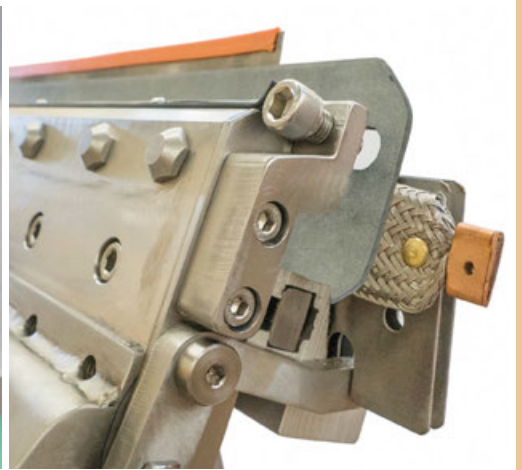
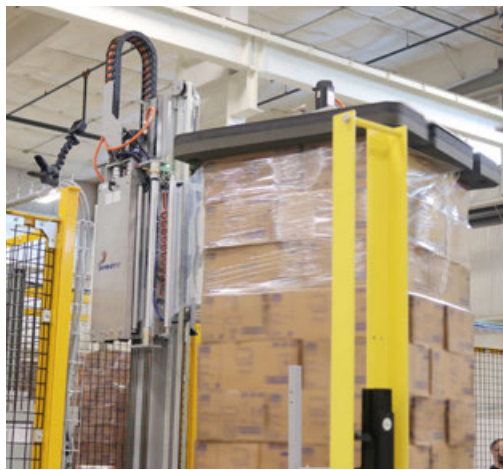
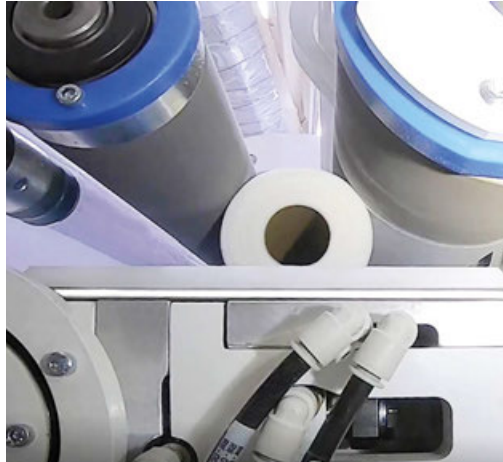
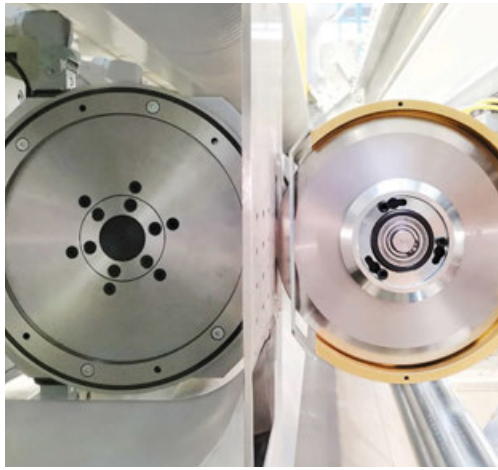


INTERNATIONAL MAGAZINE AND WEBSITE ON TISSUE PAPER MACHINERY AND TECHNOLOGY

# TissueMAG

This issue is distributed to Tissue Paper Mills and Tissue Converters in **Europe, Middle East, Africa + bonus countries**



# CONTRIBUTORS

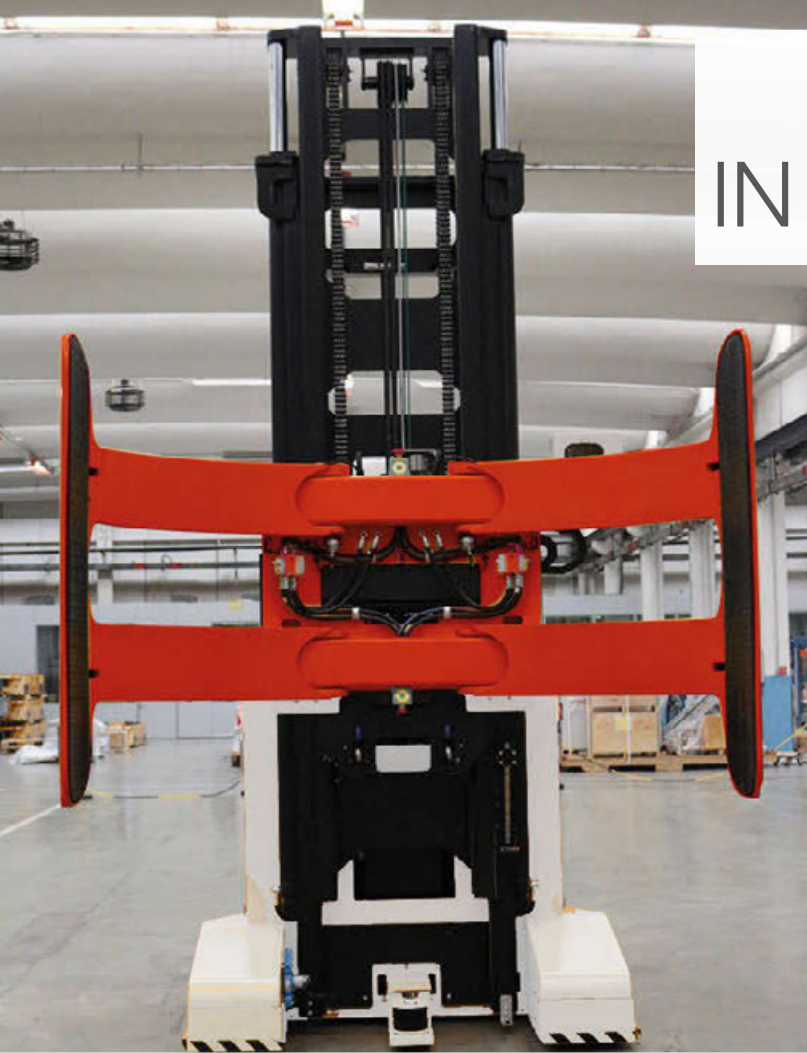
			
			
			
			
			
			
			
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INTERNATIONAL MAGAZINE  
AND WEBSITE ON TISSUE PAPER  
MACHINERY AND TECHNOLOGY

**TissueMAG**

MAY 2024

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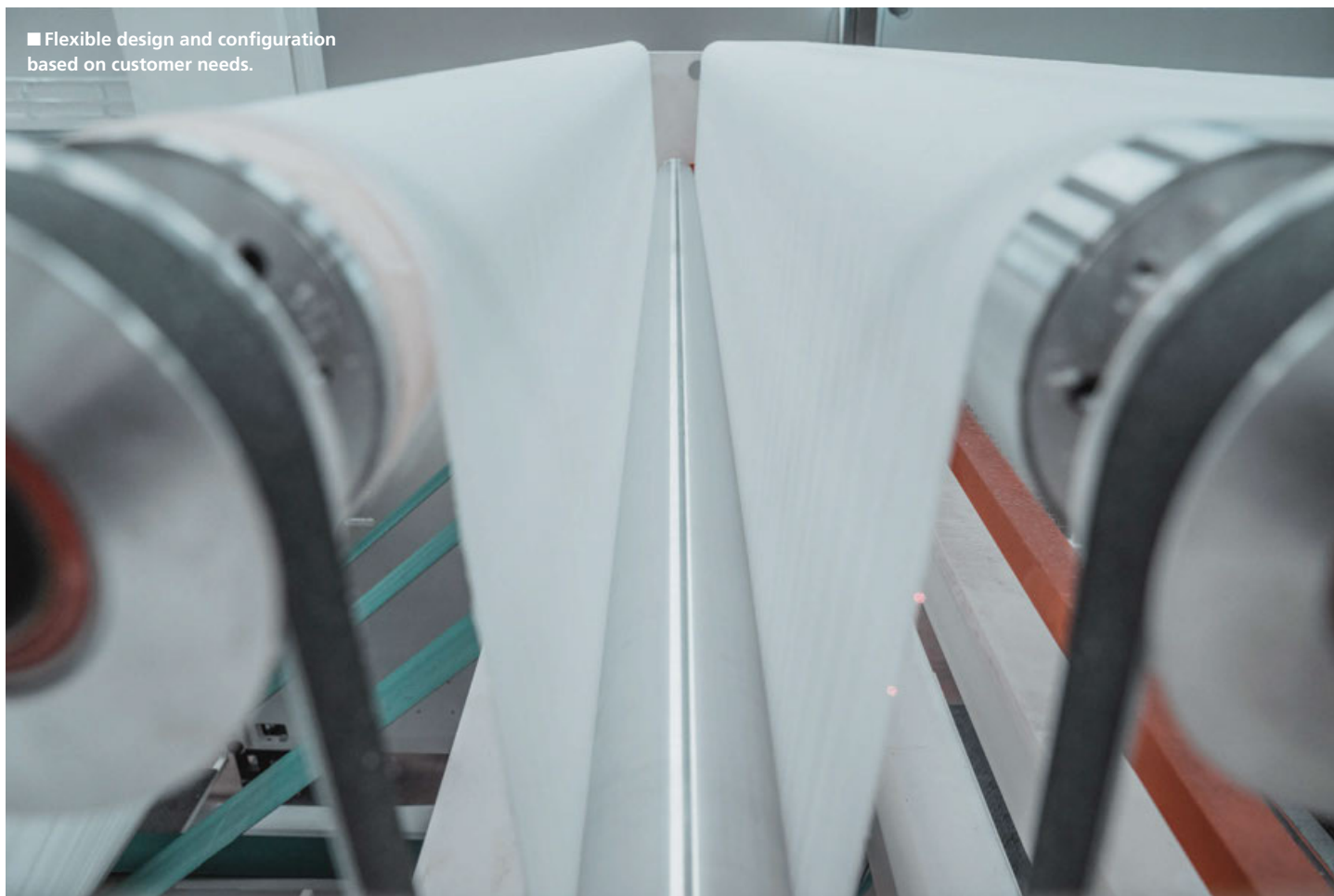
**NEXT ISSUE: NOVEMBER 2024**

# OMET: new boundaries in the world of interfolded

After setting new technological standards in the world of interfolded products with the ASV Line, OMET introduces a new and high-performance interfolded line for multi-panel products with Z and W folds. The new machine is the ASZ Line.

by: Omet Srl

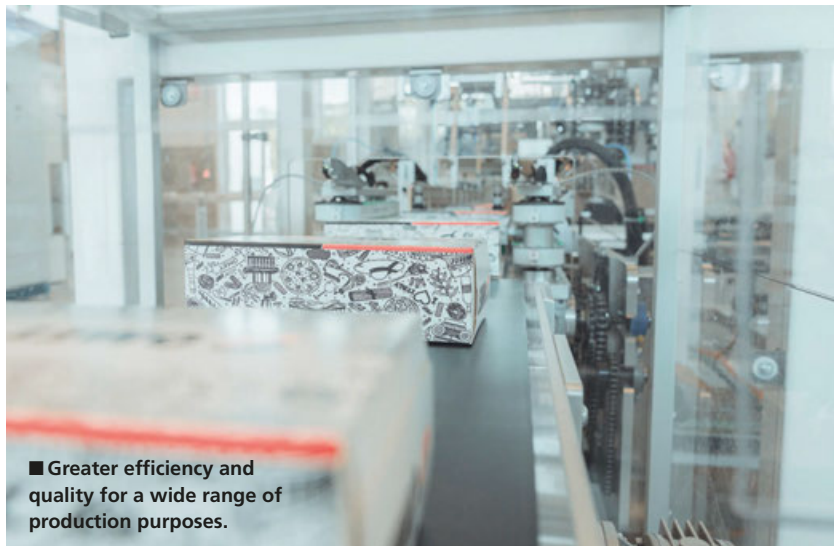
■ Flexible design and configuration based on customer needs.



OMET's ASV Line has established itself as a benchmark in the field of automatic interfolding, setting high standards for the production of a wide range of products, including interfolded towels, kitchen towels, facial tissue and interfolded toilet paper. Modular and with a user-friendly design, this highly productive machine offers various configurations and different types of folds (V, W and Multifold), adapting to the unique needs of each customer. With the launch of the new and innovative **ASZ Line**, OMET further expands the capabilities of its lines. This new machine handles two types of folds: Z-Fold and W-Fold. Equipped with a completely new interfolded head and carefully designed for Z-fold end products, the ASZ Line also combines extensive modularity, ease of use and high performance in terms of product quality and quantity, ensuring high productivity. The new ASZ Line features several distinctive

## “ Innovation with passion

characteristics, including the quick changeover from 3-panel to 4-panel product. This functionality allows the operator to select the desired product while the machine automatically moves the transfer roller to the correct working position. Machine management is made extremely simple thanks to automatic systems that facilitate the transfer of cut sheets between the various rolls, adapting to the machine's speed to ensure precision and reliability even in the presence of variations in paper characteristics. Additionally, the use of vacuum folding rolls, developed based on experience gained with the ASV Line, ensures optimal fold quality and significantly reduces maintenance costs compared to other types of rolls used for Z-fold. Finally, optimal accessibility



■ Greater efficiency and quality for a wide range of production purposes.

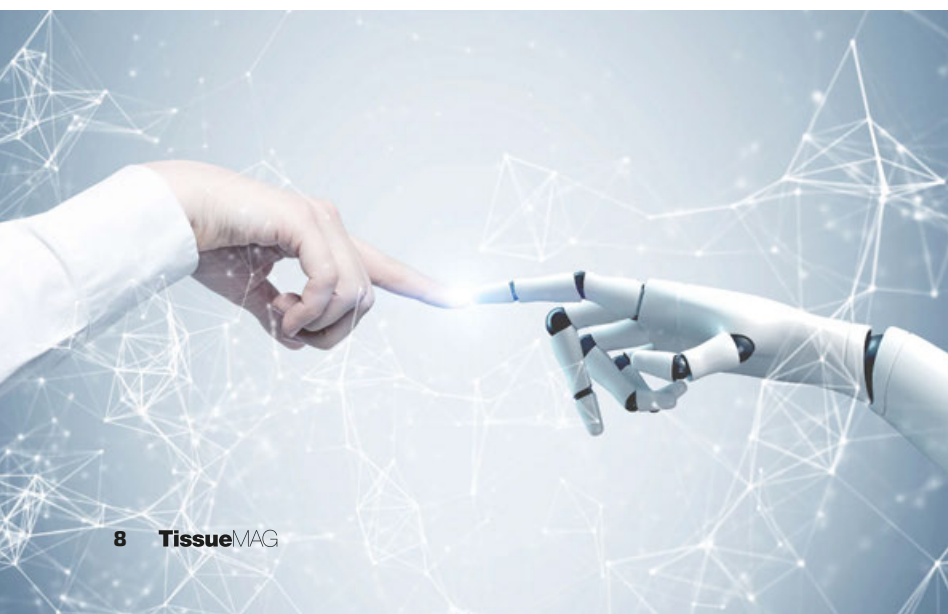
▲ The most competitive interfolding lines on the market.

▼ OMET commitment to overcome the limits of capabilities in the world of interfolding.

to all parts of the ASZ eliminates the need for intervention by specialized technicians and reduces downtime after maintenance, ensuring optimal and continuous operation and contributing to a significant reduction in service costs and times. OMET's interfolding lines stand out for their commitment to sustainability. Particular attention has been paid to the design of vacuum ducts to minimize pressure losses and optimize airflow. Through targeted studies, significant improvements have been achieved in terms of energy savings and efficiency of the suction system, slowing down gas speeds and reducing differential pressures in environments where gas pressure is lower than atmospheric pressure.

OMET interfolding lines now offer the possibility of achieving a paper width of up to 5000 mm, while maintaining high levels of speed and quality of the

final product. The paper reel is cut in the center and folded in two. Thanks to a central support that limits the bending of the rolls, product quality is guaranteed even on reels up to 5000 mm wide. The patented technology includes a double servo-controlled counting and automatic separation system, coupled with a double conveyor belt, which ensures accuracy in sheet counting and a continuous workflow. It is possible to produce different sheet counts simultaneously for each forming zone, thus increasing production flexibility. The evacuation of logs is carried out through two independent belts with different configurations, reducing evacuation times and ensuring high production speed. This innovation can be easily implemented on both the ASV Line and the new ASZ Line. In conclusion, with the new ASZ Line and the ability to achieve a wider paper width, OMET takes a significant step forward in advancing interfolding technologies, offering cutting-edge solutions for more efficient and sustainable production, adapting to the changing needs of the market, and reducing maintenance times and costs. ■



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# OVERMADE has been committed by ZAIN PAPER INDUSTRY to realize the new tissue production park in Doha Qatar



■ Yankee delivery.

The first phase of the project encompassed the installation of two complete tissue plants for the production of high-quality facial tissue

by: Overmade Srl



▲ OVERMADE OVER CR 20.

**Z**ain Paper Industry, an important player in the Middle East, has commissioned the complete lines to **OVERMADE** on the basis of a turn-key supply: from Virgin pulper to Approach flow system, from Hydraulic Headbox to Reel, from Winding system to Wrapping line, including all auxiliaries such as Vacuum line, Steam system, High efficiency hood, Mist and Dust removal system. The **DCS** (Distributed Control System), the **QCS** (Quality Control System), the Sectional Electrical Drives and the Electrification of the entire tissue mill are also part of the scope of supply. Each line will produce 30,000 TPY tissue, using softwood and hardwood virgin fibers, It will be equipped with a water treatment plant, fiber recovery plant and an advanced double dilution system to feed the headbox. The machines are the **OVER CR C20**, capable to produce the softest facial tissue, using the **DYNAFLO-C** headbox on the **OVER FORMER CR**, capable to "OVER-perform" in the fiber

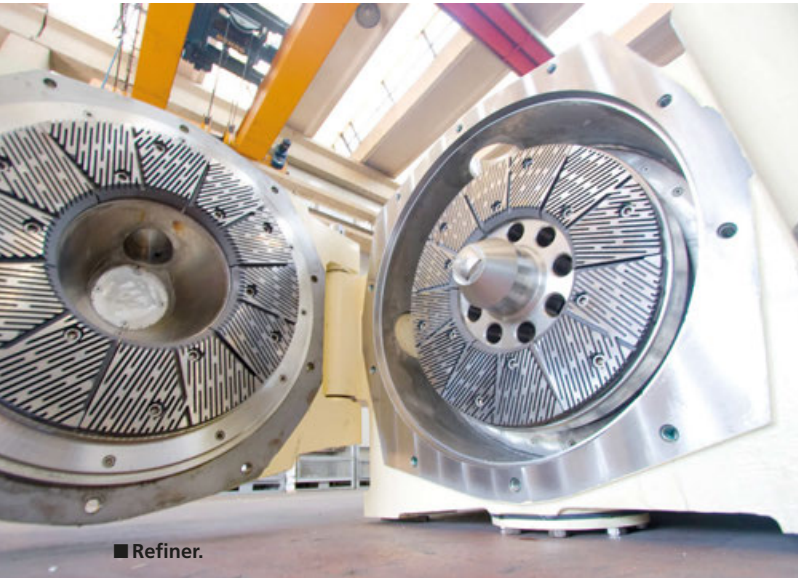
distribution at high consistency and to reduce the softwood needs in the paper. Each line, equipped with a 4,572 mm Yankee diameter, is conceived to work at a speed of 2,000 mpm with a reel trim of 2,750 mm and includes all the technological solutions for an energy saving tissue production such as high efficiency hood, steam system with economizer. The delivery of PM1 has been already completed and the delivery of PM2 is in process. Overmade's scope of supply includes all necessary services of engineering and erection supervision services as well as assistance at the start-up of both lines.

The project is entirely managed by Mr. **Elie Wanna** as CEO of Zain Paper Industry, a manager with vast experience in the tissue field and well known in the market. "We are proud to announce the Zain Paper Industry tissue park project in Qatar - stated Mr. Wanna - an important investment that is located on a plot of land exceeding 123.000 m2, which will be developed in multiple phases. In phase 1, we are already implementing the two



“ECO and LOGIC solutions for paper and tissue

# “Made in Italy - Made in Over



■ Refiner.



■ Yankee hood delivery.

Overmade lines, one tissue converting plant and one diaper plant. On top of that we are enthusiastic to announce that **Zain Paper Industry** has already activated the phase 2 project that includes the installation of two equal tissue machines and production

lines. Further already programmed phases will be launched once phase 2 will reach an advanced stage of implementation. Having multiple equal lines - continued Mr. Wanna - we dedicate each line for a single product. Production changes will be minimised to achieve the highest level of efficiency and productivity, while saving in the spare parts and consumable management. We



◀ Yankee positioning.

selected the Overmade lines mainly because of well-known quality of the product manufactured by the OVER CR tissue machines, and further because of the lowest proven production consumptions these lines have. For many years Overmade has been serving the market with this machine size, which has shown throughout the years to be Overmade's feather in the cap, all over the world including Middle East".

"We are enthusiastic about these new important multiple orders - added Mr. **Stefano Marocchio**, President and CEO of Overmade - especially because they are coming from an experienced and high demanding Tissue producer, who prepares to gain significant market shares. This allows us, in parallel, to increase our presence in a key market, and demonstrate once again Overmade's high technology level. Overmade's growth path continues with more and more prestigious installations and references, following our motto Made in Italy - Made in Over". ■

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■ Manufacturing  
the adhesives for  
tissue lamination.



# **Adhesives: the silent partner.**

## **The important role of the adhesives in the converting industry**

Although unnoticed, water-based adhesives play an essential role in the converting industry. Kitchen paper rolls, toilet paper rolls and napkins are possible thanks to an invisible union between their parts.

by: PANIKER, SL

### Adhesives with know-how: the importance of a specific technology for tissue

The importance of having a good adhesive is quite evident in every step: from the manufacture of the cardboard tube, bonding the first layer of the roll (pick-up), laminating the layers that provide absorption and quality, to finishing the roll (tail-seal). But only a few adhesive manufacturers are capable of providing the specific solutions for each of these applications, as they must meet two important conditions:

1. R&D department focused on the formulation of adhesives technologically suitable for the tissue industry sector;
2. Production capacity, as adhesives should be manufactured in segregated machines.

The adhesives manufactured by **PANIKER**, in Barcelona, meet these conditions and our most historic customers - from Spain, Europe, Africa, Oceania and America - can prove it. For more than 20 years, PANIKER have decided to specialize in this industry, learning and growing together with our clients. We have invested in a specific production

“ Leaders in **liquid** and **solid** adhesives

plant and we have an entire portfolio focused on the needs of this market. **TISSUECOL** adhesives are reliable products that reflect all this know-how.

### What should we know when choosing a good adhesive?

In applications such as lamination and tail-seal, most converting producers use concentrated adhesives, which allows them to optimize the supply chain



■ PANIKER facilities in Barcelona.

## PANIKER: more than 100 years with our customers

Founded in Barcelona in 1922 - as Engineering in Adhesives - PANIKER works towards the customer. To achieve this, has a 360° service: an in-depth evaluation of customer needs. Knowledge, collaboration and understanding what the client requests allows us to provide very high quality adhesives, excellent delivery time along with the possibility of introducing improvements in the process through ad hoc formulations, if necessary.

increasing efficiency. Adhesive must be diluted before being used, usually done manually (adding water by the operators) or automatically, using dilution systems. In our experience, average dilution ratio is 1 to 3 (1 part adhesive to 3 parts water). However, depending on the possibilities of the production process, dilution can reach ratios of 1:5/1:6 or even higher (1:9). **TISSUECOL** adhesives achieve these high dilutions, optimizing the

“ One of the **oldest adhesive companies** in Spain, founded in 1922



performance of the adhesive without compromising its main function, allowing manual or automated system dilution.

### Frequent problems in the gluing process

Issues caused during the gluing process can stop production, some due to an unsuitable adhesive. Low adhesion during the lamination process results in layers unattached while the excess of adhesion can cause too rigid bond between the layers of the paper and even machine stops as the paper ends up bonded to the embossed roller.

TISSUECOL range of adhesives were formulated to provide both optimal dilution rates and easy cleaning, as they don't adhere to the embossed rollers or any metal element.

When forming cardboard tubes, however, the challenge is speed: adhesives must be able to bond substrates (sometimes multiple layers of cardboard), at speeds that can range from 25 tubes/minute to more than 40 tubes per minute. Paniker's **EUROPANOL** range of adhesives have a wide portfolio: from the most versatile and best-selling to adhesives specially formulated to adapt to those faster machines.

### Quality and sustainability

Water-based adhesives developed by PANIKER can be dispersed in water, in an industrial recycling process with an index between 97% and 100%, following the recommendations for better

recyclability. This adds value to the final product by not interfering with the recycling process and provides a better brand image for the consumer. Likewise, these adhesives comply with FDA/BfR regulations. Since 2019, PANIKER has been working on a roadmap marked by the **Green Deal**, with sustainability policies. Using different actions such as collaboration with raw material suppliers, minimization in the use of resources, waste and emissions reduction, remanufacturing, recycling, reusing and optimizing transportation, everything within the framework of a circular economy. ■



◀ TISSUECOL range of adhesives: for lamination, pick-up and tail seal applications.



◀ Circular economy and sustainability as an everyday goal.

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Picture shown for illustrative purposes only. Actual processes may vary due to specific R&D activities.

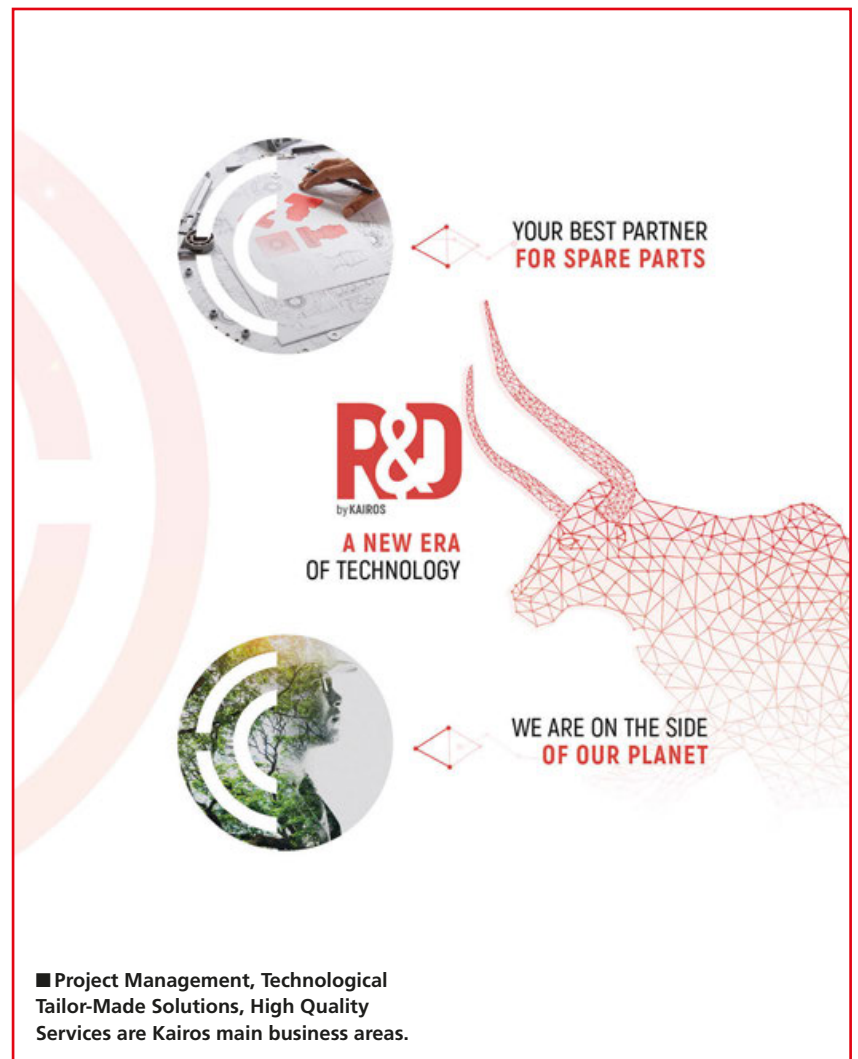
# KAIROS develops its business according to customer demands

The official launch of Taurus.

by: Kairos Srl



**K**airos was established at the beginning of 2021 from the combination of the experience and expertise gained by its founders in over thirty years working in the tissue industry. It has grown quickly, establishing itself as a company that has focused on a precise vision and now stands out for its technological innovation and personalised attention to its customers, in terms of both products and services. Specialising in interfolded products, the company has transferred the know-how acquired over the years into its corporate DNA, focusing its activities on the demands of its customers in the “Fold” industry area. The customer demands analysed, sorted and examined in depth throughout its many years of experience in the field, represent the cornerstones that shape the company’s vision: the technology and expertise adopted by Kairos is tailored to meet specific customer requirements. Competition in the sector is fierce, with large-scale international players dominating the market. But **KAIROS** makes its mark using a different approach: customised products and services focused on customer demands. Excellent after-sales and support services along with rapid replacement parts give the final touch. Kairos’ history is characterised by a swift ascent to success thanks to its determination and aperture towards technological innovation: the initial positive feedback achieved on the international markets, also thanks to the consistent attendance in all the major sector exhibitions, was the driving force behind this process and prompted Kairos to



■ Project Management, Technological Tailor-Made Solutions, High Quality Services are Kairos main business areas.

