling*
- *Two optimizing cross-cut saws, Opti-Kap 5103*
- *Sorting system*
- *Six automated stacking systems, Opti-Stack 3000 Vack*

Finding a Quick Fix Solution to Complete Installation Amid Covid-19 Lockdown

System TM was in the middle of installing a rip and cross-cut line at Pella, USA, just as the pandemic started shutting down the world, eventually forcing System TM to put the installation on hold. As a result, Pella, System TM, and MiCROTEC conducted virtual meetings and successfully completed the remainder of the installation thanks to their diligence and perseverance.

Product of Pella, Iowa, USA.



This System TM solution consists of the following:

- *Automated feeding system, Opti-Feed 6000*
- *MiCROTEC Goldeneye 602 scanner*
- *CML ripsaw*
- *MiCROTEC Goldeneye 502 scanner*
- *Three optimizing cross-cut saws, Opti-Kap 5103*
- *Material handling*
- *Sorting system*

The Pella story

In 1925, Pete and Lucille Kuyper invested in a newfangled invention – a window screen that rolled up and down like a shade. The couple went on to establish a company based on the principles of traditional American values, integrity, and the desire to enrich the homes and lives of others.
Today, Pella Corporation is still privately owned, and designs and manufactures windows and doors for both residential homes and commercial applications. The company is headquartered in Pella, Iowa and employs more than 8,000 people with 18 manufacturing locations and more than 200 showrooms across the country. Pella Corporation continues to be a leader in technology and product innovation, owning more than 150 product and design patents.

From individual to collective capabilities

Back in the day, Pella's manufacturing efficiency relied on the performance of various independent cross-cut units. As a result, Pella was unable to fully utilize wood resources and production capacity.
By merging all manufacturing operations and capabilities into one full-fledged System TM line featuring the latest technologies, Pella can now utilize production capacity thoroughly, reduce manpower needs, and avoid costly downtime and waste.

Resuming installation thanks to virtual meetings

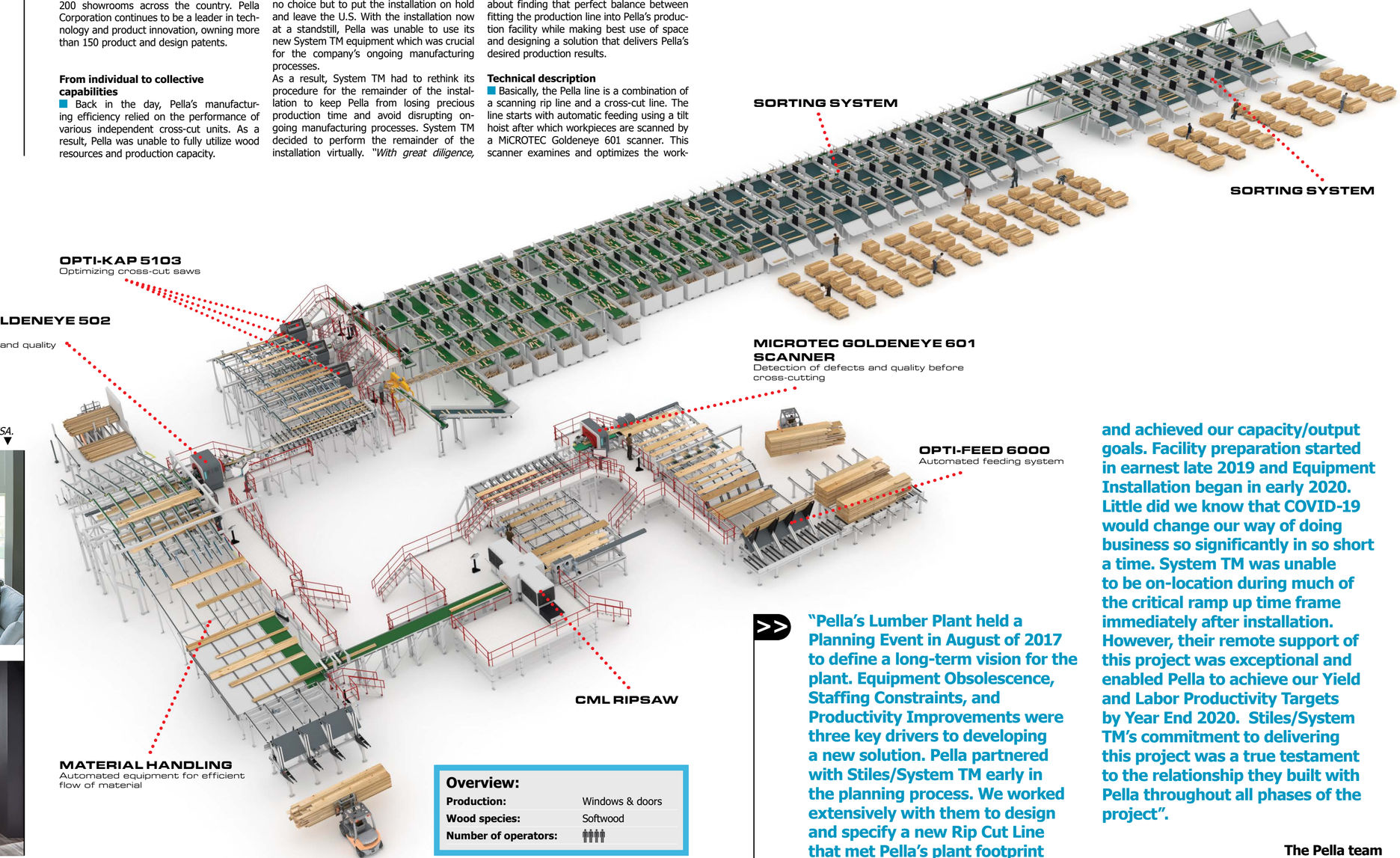
In the winter of 2020, service engineers from System TM traveled to Pella, USA, to install an optimizing rip and cross-cut line. Unfortunately, the installation was cut short by the sudden global shutdown due to Covid-19, and the service engineers had no choice but to put the installation on hold and leave the U.S. With the installation now at a standstill, Pella was unable to use its new System TM equipment which was crucial for the company's ongoing manufacturing processes.
As a result, System TM had to rethink its procedure for the remainder of the installation to keep Pella from losing precious production time and avoid disrupting ongoing manufacturing processes. System TM decided to perform the remainder of the installation virtually. *"With great diligence, perseverance, and adaptability, Pella, System TM, and MiCROTEC got together virtually and got the rip and cross-cut line up and running successfully despite the Covid-19 constraints"*, says Per Jørgensen, CSO of System TM.

