

TissueMAG

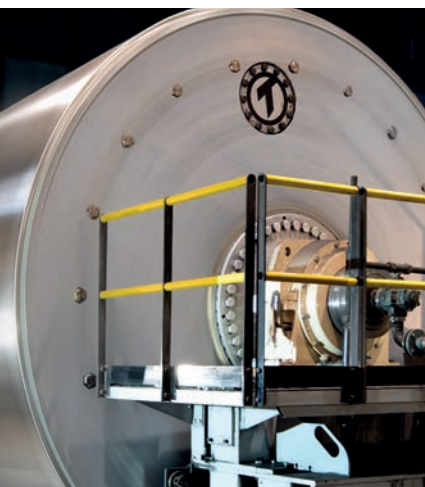
This issue is distributed to Tissue Paper Mills and Tissue Converters in **Europe, Middle East, Africa + bonus countries**



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This issue of TissueMAG is distributed in **3,078** copies to Tissue Paper Mills and Tissue Converters in:

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INTERNATIONAL MAGAZINE
AND WEBSITE ON TISSUE PAPER
MACHINERY AND TECHNOLOGY

TissueMAG

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MIAC 2023 awaits international paper industry technicians in Lucca/Italy next October

Every year, 250 international exhibitors from the paper sector participate to the international paper industry exhibition dedicated to technologies for the production of paper and cardboard and for the converting of tissue paper.

Every October in Lucca (Italy), 6,000 Visitors from across the globe meet at MIAC Exhibition, which has become an event not to be missed for all those working in the paper industry sector. At **MIAC** paper mill and tissue converter technicians can meet in just three days and in one place, 250 international companies for a full overview of the technology and equipment available to the paper industry and the tissue converting sectors.

The MIAC 2023 Exhibition allows technicians of Paper Mills and Tissue Converters to update on a professional level. Rapidly evolving machinery and technological solutions require continuous updating: MIAC is the answer to all this.

MIAC Exhibition also planned four international conferences. As every year, the participation to the conferences is free of charge and simultaneous translation is available for all of them. Lucca Exhibition Centre is in a strategic position in the North-Centre of Italy:

Pisa Airport is only 20 minutes' car distant from Lucca and Florence Airport is 45 minutes' car away from the MIAC Exhibition.

To stay up-to-date on MIAC 2023, visit the website www.miac.info/en ●

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Efficiency, safety
and easy to use:

Körber's Technical Improvement Programs reduce the TCO



▲ Auto web starter revolutionizes the paradigm of the manual web thread-up.



■ The Körber ecosystem integrates technologies and services designed to simplify the entire tissue manufacturing and packaging process, for roll and fold.

By: Körber Tissue SpA

In today's market, reducing expenses and production time and effectively managing asset life cycles are essential factors for the competitiveness of capital-intensive companies. To this end, Total Cost of Ownership (TCO) is a critical decision-making tool to proactively assess the effectiveness of industrial plants and their components in the long run and to ensure their continued functionality. In this perspective, Körber commits to reducing TCO by maximizing the OEE of paper converters, thanks to its ecosystem, which integrates technologies and services designed to simplify the entire tissue manufacturing and packaging process, for roll and fold. "There are over 20,000 machines installed by Körber Business Area Tissue worldwide. As a technology leader, we have an assistance-dedicated structure, which provides field-tested technical skills able to maintain high plant performance in the long term. More and more customers rely on the experience of OEMs and this is testified by the fact that sales

of the entire service chain recorded a growth rate of 44.7% from 2018 to 2022. Körber Business Area Tissue guarantees qualified and proactive technical support remotely or on site to minimize downtime and support customers in identifying and solving problems, so that the installed base is always up to date. In 2022 alone, over 500 on-field activities were performed, most of which were Technical Improvement Programs (TIP), technical adjustments made to new and old-generation systems to assure high standards of safety and efficiency and reduce environmental impact" - says **Alessandro Borelli, Customer Service Director of Körber Business Area Tissue**. Based on the most recent technologies, Körber Business Area Tissue's TIPs give lines new life and sometimes a new registration and CE marking based on customer needs in order to keep their investments tenable in the long run.

New electrical cabinet TIP

With the replacement of the entire electrical cabinet for wrappers and bundlers, Körber's

“ Shaping your success in tissue ”



► Alessandro Borelli,
Customer Service
Director of Körber
Business Area Tissue.

solution guarantees stabilization and machine performance enhancement up to 20%. The latest generation 4.0-ready components for the motor logic, axis control and on-board machine systems simplify the command interface and eliminate any obsolescence. For example, electronic limiters instead of physical systems are more efficient in containing critical forces resulting in a significant reduction in the wear-and-tear of mechanical parts. Furthermore, the installation of the Mguard system for the Expert Online connection simplifies troubleshooting thanks to a prompt remote intervention by Körber technicians.

▼ Operators govern the machine's start-up from the external HMI panel.