## “Optimize the production of customers, whether it is “Fold” and “Rolls”

consequently invest significant resources. With this approach, the firm aimed to improve its services and develop new technologies capable of delivering its customers the best possible tools to face the new and ever-changing challenges of today’s fast-moving market. In this sense, Kairos’ strategy currently focuses strongly on investment in Research & Development: the company recently restructured and intensified its R&D activities, underscoring its belief that innovation is one of the

key drivers behind growth and competitiveness. With a proactive approach aimed at maintaining continuous improvement, Kairos strives to develop innovative products capable of fine-tuning and optimising production processes in the tissue sector, mainly focusing on optimising production, energy consumption and eco-sustainability. The imminent official launch of the **Taurus** prototype, the new line dedicated to the converting of interfolded products, is the first result of this vision: a revolutionary machine, designed and built entirely in-house by Kairos, ultra-compact, with a 60% smaller footprint compared to a traditional machine and user-friendly which significantly reduces - by about 60% - energy consumption compared to traditional machines. This first model targets small-medium paper processing enterprises, yet already lays the design foundations to become

an exceptional production tool available to large multinational companies operating in the paper manufacturing sector. This state-of-the-art line is the ideal combination between effective energy savings, optimisation of space, productivity and flexibility, adapting perfectly to customer demands whilst providing the opportunity to manufacture different products on the same line. In fact, it is possible to change the size and number of panels quickly and easily. In addition, the low maintenance costs contribute to making this machine a highly reliable and top performing tool and a secure investment for customers.

The paper industry is renowned for being energy-intensive: with Taurus, Kairos substantiates its deep commitment to sustainability - an increasingly key topic and fundamental driver behind contemporary industrial production - and efficiently responds to the increasing demands of a customer base facing complex production challenges, complicated even further by increasingly unpredictable energy and supply scenarios.

As far as sustainability is concerned, Taurus distinguishes itself for yet another manufacturing



## “ KAIROS, converting technology

▼ The full Kairos team.

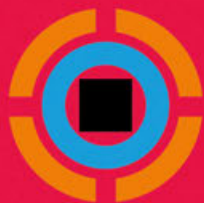


advantage: in fact the line has been conceived and designed to also use recycled and/or single-ply papers. This concept has been achieved by using an innovative folding system that, unlike traditional machines, does not require a vacuum system. This makes it possible to produce interfolded products using more eco-friendly papers, which is notoriously more difficult to fold. Sustainability, efficiency, innovation: these are the key concepts on which Taurus is based, the line that pushes the boundaries of the paper industry even further. ■

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Green Technology



# Toscotec ramps up water reduction in tissue making



■ Toscotec Headquarter.

By: Elisa Bertolucci, Fiber Systems Engineering Manager Toscotec  
Stefano Pecchia, Energy Technology Director Toscotec

**W**ater reduction approaches are very complex and bring to a progressive closure of the process water loop, which leads to accumulation of contaminants and may cause paper defects, deterioration of product quality and problems with tissue machine run-ability. The degree of water loop closure is strictly correlated with the negative impact that may affect the paper process and the capability to support it in an overall efficient system. In this context, it is crucial to establish the right equilibrium between advantages and disadvantages relevant to water consumption restrictions. In this article, we present the best practices adopted by **TOSCOTEC**, which ensure an overall plant fresh water consumption of less than 4 m<sup>3</sup>/ton paper. All values reported below refer to a typical Toscotec tissue plant AHEAD 2.2 with a max production capacity of 125 tpd. All water consumption figures calculated do not include fresh water use for chemicals preparation.

### 1.1 Machine showers

Toscotec has optimized the design of machine showers by reducing their water flow and pressure, especially on lubrication showers and by preferring the use of CW or FCW over fresh water whenever possible. Moreover, the upgrade of their mechanical design (nozzle spacing and pitch, and orifice size) was aimed at reducing water consumption. In the chart below, optimized shower's flows for Toscotec AHEAD 2.2 tissue machine plant are summarized:

Tab. 1: Tissue machine shower requirement for 2.2 plant	
Shower requirement	Total flow (lpm)
Continuous filtered clarified water	2645
Discontinuous filtered clarified water	160
Continuous fresh water	60
Yankee coating spray boom	8

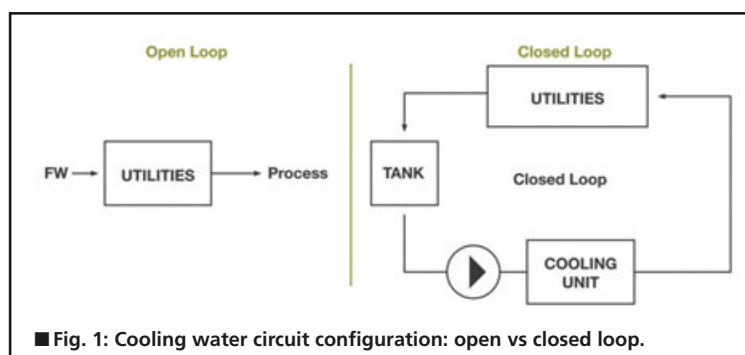
In this configuration, Toscotec ensures a tissue machine water consumption lower than 2 m<sup>3</sup>/ton paper while guaranteeing optimal machine performances.

### 1.2 Suction roll sealing technologies

A traditional suction roll lubrication shower for a Toscotec AHEAD 2.2 tissue machine requires a fresh water flow of about 66 lpm to guarantee proper seal lubrication. Thanks to Voith's new HydroSeal technology, this fresh water requirement has been reduced by approximately 87%. The required flow with HydroSeal is around 8 lpm. HydroSeal is a seal strip with a lubrication system designed to drastically lower water consumption in suction rolls installed in the forming and press section. Upon installation of the HydroSeal seal strips, the mill achieves 78% reduction in water lubrication for seals.

### 1.3 Cooling utilities management

In paper making plants, lubrication units, gearboxes and other utilities are usually cooled down by water. Generally, cooling water can be managed through an open or a closed loop (Fig. 1).



■ Fig. 1: Cooling water circuit configuration: open vs closed loop.

Close loop approach is usually more energy demanding than an open loop one, due to the cooling unit energy consumption. There are several cooling units available on the market which have different operation concepts leading to different energy and water consumption figures. Chiller units have the highest energy consumption but do not need a constant make-up of water. A proper chiller unit allows to save water and reduce the annual water consumption up zero, but it requires an annual energy consumption of 307,979 kWh. Besides the energy and water evaluation, it is also important to underline that mill location plays an important role in the selection of the cooling unit.

#### 1.4 Stock preparation

The following water-demanding utilities can be found in the stock preparation system:

- Agitator and pump seal lubrication.
- Hoses.

Selecting the right sealing type can make the difference in the water consumption of the overall plant. In general, gland packing seals require 5 to 10 lpm which can increase if the sealing unit is not well regulated. In a typical tissue machine plant with a max production capacity of 125 tpd where pumps and agitators are equipped with gland packing, the required water seal is about 100 lpm which accounts for 30% of the entire incoming fresh water flow.

#### 1.5 Additional water recovery with energy efficiency

In a tissue machine, the final dewatering is done through evaporation with the Yankee dryer and the hoods. The evaporated water, typically  $1 \div 1.3 \frac{t_{\text{water}}}{t_{\text{paper}}}$ , is available in the exhaust air flow in the vapour state. The heat recovery units that are installed on the line for various purposes (including building and process water heating) can recover more than 50% of the above-said water vapour by condensing it. The remaining water is usually wasted out. In order to reduce the overall water consumption of the tissue machine, Toscotec optimizes water condensation by installing additional heat exchangers to cool down exhaust air using atmospheric air as the cooling media. The energy consumption is approximately 15Wh electric/kg water. When it comes to heat pumps, energy efficiency and water recovery go hand in hand. The main function of heat pumps is to increase energy efficiency, but they also save water. Hood exhaust is cooled down causing high vapour condensation which releases energy; this thermal power is converted into steam by high temperature heat pumps. In this way, water recovery and steam generation together achieve a higher level of efficiency.

“The **right partner** for your tailor-made tissue line

#### Conclusion

The water consumption of today's papermaking processes varies between 5 and 20 m<sup>3</sup>/ton paper. Toscotec has taken up this technological challenge and is actively contributing to the reduction of water consumption in tissue making through the development of new technologies and strategies which require less water consumption. In this article we summarized all the best practise and technological developments which allow to reach an overall plant freshwater consumption lower than 4 m<sup>3</sup>/ton paper.

Thanks to machine showers optimization and Voith's new *HydroSeal* technology, it is possible to obtain a total tissue machine water consumption lower than 2 m<sup>3</sup>/ton paper. To this result, we have to add the stock preparation water consumption that can be lowered down to 2 m<sup>3</sup>/ton paper through cooling utilities strategies and seal selection. ■

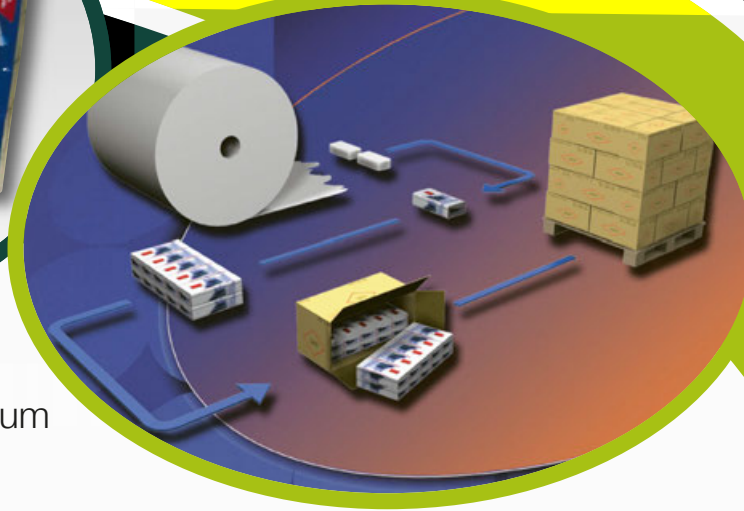
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# NEWS COMPLETE HANDKERCHIEF LINES WITH EFFICIENCY AND PRODUCT QUALITY AT THE TOP OF THE CATEGORY



Tau Machines has always offered the maximum flexibility, performance and reliability, and still continues to develop its machines with passion to maintain the lead in innovation.



converting and packaging



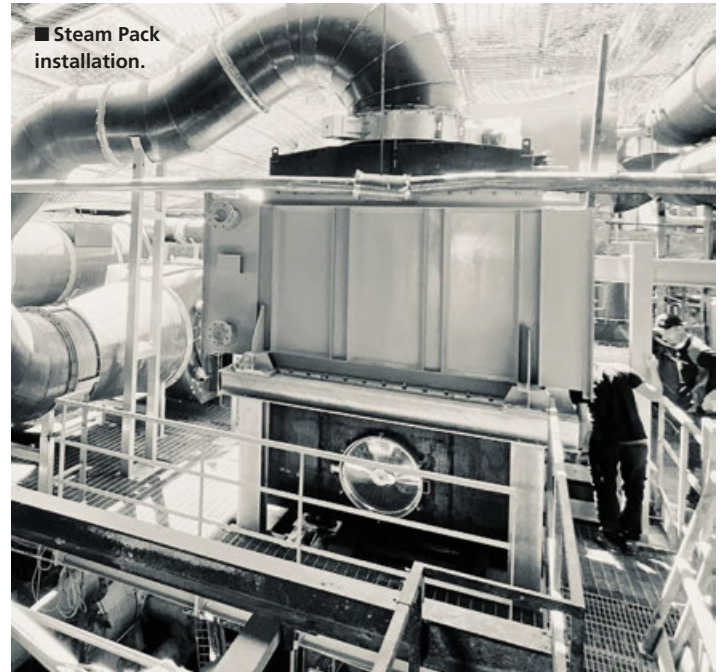
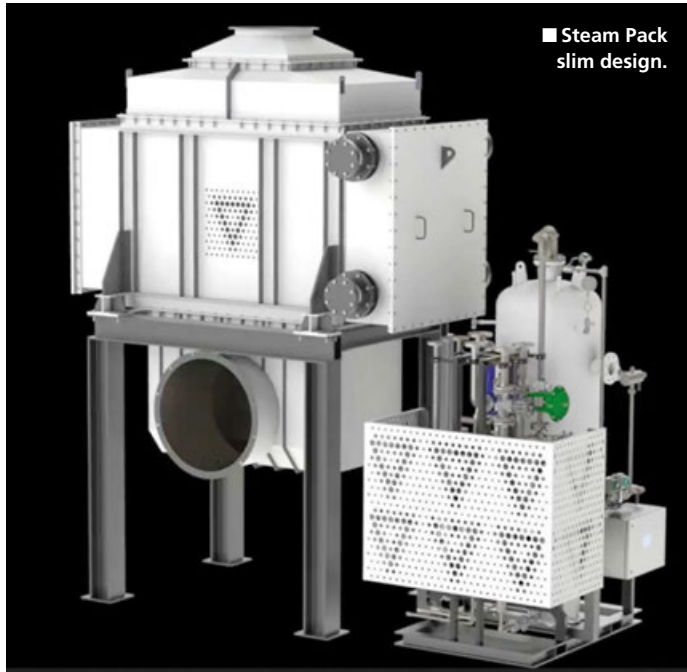
# Steam Pack<sup>®</sup> Mevas steam generator from exhaust

Steam Pack by Mevas is the pioneering steam generator which is able to produce instant, high-quality saturated steam thanks to the heat recovered from exhaust fumes. Thanks to its special features, \_SP is actually the smartest and most performant steam producer from exhaust on the market.

by: MEVAS Srl



■ Steam Pack skid.



**M**evas system consists of two items built on separated skids: an evaporator installed on the air system exhaust and the \_SP skid (tank and instruments). The condensate goes from the Yankee separator tank to the evaporator through an high-pressure pump where instant saturated steam is generated. The new steam generated by \_SP is separated in a dedicated tank, regulated by the modulating valves and the related control loops, measured by the flow transmitter and reported (fundamental step for Black/White certificates). \_SP operations lead to the elimination of biphasic flow, making unnecessary Heavy Duty equipments and cutting maintenance and operating costs. The new steam flow is monitored in real-time and controlled in terms of saturation quality and overheating. Furthermore, **Steam Pack** relies upon an automatic control system which allows a quick troubleshooting and an immediate intervention through the

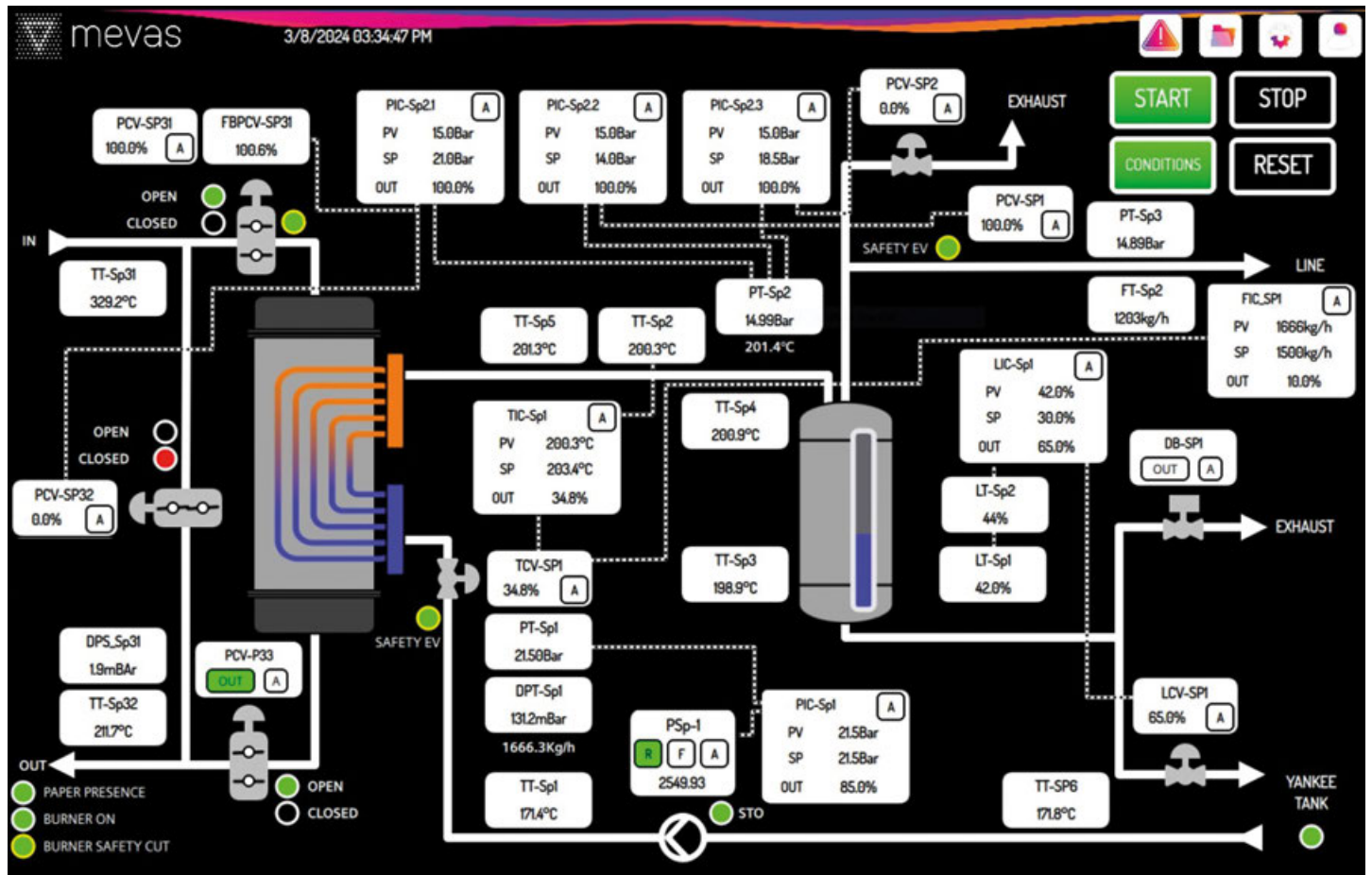
encrypted remote connection. SIL2 instruments accomplish the higher requirements in terms of system safety. The main key point is obviously the *energy saving*, which is strictly related to the environmental sustainability themes: by using the energy in the exhaust flow, which would be otherwise wasted, \_SP produces new saturated steam suitable for the process, reducing the boiler steam supply and the overall gas consumption. In standard conditions, we are talking about more than 1000 kg/h of steam generated, up to the 20-25% of the total steam consumption. At the same time, an effective heat recovery allows to significantly reduce CO2 emissions, important in a perspective of a progressive decarbonisation. The other \_SP "superpower" is the *adaptability*. The slim skid design makes \_SP suitable for any existing mill layout, even the most complex. The Steam Pack smart design makes the system extremely easy to be installed and started-up, cutting down assembly and maintenance cost.

“ We combine a solid know-how to **dynamism and enthusiasm** of a ground-breaking company

### Case study

Below some project data of the latest Mevas Steam Pack installation for a primary italian client:

- Daily production = 120 T/day.
- Exhaust temperature (before R1) = 310°C.
- Yankee working pressure = 7,5 Barg.



- Steam working pressure (motive) = 18 Barg.
- Steam generated from exhaust = 1063 kg/h.
- Power saved = 623 kW.

▲ Steam Pack HMI.

Now, you are probably wondering if **MEVAS** Steam Pack is adaptable to your tissue machine. The only mandatory requirement is an high temperature before R1 (preferably more than 280°C). Once this point is established, there aren't huge obstacles ahead. How to quickly check the possibility to install Steam Pack, evaluating costs, saving and ROI? The first step is the \_SP Check List, a simple document which has to be filled with machine and production characteristics, usually DCS/QCS screenshots are

enough. In the meantime, we need to check layout and plant characteristics, through documents or a dedicated survey. After this quick stages, we are already able to do a dedicated turn-key quotation and a customised steam production estimation; then the client can easily calculate the saving and the associated payback. Mevas Steam Pack helps our clients to deeply optimise the drying process without substantial modifications to machine and mill configuration. In conclusion, \_SP enhances the Yankee performance, maximising the overall energy efficiency and favoring the achievement of environmental and sustainability goals. ■

“Passion, expertise, reliability, ambition: these are the characteristics of our team

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# The PARAGON advantage

Revolutionizing tissue manufacturing for enhanced productivity and sustainability. by: Paper Converting Machine Company



■ PARAGON converting line for premium tissue products.

**T**he tissue manufacturing industry is at a crossroads, where the pursuit of sustainability meets the need for efficiency amidst evolving market dynamics. Factors such as rising market pulp prices, escalating energy costs and stringent ESG targets are driving manufacturers to seek innovative solutions. To address these challenges while maintaining product value, aesthetics and quality benchmarks, the engineering and research team at **PCMC** - a BW Converting Solutions company - has developed a solution specifically designed to meet this demand: the Paragon rewinding system. The rewinding stage of the tissue manufacturing lifecycle, where parent rolls of tissue are converted into consumer-ready

rolls, can be costly and energy-intensive. However, it holds immense potential for improving fiber and energy efficiency, which perfectly aligns with the industry-wide sustainability drive.

### The Paragon Advantage

Unveiled in 2021, the Paragon system has marked a revolutionary leap forward in tissue manufacturing technology. Its unique design features motorized inserts (center drives) and a pivoting winding belt for unparalleled support throughout the rewinding process. This meticulous control minimizes the destruction of bulk, reduces stress on the tissue web and lowers the frequency of web breaks. This ability to precisely manage the formation and structure of the tissue roll during rewinding is key. Paragon's



 Paragon - a **new era** in tissue rewinding

exceptional caliper retention and energy-efficient operation ensure that the thickness of the tissue remains consistent from the beginning to the end of the roll, enhancing its firmness. The equipment's ease of operation also differentiates it from others on the market, as it is less sensitive to paper variations and maintains consistent performance at high speeds. The Paragon rewinder's patented revolutionary wind nest minimizes nip force and maximizes the engagement of center drives with the product, leading to a remarkable 150% reduction in nip force on the winding belt and an average 80% engagement of center drives, even at high production speeds. As a result, the Paragon rewinder is reported to outperform conventional converting lines, achieving up to a 25% increase in productivity, while simultaneously preserving roll bulk and optimizing energy and fiber consumption.

### Paragon with INVISIBLE-O Coreless Winding Technology

An exciting application of Paragon is its integration with PCMC's INVISIBLE-O technology, a brand-new innovation that enables the production of high and low-firmness coreless rolls, for both consumer and away-from-home products. This combination allows for seamless transition between core and



◀ Experience unmatched simplicity, productivity and product quality with the innovative PARAGON winding nest subsystems.

▼ SmartTOUCH HMI is a game-changing human-machine interface providing intuitive navigation and situational awareness for the user.

“
”
**A century** of machine design, manufacturing and service experience

no-core production, enabling manufacturers to adapt to diverse market demands with agility and responsiveness. “Coreless tissue is already thriving in European markets, but we see a real opportunity to expand into the US - said **Walter Tamarri**, Vice President Marketing, BW Converting Solutions, Hygiene Division. The Paragon system not only represents a seamless solution for meeting future demands for sustainable products, but also future-proofs tissue manufacturing operations. By embracing emerging trends in the industry for sustainability, we can mitigate what would otherwise be a costly endeavor”.

The Paragon system marks a new era in tissue manufacturing, where efficiency and sustainability converge seamlessly. By embracing this innovative solution, manufacturers can unlock significant productivity gains, reduce waste, and contribute to a greener future. **BW Converting Solutions** is committed to revolutionizing the way tissue is made, one roll at a time. ■



**PAPER CONVERTING MACHINE COMPANY**

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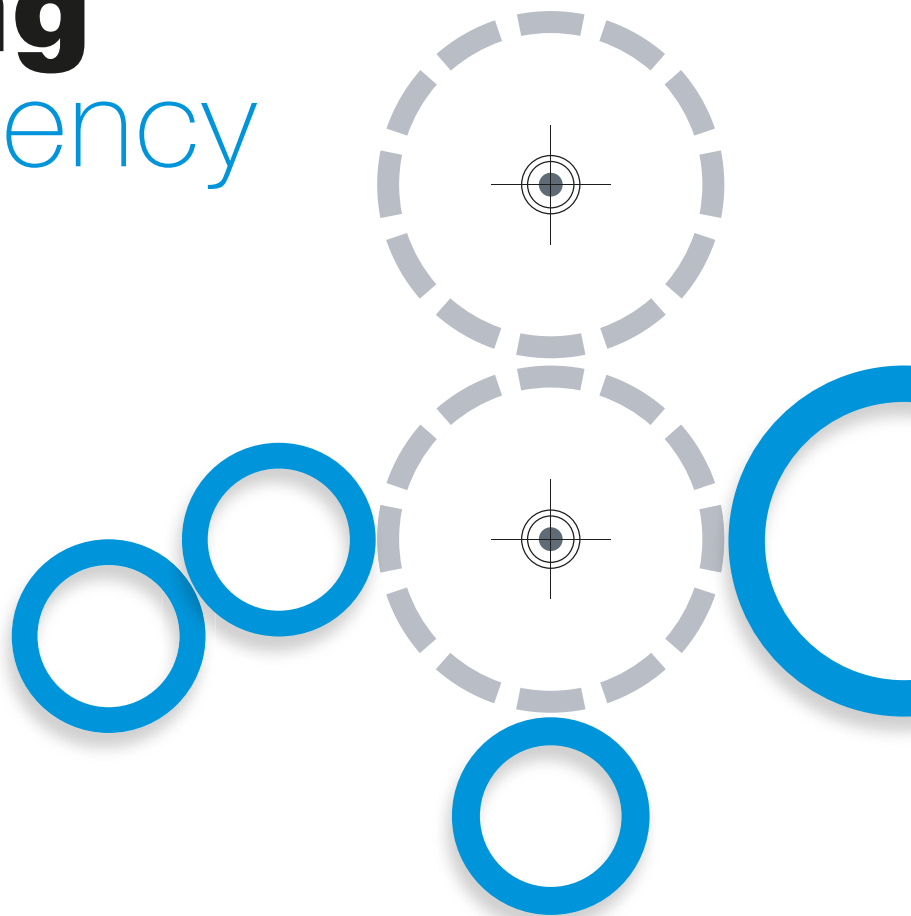


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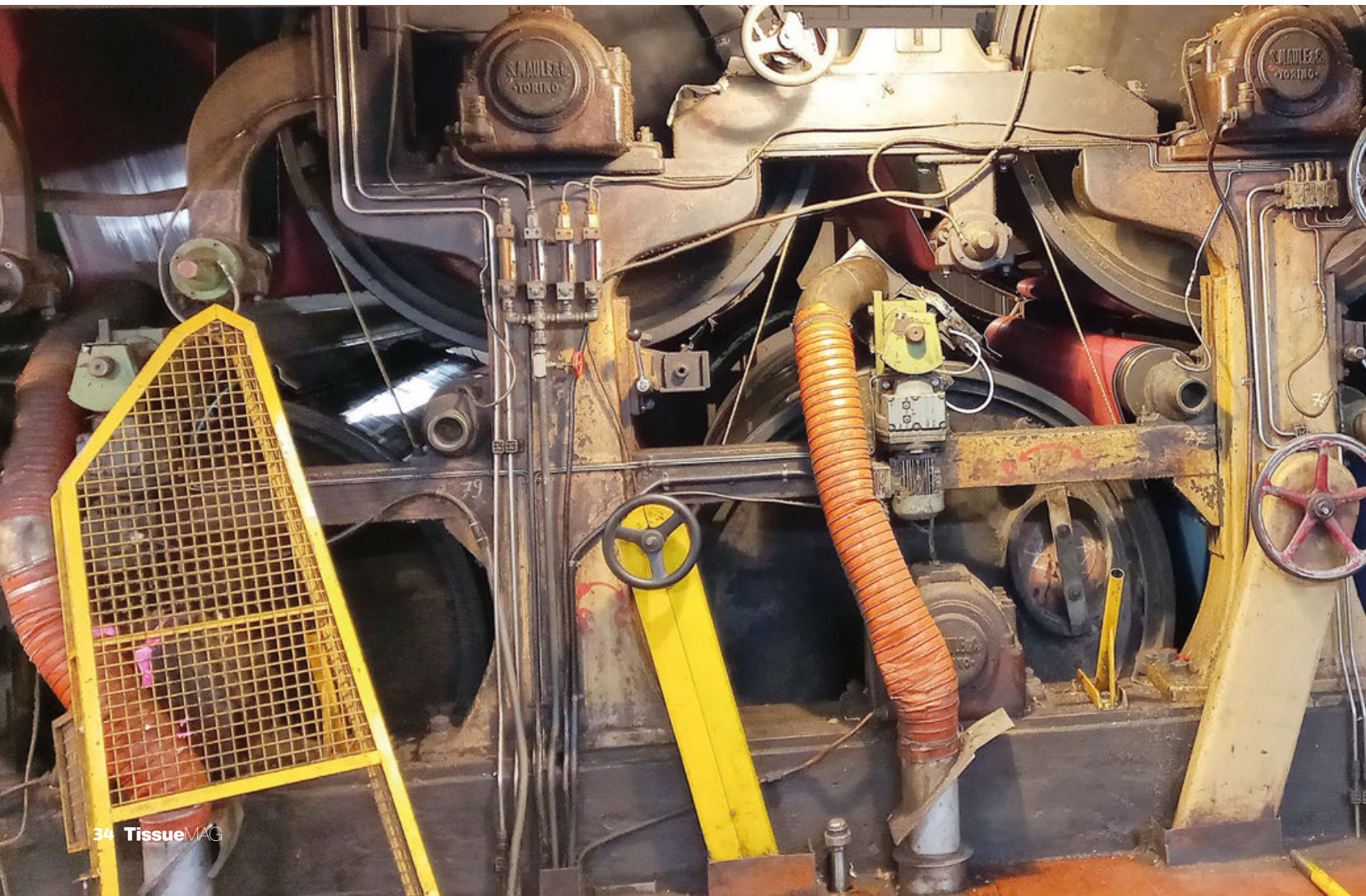
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# Doctors' rebuilding in the dryer section: how to enhance performances in a cost-effective way (with no compromises)