Finding the perfect balance

One of the phases in the Pella project that made a special impression on CSO of System TM, Per Jørgensen, was the design phase. *"The collaboration between Pella's engineering department, System TM, MiCROTEC, and Stiles was phenomenal, especially the whole art of designing a solution that fulfills many wishes at once"*, says Per. In other words, it's about finding that perfect balance between fitting the production line into Pella's production facility while making best use of space and designing a solution that delivers Pella's desired production results.

Technical description

Basically, the Pella line is a combination of a scanning rip line and a cross-cut line. The line starts with automatic feeding using a tilt hoist after which workpieces are scanned by a MiCROTEC Goldeneye 601 scanner. This scanner examines and optimizes the workpieces by measuring their widths and surface defects. Then, the workpieces move onto a CML rip saw which optimizes the workpieces based on the results received from the Goldeneye 601 scanner. Next, the workpieces enter a MiCROTEC Goldeneye 502 scanner, which recognizes and localizes defects. Then, the workpieces move onto three optimizing Opti-Kap 5103 cross-cut saws.
After being chopped by the cross-cut saws, the workpieces are sorted by a massive sorting system consisting of 32 sorting units. The workpieces are sorted according to the categories of fixed lengths, finger-jointing components, random widths, and random lengths.
The Pella line also provides the option to bypass workpieces. This means that the workpieces can be maneuvered around the CML rip saw and the MiCROTEC Goldeneye 601 scanner; as a result, they can move straight onto the optimizing Opti-Kap 5103 cross-cut saws.
Sometimes, a surplus of workpieces forms before the cross-cutting stage. When this happens, surplus workpieces move up to a buffer storage area where they are temporarily stored. These workpieces are ready to enter the manufacturing process quickly when needed. In the buffer storage, it is also possible to create workpiece bundles which can later be reintroduced to the line.
Buffer storage serves an important purpose. It ensures smooth-running processes and keeps manufacturing processes in balance whenever the pace of production fluctuates, which is the case in Pella's rip and cross-cut line.



Products of Pella, Iowa, USA.

Overview:

Production:	Windows & doors
Wood species:	Softwood
Number of operators:	

"Pella's Lumber Plant held a Planning Event in August of 2017 to define a long-term vision for the plant. Equipment Obsolescence, Staffing Constraints, and Productivity Improvements were three key drivers to developing a new solution. Pella partnered with Stiles/System TM early in the planning process. We worked extensively with them to design and specify a new Rip Cut Line that met Pella's plant footprint and achieved our capacity/output goals. Facility preparation started in earnest late 2019 and Equipment Installation began in early 2020. Little did we know that COVID-19 would change our way of doing business so significantly in so short a time. System TM was unable to be on-location during much of the critical ramp up time frame immediately after installation. However, their remote support of this project was exceptional and enabled Pella to achieve our Yield and Labor Productivity Targets by Year End 2020. Stiles/System TM's commitment to delivering this project was a true testament to the relationship they built with Pella throughout all phases of the project".

The Pella team

Product of Pella, Iowa, USA.

Products of Pella, Iowa, USA.

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optimization of staff and wood resources

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September 22 – 24, 2021

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Nagoya, Japan
October 07 – 10, 2021

LIGNA 2023
Hannover, Germany
May 15 – 19, 2023

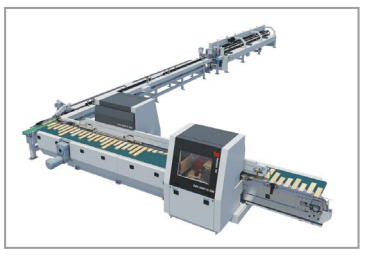
System TM, a leading global provider of customized solutions for the solid wood industry

System TM offers a wide range of automated material handling systems designed to provide high production capacity, maximum wood utilization and minimum labor costs. Our material handling systems are defined as standard system solutions and fully customized solutions designed to meet diverse customer needs.

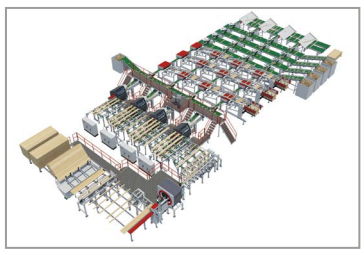
Opti-Feed
Automated feeding systems

Opti-Kap
Optimizing cross-cut saws

Opti-Stack
Automated stacking systems



Opti-Joint
Automated finger-jointing systems



Opti-Solution
Customized system solutions

- At System TM, we use our technical expertise, longstanding experience and integrated approach to design the best solution that meets your business objectives.
- Please visit our website at www.systemtm.com to find a material handling solution that fits your production requirements.

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