Thermocameras TIP plus Fire Fighting System

The main advantage of this improvement program by Körber Business Area Tissue is the prompt detection of anomalous heat accumulations on all converting and packaging lines by using high-detailed thermal images. The latter determine whether there are drifts in the expected temperature parameters, anticipating breakdowns and machine downtime. An advanced fire detection system can also be installed on all lines, eliminating the use of optical sensors and freeing it of dust, oil, water and dirt disturbances. Finally, a low-pressure water mist system that uses shed-supply water extinguishes fires. These solutions safeguard both operators and the capital invested in high-value equipment.

Auto web starter and Easy Reel change TIPS

Körber's Easy reel change allows the replacement of finished reels on traditional medium and high-level tissue unwinders without automatic Reel change systems, and the restart of production in just 90 seconds with standardized and repeatable procedures. Auto web starter revolutionizes the paradigm of the manual web thread-up, making the overall process safer for the operator and reducing costly downtime due to unexpected paper break or production change restarts. The automated process follows a three-step system. First, the insertion of the flap of paper into suitable plastic shuttles hooked to the belt allows operators to govern the machine's start-up from the HMI panel outside the perimeter casing. Second, with suitable configuration, the shuttles carrying the paper are automatically swapped on distinct belt branches. Finally, the line can be restarted automatically behind closed doors without any operator intervention. This standard technology for new plants is customizable on multiple existing lines. ●

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“ The most **advanced technology**
for the tissue & paper industry ”

■ Toscotec's TT SYD Steel Yankee Dryer.

Toscotec

to install 250th TT SYD Steel Yankee Dryer at WEPA France

WEPA France has selected Toscotec to install a TT SYD Steel Yankee Dryer on PM11 at its Bousbecque plant near Lille. The new Yankee will replace an existing cast iron cylinder.

by: Toscotec SpA

Undisputed Steel Yankee market leadership

With over 250 TT SYD sold, **Toscotec** is the undisputed market leader of Steel Yankee Dryers holding a large majority of the global market share.

- Toscotec's TT SYD was the first Yankee dryer made of steel to start up in a tissue mill in 2000.
- TT SYD is present in more than 45 countries across 5 continents, and in Europe alone it has close to 95% of the market share.
- Toscotec holds the record for the longest and largest experience of design, manufacture, and service of steel Yankees in the tissue industry.
- TT SYD embraces a whole breadth of applications: conventional tissue, TAD, MG paper, and tobacco.
- Toscotec manufactured a 22 ft. diameter TT SYD - the largest diameter of grooved Steel Yankee Dryers in the world - and it has the capability to produce up to 26 ft. diameter.
- Building on 20+ years of monitoring and servicing steel Yankees that operate in the most diverse conditions across the globe, Toscotec has made strides in product development engineering 3 successive design generations of its TT SYD.

The WEPA Group is a European family business specialising in the production and distribution of sustainable hygiene paper. Headquartered in Arnsberg (Germany), WEPA offers sustainable and innovative hygiene solutions that provide a safe feeling of hygiene and contribute daily to the well-being of millions of people. With 4,000 employees, the WEPA Group manufactures hygiene products such as toilet paper, paper towels, tissues, and napkins at 13 European sites. WEPA is among the three largest European manufacturers and leading the market in the production of hygiene paper from recycled fibre. Its annual turnover is roughly 1.3 billion euros.

WEPA's target of sustainable production

This order is an integral part of WEPA's strategic plan to boost the energy efficiency of its operations and reduce CO2 emissions. Toscotec's Steel Yankee will ensure the highest possible energy efficiency in the drying section of the tissue machine, with substantial thermal energy savings compared with the existing cast iron cylinder. Since **WEPA** installed its first Toscotec's Steel Yankee in 2006, it never went back to the old technology of cast iron dryers.

Aurelien Lebas, Technical Project Manager of WEPA says: "The installation of this TT SYD is aimed at reducing our energy consumption and overall carbon footprint, in line with our strong commitment to resource efficiency. It will also increase reliability and operational safety at our facility. Based on our long experience working with Toscotec, we expect to exceed our targets".

Riccardo Gennai, Toscotec's Sales Manager says: "It is a pleasure to work again with WEPA France after a series of successful rebuilds of PM11, and the start-up of PM18 turnkey tissue project at their mill. This order strengthens our partnership with the WEPA Group that began more than 20 years ago". ●

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■ Toscotec's TT SYD Steel Yankee Dryer.

Solutions for tissue surfaces

We focus on design, technical
expertise and highest quality

Thanks to our experienced team and cutting-edge production facilities in the fields of laser-etching, tool-engraving and direct-lasing, each day we deliver the best possible solution for our customers' demands in the tissue industry.

As a full-service provider, we support you comprehensively – from design development to the finished product and beyond, thanks to our excellent on-site assistance.

We are delighted to assist you.
Fast, flexible, reliable.