By: Sara Giunchi, Communication Manager Oradoc Srl



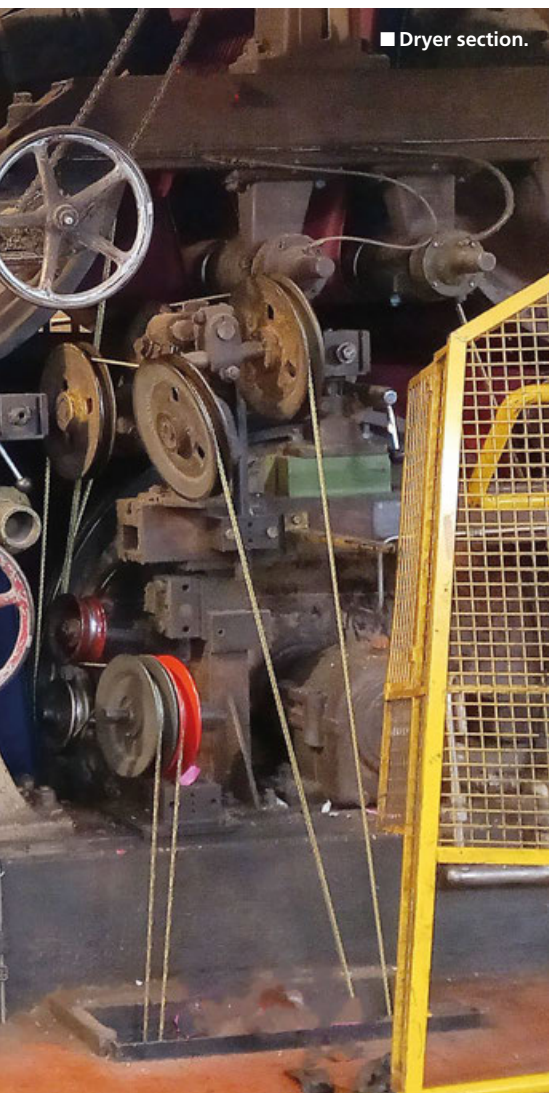
The drying section stands out as the most significant consumer of thermal energy within the paper machine; through processes like heat transfer, evaporation, water removal, hoods and hot cylinders, the slurry pulp transforms into paper with approximately 90% to 95% solid content. Given this, optimizing the operation of the dryer section in terms of both heat transfer and water removal becomes crucial. The good news is that energy efficiency can be enhanced with relatively modest investments: improving doctoring can help increasing cylinder drying capacity and runnability. At the same time, it can lead to better paper quality and improved production efficiency, with consequent reduced power consumption and operating costs. To start from scratch, **ORADOC**

meticulously evaluates critical positions within the drying section, specifically, the section's beginning and end; in some cases, doctoring systems are also responsible for detaching the paper from the last drying cylinder and directing it either to the pulper tank or to the pope or size press. When poor performance coincides with severe wear conditions, a complete overhaul of the doctors is often the wisest choice, as this safeguards optimal cleaning performance, even at higher machine speeds. In response to a request to enhance the paper machine's performance in the drying area, Oradoc proposed its well-known **OraClean**, the rigid doctoring system that ensures correct and uniform cleaning of the dryer cylinder, while its simple design guarantees easy maintenance and blade replacement. The supply usually includes doctor backs, supports, bearings, and an electro-mechanical or pneumatic oscillation system, that is all components that can be configured according to customer specifications, offering options for manual execution or via pneumatic cylinders. *But what features should an effective drying doctor have?* The rigid back of the OraClean system has a simple geometry with minimal volume, ensuring the correct working load on the dryer cylinder for maximum cleanliness. Additionally, the electro-mechanical or pneumatic oscillation enhances cleaning efficiency on the cylinder, allowing proper operation even at high production speeds. To optimize performance at both the beginning and end of the drying battery, Oradoc recommends adopting the complete **OraFlex** flexible blade holder. In this specific section of the drying area, flexibility proves most effective. The OraFlex blade holder includes special high-temperature pressure tubes, ensuring an even load across the drying cylinder surface during work. Moreover, it facilitates easier blade replacement during rest phases. The rigid doctor back, equipped with torque arms, maintains the correct working position and ensures stability in case of paper breaks. Meanwhile, the electro-mechanical or



▲ OraClean.

▼ OraFlex drying section.





▲Dust removal system.

▼OraThread.



## “Oradoc - Boosting Performances

pneumatic oscillation further enhances cleaning efficiency on the cylinder, guaranteeing proper operation even at the highest production speeds.

Another often underestimated aspect that can significantly impact the drying process is a device designed to prevent paper dust and trims from causing issues. Our brand-new dust removal system can be installed on both flexible and rigid blade holders, regardless of format. It includes a suction box directly attached to the crossbeam and a suction nozzle on the blade holder: this setup allows to concentrate suction precisely where needed - close to the blade - thanks to an adjustable front part. The implementation of the dust removal system has no adverse impact on the blade holder's flexibility, but it rather ensures high efficiency by specifically addressing air leakages.

This system can be equipped with either an electromechanical or pneumatic oscillation system, which is particularly favored in paper mills operating under high-temperature conditions.

While flexible hoses are generally preferred for high temperatures, the system can accommodate various hose types suitable

for different installations. Its compact and open structure minimizes maintenance issues and product non-compliance concerns, facilitating easier dust removal and preventing contamination. Consequently, this design contributes to overall product quality. Furthermore, all drying area doctors can be outfitted with either the OraThread or OraShoot systems. These systems enable seamless threading of the tail from one roll to another without relying on ropes the most hazardous elements in paper machines. Additionally, air blows can be integrated into both OraClean rigid doctors and OraFlex flexible doctors. These enhancements offer substantial benefits, including improved machine operator safety and greater efficiency in terms of time and energy savings, finally automating the operation. ■

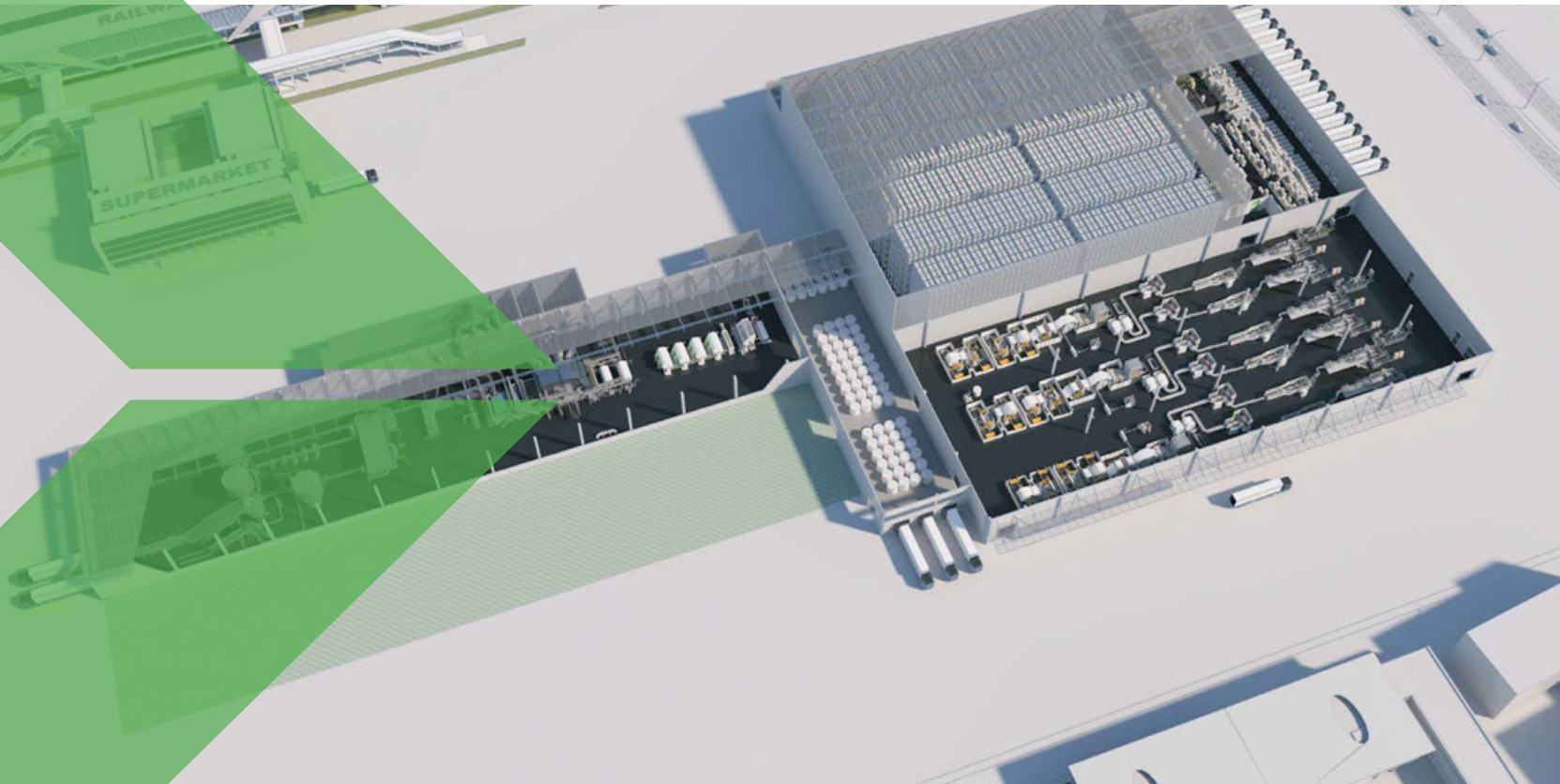
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# Promotech: performance optimization and energy saving in the paper industry

by: Promotech Srl



**W**hether it's a new product or a retrofit, the initial startup of a machine is always an exciting moment, especially when integrating drive technology. If the on-site drive startup goes so well that it surprises even the most experienced engineers, it's even more satisfying. In general, we can say that the paper industry is decidedly energy-intensive: globally, it consumes 10% of energy, ranking second only to steel.

Although much of the energy is transferred to the machine in the form of steam, mainly for continuous machines or high-temperature gas in the case of vellum paper production plants, the quantity of medium to high-power motors in these installations requires special attention to optimizing motion control and management systems. And that's why **PROMOTECH**, along with numerous partners, is committed to finding solutions that improve energy efficiency, a fundamental topic for all of us



and highly valued in the paper industry sector. With over 50 years of experience in motor drives, **Yaskawa** has developed products that seamlessly combine technical superiority, easy management and energy savings. This has led our companies to work closely for almost 15 years, culminating in the official recognition of Promotech as a *Yaskawa Sales Partner* in 2022. The latest results of technical evolution converge in the new GA500 microinverter and the GA700 series and Promotech has demonstrated how versatile and easy to use they can be. Available



## “Renew, repair, **restart**”

in three sizes with power ranges up to 30 kW, the GA500 series stands out for its compactness and the ability to control asynchronous, permanent magnet or reluctance synchronous motors. Installed and ready to use in minutes, they are now also used in high-speed applications, as the output frequency range of 590 Hz can be expanded to 2,000 Hz if needed, for example, in spindles for metal or wood processing applications or in centrifuges. The same features are found in the GA700 series, available in sizes up to 630 kW, but in this case, performance and flexibility are even greater thanks to the possibility of installing up to two encoder cards, allowing closed-loop operation with special software for easily and quickly implementing electrical trees or winding/unwinding systems typical of the paper industry. The robust and easy-to-use design allows continuous operation at an ambient temperature of up to 50°C without power derating. With minimal power reduction, temperatures up to 60°C can be reached, enabling installation even in particularly critical areas, such as near calendars. At the same time, integrated functions for monitoring machine status and remaining lifespan prevent the risk of sudden stops. The integrated STO function complies with SIL3 or PLe safety requirements. A 24 V interface can be used to add additional sensors, such as pressure or temperature sensors. **GA500/700** inverters support various industrial communication protocols to facilitate connection to the factory automation network as much as possible. For non-critical applications, with a fieldbus interface card in a single inverter, up to five GA inverters can be networked, significantly reducing costs and minimizing the required wiring effort. An EMC filter is integrated, ensuring compliance with global standards and reducing the number of components in the electrical panel. The new fanless version of the GA500 inverter is suitable for use with special heat sinks, water cooling units, or any other cooling element. Depending on the inverter size, these can be mechanical parts of the machine or heat sinks for special applications. For example,



in textile and paper machines where lint and dust, besides being easily flammable, can hinder the cooling of standard inverters, the combination of a fanless GA500 drive with the right heat sink solves this problem, significantly reducing machine downtime and consequent production losses. For both series, in the case of inverters with an attached heat sink, mounting can also be done outside the electrical panel. As a result, 80% of power dissipation is eliminated from the electrical panel.

This makes it possible to use smaller electrical panels, reduce cooling systems or fit more devices in the same panel. In addition, the reduced air circulation inside the electrical panel significantly



## “ Leader in the distribution of **electronic equipment**”

reduces dust pollution and extends service intervals.

In the converting world, where winders and unwinders often coexist or there are processing cycles with numerous start and stop cycles, we have the opportunity to work by sharing the DC bus and managing the system with an active **D1000** type front end. This component allows significant energy savings by eliminating all braking resistances and excess energy.

The elimination of braking resistances also reduces the fire risks that these components can introduce in the presence of flammable dust, as in the paper industry. An additional advantage is that using D1000 lowers harmonic distortions to values close to 5% and brings the power factor to about 1; consequently, reducing reactive power systems and minimizing issues with control systems. In all of this, Promotech guarantees worldwide delivery and, above all, an immediate support network for its customers. ■

## Promotech in Italy and around the world

Promotech was born and developed in Lucca, a global hub for the paper industry. Since the 1990s, alongside the distribution of industrial automation technologies and sales, it has cultivated hardware and software consulting support, providing a range of tailor-made services dedicated to the specific needs of each company and sector.

Leading companies in the paper, packaging, pharmaceutical, industrial and food industries have chosen Promotech as a partner due to its dynamic and specialized organizational structure. Its strengths include a large warehouse inventory, problem-solving capabilities, new, obsolete, used and refurbished components, technical support and repair services.

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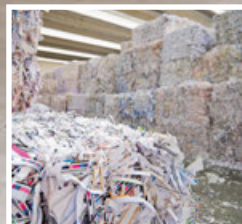


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▼ Facial tissue converting production line equipped with packaging solution.



# Giotto Technologies, the new Baosuo's view on the tissue papers converting machinery market

By: Giotto Technologies Srl



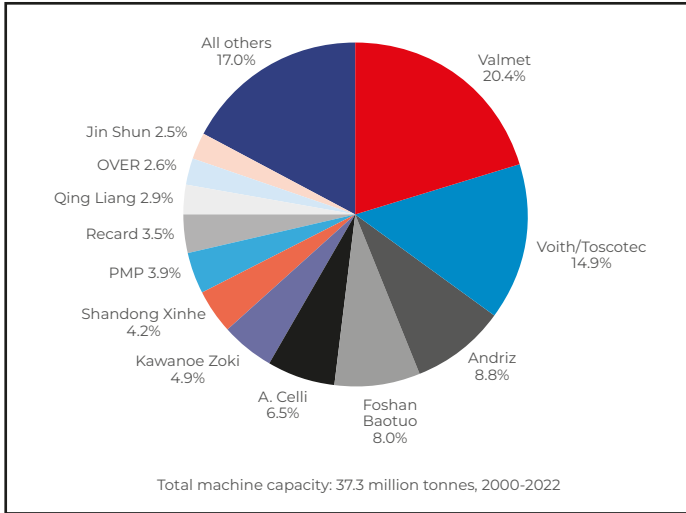
“ High performance solution  
for **highly competitive products**”

**B**aosuo Group is a premium corporation specialized in equipment and technology for tissue paper, dedicated in providing complete support to paper mills and tissue converting companies, offering turnkey solution and first-class service from design, manufacturing to installation. Baosuo Group's products portfolio includes tissue making machines, tissue converting machines, tissue packaging machines and electric intelligent systems. **BAOSUO GROUP** owns 6 subsidiaries and 5 production bases, including Giotto Technologies located in Italy. Among them, **Baotuo** company is developing the tissue making machine business very actively, ranking 4th in the market share of major global tissue machine suppliers from 2000 to 2022 with a market share of 8% (source: Fast markets RISI). Recently, Hengan Group and Baosuo Group signed a contract for four high-speed 3650mm wide crescent former tissue machines. The machines

will be put into production at the Hengan Paper production base in Chongqing city in 2024. This is another collaboration after the successful cooperation with many production bases of Hengan Group in Fujian province, Hunan province, Shandong province, etc. The technologies and performances achieved together with the excellent results obtained in terms of energy and fiber savings, have been welcomed and positively evaluated by those customers in the western market, who are currently analyzing and developing their future investment in tissue machine with Baotuo.

**Giotto Technologies, the European R&D and manufacturing site of the Baosuo Group**

Giotto Technologies was born in 2021 from the combination of the experience and deep knowledge of the tissue converting sector of a group of Italian senior professionals and engineers with the productive capacity of Baosuo Group, the first European R&D and



◀ Market shares of main tissue machine suppliers in the world since 2000 (source: Fast markets RISI).

production site of Baosuo Group with the aim of offering reliable and energy saving tissue converting machines and positioning itself as a real competitive alternative for customers who are looking for a primary and reliable partner for integrated tissue equipment. **GIOTTO TECHNOLOGIES** tissue converting lines have reduced energy consumption thanks to the motorization integrated into the rolls which allows the elimination of any transmission device such as reducers, belts, etc. and to obtain better control of the winding cams and electronic movement phases. To guarantee the maximum quality and the outmost product developments possibilities, the embossing laminator, **TRIPLER** features the unique peculiarity of being able to be equipped with three Rubber to Steel embossing units with the freedom of multiple configurations. Known configurations, such as D.E.R.L., D.E.S.L. and Point to Point as well as new and innovative ones, such as the combination of the aforementioned as Point to Point + D.E.S.L. or Point to Point + D.E.R.L. etc. The new configurations now achievable can give the finished product the highest caliper obtainable from the substrate without compromising the

softness, which can actually be increased. Furthermore, the use of latest generation electronic controls combined with an unique winding system, allows us to produce rolls while maintaining the best quality standards both for the uniformity of the winding and for the high caliper retention. Giotto Technologies is able to supply complete tissue converting lines, for Rolls and Folded tissue products, such as bathroom tissue rolls, kitchen towel rolls, JRT rolls, interfolded facial tissue, interfolded hand towels and napkins, including packaging and palletizer. ■

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“ Your **tissue needs**, one single partner

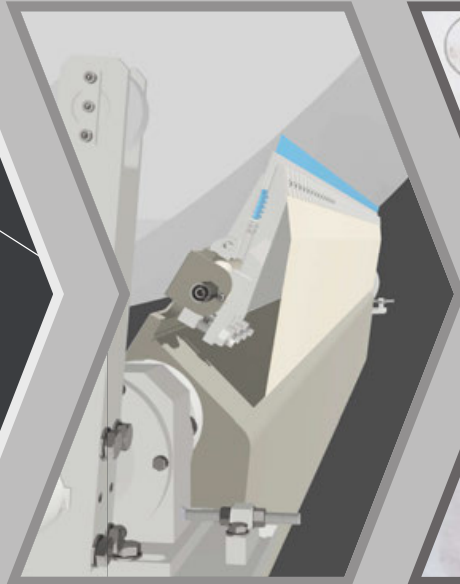
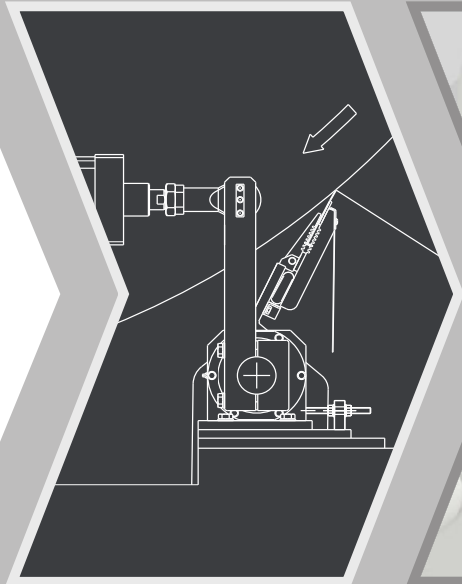


■ Paper mills solution.



DOCTORING  
SYSTEMS  
SPECIALIST

MADE IN ITALY



#### TECHNICAL SERVICE

- ▷ Measurement of existing application
- ▷ Supervision during the installation
- ▷ Set up and alignment of the supplied system
- ▷ Attendance during start-up
- ▷ Maintenance of existing doctoring systems
- ▷ Audit of the existing doctoring systems

#### PRODUCTS

- ▷ PCrep flexible creping doctors
- ▷ PCut and PClean Yankee doctors
- ▷ Dewatering press section doctors
- ▷ Doctors for any other application
- ▷ Shower units
- ▷ Spare parts

With over **25 YEARS EXPERIENCE** Polimek's technicians are able to service any type of doctoring system

#### OPERATING UNIT

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■ Cannon Bono Energia - Fire Tube Steam Generators SM series.

# **Cannon offers innovation, sustainability and excellence**



## Empowering the pulp and paper industry with advanced boiler solutions

By: Cannon Bono Energia

**A**s we navigate the Middle East’s dynamic economic landscape, the paper and tissue market stands out as a sector undergoing significant growth and transformation. Driven by changing consumer preferences, environmental considerations and advancements in technology, this industry has experienced notable shifts. Innovation is paramount in the pulp and paper industry, a globally significant and energy-intensive sector. To achieve success, companies must prioritize novel manufacturing processes, emphasizing the optimization of operating costs and resources for sustained competitiveness. Adherence to stringent environmental regulations is equally vital. Continuous investment enables companies to implement sustainable practices, effectively reducing waste.

### Empowering industry excellence: Cannon’s tailored solutions

In Cannon Group, we support the sector’s companies in their choices, helping them with solutions configured specifically for their real needs and objectives. **CANNON BONO ENERGIA** is dedicated to designing and manufacturing industrial boilers for standard and special applications, including plug-in and package solutions. All products are manufactured in Italy with a commitment to energy saving, energy efficiency improvement, emission reduction and low environmental impact. Since 2015, our local company **Cannon Middle East**, has been at the forefront of delivering cutting-edge boilers and exceptional services to the pulp and paper industry. Maintaining a global presence through local agents and branch offices enables us to provide support throughout the entire life cycle of the installations,

offering a wide range of aftermarket services that ensure asset efficiency and optimum service lifetime. With a steadfast commitment to excellence, we have consistently strived to exceed industry standards for our clients. We take pride in offering annual maintenance contracts designed to provide our clients with uninterrupted operations. Notably, our commitment to service excellence is exemplified by our 24-hour response time for service within the UAE and 48 hours for the rest of the Middle East. This ensures that our clients receive prompt and reliable support whenever the need arises.

Our proficiency extends to providing comprehensive engineering services: we offer innovative solutions that optimize performance, reliability and safety, thus contributing to overall operational efficiency. In addition to our technical expertise, we boast a robust support infrastructure that includes an assistance center, warehouse and extensive spare parts inventory. This ensures that our clients have access to the resources they need to address any operational requirements promptly.

### Driving efficiency and sustainability in paper manufacturing

With extensive experience in the pulp and paper sector, we offer a range of fire tube generator solutions and expert services for both new and existing facilities. The **Abu Dhabi National Paper Mill** chose our fire tube generators: an SM800 series boiler, producing 8 t/h of steam at 18 barg pressure for their drying process, alongside a larger one, an SG1500 series, producing 15 t/h of steam at 18 barg.

**Saudi Paper Manufacturing** chose our SG2000 (20 t/h @20 barg) boiler to work to power a completely new production line, depicting the superior qualities of our equipment. Our dedication to guaranteeing seamless operation extends beyond just providing the boiler: from initial installation and setup to



■ Cannon Bono Energia - Fire Tube Steam Generators SG series.

## “ Innovative design with energy efficiency in mind

ongoing maintenance and technical support, all designed to meet the specific needs of your industry, our services cover the complete lifecycle. In both these projects, we integrated our boilers with economizers or the HE Smart package to optimize energy use and align with global sustainability goals, showcasing a forward-thinking approach to energy management. These choices not only improve operational performance but also contribute to resource conservation and environmental stewardship, setting a commendable example for the broader industrial landscape. Moreover, our expertise extends to revamping and upgrading existing facilities, where we leverage our in-depth knowledge and experience, boosting efficiency and performance. We stand as a testament to unwavering dedication and excellence in the pulp and paper industry. Our commitment positions us as the premier partner for businesses seeking unparalleled solutions. ■



■ Cannon Bono Energia - Fire Tube Steam Generators SG series

### CANNON BONO ENERGIA

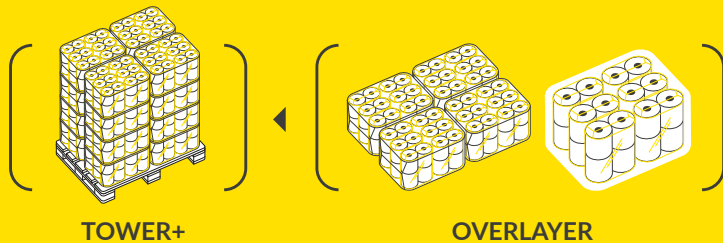
Via Resistenza 12 20068 Peschiera Borromeo (MI) - Italy

■ website: [www.cannonbonoenergia.com](http://www.cannonbonoenergia.com)

■ phone: +39 02 55302848 - email: [energy@cannon.com](mailto:energy@cannon.com)

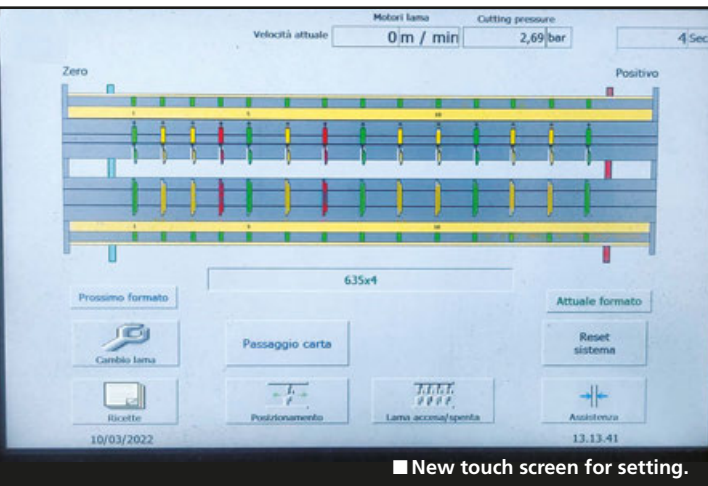


# Concentrated technology for the tissue packaging end-of-line.

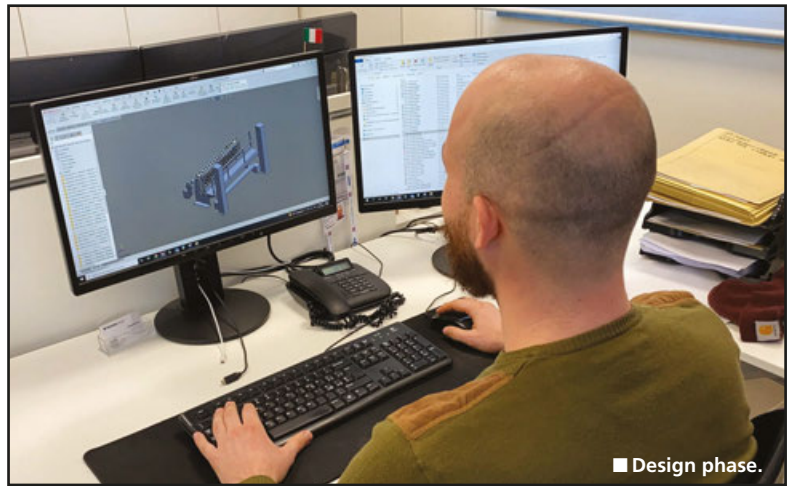


2 machines instead of 3, the new Plusline technology that integrates bundler, layer former and palletiser in just 15 metres compared to the traditional 40. A super-compact solution that revolutionises end-of-line efficiency.

Curious to find out more?



■ New touch screen for setting.



■ Design phase.

# Revamping and compliance of a tissue rewinder

By: Tecno Paper Srl

**T**ecno Paper boasts many years of experience in the world of paper mills and in addition to the production of rewinder and winder, it specializes in the reconstruction and modernization of sections of paper mill machines.

Thanks to the experience gained in the field, we can respond to specific customer needs, intervening in certain sections of the machine, in order to improve its characteristics from different points of view such as efficiency, productivity and last but not least the safety aspects of the modification. In this case, an important group operating in the world of tissue products,

asked us to evaluate among the various possible options, the best solution for replacing the existing slitting system in one of the rewinders present in the Lucca plant.