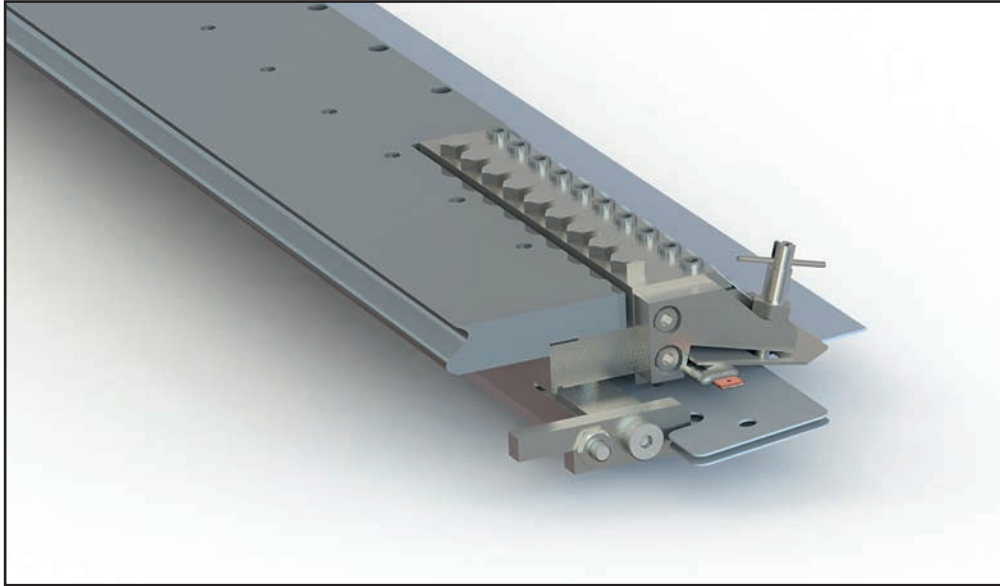
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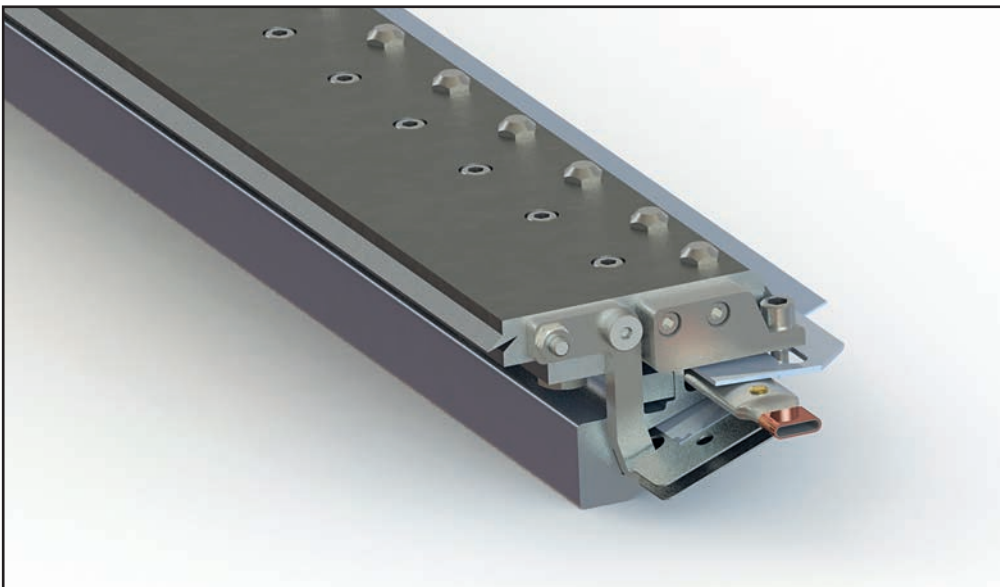
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◀Kadant's Conformatic XL Holder is the industry standard in tissue making.

THE KADANT APPROACH TO TISSUE CREPING



◀The Conformatic™ AL Creping Holder: the next generation Conformatic creping blade holder.

By: Kadant U.K. Limited

What is tissue creping?

Tissue creping is an operation near the end of the tissue manufacturing process where bulk, stretch, absorbency, and softness are created in the tissue. Tissue creping is vitally important when these characteristics are key attributes of 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. The variables involved in the creping process are numerous, but with poor doctoring the ability to create a soft and absorbent tissue is limited.

“ Kadant a **global leader** in doctoring, cleaning & filtration ”

What makes proper tissue creping so important?

Imagine two metal parts: one is stationary and the other is running; both rubbing against each other. That is doctor creping. As Yankee speeds increase, vibrations between the rolls, Yankee, and creping blade will become a more significant factor. If vibration is not controlled, the Yankee surface can be damaged and will need to be refinished typically 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.

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 designed for use in all Yankee doctor positions including cut-off, creping, and cleaning. The Conformatic blade holder is the industry standard when it comes to tissue making. With this next generation model, the focus 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 in order to eliminate issues caused when using stainless steel items.

“ Innovative solutions to optimize your process ”

Significant upgrades to the holder's adjustability has 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.

How to protect your Yankee with Blade Holder Genuine Parts

The Yankee dryer is arguably the most important part in the tissue making process. Protecting the Yankee against premature wear and damage is essential for the tissue mill. One way to keep the Yankee operational is ensuring creping blade holder parts are maintained on a regular basis. The Conformatric™ blade holder profile tube, backup blade and cartridge should be inspected during each machine outage and replaced with genuine parts. Conformatric blade holders have a specially designed load tube. When a non-OEM aftermarket version is used, it takes the conformability of the holder away, eventually leading to an increased risk of damage to the Yankee surface.

Using genuine parts ensures the highest product quality and integrity is maintained when repairing Kadant equipment. We have witnessed numerous cases of non-Kadant aftermarket parts being used incorrectly leading to equipment damage, production losses and increased safety risks. These outcomes can be minimized when **Kadant** genuine parts are used. Look for the Kadant Genuine Parts seal to be assured you are using the highest quality repair parts. ●

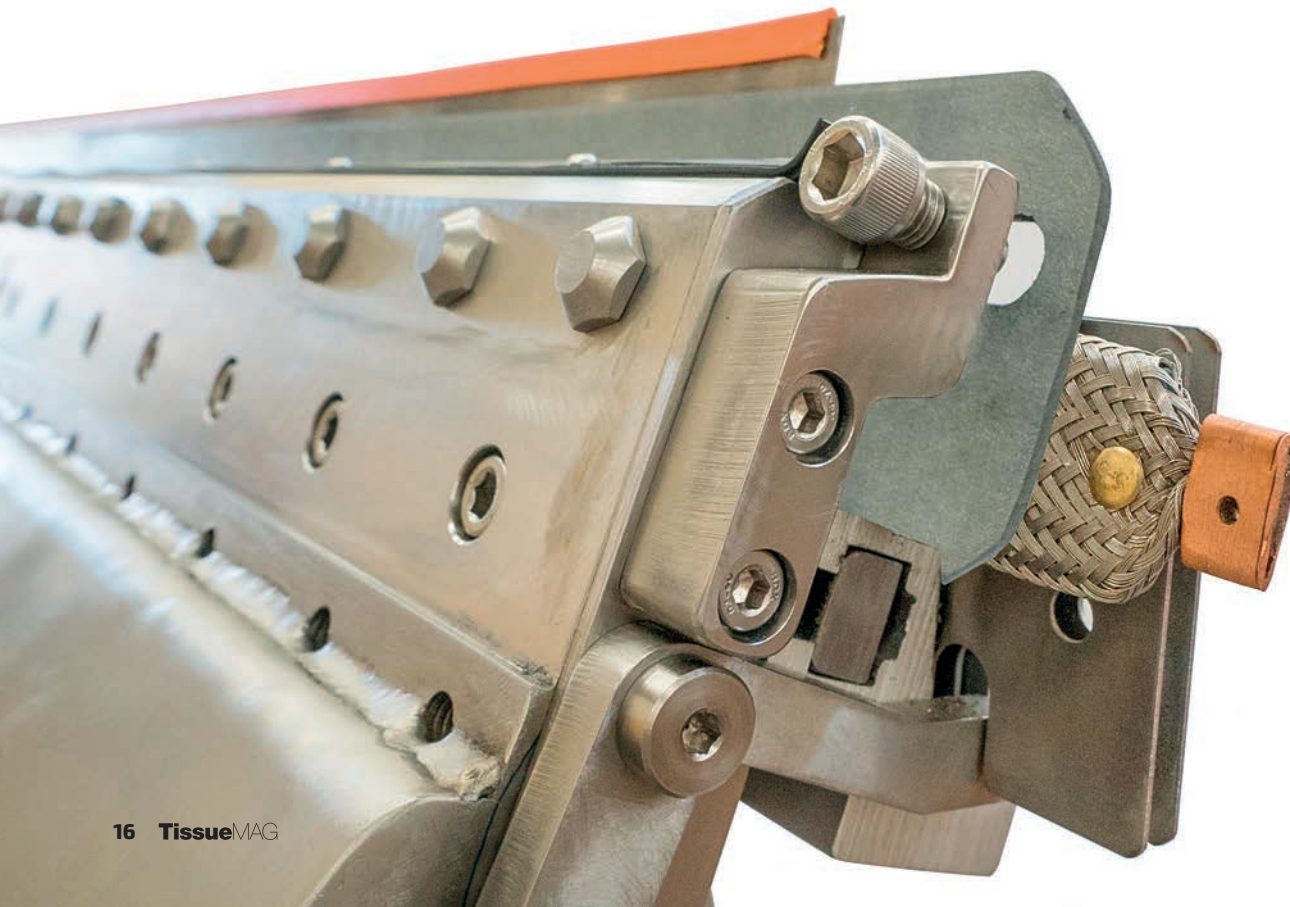


◀ The Kadant Genuine Parts seal ensures you are getting the highest quality products for your maintenance and repairs.

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◀ Check your Conformatric™ holder profile tube, backup blade and cartridge during each machine outage to ensure optimal performance.

100% CARBON FIBER 3" EXPANDING SHAFT

with steel journals

Ultra lightweight and super fast



The solution developed by Svecom-P.E. allows you to go beyond the limits to optimize your machines.

The new range of products allows to overcome the usual speed limits for 3" diameters, optimizing your machines at mechanical speeds over 1200 m/min.