The continuous and different requests from the market, in terms of product formats, have highlighted the customer's need to install a new slitting system with automatic positioning, instead

**“ Tecno Paper - your needs, our innovations**



■ New slitting system installed.

of the existing manual one, which can guarantee the right flexibility to meet production needs. It was therefore necessary to carry out a feasibility study made by our technical office. So we went on site to get all the dimensional measurements necessary for the replacement of the cutting unit, maintaining in this specific case, the same geometry relating to the paper passage and to the other accessory elements such as tangency rollers; on the other hand it was necessary to revise some parts in the trimming section, because they are closely related to the cutting geometry.

The project was developed by **TECNO PAPER** with the help of a 3D design software, in order to make the installation as quick as possible for obvious production reasons, checking in advance all the elements involved in the modification, from the mechanical components to the electrical and pneumatic wiring. We supplied to the customer an evaluation risk document, related to the new slitting system. In addition, we supplied even the necessary documentation needed for the integration process on the existing customer's machine.

Tecno Paper therefore did the installation of the new slitting system, having at its disposal specialized technicians who work in the paper mill every day, taking care of the maintenance on all the machines involved in the processes of paper production.

Thanks to the complete set of special instruments available, such as laser aligner and theodolite, the new unit was installed in a very short time.

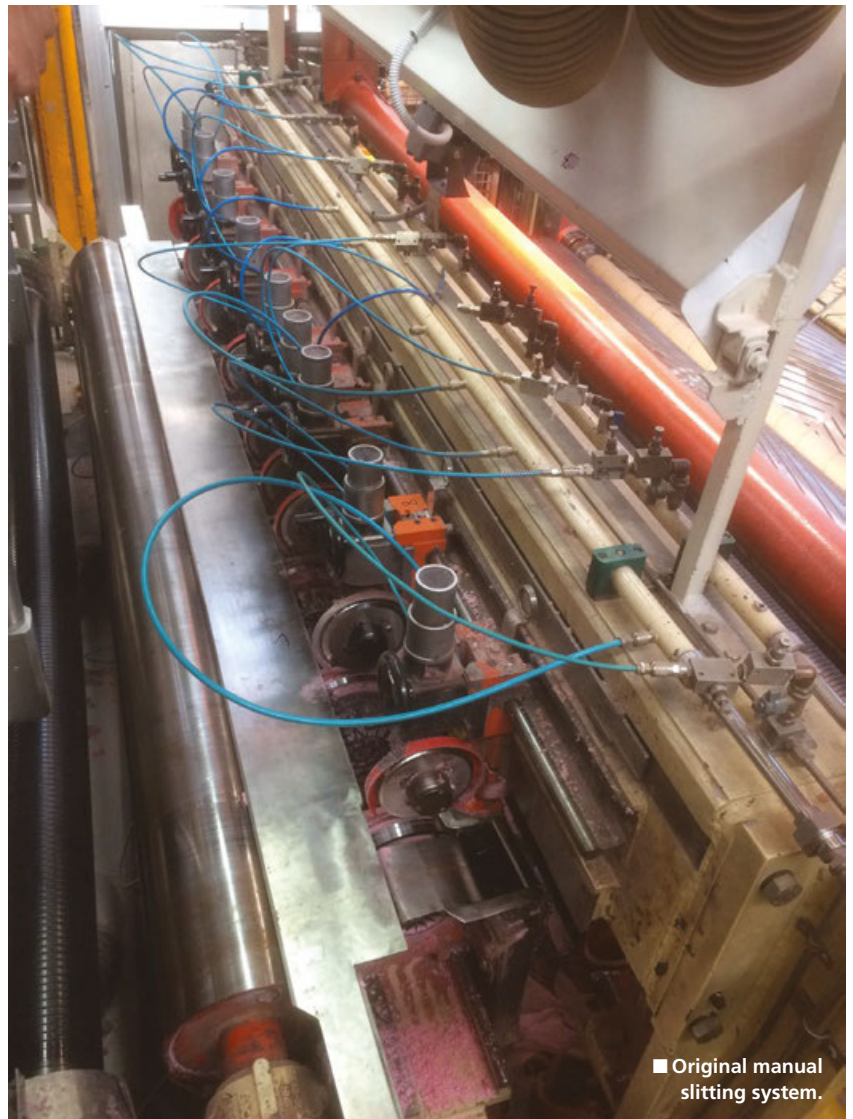
The final result is a perfect fitting of the new automatic slitting system in the existing machine, that allows the customer to face continuous production changes, with positioning time of the 14 slitting units in less than 15 seconds.

This *setting phase* is done in total safety by the operators, thanks to a new operator touch panel installed on the existing console positioned inside the control room. The revamping described in this article is only one of the possible modifications that can be made on existing machines. The targets of these interventions are increasing the efficiency of the machines, improving the qualitative characteristics of the finished products and adapting the existing machines to the level of safety required by current regulations.

These are the reasons why the request of revamping interventions on paper machines, rewinders and winders are increasing day by day.

Tecno Paper over the years and in the face of the experience gained, has proved to be the ideal partner for these types of projects. ■

“ Tecno Paper is a company with a dedicated **customer oriented philosophy**



■ Original manual slitting system.

### TECNO PAPER SRL

Via S. Martino 36 - Fraz. Marlia - 55012 Capannori (LU) - Italy

- website: [www.tecnopaperitalia.it](http://www.tecnopaperitalia.it)
- phone: +39 0583 299023
- email: [info@tecnopaperitalia.it](mailto:info@tecnopaperitalia.it)
- contact person: Paolo Baldaccini



[www.sabasrl.com](http://www.sabasrl.com)



Technologies  
and solutions  
for the  
end of line

Automatic robotic  
palletizing systems

# THE INFINITY R10SW PALLETISER

By: Infinity Machine & Engineering Corp.

It is no secret that in recent decades manufacturers have pivoted toward automating the production process at a rapid pace. And as the cost of labor has steadily increased, there is no indication this shift towards automation will slow down anytime soon. Tissue converters have been especially proactive in implementing automation into their production process as nearly every step of the converting process can and has been automated. In 2004, **Infinity Machine & Engineering Corp.** was founded in response to the surge in automated tissue converting lines and has led the charge in automating the tissue packaging process ever

since. Already boasting the most comprehensive roster of automated packaging machinery in the industry, INFINITY is further expanding their roster of automated machinery to cover the end of the production line with the R10SW palletizer. Responding to consumer demand, the R10SW palletizer can be integrated with Infinity

“A **global vision**, focused on tissue and hygiene packaging solutions

■ Infinity palletizers offer fully servo, fully automatic stretch wrapping.





■ Infinity Machine & Engineering Corp. has brought its signature build quality and innovative engineering to the production line's end-of-line with Infinity palletizing solutions.

packaging lines, enabling Infinity machinery to automate every step of the tissue production process after the log saw.

A key aspect of the **R10SW** palletizer is its modularity. The R10SW is made up of modular palletizer sections that can be arranged into countless different layouts in order to accommodate production requirements, as well as facility limitations. The flexibility created by these palletizer sections make it perfect for a multitude of product lines, from single product to large-scale, multi-line operations.

The palletizer segments offered by **INFINITY** include automatic slip sheet placement, integrated labeling and fully automatic, fully servo stretch wrapping. All designed to provide extreme efficiency and flexibility in a minimal amount of space.

The R10SW palletizer comes equipped with an articulated robot arm from FANUC, one of the world's largest industrial robot manufacturers. The R10SW's FANUC articulated robot arm is capable of quick cycle times and robust performance. The

development of the R10SW palletizer has led to Infinity becoming an official "FANUC Authorized System Integrator". Versatility and robust performance capabilities are built into the design of the R10SW. Vacuum or servo gripper end effectors can be equipped on the palletizer, allowing for high-speed stacking on a wide range of products, including cases, bundles and DRP. One focus for Infinity engineers in the design of the R10SW was prioritizing operator convenience and safety. This resulted in a machine that features multiple safety zones separated by access gates, allowing for safe observation of production. Access to hard-to-reach areas of the machine has also been improved, culminating in a palletizer that is as safe as it is accessible. Operators of the R10SW are given total control from the machine's HMI. Convenient access to production information such as wrap status, load height and slip sheet quantity allows for possible adjustments in production to be identified and made immediately from the HMI.

As tissue converters throughout the world continue to embrace automation, flexibility is as essential in the production's end-of-line as it is in the converting and packaging process. The R10SW brings Infinity's signature innovative engineering and robust build quality to the world of palletizing solutions, making the production end-of-line safer, smarter and as flexible as the rest of your line. ■

“Tissue **packaging innovations**,  
from concept to case



◀ Multiple safety zones on the R10SW palletizer allow for unprecedented machine access.

### INFINITY ITALIA SRL

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- phone: +39 051 0560980
- contact person: Daniele Cavallini
- email: [dcavallini@infinitymec.com](mailto:dcavallini@infinitymec.com)



# UNBEATEN.

**You think your project is complex?  
Challenge us!**

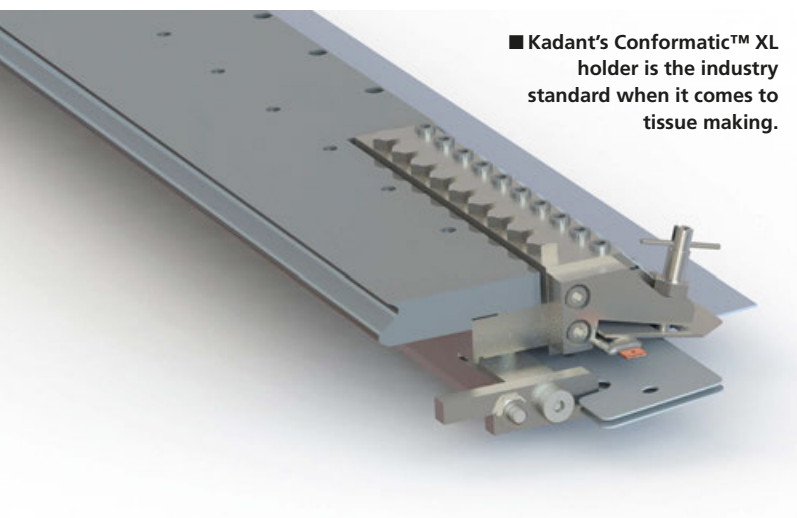
As the unbeaten technology leader in the optimization of board, pulp, tissue, and paper machines, we get the best out of your machine for you - with revolutionary products and services in over 15 application areas and more than 55 years of experience.



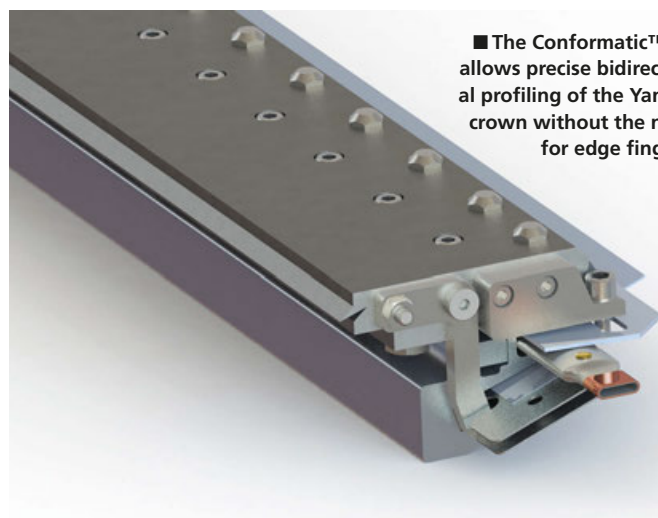
**SAVE RESOURCES  
WITH IBS TECHNOLOGIES**

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■ Kadant's Conformatic™ XL holder is the industry standard when it comes to tissue making.



■ The Conformatic™ AL allows precise bidirectional profiling of the Yankee crown without the need for edge fingers.

# A crowning achievement to tissue creping from your trusted partner KADANT

By: Kadant UK Limited

## Introducing: the Conformatic™ AL Creping Holder

The Kadant Conformatic AL creping holder incorporates the latest technology, bringing improved blade holder performance to the tissue market. The holder is primarily designed for use in the Yankee creping position. The Conformatic blade holders are the industry standard when it comes to tissue making. The focus of the Conformatic AL model was on features that would make it easier to use and mitigate risk to the Yankee. The proprietary adjustment mechanism allows for effortless bi-directional adjustment, with enough movement to accommodate even the most extreme Yankee crowns. The modern design uses adjustment screws to maintain the desired positioning and eliminates the need for edge fingers. As the operating duty is extreme, the load capability of the conforming tube has been increased and a carbon fiber backup blade has been designed to eliminate issues caused when using stainless steel items. Significant upgrades to the holder's adjustability have been achieved with a proprietary adjustment mechanism, allowing for precise control of the holder profile across the entire Yankee face. The robust construction is designed for high-performance tissue machines and features a self-conforming liquid tube, a backup blade and a quick removal feature that allows the holder to be removed for cleaning and maintenance. Optional "smart" features can be integrated to provide real time process feedback such as vibration and load.

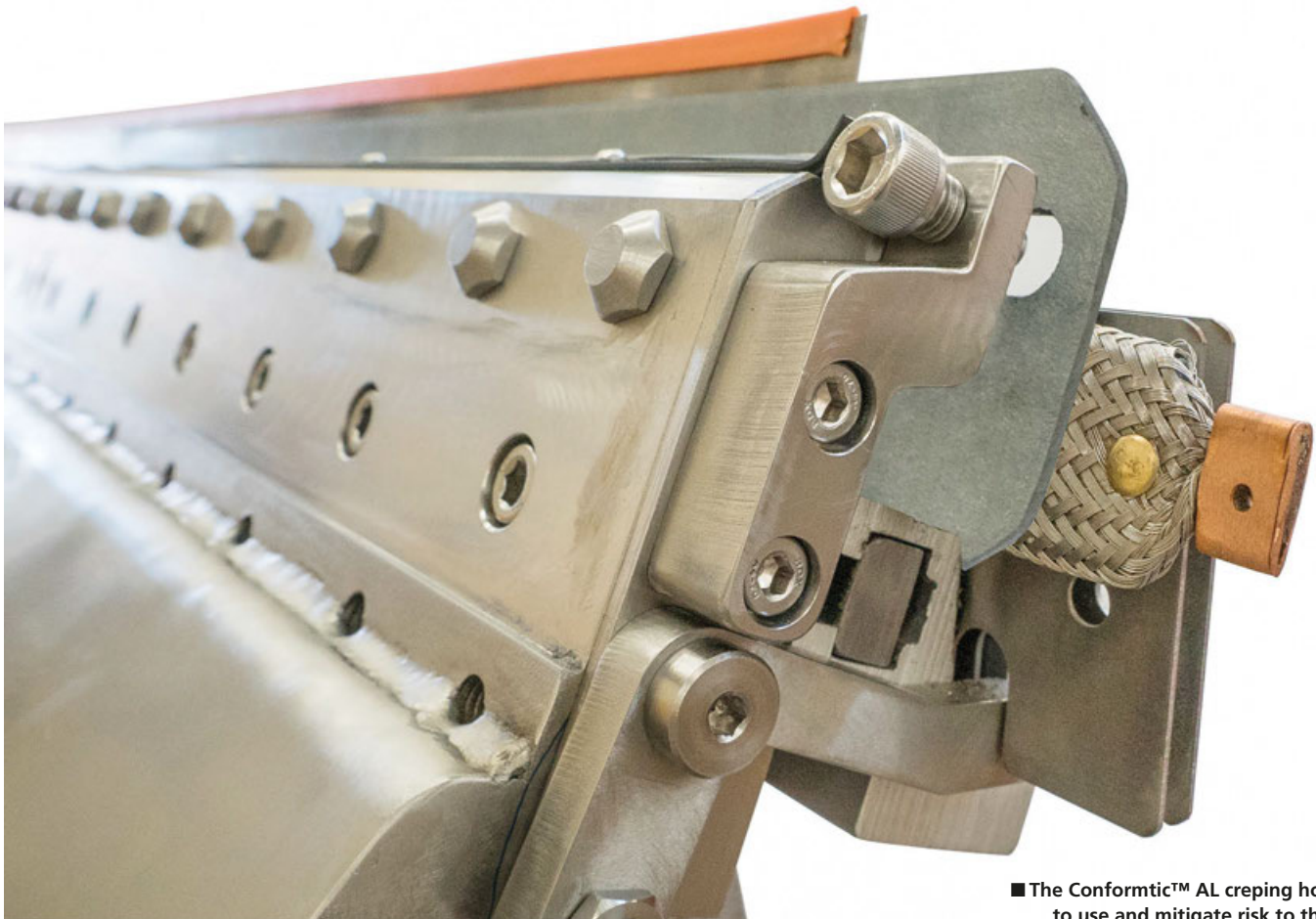
### What is tissue creping?

Imagine two metal parts: one is stationary and the other is running; both rubbing against each other. That is tissue creping. As Yankee speeds increase, vibrations between the rolls, Yankee and creping blade will become a more significant factor. Tissue creping is an operation near the end of the tissue manufacturing process where the key characteristics bulk, stretch, absorbency and softness are created in the tissue.

### What makes proper tissue creping so important?

If vibration is not controlled, the Yankee surface can be damaged and will need to be refinished by grinding, which involves downtime of three to five days. As the Yankee ages and is repeatedly ground, the steam pressure rating can be reduced resulting in lower operating steam pressure, reduced speed and less production. If the process is not stable, the Yankee can wear out in 15 to 20 years. When maintained and managed properly, the Yankee could be expected to operate for more than 30 years. Tissue creping is vitally important when the key characteristics attribute to the final product. Technically, everything can be a factor which affects the tissue creping process. The process is simple in many respects, but to get high quality tissue and meet market expectations, good creping is essential. Doctoring systems are crucial to producing a high-quality product and not damaging the Yankee shell in today's high-speed process.

“ A **global leader** in doctoring, cleaning & filtration



■ The Conformtic™ AL creping holder, easy to use and mitigate risk to the Yankee.



“ We help our customers improve their production processes

**Field service**

Kadant UK Ltd takes field service to a new level. Our expert team of UK based field service technicians are committed to providing your mill with a safe, quality, timely and efficient experience onsite or remotely. Let the **KADANT UK** field service team plan, implement, manage and develop customized maintenance strategies for your facility.

**Machine and equipment audits**

A true understanding of machine and equipment performance is key to a safe, high-quality, and efficient process. Our team performs comprehensive machine and equipment audits including digital machine mapping. The result is a detailed service assessment with feedback, recommendations and project justification which are aligned to customer corporate strategies including energy efficiency targets, freshwater management reduction and production optimization.

**Yankee doctor services**

Yankee doctors operating at maximum efficiency is crucial to the success of any tissue operation. The field service technician will inspect all mechanical components including mounting brackets, bearings, journals, doctor structure, blade holder, levers, air cylinders, oscillation, and other equipment. Also, the blade angle will be adjusted to your specific application and the blade holder profile will be checked and necessary adjustments made to ensure a proper blade-to-surface fit. A full report including service details, before and after profile diagrams, and recommendations for improved performance will be provided after each service. ■

**KADANT UK LIMITED**  
 Riversideworks, Woodhill Road (Bury) BL8 1BD - United Kingdom  
 ■ website: [dcf.kadant.com](http://dcf.kadant.com)  
 ■ phone: +44 (0) 161 7649111 - email: [sales.bury@kadant.com](mailto:sales.bury@kadant.com)



# TAURUS

## BEYOND THE LIMITS OF SUSTAINABILITY



SMARTER - SMALLER - ENERGY SAVER  
BUT WITH THE STRENGTH OF A BULL



### BALANCE

Taurus is a slim, space-saving line



### SPONTANEITY

Taurus consumes less 60% of energy



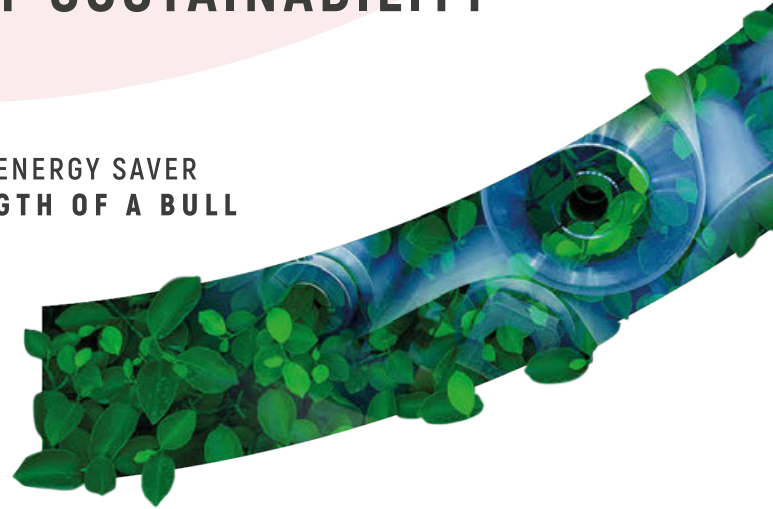
### SIMPLICITY

Taurus is intuitive and easy to use



### STRENGTH

Taurus has the same production strength as a standard line



## TAURUS: REVOLUTIONIZING PAPER USAGE WITH RECYCLED AND SINGLE-PLY PAPER INNOVATION!

The line is designed to embrace the use of recycled paper as a valuable option. With its vacuum-free folding system, it enables the production of interfolded products using more ecological paper, which is notoriously challenging to fold. **Taurus** integrates recycled paper into a cost-effective system without compromising performance and ensuring superior fold quality.



by KAIROS  
A NEW ERA  
OF TECHNOLOGY

TAURUS IS A PROMISE FOR THE FUTURE:  
SMART, FLEXIBLE, ENVIRONMENTALLY SUSTAINABLE

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**KAIROS**  
converting technologies

# IM CONVERTING

## expands its products portfolio of tissue interfolding lines

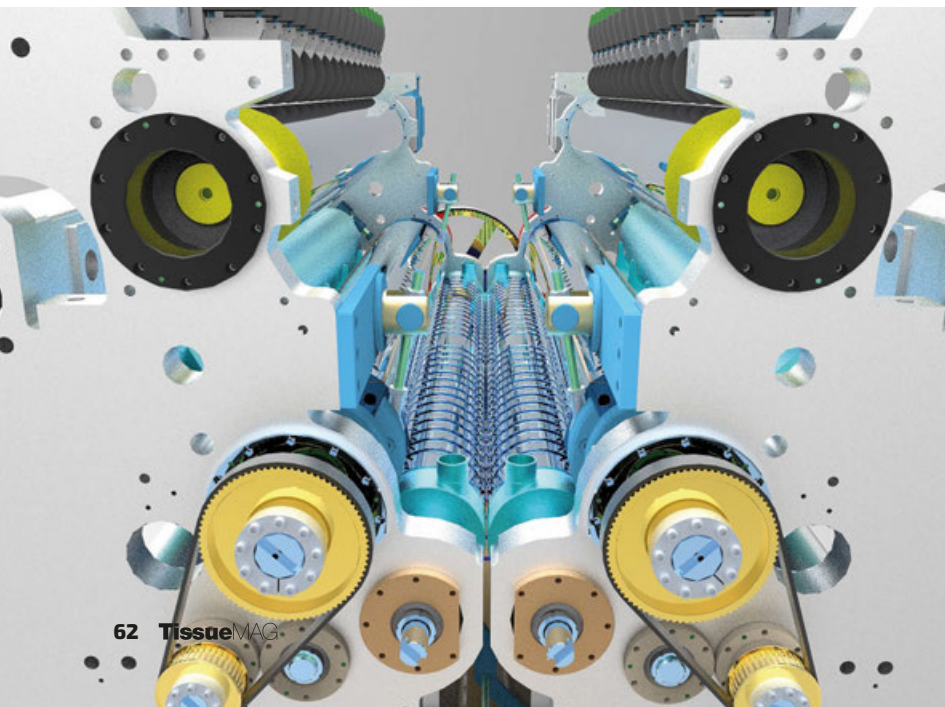
By: IM Converting Srl



Since the beginning of its activity, IM Converting had a clear vision of what its machinery would have had to comply with, and namely:

- Reduction of energy consumption;
- Reduction of the use of polluting material;
- Increase of the overall efficiency of production lines;
- Shortening of the investment payback time.

▼ Vacuum folding head.



Today we can say that the above targets have been fully reached and this opens the doors of the worldwide market to IM Converting which is implementing its commercial action on several foreign markets. Thanks to the recent investment to strengthen our commercial network extended towards emerging markets, many requests have arisen for small or medium production systems, with particular attention paid to advanced technologies and made in Italy at an accessible cost. Furthermore, following the increase in the use of interfolded tissue products in general on all markets, we have encountered an increasing number of requests for small/medium production lines from converters who need to explore the market and therefore do not want to undertake too large investments. For the above reasons we thought it appropriate to respond with a new project tailored to the requests. Thus, it was born the new *S-series* vacuum line which maintains the concepts which have always distinguished our ethics, such as: low energy consumption, advanced technologies aimed at optimizing production efficiency, safety for operators and the continuous production cycle. They are also kept other important features, such as: automatic log transfer and independent block structure allowing to reach the maximum flexibility of production and the optimal space configuration, all combined with simplicity of use and setting from

“ The “Made in Italy” answer to global challenges



the operator panel. A line capable of producing quality towels, toilet paper or facial tissues at a reel unwinding speed of 130m/min or 10 logs/min of width up to 1.5m, offering at the same time a fast payback of the investment. To obtain the maximum possible flexibility, “clever” solutions have been designed such as the possibility of cutting the packages in the machine and eliminating the cutter to save space and the investment as much as possible, a solution particularly suitable to produce

facial tissues, then destined for packaging in carton cases. This new S-series line have been designed making use of the experience gained in production which led to the patented evolution of the consolidated mechanical folding system *M-series*, that combines vacuum to mechanical operation. Going to packaging, it continues the success on the market of our **IM Hug** folded product logs banding machine, that is the only equipment we offer for packaging. There are by now many installations of

▲ Complete line.



◀ Vacuum folding rolls.

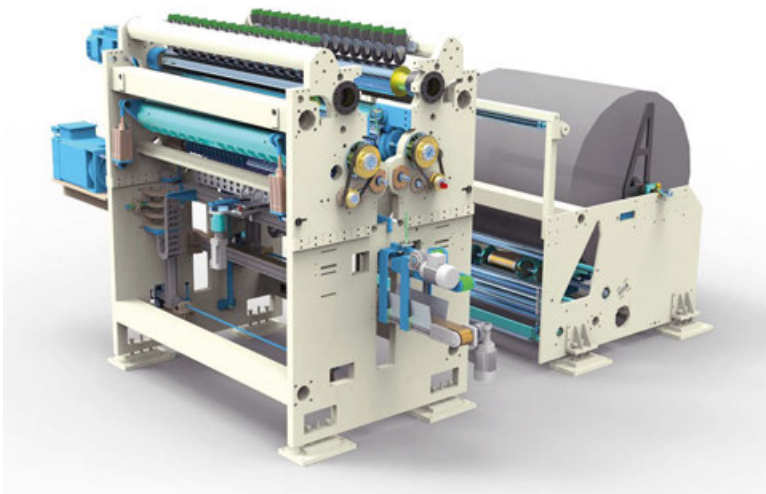
► Packaging.



“Continuously improve **customer satisfaction** in terms of time, cost, quality, availability and plant reliability

this machine on the market, also in already existing folding lines supplied by other OEMs. IM Hug offer green solution by reducing the use of plastic wrapping material: it is in fact one of the very few technologies that allows to wrap/pack logs of folded

▼ Vacuum folding line.



products using paper instead of plastic, obtaining a truly green packaging with very high performances (up to 22 logs/min) with use of only 5Kw electric motor. Furthermore, it can be fitted with a special unwinder of wrapping material for reels up to 1.2m diam. which allows one reel change per shift only; an optional accumulation systems for logs and an internally developed software, that allows the interaction between the machines of the plant by automatically adjusting the speeds, manage the accumulation and delivery to log saw of both bulk and packaged products. **IM CONVERTING** is a company that brings innovation on the market and looks to the future of tissue converting by offering efficient machines, matching the evolution and changes, in the needs of tissue producers and paying at the same time high attention to the optimal investment conditions. ■

### IM CONVERTING SRL

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■ phone: +39 0583 1802122

■ contact persons:

Mauro Della Santa (Head of sales) - email: [mauro@imconverting.com](mailto:mauro@imconverting.com)

Marco Martini (Ceo) - email: [marco@imconverting.com](mailto:marco@imconverting.com)



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# Maximum efficiency, minimum consumption. Simply AHEAD.



The TT AHEAD 2.2 L offers an exceptional combination of productivity, speed, flexibility and energy efficiency, with advanced features such as TT SYD, TT NextPress™ and many other customized solutions for energy savings.