Ultra lightweight



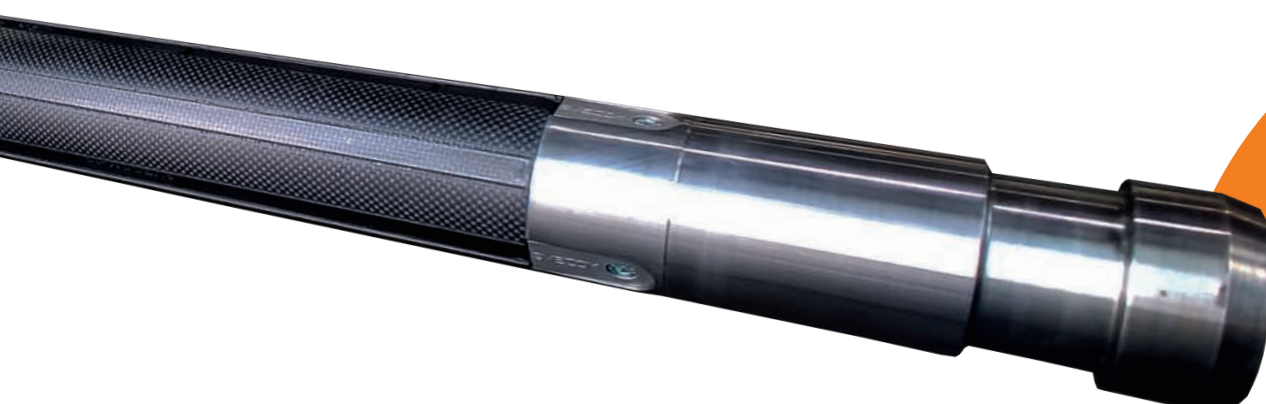
Safe



Fast



Resistant



NEW SVECOM-P.E. PATENT!

- Higher resistance
- Higher lightness
- Faster acceleration
- Increased critical speeds



www.svecom.com



Infinity Machine & Engineering: creating a more sustainable future of packaging

By: Infinity Italia Srl

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

■ Infinity's C15 Casepacker can utilize an array of ecological secondary packaging.



Consumer research indicates that more and more people strongly consider the ecological impact of the products they buy when making purchasing decisions. As environmental awareness increases amongst consumers, product packaging faces increased scrutiny. Product packaging can discline ecologically motivated consumers due to an often heavy reliance on plastics and other materials that lack a green reputation. However, the push for more sustainable packaging is not being led solely by consumers. In the tissue industry, many corporations have recognized the benefits of packaging solutions developed with a focus on the environment. As the number of consumers and corporations that prioritize sustainability increases, the packaging industry must also prioritize innovative ecological packaging.

Infinity Machine and Engineering Corp. has been on the forefront of innovating sustainable packaging solutions. In 2020, Infinity partnered with Little Rapids Corp. to test and develop ECOVA paper overwrap, a 100% plastic free, heat-sealable paper wrap, made from 100% recycled fiber. Since then, Infinity has increased its sustainable packaging efforts and prioritized ecological design in its machinery. One focus for Infinity engineers has been to pioneer more sustainable packaging for individually wrapped tissue rolls. While primarily used as away-from-home tissue in North America and Europe, individually packaged bathroom tissue rolls are very common in the South American consumer sector. Due to the increased amount of packaging material needed to wrap rolls individually, Infinity has designed its single roll wrappers, the S250BRT and the S250HT, to wrap in paper as well as plastic. However, Infinity's commitment to sustainable packaging goes beyond primary packaging. Infinity's C15 Casepacker is capable of loading rolls into corrugated trays. This not only provides stable secondary packaging for tissue products, but it also reduces the amount of material needed for packaging as a tray often uses less than half the cardboard of a standard case. The C15 can also package some tissue roll products directly into corrugated cases without the need for any additional packaging, cutting down on

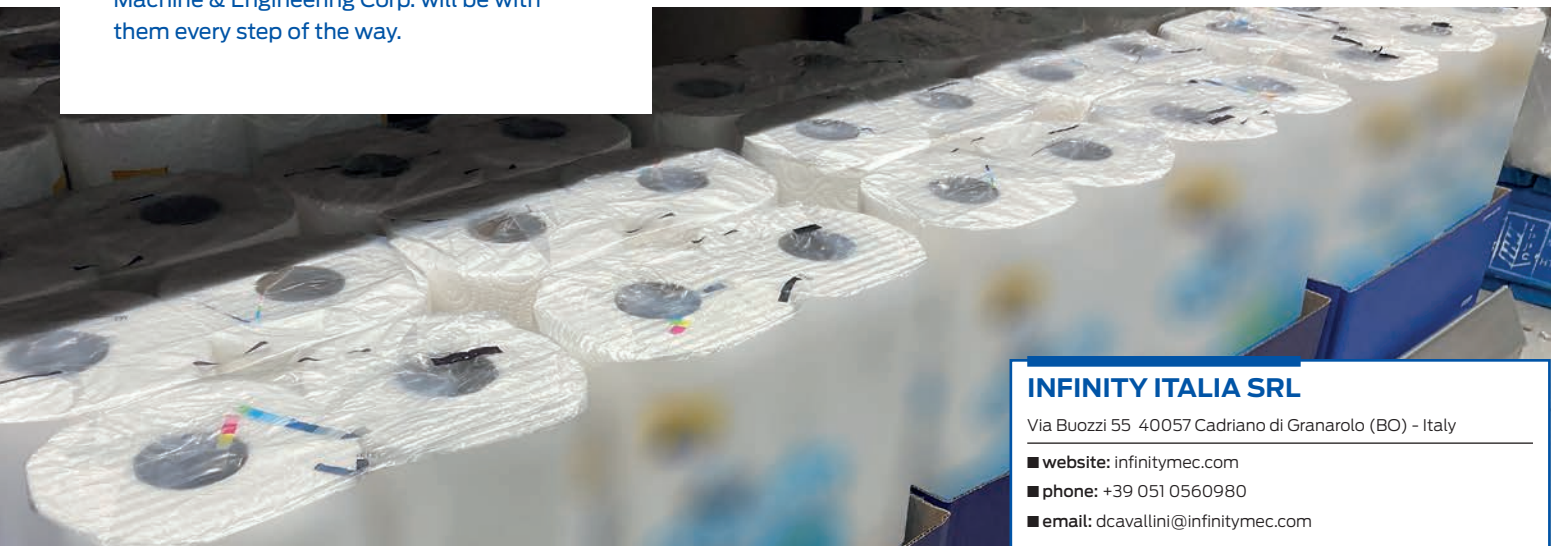


Infinity is also prioritizing sustainability in its research and development department. With about 15% of annual revenue invested in R&D, Infinity has the resources and commitment to develop new machinery and packaging with the planet in mind. Infinity is currently testing ecological materials and new machine designs that will disrupt the current tissue packaging industry and make way for a more sustainable future. As converters and consumers alike continue to explore a more sustainable future of packaging, Infinity Machine & Engineering Corp. will be with them every step of the way.

material cost, and material waste. While prioritizing sustainable packaging is a positive step for the tissue industry, Infinity has taken it a step further by also exploring new ways to reduce the environmental impact of tissue packaging machinery. Infinity machinery can be equipped with IE3 and IE4 rated motors, which use less power while performing at a higher efficiency. Infinity is also trialing monitors on its new Vision G3 multipack wrapper that track the machine's power usage and air consumption. The information that is collected will be shared with the purchaser which will allow ecologically opportunities to be identified and implemented based on the recorded data. ●

▲ In 2020, Infinity partnered with Little Rapids Corp. to test and develop ECOVA paper overwrap, a 100% plastic free, heat-sealable paper wrap, made from 100% recycled fiber.

▼ Infinity's C15 can package tissue product in trays like the ones pictured here, cutting down on material cost and material waste.



INFINITY ITALIA SRL

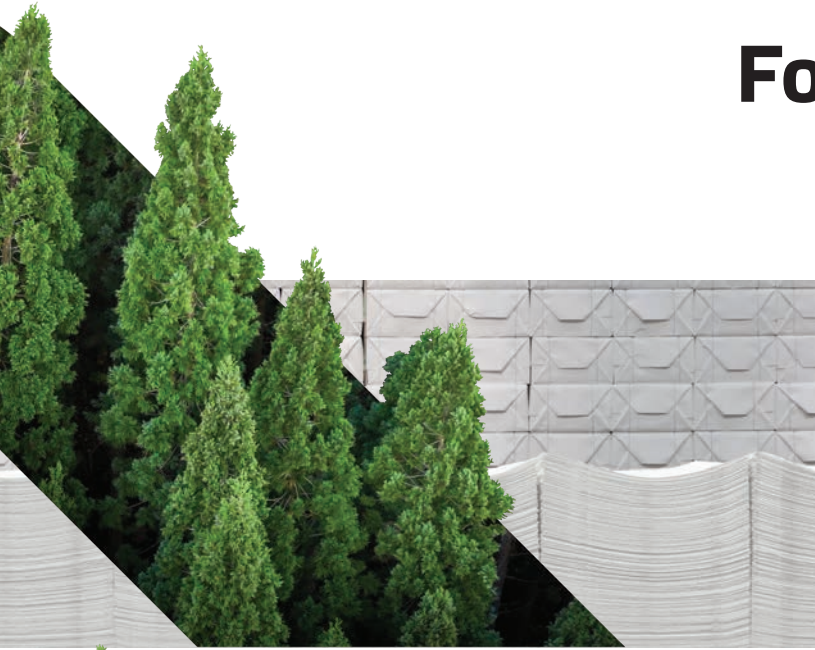
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Valmet's climate program Forward to a carbon neutral future



Valmet's target is to enable 100 percent carbon neutral production for all our pulp and paper customers by 2030. We believe that technology plays a key role in mitigating climate change and global warming in the transition to a carbon neutral economy.

We have estimated that around 95 percent our value chain's environmental impact is caused when our customers use our technologies over their entire life cycles. In our climate program – Forward to a carbon neutral future – we have set ambitious targets to enable 100 percent carbon neutral production for all our pulp and paper customers and to improve the energy efficiency of our current offering by 20 percent by 2030.

Already today we offer an extensive range of solutions for reducing CO₂ emissions and other environmental impacts.

Explore how on www.valmet.com/climateprogram



■ Smart Machine Assistant gives machine operators recommendations for parameter adjustments during operation to increase overall product quality and machine efficiency.