We Tech **Care**

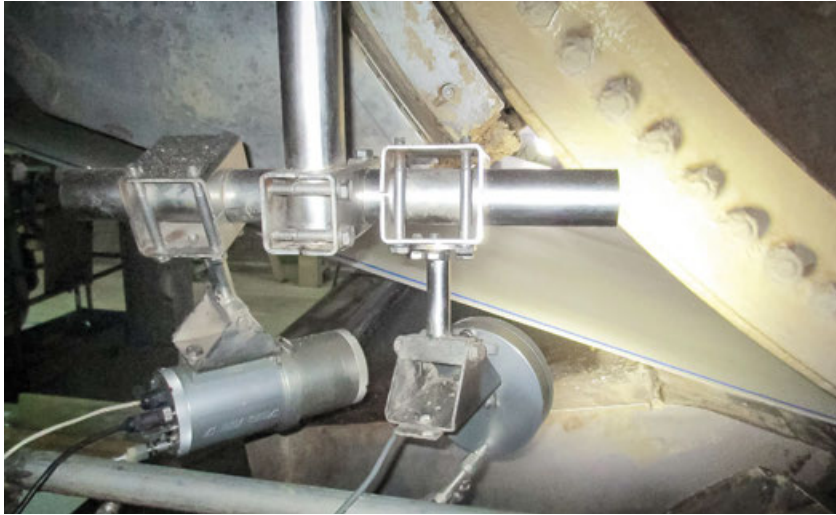
 **TOSCOTEC**  
A Voith Company



# Cutting-edge technologies

## for improving efficiency and quality in tissue production

By: IBS Papertech GmbH



as web breaks and defects, enhancing efficiency and product quality from forming to slitter winder stages, empowering manufacturers to compete effectively.

### AI-based web inspection technology

WebInspector® WIS 100% examines the entire web for various quality issues and leads innovation in tissue making with its AI-based web inspection technology. Through neural networks, it achieves precise defect segmentation, ensuring exceptional product quality. Furthermore, during the converting process, *QualityVision* evaluates embossing and print quality, thereby enhancing line efficiency and product quality. Embossing quality can also be measured offline with our EmbossingAnalyzer.

### The industry's first non-marking winder automation solution

Recently Papertech presented iSTOP+™, the industry's first non-marking slow/stop-on-defect winder automation solution. This revolutionary product eliminates the need for ink or lasers, effectively tackling critical defects while storing

**P**apertech is the leading machine vision system supplier for tissue, paper, board and pulp production lines. There are now over 1.500 installations in 43 countries. Since its acquisition by the IBS Paper Performance Group in 2016, **PAPERTECH** has embarked on a journey of innovation, leveraging the extensive expertise and resources available. Its expertise extends beyond machine vision applications to provide cutting-edge solutions tailored to meet specific requirements.

▲ High-speed WebVision® cameras and advanced LED lighting to monitor the sheet.

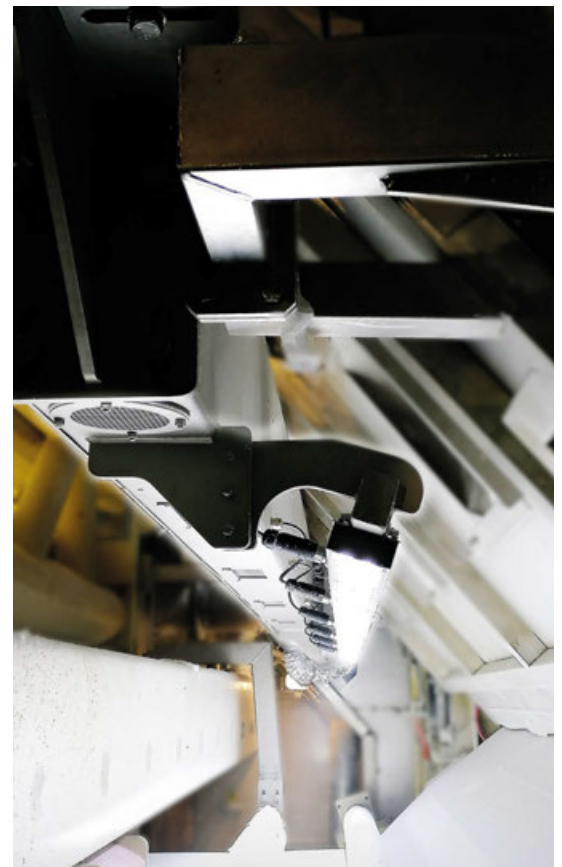
### Advanced machine vision for enhanced operational excellence

Traditionally, tissue machine operations focused on metrics like basis weight and moisture, often overlooking the crucial impact of runnability on downstream converting processes. Tissue web defects such as holes, dirt, edge cuts and creases pose challenges to converting line performance, leading to breaks and decreased Overall Equipment Effectiveness (OEE). Papertech's tissue solutions take a proactive stance in addressing these challenges. It features tools to identify various defects, trace their root causes and promptly enhance machine OEE. Additionally, it ensures overall product quality through features like online embossing and print quality measurement.

### Web monitoring and web break analysis

WebVision® WMS utilizes high-speed cameras and advanced software to monitor the sheet at critical locations throughout the tissue machine and converting process. Deployed in hundreds of installations, it swiftly identifies issues such

▶ AI-based WebInspector® web inspection technology.





▲ Industry's first non-marking winder automation solution: iSTOP+™.

◀ Muv-E Cart, "All-In-One" maneuverable operator station.

### Suite of services - from initial setup to ongoing support

Papertech's dedicated suite of services, from initial setup to ongoing support, is committed to maximizing the effectiveness and longevity of their systems. Beginning with pre-engineering assessments, ensuring every component of your system is precisely aligned with your requirements, optimizing its performance. The experienced team handles the installation process with precision and efficiency. This ensures seamless integration into your existing infrastructure.

### The power of Papertech solutions

- Enhanced quality control through advanced algorithms and high-resolution cameras, surpassing human capabilities.
- Real-Time optimization through instant monitoring and adjustments, optimizing efficiency at every production stage.
- Customized excellence to meet consumer demands, enhancing brand loyalty and market competitiveness.
- Seamlessly integrated production and converting processes, minimizing downtime and maximizing return on investment. ■

“Only work with the best, to be a step ahead

customer roll map data for future processing. Its versatility across various applications including winder, calendar and off-line-coater, coupled with the capability for manual or automatic stopping at any position, delivers unparalleled control and efficiency.

### Fully integrated or portable solutions

Papertech excels not only in machine vision applications but also in the development of highly adaptable systems tailored to your unique needs. Its customizable systems are intricately intertwined with advanced machine vision technology ensuring unparalleled performance. The company offers seamlessly integrated cabinet systems or portable solutions.

**IBS PAPERTECH GMBH**  
 Hauptstraße 22 - 8833 Teufenbach-Katsch - Austria

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■ **websites:** [www.ibs-pgg.com](http://www.ibs-pgg.com)  
 ■ **phone:** +43 3582 8511-0  
 ■ **contact person:** Christoph Herzog, Head of Marketing

# REWINDING REINVENTED

Small rollers, gravity, and direction changes  
harm roll integrity during winding.

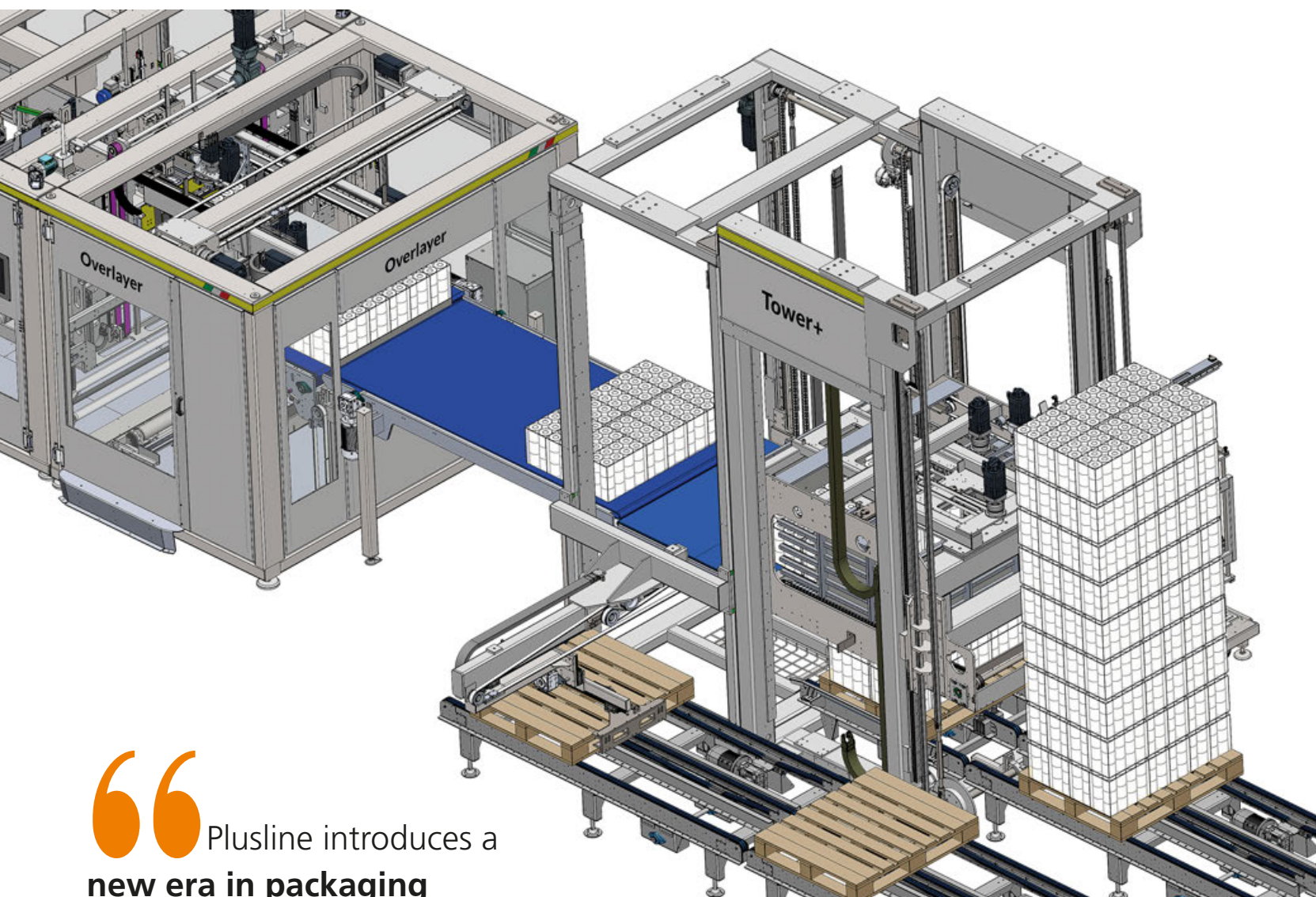
That's why we reinvented rewinding, with PARAGON.

Featuring a pivoting belt rewinder with center drives redefines  
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# Plusline, highly efficient packaging and palletising systems

By: Plusline Srl



“ Plusline introduces a new era in packaging



► Matteo Giardini,  
Business Development  
Director Plusline.

**Matteo Giardini, Plusline Business Development Director, do you have any news for us about the technological innovations the company has presented to the market in recent months?**

The most recent is the technology that integrates secondary packaging and palletising in a unique, highly efficient system, the **Overlayer & Tower+**, which ensures flexibility, precision and high speed for both bundled products and display-ready pallets (DRPs), ie pallets loaded in such a way that the consumer can access the product from them directly rather than from traditional shelves.

This is an increasingly widespread trend in retail and our solution has garnered significant market share in Europe while gaining traction in North America too.

**Can you explain the technology in more detail?**

Overlayer & Tower+ optimise the end of line by integrating bundler, layer former and palletiser in a single high-speed, totally automated and super-compact solution (only 15 metres compared to the traditional 40). This optimises space and logistics while ensuring high production capacity, reduced downtime and improved finished product quality at the same levels of performance.

But that's not all, as it also ensures absolute safety for the entire end of line, with one operator managing multiple lines from a single supervision

and control station, minimising the manual operations required.

**What about process simplification?**

Plusline develops advanced technological solutions that eliminate the complexities associated with primary and secondary packaging for tissue products. The Overlayer fully meets these objectives. Unlike a classic bundler, it forms layers directly (hence the name, which combines the Overpack - our bundler - with the Layer Former) instead of using standalone technology as previously required. The Overlayer is a patented solution capable of forming any layer with both bundled and display-ready products, and of combining different formats to create optimised layer mosaics with no limitations of complexity. It is combined with the Tower+, the only **PLUSLINE** palletising line that stacks layers from the Overlayer, adding interlayers where required. It can also handle Euro, UK, NA and Australian pallets in both full and half height formats. This results in retail-ready bundles and pallets with any layer mosaic required.

**As well as process efficiencies, are there any cost savings?**

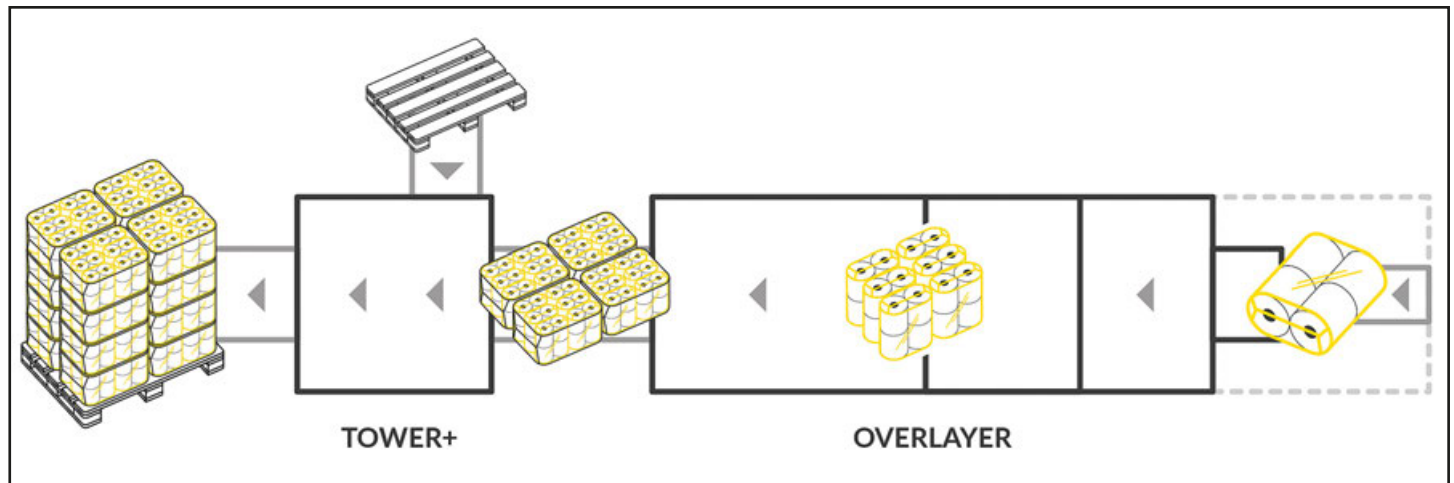
There are definitely savings, because more machines are integrated in a super-compact solution that



◀ Overlayer & Tower +  
Plusline, rendering.

optimises space and eliminates certain cases of costly downtime repeated with traditional technologies, reducing energy costs. In traditional systems, when standalone technology is forming the layer for DRP, the bundler is either idle or used only as an expensive by-pass conveyor. In addition, the suppliers of the two technologies are often different: one for packaging and one for palletising. With this solution, the customer has a single point of contact and this translates into optimisation in terms of support, spare parts and commercial negotiations.

▼Overlayer & Tower + Plusline, scheme.



## Are we talking about prototypes or is this technology already in operation?

We're talking about technologies that have received positive feedback from the market. The first lines are being shipped to South America in this period. And in June, the system will be installed at the **Futura LAB**, immediately downstream of our Together in the Andromeda 3 line. Prospective customers will therefore be able to see a complete line in action, fully integrated with converting and packaging functions: from jumbo reel to pallet. The

## “ The **packaging company** the future has been waiting for

### What do Overlayer & Tower+ have in common with your Together?

They definitely share the same basic approach of challenging the status quo and working to achieve a completely integrated and automated factory. **Together** was the starting point, the solution that changed the rules of the game, integrating trim cut, log saw and wrapper in a single, super-compact machine and creating a new end of line concept starting from the rewinder. Now we have completed the process through to palletising. All in just 23 metres from log loading to palletising, all managed from a single supervision and control station, and all fully automated and high speed, with a view to achieving the smart, safe factory. Plus all the innovation needed to simplify the user experience, reduce service time, increase efficiency and improve the quality of the finished product.

entire Futura and Plusline philosophy is crystallised in this totally integrated, safe and automated line, managed from a single supervision and control station by a sole operator. We have a mission to supply state-of-the-art solutions that contribute to our customers' success and we're convinced that by combining our technologies we can bring significant benefits to forward-looking customers with a focus on automation. ■

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# ALL-ENCOMPASSING CONSULTING for more security and higher efficiency for roll systems

Application technology and services from SchäferRolls by: SchäferRolls GmbH & Co. KG

Increasing quality requirements and the constant optimization of machine performance are on the agenda for anyone who wants to stay ahead in the future. Paper manufacturers are faced with increasing demand for more efficient use of resources and cost effectiveness in production, without affecting product quality. Considering the complex aspects of the equipment in an ever-faster world, manufacturers increasingly resort to external service providers. SchäferRolls, a worldwide established producer of polymer-based roll covers with its headquarters in Renningen (Germany), is expanding its product range by focusing on application and service support around roll systems.

**SCHÄFERROLLS** offers industrial companies an all-round range of solutions for operating, managing and maintaining roll systems - from planning, design and execution to initial start-up, servicing and integration into running processes.

The detailed analysis of an application in order to determine the ideal roll cover design as well as helping with the optimization of process parameters are just as much part of the service catalog as the preventive maintenance.

## Dewatering analysis for an optimized performance

The example of a Belgian customer shows that a dewatering analysis can not only contribute to the



increased performance of the individual presses. Rather, the SchäferRoll's SurfaceOptimizer (SSO), a computer simulation tool to design an optimal roll cover, has created a design that optimizes the performance of the first and second press through open areas and increased void volume while providing the necessary stability for the third and fourth press.

Thus, this cover can be used flexibly in all four positions which increases the availability of reserve rolls and significantly reduces all the maintenance costs.

▲ Service support for roll covers.



## What SchäferRolls application and service technology offers

- Selection and design of roll covers.
- Dewatering analysis.
- Thermographic analysis.
- Nip measurements.
- Ultrasonic measurements.
- Start-up support on site.
- Troubleshooting service on site.
- Shutdown service.
- Service, repair and maintenance.
- SchäferRolls Management Service – SRMS.



■ Nip measurement.

▲ Service support for roll covers.

### Nip measurements and thermographic analysis solve persistent problem

A customer in the Netherlands complained of vibrations and resulting regular paper breaks at the film press rolls. He therefore sent the rolls for investigation to SchäferRolls, where massive detachments of the cover were determined. The good SchäferRolls references for this roll position convinced the customer to buy two new rolls including complete service support by SchäferRolls, such as nip measurements, thermographic analysis and on-site consultation. After start-up,

the customer still had problems with wrinkling. Supported by a *thermographic analysis*, the problem could be identified directly in the wire section and thus be eliminated. Due to the good experience with the covers as well as the service both roll pairs for this position have been covered at SchäferRolls.

### Ultrasonic measurement: inspection of material and bonding properties

Regularly, customers take advantage of ultrasonic measurement which allows destruction-free inspection of the roll cover's material and bonding

properties, to contribute to the operational reliability of the paper machine. Specially trained technicians from SchäferRolls have comprehensive expertise and experience in performing ultrasonic inspections and interpreting the measurement results on a case-specific basis. This allows discovering risk-relevant defects and covering separations at an early stage, before they cause damage in the machine.

### Shutdown-Service: making efficient use of downtime for preventive maintenance

Several customers have repeatedly taken advantage of the SchäferRolls shutdown service because the time of a scheduled machine downtime is being used effectively. SchäferRolls experts will be on-site during a system shutdown to investigate all application-relevant requirements and operating conditions for the rolls defined in advance with the customer. Based on a comprehensive report with photo documentation, derived actions can be weighed up with the aid of a traffic light system and implemented according to the urgency.

### Sensor Data Service

In partnership with **countroll**, SchäferRolls offers a sensor data service to analyse weak points, such as slippage problems on wire driven rolls in a paper machine. This service includes the complete hardware and its installation on the machine. The measured data is analysed in a *cloud-based* platform and interpreted based on SchäferRolls' experience. Based on the analyses, solutions for optimizing the machine are developed together with the customer.

## SchäferRolls

SchäferRolls GmbH & Co. KG, based in Renningen, Germany, was established in 1946. With by now over 300 employees worldwide, the company manufactures technologically sophisticated and high-performance roll systems and roll covers for all industries, particularly for the paper, foil, textile, printing, furniture, packaging and metal industry, as well as for machinery and plant engineering. Production facilities with a total production area of more than 30,000 m<sup>2</sup> are located at Renningen (Germany), Brnik (Slovenia) as well as at Farmington, NH and Covington, VA (USA).

“ Tradition, development and innovation

▼ Thermographic analysis.

A sensor that measures the number of revolutions, speed, speed changes, temperature and vibrations has been developed and affixed to the roll. This data is also displayed and managed in the cloud-based platform. SchäferRolls assists the customer with installing, setting parameters, commissioning and downloading the sensor's data. The sensor was originally developed for industrial rolls but is now used in numerous applications. In the paper industry, there is also huge demand for vibration measurements (early warning) as such vibrations are often the result of bearing damage and/or a misalignment of the roll systems. Since the sensor is mounted directly onto the roll (on-axis and off-axis), the sensor detects malfunctions with the bearing housing much faster than static piezoelectric sensors. In addition to using the sensor as an early warning system for vibration problems, tests are currently being conducted on wire driven rolls in two paper mills to detect and visualise slippage issues. The results of these tests will also assist in the design of an optimum roll cover to ultimately reduce maintenance and operating costs as well as prevent unscheduled machine outages. ■



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**CONVEYORS - WRAPPERS - BUNDLERS - CASE-PACKERS - PALLETISERS**

Over the years, great attention has been paid to the environment and to the rationalization of water consumption in tissue paper production. In the diagram in the page 80, we want to show the quantities of water associated with a unit quantity of fiber for each phase of the production process. The fiber, with a fixed quantity throughout the process, is represented by the small orange rectangles at the bottom, while the rectangles in two different shades of blue identify the quantities of water associated with each single phase. Specifically, the water deriving from the previous phase is represented in light blue, while in dark blue we have the variation in the amount of water that occurs in the phase itself.

## “A.Celli Paper: together towards tomorrow

The use of water in the tissue plant begins in the **stock preparation** phase, where the proportion between fiber and water, called consistency, is about 5% (20 parts of water are required for one part of cellulose). After pulping, the stock is transferred to temporary storage tanks (dump chests) which have the task of “amortizing” the discontinuities of the plant. Downstream of the dump chests, the stock goes through a cleaning phase by **HD Cleaners**. For the correct functioning of this process, the stock must be further diluted to reach a consistency of about 4%, which means adding another 4 parts of water for each part of processed fiber. At this point the stock is ready for **refining**, after which it is transferred to the machine chest. Upstream, the stock can be mixed via a static mixer, with fractions deriving from other processes (second preparation line or broke line). From the machine chest, the stock is sucked in by the stock pump and injected into the inlet of the fan pump. The stock ends up in a large conduit through which the fan pump sucks in a large quantity of white water from the so-called silo,

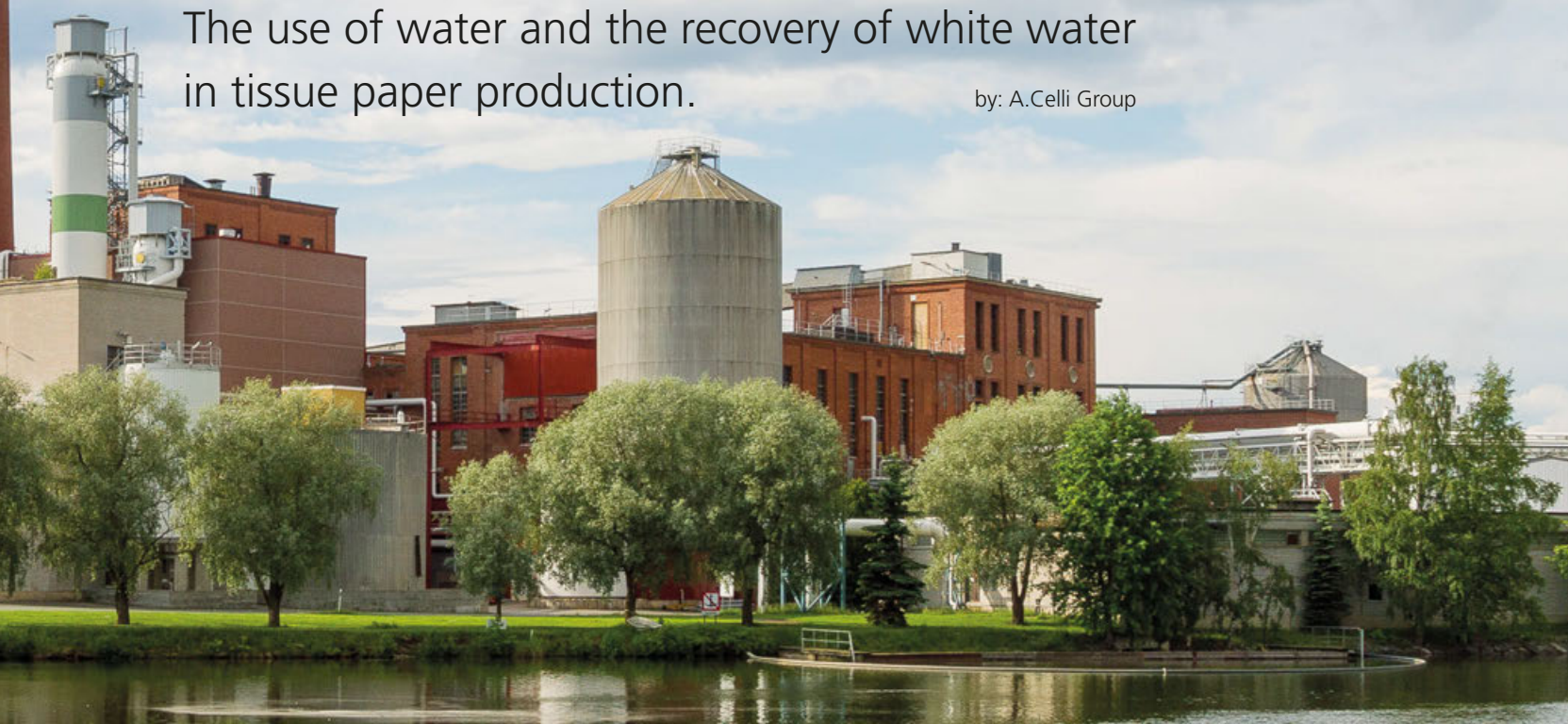
where the waste waters coming from the forming section of the paper machine are collected. In the channel and in the silo, white waters release the air they have trapped during drainage, then they are sucked back by the fan pump, mixed with the fraction of fresh stock and sent back to the machine. This process, repeated several times every hour, forms the white waters short circuit, where white waters transport the fibers to the paper machine at a consistency of around 0.3%. At this point the fan pump pressurizes the stock, an operation necessary to ensure it comes out of the headbox at a speed equal to that of the machine (which can reach over 2000 mpm).



# How to best manage the water in a tissue plant

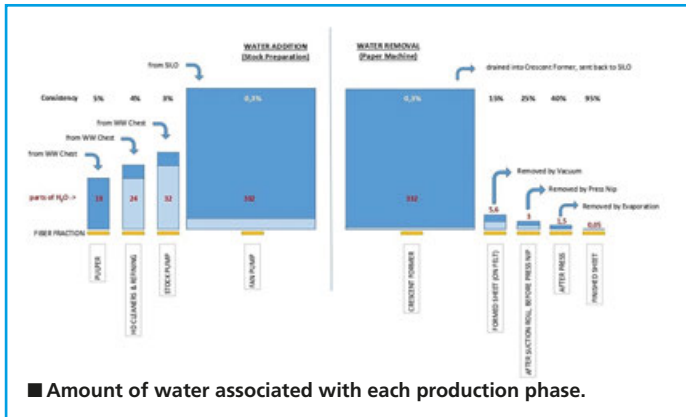
The use of water and the recovery of white water in tissue paper production.

by: A.Celli Group



The transfer and pressurization of these large masses of stock in this phase represent one of the most energy-intensive processes of the entire plant, where small variations in the required consistency can lead to significant variations in the energy consumption of the entire plant. Using solutions such as latest generation headboxes and *Crescent Formers* capable of producing high quality sheets of paper by operating at high consistencies can result in significant **energy savings** for the entire plant. The excess of white water in the silo is collected in the white water chest, from which the flows necessary for the functions external to the short circuit are withdrawn. A part of the white water is

instead withdrawn from the chest to be clarified in a flotation unit and collected downstream of this in a clarified water chest. In turn, part of the clarified water is withdrawn and filtered to obtain substantially pure water for more delicate uses, such as felts and wires conditioning. Another part of water, coming from the cooling systems of the hydraulic and lubrication units, is instead conveniently used for the dilution of the chemical additives necessary for the process and for the lubrication of the suction press rolls seals. Coming back to the **paper machine**, the newly formed sheet still contains about 15% of "dry weight". In the next machine section another fraction of water is eliminated by



# Technologically advanced system solutions for complete turnkey plants

means of the action exerted by the vacuum in the suction roll and by forced contact pressing (nip) between a press roll and a Yankee Dryer. After this, the proportion between parts of water and parts of fiber is almost equal. The vacuum through the felt conditioning **suction** boxes is also necessary to recover the water contained in the felt of the press downstream of the nip.