Informed efficiency: AI in nonwovens manufacturing

Efficiency in the production of nonwovens is mainly determined by two resources: fiber and energy. To increase both efficiency and sustainability of their operations, manufacturers can now draw upon the power of artificial intelligence (AI).

by: Marco Eichelkraut, Marketing Manager



Manufacturers of machinery used in the textiles-manufacturing industry confront many challenges - new materials, new products and applications, stricter tolerances for product quality and process stability, and increasingly high requirements for resource efficiency all drive the need for innovative production solutions. At the same time, the textiles industry is a highly competitive market and any production machine must be able to demonstrate its value to justify investment - and that is especially true of machines for nonwovens. "We want to continuously improve on the value we provide

to our users, in terms of machine and line performance but also in terms of usability" - says **Rebekka Dilo, Head of DiloGroup's Technical Research Center**. She continues: "One area where we definitely see a growing awareness in the market is resource efficiency, especially energy and fiber efficiency". The company is a leading manufacturer of needlefelt production

▲ Smart Machine Assistant will help operators fine-tune the process parameters of their DiloGroup lines.

“ Boosting **reliability** and **cost efficiency** in the textile industry ”



◀“With the Smart Machine Assistant, we want to increase process stability and product quality and make targeted recommendations for increasing energy efficiency”. Rebekka Dilo, Head of the Technical Research Center, DiloGroup.

lines. It serves customers in more than 80 countries worldwide and is constantly working to provide solutions that help users optimize their entire production process.

Assisting users with artificial intelligence

What makes such optimization so challenging is that nonwovens production involves several complex processes that are sensitive to

changing production conditions. Identifying correlations and reacting properly to changing production conditions can be difficult.

As many companies will see many of their experienced machine operators retire, transferring all of that know-how will soon become a challenge, “which is why we are currently exploring how we can preserve the experience that operators have as a technical solution to better support our customers,” says Dilo. The solution **DiloGroup** is currently evaluating for this purpose is the Siemens Cloud application Smart Machine Assistant, a self-learning application that uses machine learning capabilities to determine the optimal settings of an industrial machine in a complex environment. “Product quality of nonwovens depends on many parameters, with time lags between cause and effect and multiple interdependencies” - explains Dilo. This makes formalizing machine

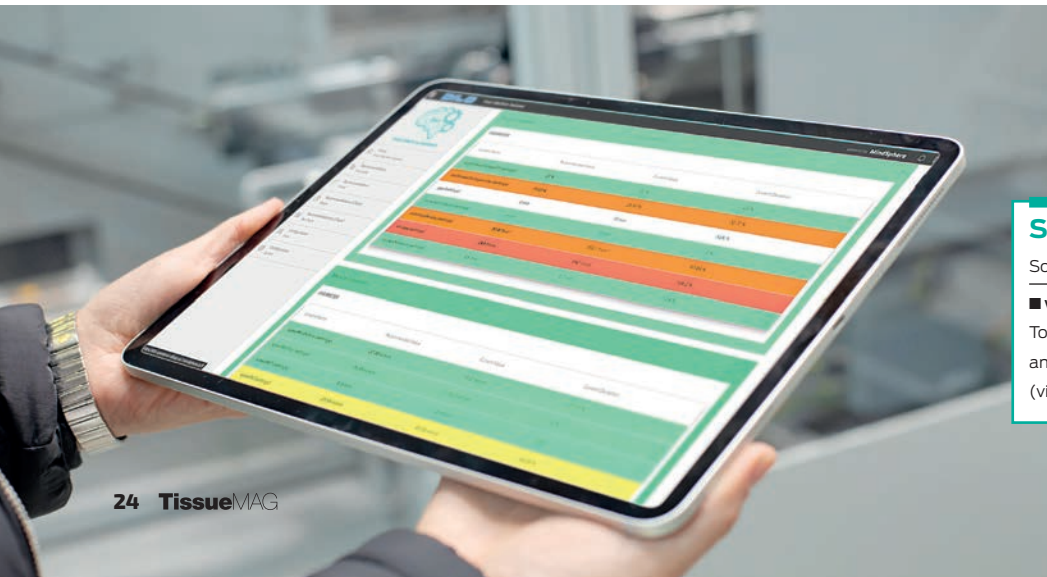
▼ The application uses machine learning capabilities to identify unknown relationships among machine parameters and key performance indicators, which helps increase overall product quality and machine efficiency.

and process behavior very complex, and any optimization requires large amounts of data, “which is why having a self-learning algorithm was a big help” - says Dilo.

Leveraging the power of production data

Introducing Smart Machine Assistant is the latest of several Internet of Things (IoT) projects that DiloGroup has executed with **Siemens**. The flexible architecture of the IoT ecosystem within the Xcelerator digital business platform ensures that different applications and solutions can be easily integrated so that users can get the most out of their data: “By integrating the data and the application into the Siemens IoT ecosystem, we also have a uniform database for our process data and can also reuse them in other applications” - says Dilo. With a broad range of automation and drive systems complemented with software and hardware solutions for IoT applications, Siemens is able to support DiloGroup in many aspects of the company’s research and design processes.