The energy associated with the vacuum generation plant is an important fraction of the factory's total consumption. Having high-efficiency machines for vacuum generation, such as turbine machines (turbo blower vacuum pumps), can lead to considerable and continuous **savings on the energy consumption**. At this point, the amount of water remaining in the sheet will be eliminated through physical processes (evaporation) by means of the *Yankee Dryer* and the active hood that surrounds it, arriving at a water content of only 5-6%. The evaporation process involves a considerable waste of thermal energy, which is supplied by means of steam and hot air generation systems. Also in this case, small percentage variations in dryness after the press section can correspond to large variations in energy consumption. ■

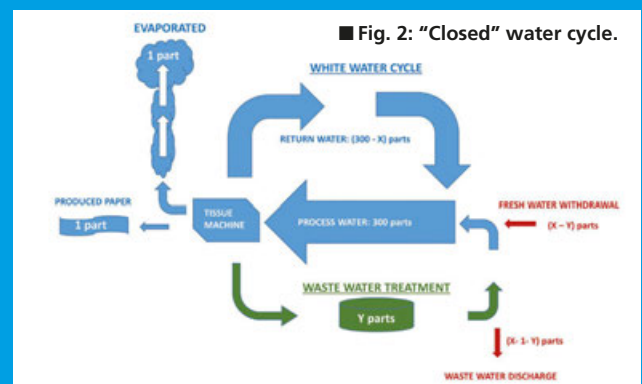
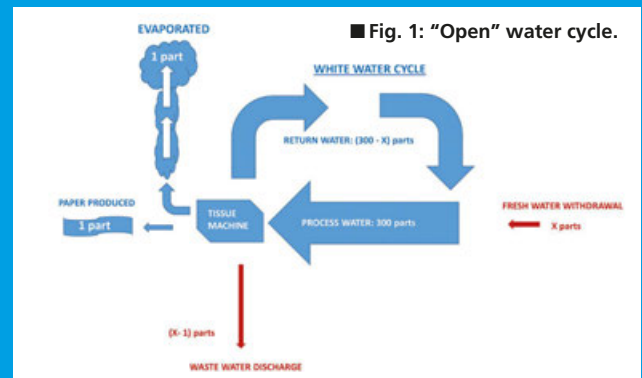
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## Wastewater treatment

As we have seen, most of the water is recycled continuously. Since the water is progressively enriched with chemicals and electrolytes that tend to "poison it", a portion of water must be renewed at each cycle to keep the characteristics of the total within the acceptable limits. Otherwise, it is necessary to withdraw a certain amount of fresh water from the environment and give back an approximately equivalent amount in the form of waste water. The progressive improvement of Waste Water Treatment plants (MBBR biological treatment, micro and ultrafiltration) has made it possible to increasingly safeguard the environment and to reuse ever larger fractions of water within the plant, "closing" the water cycle more and more. In some plants, more than 90% of closure has already been reached, which in practice means zeroing the discharges and withdrawing from the environment only the amount of water evaporated during the drying process. However, closing the cycle is not free, neither from an energy nor from an investment point of view, and therefore must be carefully evaluated case by case in terms of cost-benefit ratio. Finally, the following diagrams show, in a simplified way, the hydraulic balances of plants with respectively "open" and "closed" water cycles through a Waste Water Treatment plant.







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# Tissue converting machinery and circular economy: **THE MAFLEX APPROACH TOWARD THIS MODEL OF PRODUCTION AND CONSUMPTION**



The focus of the circular economy is to extend the life cycle of products and simultaneously contribute to waste reduction. It applies the rule of the three R's - Reduce, Reuse and Recycle - and undoubtedly represents a business opportunity for the tissue converting industry as well.

by: Maflex - Tissue Converting Machinery

**A**ccording to Maflex, which distinguishes itself by a distinct propensity to meet specific needs, its great added value, guiding customers toward informed choices and sustainable investments is crucial. "Our tailor-made approach enables 're-solving', 'remanufacturing' and 'reconditioning', making three new R's available to converters - General Manager **Luca Mazzotti** explains. Maflex stands out for its highly personalized consulting support. Maflex aims to solve several issues related to the converting process that also fall within the circular economy, such as the possibility to upgrade existing machinery by integrating more advanced automation solutions or to enable, in a simple and

versatile way, the automatic production of Coreless products, considered a zero waste in the AFH tissue product landscape”.

For **MAFLEX**, awareness comes through construction design. The benefits of the Maflex Modular Philosophy begin with the shipping and installation stages, through production and use. Indeed, the compact nature of the modules affects their footprint, with significant reductions in transportation costs and, consequently, environmental footprint. The independence and autonomy of the modules, each with its own integrated electrical panel and all the necessary equipment for operation, ensure fast assembly times, limited production downtime and, above all, easy additions or upgrades to existing systems. “The Maflex modular approach favors change management: **regenerate**. Each unit can be smoothly integrated with new technologies: the



We provide **dedicated solutions** to special needs

▲ Ing. Luca Mazzotti,  
Maflex General Manager.

processing line remains state-of-the-art according to industry developments, while adhering to a conscious, future-oriented approach” - says Luca Mazzotti.

Seamlessly upgrading avoids complete refurbishments and maximizes equipment lifespan (key in Life Cycle Assessment - LCA), promoting a circular economy that postpones disposal of obsolete machinery. “This design system, in fact, intervenes on maintenance and consequently on durability. The simplification of interventions contributes to their resilience. Individual units can be individually maintained, addressed and upgraded, ensuring efficient business continuity” - adds Mazzotti.

The **Maflex Modular Philosophy** enables targeted and precise interventions to ensure operations for as long as possible. This also results in high residual value. “This is a very important aspect because it ensures a sustainable investment aligned with economic commitment and circular issues - Mazzotti continues. Each machine maintains not only its efficiency for the longest possible time, but also its value over time, postponing further large investments and machinery decommissioning”.

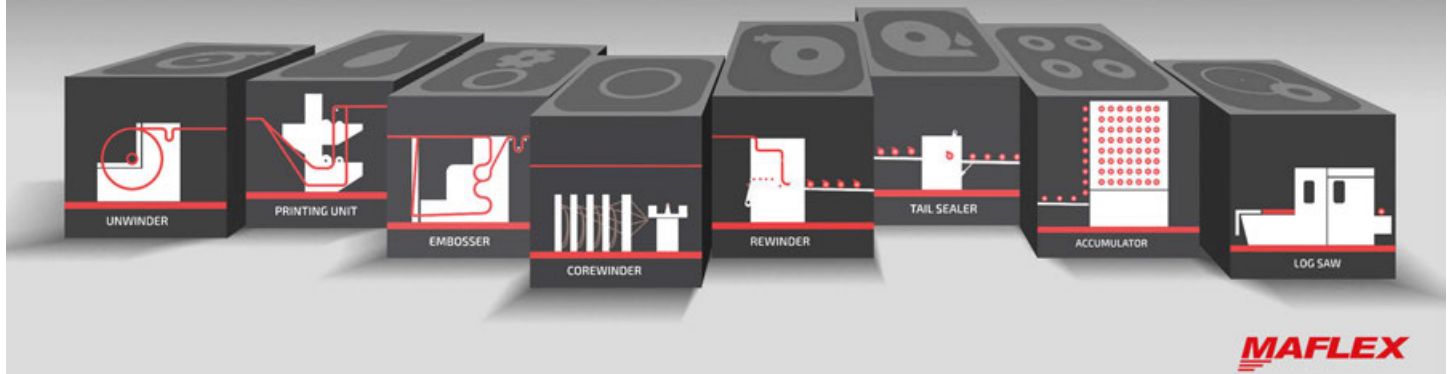
Needs analysis is always at the forefront. Maflex evaluates options with its customers, with the possibility of optimizing systems that are still efficient or that of **Reconditioning** if necessary. “When existing equipment is no longer in line with the customer’s needs and the conditions are right, we offer to take back the decommissioned machines, with the intention of reallocating them



◀ MERS: Maflex Energy Regenerative System that redefines sustainable energy management practices with savings of up to 20%.

**CHOOSE MAFLEX AND ITS MODULAR PHILOSOPHY:**

- AGILE DESIGN
- LASTING BENEFITS
- SUSTAINABLE EFFICIENCY



▲ Maflex Modular Philosophy: awareness comes through construction design.

▼ Coreless products, considered a “zero waste” in the AFH tissue product landscape.

to more suitable markets” - says Mazzotti. This is a practice that represents an opportunity for the tissue industry, especially in many areas of the world where technological and production needs can vary greatly. “There are many areas where this practice proves to be critical and is an opportunity to promote an efficient and sustainable business system and to participate in the emergence of a new converting facility” - adds Mazzotti. Supporting customers in achieving certain circular goals means **Regenerating** the technologies used

by enhancing them and supporting its production ambitions by containing its consumption. The **Maflex Energy Regenerative System (MERS)**, introduced by Maflex in 2010, is a pioneering system that redefines sustainable energy management practices with savings of up to 20 percent. A requirement that can not only be contained but also reused. “Regeneration units allow MERS to replenish unused energy, thereby improving the carbon footprint of the equipment. MERS, by reducing the total energy demand in the manufacturing plant, helps optimize energy efficiency in one of the most demanding industries in this respect” - Ing. Mazzotti concludes. Maflex confirms itself as a proactive partner in supporting customers, even in the area of circularity. Offering customized solutions tailored to individual needs and ambitions is the first step in mitigating impact and applying the three-plus-three R rule in the tissue converting industry. ■



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*‘Adhesives with  
know-how:  
the importance of a  
specific technology  
for Tissue’*



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ENGINEERING IN ADHESIVES **SINCE 1922**



■ Flexible creping system PCrep-410.

By: Polimek Srl

**A**t the heart of technological innovations in the tissue paper production sector, the creping blade stands out as a fundamental and essential component to ensure the excellence of the finished product. This element not only determines the physical properties of the paper, such as softness, elasticity and tear resistance but also significantly affects the perceived quality of the product by the end consumer.

The creping of the paper sheet is achieved through the interaction of a very hard steel blade, inserted in the creping knife, with the hot surface of a cylinder that, during its rotation, brings the sheet into contact with the blade. The blade is made of hardened steel and, in the area of contact with the cylinder (also known as the Yankee cylinder) is coated with a very hard ceramic material whose hardness reaches 1,000 HV. Since the coating of the cylinder also has a similar hardness (900 to 1,100

► Chattermarks on a yankee surface.

▼ Creping process of a tissue paper sheet.



## “ Polimek, doctoring systems specialist

HV) and the blade load during contact with the cylinder is about 300 daN/m, a protective film called coating is interposed between the two elements. Incorrect operation of the creping blade can lead to damage to the surface of the Yankee cylinder and, if the problem persists, it becomes necessary to grind the cylinder with a consequent machine stop and production loss. This possibility greatly frightens mill managers, whether they are in production or maintenance, because it requires the machine to be stopped for several days, the use of highly specialized companies in grinding and the reduction of the hard coating thickness of the Yankee cylinder.

### Never Alone

The phenomenon of Yankee cylinder damage is quite complex, and mill technicians often feel alone in facing a problem that generally gives signals several weeks before the problem manifests. With the **Never Alone** policy, Polimek provides tissue paper manufacturers with a team of expert installers and maintainers capable of optimizing the operational parameters of the creping systems and supporting the customer throughout the year. Thanks this initiative, Polimek intervenes with tailor-made solutions ranging from the optimization of operational parameters to scheduled maintenance



◀ Giovanni Policastro,  
CEO of Polimek.

► Poli-Check for the vibration monitoring.



“ Each installation is perfectly **designed and developed** to meet the needs of the customer

and precise profiling of the creping blade. This proactive approach not only prevents damage to the Yankee cylinder but also ensures operational continuity and consistency in the quality of the finished product. Thus, scheduled maintenance and inspection visits are organized with machine downtime during which Polimek experts check the wear of mechanical elements, such as bearings, oscillators, pneumatic systems, the profile of the creping blade and the worn blade. Once the inspection and maintenance work are completed, Polimek technicians remain in the mill during the machine start-up phase to monitor the dynamic behaviour of the Yankee doctoring systems. Dynamic and structural checks of the doctors in the Yankee area involve checking the natural frequencies of the mechanical components of both the doctors and the machine structure to verify their interaction. With the **Poli-Check** vibration analysis tool, it is possible to see in real-time how the entire system behaves and ward off the annoying

phenomenon of chatter marks, which results in the grinding of the Yankee cylinder.

**POLIMEK** is capable of performing alignment, profiling and maintenance interventions on every type of creping blade, whether rigid or flexible; it also performs regular technical services on all the scraper systems of the paper machine. Polimek, an Italian company based in Paruzzaro - a few kilometres from Milan - designs and produces every doctoring system; its technicians boast over 30 years of specific experience in the field of doctoring systems and in the profiling and maintenance of creping, cutting and cleaning doctors. ■

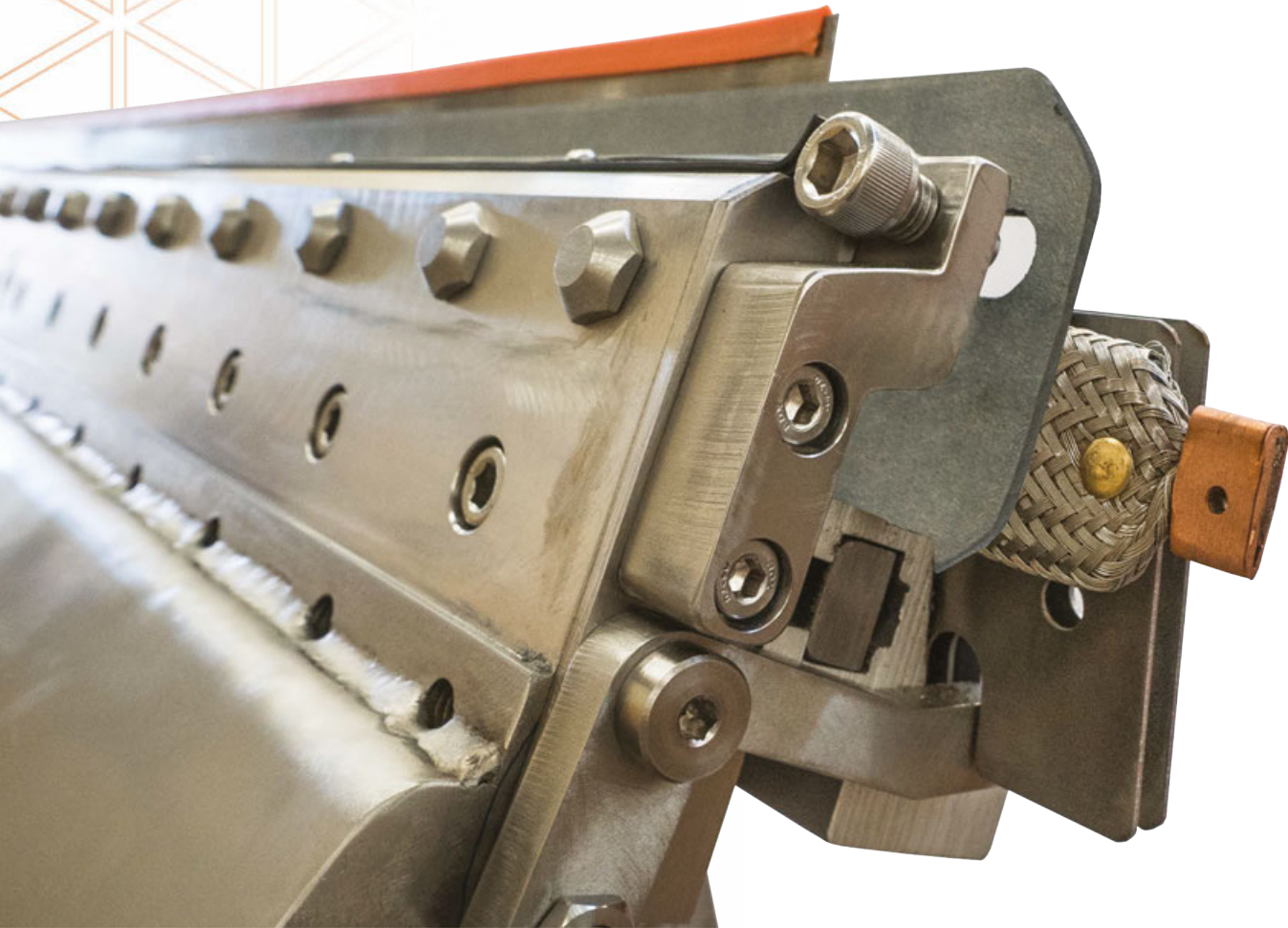
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- contact person: Mr. Giovanni Policastro



# A CROWNING ACHIEVEMENT



## CONFORMATIC™ AL

The next generation Conformatric creping blade holder. Precise bi-directional profiling of the Yankee crown without the need for edge fingers. Provides uniform sheet quality, reduced Yankee dryer surface wear, and longer blade life.

# Lucart Group excels in production capacity, quality and sustainability with Valmet's Perini MyLine

By: Martina Giusti, Valmet

**L**ucart Group - one of the leading players in Europe in the production of thin MG papers for flexible packaging and hygiene products in tissue and airlaid - excels in terms of production capacity, quality and sustainability operating

**Valmet converting lines.** Between 2015 and 2022, Lucart installed four Perini MyLine in its facilities across Europe, particularly in France, Hungary and Italy, for the transformation of tissue paper into consumer hygiene and kitchen towel products. Thanks to these solutions, the historic Lucca-based group has increased its production capacity by over 15%, compared to previous plants, for superior quality products. "The Perini MyLine is a system that perfectly meets our needs to set up different product changes throughout the week and month - says **Gabriele Coli**, Engineering Manager of Lucart Group. Thanks to the flexibility, reliability and high performance that characterise Valmet's technology, we can diversify our production to effectively respond to market demand. The multiple benefits already observed with the first line have led us to continue our collaboration with Valmet as our trusted partner in every aspect".

## Simplicity, quality and sustainability

Among the numerous advantages for the company, is the quick start-up of the installed plant, coupled with a simplified operator interface. Another plus of the Valmet Perini MyLine is the laminator-embosser, which allows for quick changes in embossing without requiring specific skills on behalf of operators. For customers, who needs



■ Lucart SpA, Diecimo (Lucca).



“ Process technologies and services for **tissue converting** ”

to modify embossing during production, the line offers high flexibility and optimal alignments with processing times. Additionally, the joint research by Valmet's Engraving Solutions and Lucart's technical team, over the years, a series of embossings have been developed and customised, leading to a significant improvement in the various product categories in terms of quality, finish and aesthetics. **Ivo Cataldi**, Sales Manager Valmet, says: "Lucart is very attentive to the constant upgrading of the final product quality. In this regard, the services offered by Engraving Solutions perfectly reflect the care the company invests in this area. In particular, our facility is equipped with pilot lines dedicated to testing various embossings with Lucart's paper, in order to optimise the quality of the product to be offered on the market". Ultimately, with the installation of Acquabond® water-based lamination technology, developed by **VALMET**, Lucart has reduced procurement costs related to the use of glue for sheet adhesion, also benefiting from a general simplification in terms of maintenance, plant cleaning and generating eco-friendly products, such as the *Tenderly* brand. Thanks to the partnership with Valmet, Lucart will, in a near future, be able to launch technically different products compared to what is available on the shelves today.

### Group synergies and unparalleled technical support

Due to the excellent results achieved with the Perini MyLine technology, **Lucart Group** has also associated Perini Proxima lines, highly flexible machines specialised in the production of Away from Home products. The modularity of Valmet machinery has enabled the generation of group synergies, facilitating the entire production process.

▲ Perini Proxima.

▼ Perini MyLine.



## VALMET

Valmet is a leading global developer and supplier of process technologies, automation and services for the pulp, paper and energy industries. With our automation systems and flow control solutions we serve an even wider base of process industries. Our more than 19,000 professionals around the world work close to our customers and are committed to moving our customers' performance forward - every day. The company has over 220 years of industrial history and a strong track record in continuous improvement and renewal. Valmet's net sales in 2023 were approximately EUR 5.5 billion. Valmet's shares are listed on the Nasdaq Helsinki and the head office is in Espoo, Finland.

■ Valmet, Lucca.



"If we need steel rollers for embossing at a certain location, we can transfer them seamlessly from one facility to another on all lines, as the laminating units are 100% compatible. Moreover, our technicians, trained by Valmet, become in-house trainers who are able to share the know-how they have acquired on the field with colleagues from other plants - says Gabriele Coli, who concludes: "also, if a spare part is not available in our factories in Italy, we can quickly source it through Valmet or from our overseas locations, minimising downtime". Another key strength of Valmet Converting solutions is the service that the Valmet team offers in all phases of the project: from consulting in choosing the ideal configuration, installation, and

start-up of the machinery, to the after-sales phase. Due to the project management service dedicated to each individual project, Valmet provides its customers with a multitude of specialized skills, capable of preventing and solving most problems quickly. Ultimately, **Ivo Cataldi** states: "The priority for Valmet is the customer satisfaction. For this reason, we stand out for both our cutting-edge technological solutions and our specialized and timely assistance, onsite and remotely, which enables us to guarantee comprehensive support to reduce downtime and ensure continuity of the production plant. Traits that make Valmet a reliable long-term partner, capable of ensuring its customers the lowest transformation cost on the market". ■



### VALMET

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# HELIOS<sup>®</sup>

## SLITTING

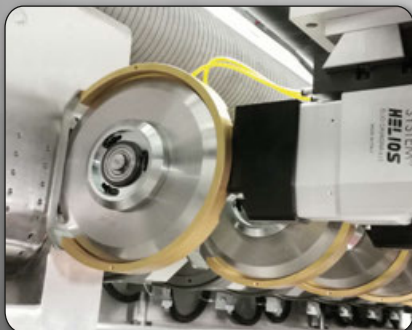
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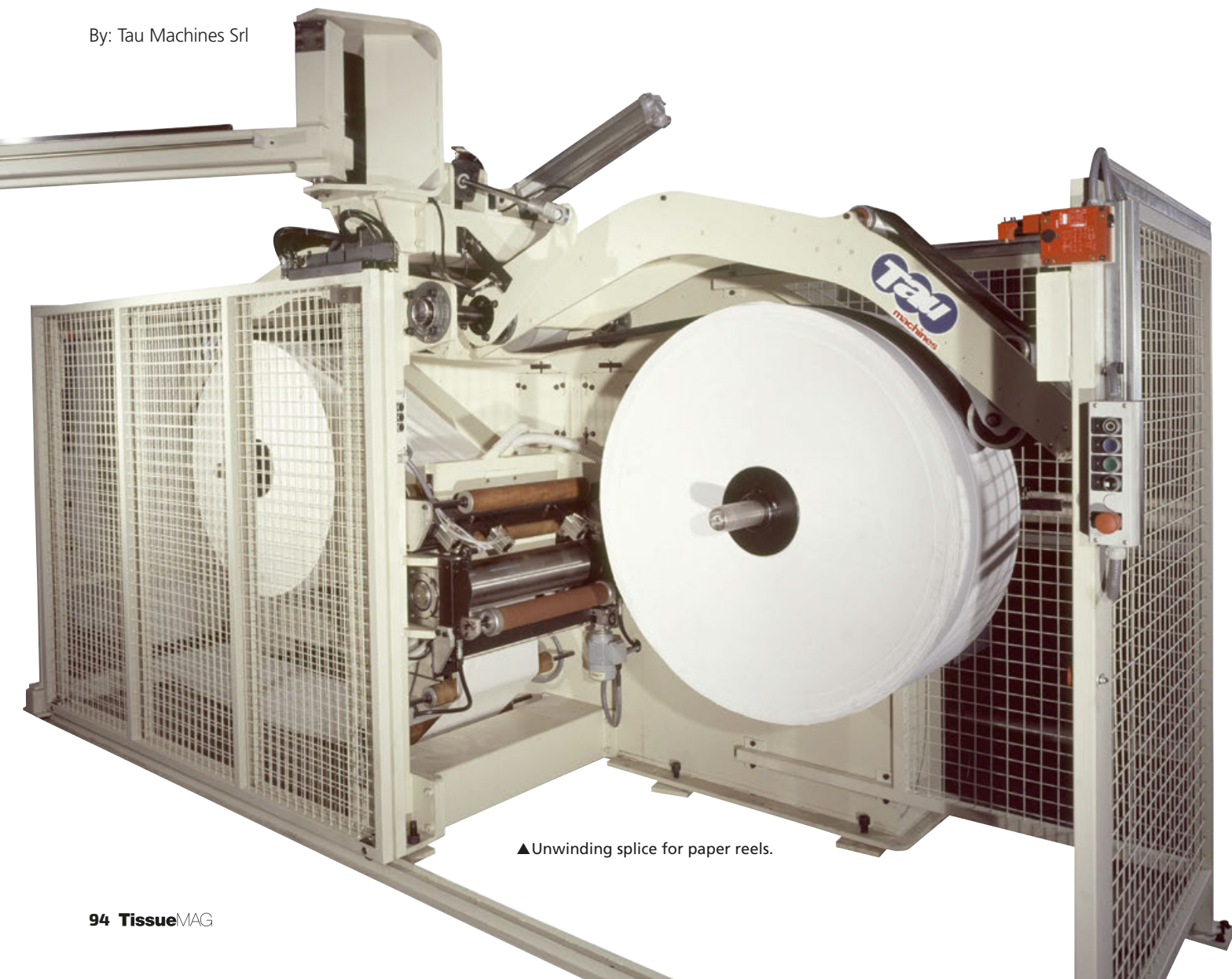
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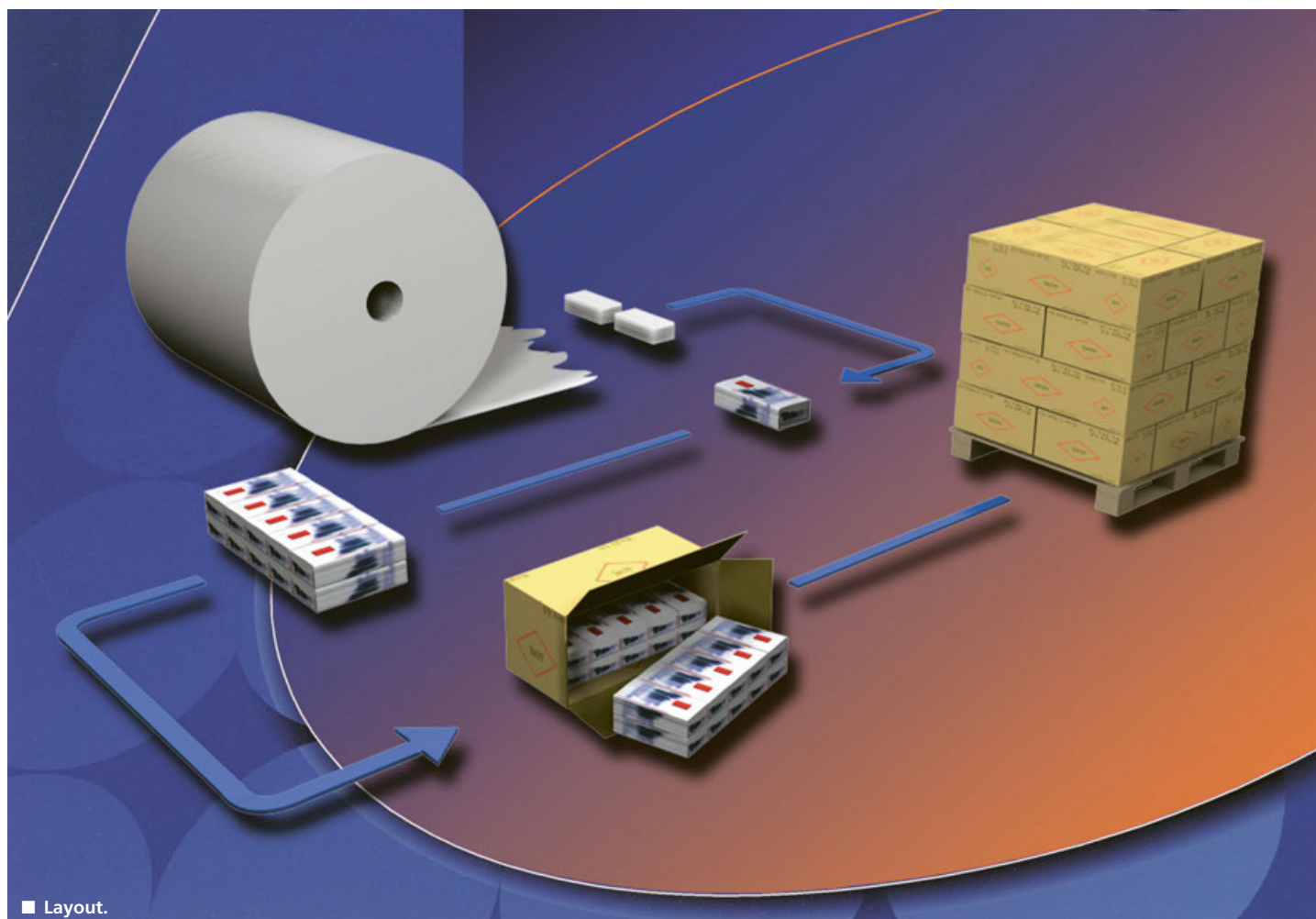
# New complete handkerchief lines

with efficiency and product quality at  
the top of the category. Now available  
with further important developments

By: Tau Machines Srl



▲Unwinding splice for paper reels.



Following the introduction of the new handkerchief production lines in 2021, Tau Machines has continued to develop its machines to offer the best solutions to the tissue converting market. The new upgrades of the 2040 lines deliver increased production performance, lower energy costs and faster and easier production and format changes. All this takes place via the machine's control system or remotely. In addition to the new lines **TAU MACHINES** can offer new units for reclosable adhesive labels, delivering up to 500 packets per minute and ensuring better product quality and considerable savings in raw materials and production costs.

A further important development has been the introduction of the new **CS120** packaging machine with actual speeds of up to 120 packets per minute, which incorporates all the developments made to the earlier CS80 model and is suitable for the production of bundles of handkerchiefs, packets of napkins and interfold products.

Tau Machines has been serving tissue producers in the international market for over 25 years, supplying complete lines with innovative technical features that have paved the way for flexibility and ease

of use in the tissue sector since the beginning of the millennium. Their main technical features were:

- modular machine construction so customers can compose the machine to their requirements; this is achieved through a plug-in system, which can be upgraded even after purchase, for example:
- one embossing unit; two embossing units; a softening unit; fully automatic paper unwinder and splicer; non-stop automatic film splicer and reel unwinder; system to vary the number of single sheets per packet from 7 to 15, on-the-fly through a computerised system; fast changeover system between "pocket" and "compact" packet formats.

Our tradition of leadership in this technology along with our motto "*there is no limit to doing better*" has continued over the years and has led to the medium-sized machines supplied to our customers becoming the benchmark for ease of use, flexibility, reliability and performance.

At the beginning of the 2020s, despite a difficult worldwide market situation due to Covid-related events, we introduced further important developments that have reinstated Tau Machines at the highest technological level in handkerchief

“ The maximum **reliability, quality and flexibility** from raw material to finished product

production, with a special focus on sustainability. Our technology is oriented towards the highest possible energy consumption efficiency, which on average is up to 20–30% lower than that of our direct competitors.

Our packaging can also use 100% recyclable paper and film, which has led to significant cost savings and a high degree of environmental friendliness.

For new machines, Tau Machines has designed all the components across the entire line from scratch, including all the mechanical parts and all the electronic systems for motion control and production management. Some of their technical features are:

- Full control over working parameters through HMI panels on the machine.
- Production management from on the machine or in remote mode.
- Scheduled maintenance management from the control panel on the machine.
- Option of connecting to company ERP systems for production management.
- Machine construction complies with EC regulations and Industry 4.0 rules.
- Guaranteed production rate of 140,000 to 160,000 packets per shift.
- 2/3/4 ply and 100% recyclable papers can be used.
- Standard or 100% biodegradable packaging films can be used.
- Extremely easy to use and maintain.
- Use of packaging film with standard sizes and print layouts compatible with all machines currently on the market.



▲ Complete handkerchief line Model 2040.

New **CS120** bundle machine with actual speeds of up to 120 packets per minute is the top of its category in terms of performance and product quality. Its various options can be used for packaged bundles of handkerchiefs, napkins and interfold products.

Like the renowned CS80, it incorporates an automatic system for changing formats and types of production. This means that previous work orders can be replicated automatically via a product labelling system that can be operated on the machine panel or remotely via the company ERP. ■

### TAU MACHINES SRL

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▲ Multiple packs bundle machine CS120.



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Tissue



Paper



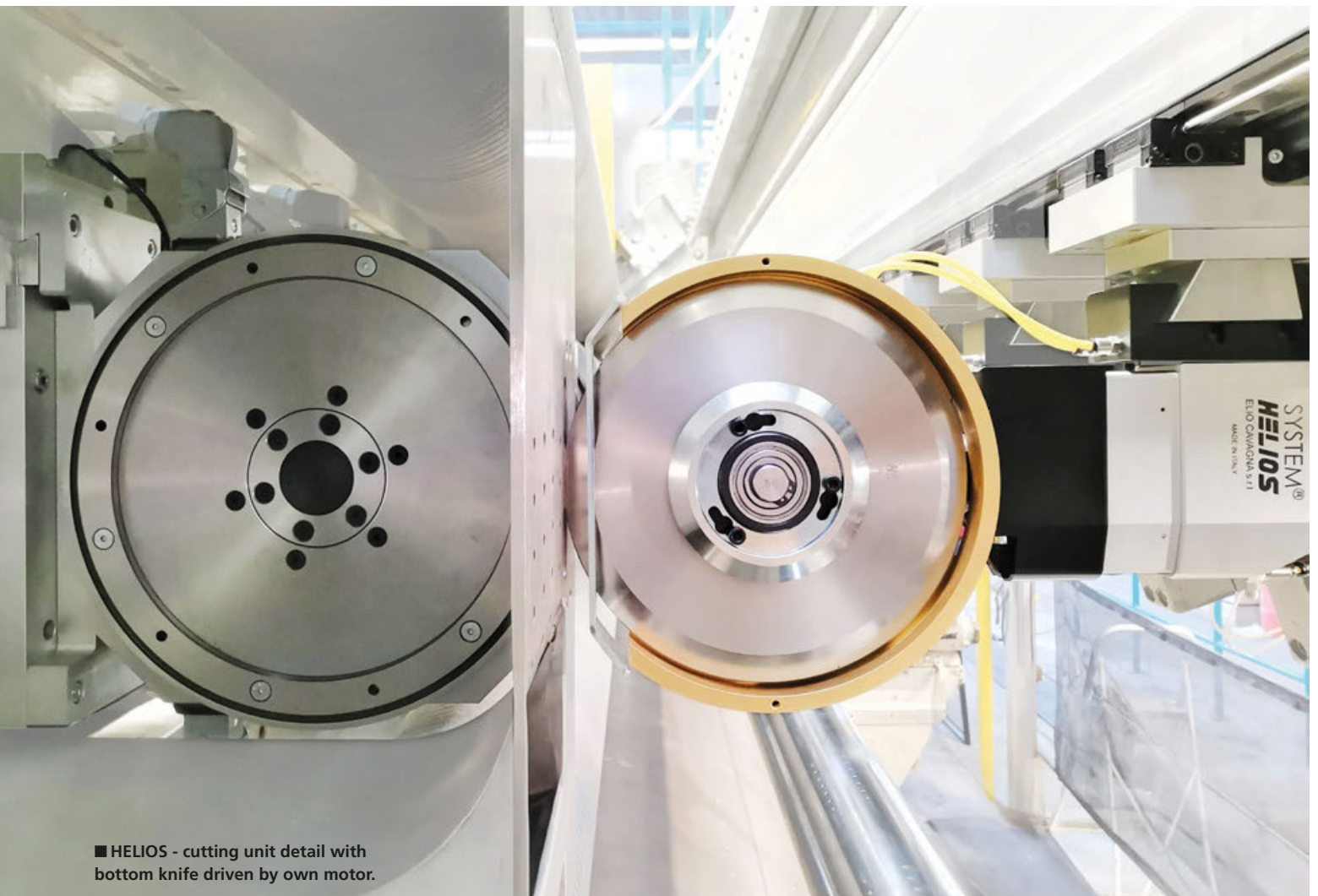
Packaging  
grades



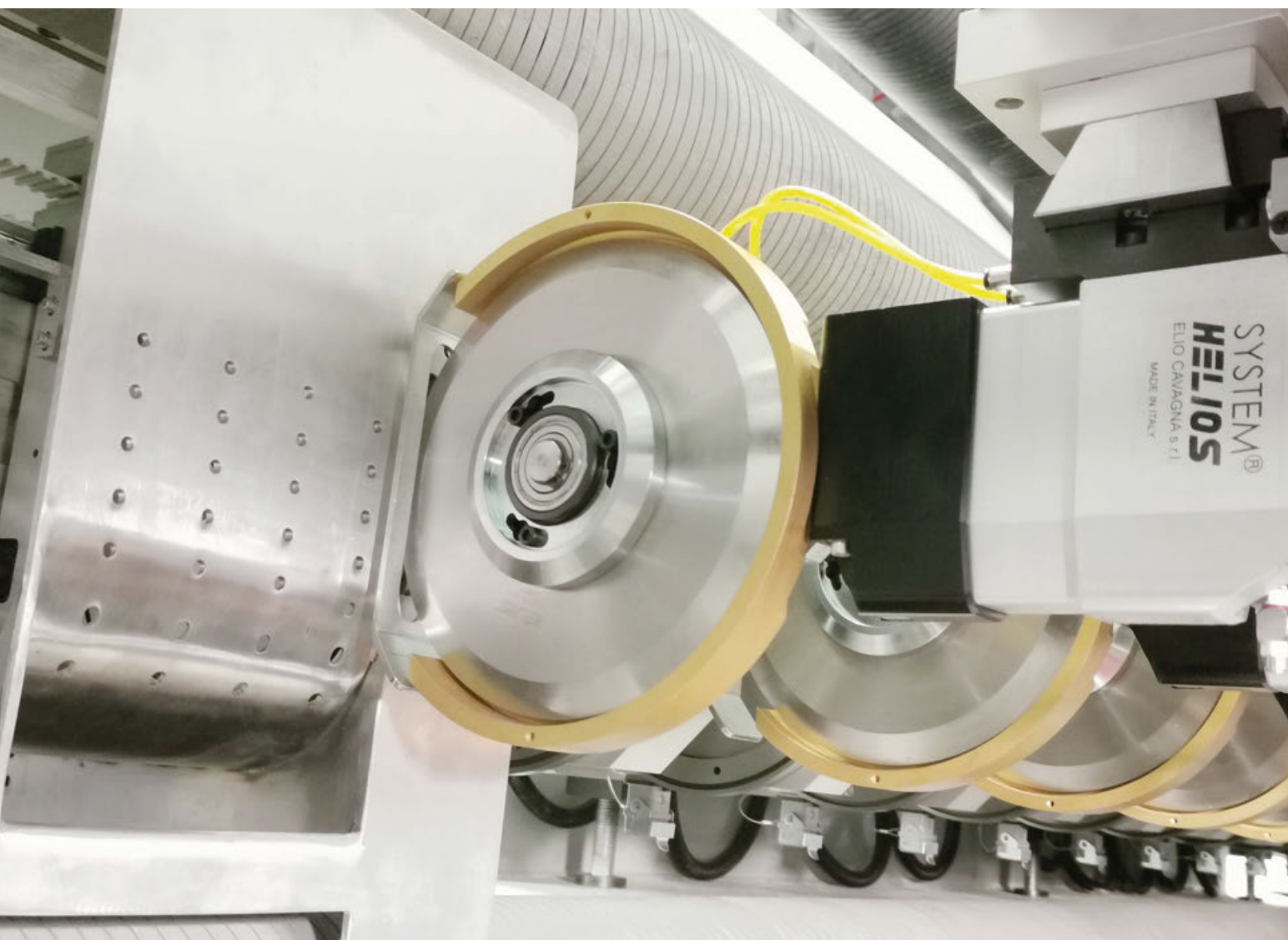
# HELIOS SLITTING: your partner for rewinder efficiency

Business optimization: the key to success.

by: Elio Cavagna Srl



■ HELIOS - cutting unit detail with bottom knife driven by own motor.



**B**usiness optimization is a crucial goal for any organization. Improve efficiency, reduce waste and increase productivity are key elements for long-term success. In this context, the rewinder plays a fundamental role in the production process and cutting is a crucial part to achieve efficiency and quality.

**The rewinder and cutting: an essential pair**

It is a machine that rewinds and cuts paper or material coils into smaller rolls. In the tissue paper sector, the rewinder transforms large mother paper rolls into manageable rolls ready for distribution. But why is cutting performed by this machine so crucial?

**1. Product quality:** cutting directly affects the quality of the final rolls. Precise cutting ensures that the rolls maintain the desired characteristics and quality. For example, uniform cutting avoids defects or irregularities along the edges of the rolls.

▲HELIOS - cutting unit detail with trim aspiration.

“We **develop solutions** for new installations, as well as modifications and retrofitting

- 2. Efficiency:** an efficient rewinder cuts the incoming sheet from the unwinder into the desired format for the customer. This allows obtaining rolls with a smaller diameter and format compared to the starting mother roll. Cutting efficiency reduces machine downtime and contributes to overall productivity.
- 3. Reduced risk for operators:** the automation of the cutting process reduces the need of manual intervention, improving workplace safety.

**Helios Slitting: customized solutions for efficiency**

This is where Helios Slitting comes into play. With 50 years of experience in the industry, Helios Slitting is a reference point for retrofitting and automating cutting stations. Let's see how they can support your strategy to increase productivity with tailor-made solutions, creating cutting systems that meet the various needs of manufacturers or plant builders. From manual solutions to fully automatic ones, Helios Slitting provides reliable and user-friendly automatic cutting modules. Quick and precise format changes are possible without removing the material, minimizing waste. Investing in advanced cutting solutions, such as those offered by **HELIOS SLITTING**, can transform your rewinder into an efficient and reliable system. Your roll production will benefit from increased efficiency, quality and safety. Furthermore, it intervenes in existing systems, improving them or restoring them to maximum efficiency and productivity. It also contributes to enhancing the technicians' operability. Not only that, individual motorization of



▲HELIOS - HMI panel control for 43 cutting unit.

▼HELIOS - retrofit with automatic positioning.

the control blades is a choice that can significantly improve the efficiency and production speed of the rewinder. Moreover, maintenance, along with its associated costs, benefits from this approach, becoming easier and allowing for the replacement of damaged blades in just a few minutes. The blades and counter blades produced by Helios Slitting are made of the best steels available in the market. The precision of the cut depends on the quality of the blades and Helios Slitting guarantees excellence. Investing in advanced cutting solutions, such as those offered by Helios Slitting, can transform your rewinder into an efficient and reliable profitable solution. Your coil production will benefit from increased efficiency, quality and safety. Choose Helios Slitting as your partner for the future of your company! Investing in this technology can lead to significant gains in terms of production speed, product quality, and operational cost reduction. With its experience in the industry, Helios Slitting can help you implement this tailored solution to meet your specific needs. ■



**ELIO CAVAGNA SRL**

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# OMET

## ONE FOLD **AHEAD!**



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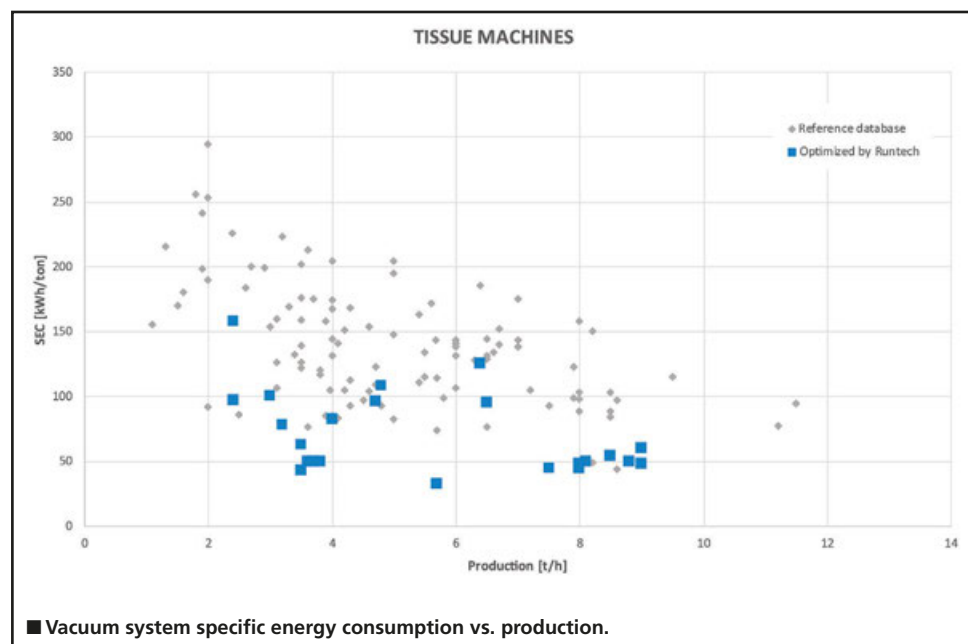
# Maximizing efficiency through vacuum optimization



■ Accurate online water flow measurement empowers you to fine-tune vacuum levels, ensuring they are neither excessive nor wasteful.

For substantial energy savings, it's essential to use vacuum only where it's most critical. By optimizing vacuum usage, strategically measuring water flow and implementing EP Turbo Blowers, mills can reduce energy consumption by 30-70%. Furthermore, exhaust heat recovery, regular maintenance and tailored dewatering solutions help achieve remarkable energy savings.

by: Runtech Systems



“Energy saving and vacuum system optimization”

### Find the real reasons for the high energy consumption

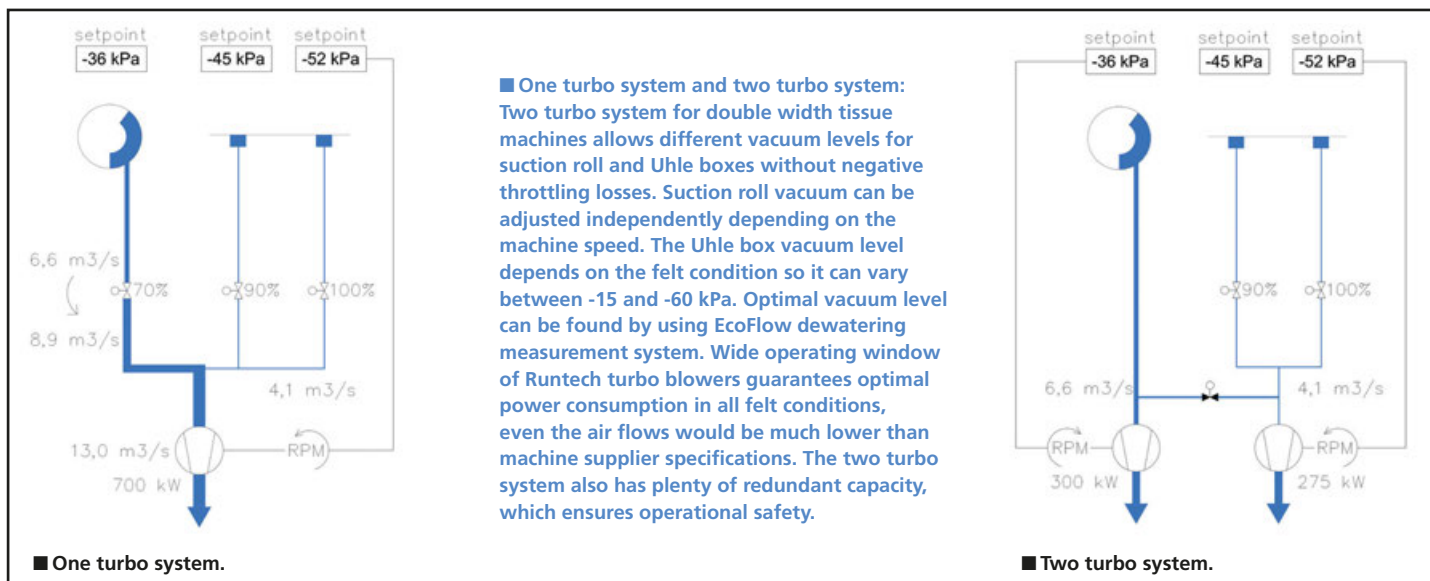
Everything starts with an audit. Vacuum levels are studied to identify problem areas and analyze system losses. Based on the findings, energy savings are calculated based on EP speed control technology. This way **RUNTECH** can give recommendations and proposals for the best course of action as well as ROI calculations. With the experience of thousands of audits and studies at paper mills, we can benchmark the effectiveness of existing vacuum systems, dewatering equipment, suction elements, fabrics and felts.

Many paper mills use excessively high vacuum levels due to missing or inaccurate water removal information.

**EcoFlow** dewatering meters are designed to address this challenge by measuring water flow across mechanical restrictions, unaffected by entrained air or foaming.

### Changing conditions call for a flexible vacuum system

Vacuum system needs to be flexible, as paper machine conditions change all the time, e.g. the machine speed can easily vary from 900 to 2,000 m/min depending on basis weight, furnish and felt condition changes over time. New felt is also different compared to the old felt and this means it is not optimal to have the same amount of vacuum (kPa and/or air flow) in different conditions. Our over 30-year experience in the field has taught us the importance of measuring water removal and controlling vacuum levels. Traditional vacuum technologies proved unsuitable when the target was to optimize vacuum levels, minimize energy consumption and adapt to changing conditions. New paper machines especially have always presented a major challenge. Machine suppliers tend to play on the safe side and provide highly oversized vacuum specifications. Runtech has rebuilt 3 to 4 year-



■ **One turbo system and two turbo system:** Two turbo system for double width tissue machines allows different vacuum levels for suction roll and Uhle boxes without negative throttling losses. Suction roll vacuum can be adjusted independently depending on the machine speed. The Uhle box vacuum level depends on the felt condition so it can vary between -15 and -60 kPa. Optimal vacuum level can be found by using EcoFlow dewatering measurement system. Wide operating window of Runtech turbo blowers guarantees optimal power consumption in all felt conditions, even the air flows would be much lower than machine supplier specifications. The two turbo system also has plenty of redundant capacity, which ensures operational safety.

old vacuum systems, resulting in energy savings of over 50% or over 10 GWh/year. Unless you specify the vacuum system for your machine supplier, that provider will often deliver the lowest cost option in terms of the purchase price without considering the lifecycle costs. In **RunEco** vacuum solution traditional method of increasing vacuum levels is replaced with speed adjustable turbo blowers, optimal doctoring and save-all systems with online dewatering measurements.

### The power of EP Turbo Blowers

Switching to EP Turbo Blowers is a game-changer in energy efficiency. In numerous rebuild projects, energy savings of 40-70% have been achieved when compared to traditional vacuum systems. Energy efficiency, a key feature of the solution, comes from both turbo technology itself, and the ability to measure water removal and adjust the vacuum to the optimal level. RunEco is developed specially to consider the challenges and demands related to the dewatering and runnability of paper machines.

**EP Turbo Blowers** are designed to operate efficiently across a wide range of vacuum levels and air flows allowing paper mills to optimize vacuum levels. High speed motors, driven by frequency converters, allow a typical EP Turbo Blower to provide vacuum levels between 15 and 70 kPa. A wide range of impeller designs allows highly efficient levels across the operating range. We emphasize the importance of carefully analyzing vacuum connections, levels, and system operation. In tissue machines, depending on design and width, the most efficient operation sometimes requires one and sometimes two turbo blowers. Additionally, Runtech is the sole provider of both dry and liquid ring pump technology, to form a combination of both technologies - a hybrid system, allowing us to cater to diverse customer demands, needs and budgets.

The EP Turbo Blower's water-free design not only reduces water

and chemical consumption within the vacuum system but also eliminates the need for water-related equipment like cooling towers and circulating pumps. Furthermore, the RunEco system offers several benefits, including impellers fitted on motor shafts without the need for a gearbox, fast and straightforward maintenance, energy recovery through a heat exchanger on the exhaust line, a compact and lightweight design that is easy to install in rebuild projects and the ability to install it step by step with minimal shutdown time and easy back-up connection ensuring operational safety. ■



### RUNTECH SYSTEMS

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# YOUR TISSUE NEEDS ONE SINGLE PARTNER



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## FACIAL & HAND TOWELS COMPLETE INTERFOLDER LINE

SUSTAINABLE SOLUTIONS  
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We can establish a **successful partnership** with paper mills and converters that are looking for innovative, sustainable and more efficient **technological solutions** to improve the production chain from the tissue paper production to the finished products.



### TISSUE MACHINE

High efficiency  
Low energy consumption



**Tripler**, the innovative embosser to multiply the possibilities of converters to launch on the market unique tissue roll products.

# The Al Mulla Group Case and **Microline**



■ The conveying phase is managed in a very precise and delicate way.

Microline, an Italian company dedicated to design and manufacture of machines and systems for tissue industry and secondary packaging for over twenty years, has a strong propensity to export and expand into the global market. In one of its most recent job orders, the company supplied a roll packaging system to the Al Mulla Group, a UAE-based company.

by: Microline Srl



▲ Microline and Al Mulla's staff.



▲ Microline technology inside Al Mulla's premises.

### The protagonists of the story

Al Mulla Group is a multi-disciplinary conglomerate, engaged in a wide spectrum of business activities. Founded in 1974, has several prestigious subsidiaries in the Middle East. As a leading company headquartered in Fujairah, UAE, **Al Mulla Group** has enhanced its competitive positioning in sectors including Trading and Contracting, Automobiles, Marine Engineering, Tissue Paper Converting, Plastic Products, Logistics and Travel & Tourism. Al Mulla Industries L.LC is one of the leading tissue paper products converting companies in the Middle East. With its sophisticated machinery and *best-in-class* technology, the company maintains a continuous improvement of processes and technology, backed by automated and quality production systems. Recently, the company experienced a change in its business unit dedicated to the production of rolls for industrial and commercial use. It was therefore only natural to turn to **MICROLINE**, which has specialized in solutions for the packaging and handling of tissue products for over twenty years, with particular expertise in the development of rolls packaging machines and auxiliary systems. As a global player, the Bologna-based company offers products and services that are tailored to meet the needs of customers on a global scale.

## “Tissue industry - solutions for rolls

### A reliable, high-performance wrapper

Microline was contracted to supply an AL80 horizontal wrapper, which is one of the most popular machines in its product portfolio, along with a shrink-wrapping tunnel and an infeed sorter. From a design perspective, the **AL80** was conceived for the paper industry and AFH-type rolls, with the specific purpose of preventing material waste during the packaging cycle while retaining the high performance

► A detail of the AL80:  
one of the most popular  
machines of Microline's  
portfolio.



## “ High reliability and reduced maintenance

the industry expects. Indeed, since the films are very thin and there is no packaging waste, a relatively small amount of packaging material is required. A key characteristic of the feed stage is the precise and gentle handling of the product, which prevents the deformation of even the softest rolls and prevents marking of the embossing.

Having this aspect in place makes it possible to eliminate production waste and increase productivity and efficiency at the same time. With the specific equipment supplied to Al Mulla, it is possible to handle single, double or triple rolls at a production rate of 70 rolls per minute for individual packs and 120 rolls per minute for double packs, based on the size and number of the products.

### Made in Italy for the Middle East

A machine was installed at Al Mulla Industries premises last December 2023 and immediately demonstrated performance that was in line with expectations. Microline has developed technology that combines sturdiness with flexibility and efficiency. All Microline machines are designed with a modular concept and they provide the possibility of using different feeding systems as well as working with different types of products. Microline solutions enable savings not only in terms of packaging material but also in terms of energy consumption. ■



▲ The outfeed phase: the  
products are intact and  
perfectly packaged.

### MICROLINE SRL

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PAPER AND BOARD

**SERVICE**

REVAMPING AND  
UPGRADE OF WINDING  
AND REWINDING LINES

# TKM. The Knife Manufacturers



■ Grinding wheels.

There is more to us than being  
“The Knife Manufacturers”.

by: TKM GmbH

**A**s the world market leader, it is our ambition to develop highly efficient tools and solutions with innovative ideas and advanced technology, all while setting sustainable trends. The satisfaction of our customers, from the craftsman’s workshop to the global industrial company, has always been and still is the focus of our activities. We guarantee optimal customer proximity and competent support through our

worldwide network of our own sales, service and production companies as well as through the high qualification and continuous training of our employees. Our motivation is, always, to find the best solution for our customers.

We take knowledge and experience from many industries and apply it to our products and services for the tissue paper industry.

### That's why we added three additional service tools to be closer to customers:

- The TKM Group App, available for Apple and Android, includes a trouble shooting of the most common problems with the log saw blade application. All our customers can use the app for free. Try it out.
- To start, we build up a simple but efficient TKM performance centre. TKM performance centre is an easy access channel for our customers to industrial internet applications and remote services. Our experts have a deep understanding of the cutting applications of your tissue converting lines. With remote connections and tools, we provide the needed support and guidance without delay - and more broadly than before.
- The relaunch of our website [www.tkmgroup.com](http://www.tkmgroup.com). The structure of the website has been completely adapted and designed to be more user-friendly, but not only that, it now offers our visitors an absolute added value. In addition to our range of services, we offer you a detailed desktop solution manual. Discover more and visit our new Solution Finder now.

In the last edition of TissueMAG you find a detailed article about our well known Log Saw Blades. In this edition, we go into more detail about the importance of one product that the Log Saw Blade absolutely needs for good performance: the CBN grinding wheel.

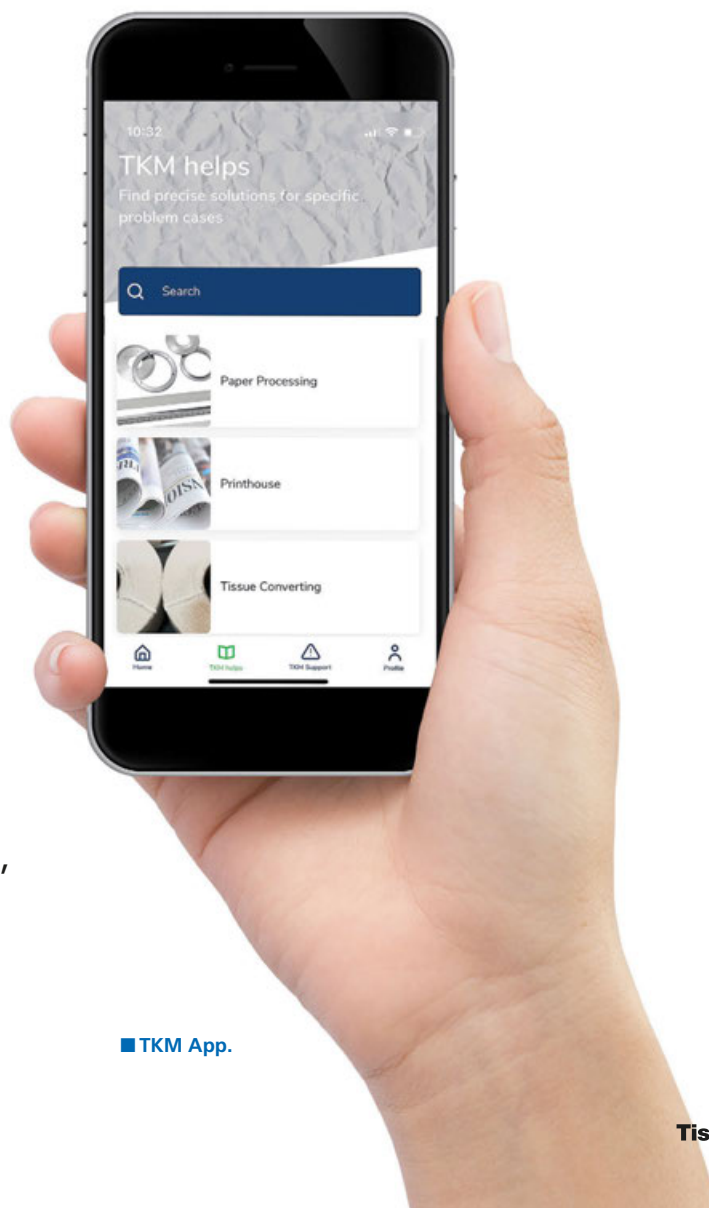
“TKM is **future-oriented**, creative, responsible

### Summary

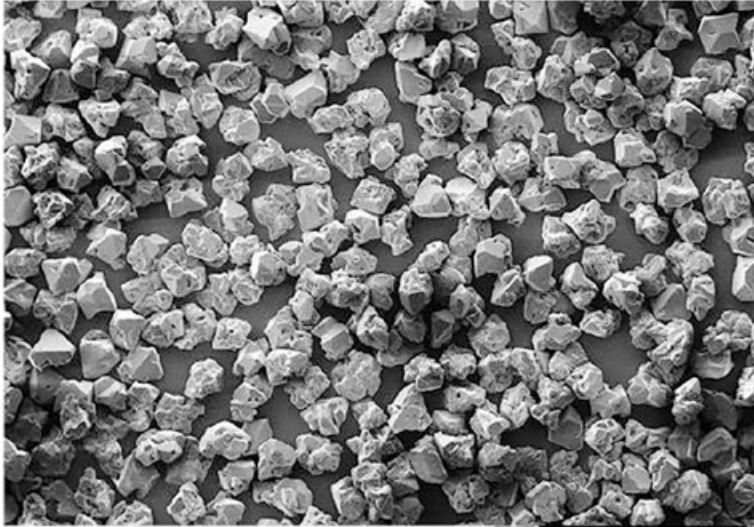
Each Log Saw Blade needs two CBN grinding wheels to sharpen the blade regularly. The best blade cannot function without high quality grinding wheels. That's why **TKM**, as only blade manufacturer, decided more than 10 years ago to manufacture the CBN grinding wheels in-house. This gives us the opportunity to constantly develop our grinding wheels with the aim of performing well even when heavily contaminated. TKM Log Saw Blades with TKM grinding wheels guarantee our customers the best possible cutting quality.

### The details

The main task of the CBN grinding wheels is to keep the Log Saw blade always in a sharp condition. The quality of a tool starts with the raw material. Although a grinding wheel looks very

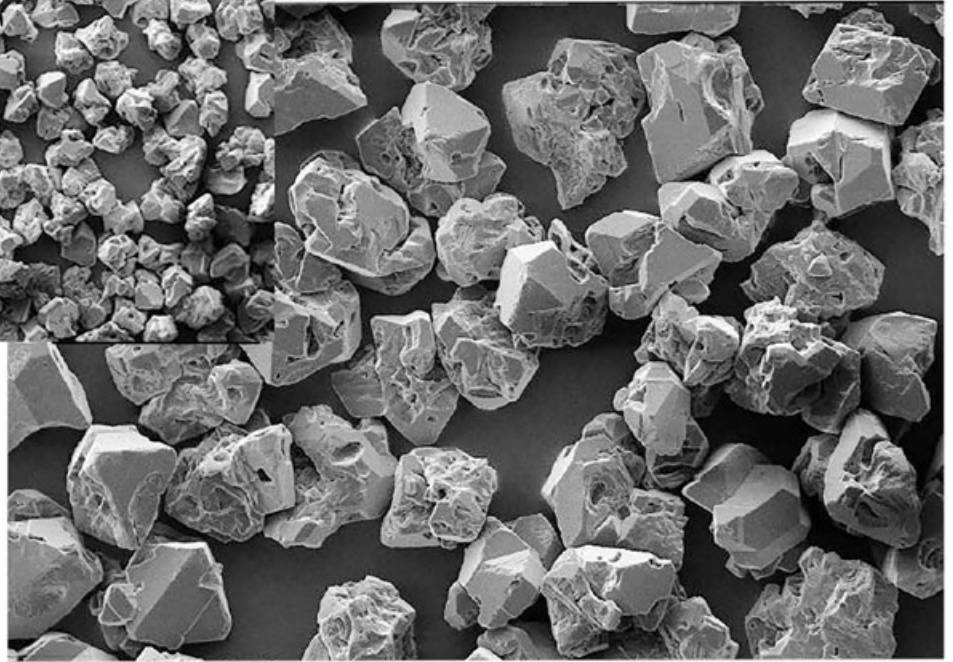


■ TKM App.



■ Abrasive grains.

*Mixed grains friable / blocky*



## “ Develop highly **efficient tools** and **solutions** with innovative ideas and advanced technology

unimpressive, a lot of development work goes into it. In the following you find the most important factors which decide about the characteristics of CBN grinding wheels:

- Quality of CBN grains.
- Geometry of CBN grains (Friable ↔ Blocky).
- Characteristics of CBN grinding grains (for example heat resistance and hardness)
- Way of wear (Blunting ↔ Spalling ↔ Break-Out).
- Size of the CBN grains (Fine ↔ Coarse).
- Concentration (Weight of CBN grains per cm<sup>3</sup>).
- Characteristics of the bond material.

TKM's production goal is to develop the best possible recipe of the different ingredients. The aim of TKM's technical consultancy is to suggest the type of grinding wheel that best fits the machinery and product variety of each customer.

The main goals of CBN grinding wheels are:

- Keep the blade always as sharp as possible.
- To create as less sparks as possible.
- To polish the cutting edge in the best possible way.
- To wear the blade as less as possible.
- As low contamination as possible (no dark graphite in the bond material).

The in-house production of grinding wheels helps TKM a lot to develop the grinding wheels step by step more and more. We already regularly sell a type of grinding wheel that has a significantly lower sensitivity to contamination: TKM P1 or TKM SuprCut. The medium-term goal is to develop grinding wheels that no longer require cleaning, regardless of the level of contamination and always keep the blade as sharp as possible. ■

### TKM GMBH

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- phone: +49 (0) 2191 9690 - email: [TFriede@tkmgroup.com](mailto:TFriede@tkmgroup.com)





TISSUE INTERFOLDING LINES

- Facial Tissue
- Towels
- Toilet Paper



MECHANICAL and VACUUM technologies  
for high productivity



Reduction of energy consumption



Reduction of the use of polluting material



Increase of the overall efficiency of production lines



# SABA AUTOMATION

## Innovation and reliability, the perfect model for automation of your tissue end-of-line system

By: SABA AUTOMATION Srl

**S**ABA AUTOMATION designs and builds innovative robotic solutions for palletising tissue products, such as toilet paper, kitchen paper, paper towels, paper napkins, paper handkerchiefs, industrial paper rolls, inter-folded paper towels, from the exit of the packaging machines to the entrance of your warehouse. In the words of **Alessandro Pollini**, Sales Director - "tissue is an important sector for us, where, over time and based on requirements, we have designed and developed systems and specialised machinery for end-of-line management, bringing significant benefits to our customers' production process".

### Which innovations distinguish our robotic solutions in the tissue palletising market?

Particular attention has been dedicated to the design of pick-up implements for products both packaged and in display format. Thanks to the special grippers,



■ ZEUS L Palletizer.



■ ZEUS Palletizer



“ We develop technical solutions, according to your production process



any product can be picked without going subject to deformation so that it can be perfectly palletised. Another factor that distinguishes us is the machine management software (PAL), with an operator-industrial PC interface, which allows easy use of the entire system and complete independence of customers when it comes to handling new product formats. This software can be interfaced with the latest management systems for data exchange, etc. We employ it for our entire range of palletisers.

**What efficiency improvements do our solutions offer customers?**

By combining our robots with our software, we make it easier to control all processing steps at the end of the line, as well as support in achieving consistent and reliable production. Thanks to the use of our systems, customers can fulfil all their production requirements. Operators are no longer needed to

perform heavy-duty, tedious palletising work. The use of our robots also allows customers to increase production, both in assisted and unassisted shifts.

**What kind of after-sales support and services do we offer?**

We offer preventive maintenance, support in the event of stoppages, supply of spare parts, etc. Offering our customers maximum productivity and reducing downtime to a minimum is our priority. Our after-sales support service works side-by-side with our customers for the entire service-life of the system. The passion, professional training and above all great experience of SABA AUTOMATION technicians is the guarantee of a high standard of service.

**What emerging trends are shaping the future of our robotics solutions?**

The evolution of the tissue product market is always in focus at **SABA AUTOMATION**. Over the past year, we have expanded our range for both folded and roll products, simplifying the technologies applied. In particular, we have presented a new range of Cartesian robots for palletising boxes containing folded products (BD) and very high productivity anthropomorphic robots for fast roll handling lines.

**Why choose SABA AUTOMATION?**

Choosing SABA AUTOMATION means relying on a leader in innovation and reliability for automation in the tissue industry, guaranteeing tailor-made solutions that optimise production, improve efficiency and ensure excellent after-sales service. With SABA AUTOMATION, you will have access to state-of-the-art technology and constant support to keep your production in step with future market requirements. ■

**SABA AUTOMATION SRL**

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# Innovation and sustainability: **Svecom-P.E. heat recovery boilers in the paper industry**

Svecom-P.E. and its business unit Garioni Naval.

by: Svecom P.E. Srl



**S**vecom-P.E. has been building customized solutions for the winding and unwinding of reel material since 1954. Thanks to the know-how acquired in metalworking, in September 2015 Svecom-P.E. acquires **Garioni Naval** brand, a historic brand that creates industrial and naval heating systems. Consequently, the manufacturing area, part of the commercial network and customer service are transferred to the Svecom-P.E. headquarters in Montecchio Maggiore (Vicenza).

### Genesis of the project and preliminary study

Today, Svecom-P.E. makes the know-how acquired over the years in the paper and tissue sector

available also for the production of heating systems. The paper industry is constantly evolving, driven by the search for more efficient and sustainable solutions. It is in this context that the project emerges for an important company in the paper sector based in Lucca (Italy): a recovery steam generator with water tubes, in compact and modular design with finned tubes.

The project came to life in December 2022, when the first study was launched to develop a system capable of recovering and exploiting the heat coming from exhaust fumes. This ambitious goal was translated, after a careful analysis, into a solid and innovative commercial proposal.

**“ Custom solutions - wide range of products - certified quality**

### Sustainability and environmental impact

A fundamental aspect of the project is its contribution to the sustainable ecosystem:

- By using this type of solution, CO2 emissions are drastically reduced: the heat recovery boiler, is in fact designed to recover waste heat without the use of non-renewable fossil fuels.
- A large part of the water is collected from the condensed steam and is pumped at high temperature to conserve as much heat as possible, minimizing losses to the atmosphere.
- The project is in line with the goals of reducing environmental impact. Considering that the plant is active 24 hours a day, we are talking about approximately 12,000 tonnes of CO2 saved every year. A fossil fuel boiler of the same power would emit around 1500 kg of CO2 into the atmosphere per every hour of operation and would consume around 6 million Nm<sup>3</sup>/h of gas per year.

### Technological innovation

Steam generators are traditional products historically available in many different forms: an uncommon peculiarity of this creation is its modularity, which facilitates transport on site and any future expansions. The product is highly customizable, reflecting the increasing demand for tailor-made solutions in the paper industry. In recent years, between the end of 2022 and the first half of 2023,





4-5 similar projects have been advanced, each characterized by unique design specifications. One of the most notable aspects of the project is the completion time: just four months, including ASME certification. This speed of execution represents a successfully overcome challenge, considering that similar projects generally require more time. The extraordinary performance was achieved thanks to an efficient organization and the adoption of advanced methodologies.

### Operation and technology

Customization responds to specific needs:

- Maximize energy recovery without consuming fossil fuel.
- Produce more than 9.5 tons/h of steam at 16 bar for a power of over 6800 kW.
- Optimize the spaces and integrate the system with the other machinery of the plant from a mechanical, electrical and electronic point of view.
- For these reasons, the heat recovery boiler operates with cutting-edge technology:
  - The water tube type steam generator is characterized by a compact and modular design, with the use of finned tubes and can work with a pressure of 20 barg at a temperature of 205°C.
  - On the one hand, maximum energy recovery from exhaust fumes is guaranteed, maximizing the efficiency of the process; on the other hand, transport, installation and possible future expansions are facilitated.
  - The control system is electronic and can be

managed remotely: it is connected to a network with the other components of the system, allowing the user to remotely supervise the operating parameters, modify their values and, possibly, make changes to the software.

### Conclusions

The project represents the entry of Svecom-P.E.'s boiler division into the paper industry, combining technological innovation, energy efficiency and environmental sustainability. The company offers numerous other solutions such as, for example, combined water tube steam generators with steam recovery function (coming from turbo gas or cogeneration) and with burner or fire tube steam generators with burner, which can be ASME, PED, IACS, TSSA and EAC certified. The experience and expertise of **SVECOM-PE.** in the sector have played a fundamental role in the success of this project: the mission, vision and corporate values that have always distinguished the company have made it possible to expand the Svecom-P.E. product range in the paper industry sector. ■

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■ Carer A80X in storage.

# CARER forklift: compact electric forklift trucks for the paper industry

Carer Forklift's large capacity electric forklift trucks are increasingly becoming the main players in the handling of heavy reels in the paper industry all over the world.

by: CARER Srl

Companies in the paper industry, forced to abandon traditional motor-driven vehicles mainly for environmental reasons, are choosing the large capacity electric forklift trucks produced by Carer Forklift. This is mainly due to the compact dimensions of the vehicles (much smaller even at the same capacity than endothermic powered vehicles) and to the long and unrivaled autonomy offered by the 96 v and 120 v lead acid batteries and lithium batteries.

**Carer Forklift** trucks are able to guarantee the capacities needed to handle reels, up to high lifting heights, even with single front tires. Compared to trucks equipped with twin and therefore wider front tires (*note*: the Z, F and A series trucks are mm. 1,670 to mm. 1,830 wide), these vehicles, as wide as the reels, offer the advantage of being able to store much more material in the same amount of space. The elimination of noise and pollution, with the reduction of dust inside the sheds, make work less stressful for the operator.

A trend that is set to grow. We are now going to outline some of the examples from the Carer Forklift's catalogue that display the extraordinary efficiency of this kind of application.

## The "specialists" in Carer Forklift's offering

■ The *A Series* (mainly with the A 70 X and A 80 X models) is ideal for working with high performance both in outdoor spaces and on the



■ Carer Z80H2  
is picks up  
paper rolls.

# “ 46 years of experience in electric forklift trucks field

irregular factory floors. It features up to 7.5 m lifting masts designed for handling coils by grippers. It also offers the highest residual capacities at maximum height among all the vehicles in this capacity range available on the market.

■ The *Z Series* provides other optimal solutions for paper mills. It includes super-compact trucks that feature high seating and can result extremely comfortable for an operator often involved in daily shifts. The range of capacities for the paper industry ranges primarily from the 6 t of the Z 60 H2 to the 8 t of the Z 80 H2 and enables long work sessions thanks to great autonomy, cost control and zero emissions.

■ The *F Series* is equally performing in paper industry plants. Compared to the Z Series, it features lesser loading vehicles, and is ideal for those applications where the forklift driver frequently needs to get in and out of the seat during work shifts.

The F series is available in two engine types: H, for lighter handling and HD<sup>2</sup> (short for “Heavy Duty”),



▲ Carer Z80H2 is picking up paper rolls.

▼ Carer A80X is handling paper rolls.

designed for heavier operations. The vehicles are totally ergonomic, thanks to cabs equipped to reduce vibration. The driving operator has a broad view and has easy access to driving instruments, thanks to Carer Forklift’s range equipment.

The above-mentioned truck series are available in capacities ranging up to 16 tons. And if you have any specific requirement, Carer Forklift makes customization its added value, thanks to a special technical department.

The Italian company is always able to customize a suitable solution starting from your needs. Please contact Carer Forklift. Specialized technicians will be pleased to reach you, also for a free inspection. ■



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The magazine is distributed to **Tissue Paper Mills** and **Tissue Converters**.



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Next issue **November 2024** - come with us!

# Bolzoni Group

## developed the perfect clamp for handling tissue paper rolls

By: Bolzoni Group

### Tissue paper trends

The global **tissue paper market** is constantly growing. In order to keep up with this continuous evolution, Bolzoni Group is focused on providing the best and innovative solutions to forest products handling operators. Thanks to the close cooperation with the paper industry worldwide, the company is the most reliable partner in forest products handling. And when it comes to tissue rolls handling, which are bulky and can get easily

▼ AGV fitted with Auramo paper roll clamp. For this application we recommend the 180-degree rotation, for fast and precise handling of horizontal and vertical rolls.

damaged, **AURAMO** has developed a dedicated clamp for this special application.

### The right clamp for tissue paper rolls

Auramo provides the best and innovative solution to handle paper rolls in a damage-free and effective way. Auramo, being market leader in the sales of paper handling tools in Europe, created a complete range of well-designed and strong tissue paper roll clamps, with capacities starting from 1500 kg up to 6000 kg (3000 to 13000 lbs) and with roll diameters up to 2.700 mm (106") in standard series. Dedicated tissue paper roll clamps are always built to be able to handle large diameter rolls; they also have higher and wider contact pads to reduce surface pressure on the soft paper.

### Contact pads

Since contact pads are the most important part of the clamp attachment, Auramo has paid special attention in designing and manufacturing contact pads, which ensure safe and non-damaging tissue roll handling. Common contact pad options are:

- Single radius pads for hard and medium-hard paper grades.
- Triple radius pads for hard, medium-hard and soft paper grades, especially on larger roll diameters.
- Convex radius pads for very soft and hard-to-handle large diameter rolls.

### Designed and dedicated clamp: AR-RT tissue paper roll series

The AR-RT series clamps are designed and developed to have superior visibility, great rotating





■ The pad edge is smooth and well rounded. Pad corners have large radius design, without protruding parts or edges.

speed and to be operator-friendly. Its main features are:

- Higher and wider contact pads to reduce surface pressure on all soft paper grades.
- 180-degree rotation, for vertical and horizontal roll handling with hydraulic cushioning in the vertical end position.
- Smooth rounded arms, contact pads surfaces and corners to reduce roll damage possibility.

## “ Specialized tissue paper **contact pads**

### **Bolzoni Group is on the cutting edge: partner in AGV automated solutions**

The new challenge for companies that want to embrace the *Industry 4.0* philosophy is automation. Bolzoni Group is strongly focused on the development of intelligent products, to be fitted on forklift trucks, and on Automated Guided Vehicles too. Great investments have been done to support AGV specialists with a completely new range of hydraulically and electrically driven attachments. In the range we also have tissue paper roll clamps, in 180-degree rotation, developed in co-design with AGV manufacturers.

### **Optimized clamping force - key to damage-free tissue roll handling**

Excessive clamping force is one of the most common causes of paper and tissue roll



■ Auramo tissue paper roll clamp mounted on an AGV lift truck, on which both hydraulic system and sensors set have been codesigned with the LGV manufacturer.



◀ This valve, installed on paper roll clamps, prevents overclamping. No more roll out-of-roundness.



▶ The minimized pad thickness ensures good knifing properties when handling tightly stacked and bilge rolls.

“Engineered to suit the **application needs**”

■ The pad edge is smooth and well rounded. Pad corners have large radius design, without protruding parts or edges.



out-of-roundness damage. The varying paper roll hardness, weights and diameter plus the high value of the rolls themselves, are all factors requiring an extensive control of clamping force on behalf of the operator. In order to support the operator in the selection of the correct clamping force, we strongly recommend the use of FORCE Matic, our automatic clamping force control system. This fully mechanical pressure control system can be applied to paper roll clamps, in order to prevent overclamping causing roll out-of-roundness.

**Worldwide support**

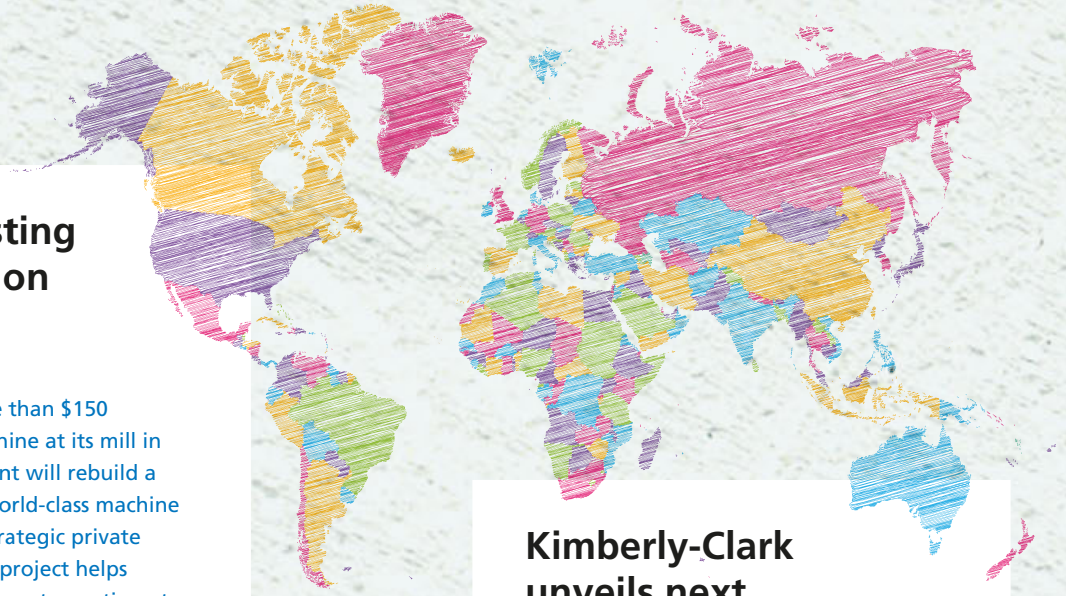
Thanks to the far-reaching service and support network, **BOLZONI GROUP** is strongly committed to providing our customers with high-quality service support before, during and after the purchase. When maintenance is required, our global service network is available, with equipped workshops, large spare parts storage and, above all, very skilled sales engineers and a paramount after sales service. ■

**BOLZONI GROUP**

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# Tissue news around the world



## Georgia-Pacific investing more than \$150 Million to grow consumer tissue business

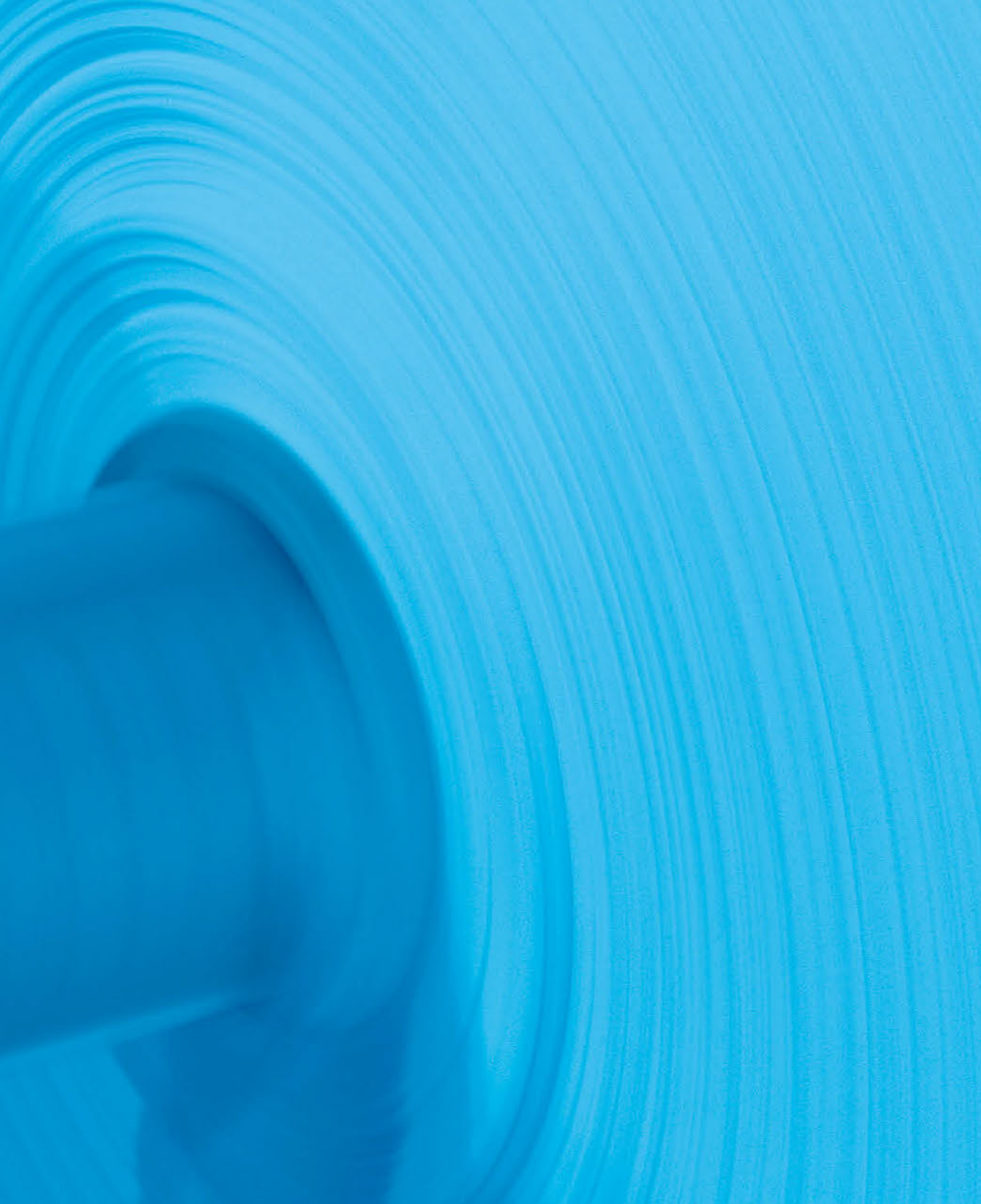
**G**eorgia-Pacific is investing more than \$150 million to rebuild a paper machine at its mill in Wauna, Oregon. This investment will rebuild a 1965-vintage paper machine into a world-class machine to make paper for Angel Soft® and strategic private label bath tissue. This modernization project helps position the mill and the overall business to continue to be competitive in the market. Engineering and related work has begun, and startup of the machine is scheduled for 2026. At peak construction, 500 construction and contract-related workers are expected to be onsite at the mill. “We are excited to invest in our market leading Angel Soft® bath tissue and strategic private label brands we support,” said **Vivek Joshi**, president of Georgia-Pacific’s retail tissue, towel and napkin business. “This investment will allow us to grow these brands and continue to serve our loyal consumers with the great quality they have come to expect.”

## Grigeo acquires a tissue paper mill in Poland

**G**rigeo AB has successfully completed the acquisition of one of the mills of Glucholaskie Zakłady Papiernicze sp. z o.o (GZP), a Polish producer of tissue paper and paperboard. “This transaction will allow us to strengthen our position in the fast-growing Eastern and Central European market. Optimization of logistics costs will also open up wider opportunities for sales of top-quality products in Germany and other Western European markets,” said **Tomas Jozonis**, CEO of Grigeo AB. The acquisition of the Polish factory was one of the company’s strategic steps, for which it had been consistently preparing. “We acquired not only the factory, but also the expertise. We will be able to combine it with the best production practices we already have in the Grigiskes factory when looking for new solutions and expanding our product range,” said Jozonis.

## Kimberly-Clark unveils next chapter of strategic transformation

**M**ike Hsu, Chairman and Chief Executive Officer of Kimberly-Clark Corporation, and members of his executive leadership team are unveiling the next phase of the company’s transformation, including a new operating model and key commercial initiatives designed to grow its brands and businesses at a faster pace than its categories. “Over the past five years, our global team’s dedication and strong execution have positioned us to fully leverage the scale we’ve built and to catapult Kimberly-Clark into its next chapter of growth,” said Hsu. “We are building on the consumer centricity and commercial advantages we’ve established by moving to a more agile and focused operating structure that we are confident will help accelerate our proprietary pipeline of innovation in right-to-win spaces and improve our growth trajectory, profitability, and returns on investment. We have more than 150 years of history, transforming groundbreaking insights into innovative categories, with products that provide Better Care for a Better World. We are excited to build on the strength of that legacy as we drive for consistent, long-term value creation.”



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