“With the Smart Machine Assistant, we want to increase process stability and product quality, and enable any operator to choose the optimum settings for their product so they can reduce setup times and reduce scrap. Plus, we want to make targeted recommendations for increasing energy efficiency which helps cut overall power consumption - an important benchmark for our users and for us” - says Dilo. Working with Siemens not only has helped DiloGroup leverage the power of its production data, but also has helped it increase machine availability and performance. DiloGroup’s automation and drives portfolio is largely standardized on Siemens components and systems, and the company also cooperates with Siemens for repair services. This combination of IoT, textile and service expertise is another big asset according to Dilo: “Support from Siemens was always spot on” - she says. ●



SIEMENS AG

Solutions for textile machines

■ website: [siemens.com/textile](https://www.siemens.com/textile)

To learn more about our digital solutions for textile machines and the project with DiloGroup, join us at ITMA 2023 (visit [siemens.com/ITMA](https://www.siemens.com/ITMA))

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Problems in tissue rewinding: how to solve them with **A.Celli E-WIND® T100 Rewinder**



■ A.Celli E-WIND T100.

The unwinding and winding operation, the so-called tissue rewinding, is a process that requires special precautions. This is due to the delicate nature of the material itself and the need to preserve the creping and density obtained in the production process to maintain the softness and bulkiness that distinguish it.

by: A.Celli Group

E-WIND® T100 and T100S: main features

The high-end tissue rewinders of the A.Celli E-WIND® family are available in two versions: the T100, designed for winding with expandable shaft, and the T100S, for shaftless winding. Both solutions are able to process tissue Jumbo rolls with basis weights from 12 to 45 gsm and with a maximum width and diameter of 3.6 mt. and 3 mt., respectively. Both the T100 and the T100S also provide for the automatic change of the finished reel: once the desired reel diameter is reached, the tissue paper is cut, kept in tension and in position, while the finished reel, which can reach a maximum diameter of 2,5 mt., is placed on the ground or onto a conveyor belt after the removal of the expandable shaft.

At this point, the winding shaft and cores for the new coil are prepared and placed in position to start a new cycle, all automatically and in a maximum time of 50 seconds.

As for the differences from the technical point of view, the E-WIND® T100 reaches the speed of 1900 mpm and is able to handle shafts with a diameter up to 12", while the T100S works up to 1100 mpm and can handle cores up to 10" in diameter.

The results obtainable thanks to E-WIND® T100/T100S Tissue Rewinders

Our tissue rewinders have been designed to avoid the most common problems concerning the winding of tissue, achieving the following results:

- High process speed, efficiency and productivity.

- Elimination of the risk of excessive bouncing during winding, even at high speeds.
- Excellent rewinding quality and maintenance of the characteristic tissue paper bulk, i.e. the volume given by the creping and thickness of the paper itself.

“ **Extraordinary performance**, flawless finished reels, high automation capabilities and ease of control and use ”

This is possible thanks to particular design choices adopted starting from the unwinders. The belt, for example, is characterized by a design developed to preserve the properties of tissue paper, with a more uniform pressure area of the belt thanks to the arms used. The latter work pneumatically, thus ensuring the absorption of the differential pressure of the belts against the reel caused by the irregularity of the reel itself. **A.Celli** tissue rewinders also use special load cells, mounted on the driven rolls/lead in rolls of the unwinders, capable of measuring the tension value of the tissue sheet



“ T100 - **Top range rewriter** designed and manufactured for high capacity, speed and efficiency ”

of reducing up to 5 mg/m³ (or 3 mg/m³ with total compartmentalization of the rewriter). There is also a system for the removal of trims, which can be conveyed to the pulper or to a dedicated baling press. Furthermore, the T100 and T100S tissue rewriters are also equipped with a complete and efficient protection system capable of guaranteeing the maximum safety of the personnel and of the structures themselves. Finally, it is possible to equip these machines with advanced *Industry 4.0* digital solutions, such as IoT and Artificial Intelligence applications. ●

and sending the relative signal to the control system of the rewriter, thus allowing a constant adjustment of the tension during unwinding. A strong point of the E-WIND® T100 is the design of the shaft locks: compared to the conventional solution, these are not subjected to axial locking, thus ensuring greater stability of the reel during winding and, consequently, an optimal final result.

During the winding of the finished reel, it is also essential to control the rider roll and the shaft locks. That is why the first is equipped with two load cells for nip impression control during winding, while the latter are equipped with as many load cells for controlling the lightening of the reel. Among the available options, we find the possibility of installing a calander with two operating modes: Nip control and Gap control. Nip control makes the paper softer and smoother by adjusting the linear load between the two rolls. This property is very important especially for face skin care products such as, for example, handkerchiefs.

The Gap control, on the other hand, makes the thickness of the paper uniform, allowing the two rolls to work with a very narrow Nip opening.

Cutting-edge safety and technology

To ensure a healthy and safe working environment, the E-WIND® T100 provides a dust removal system with wet scrubber capable

▲ A.Celli E-WIND Tissue Rewinder.



▲ A.Celli E-WIND T100 - Slitting Group.

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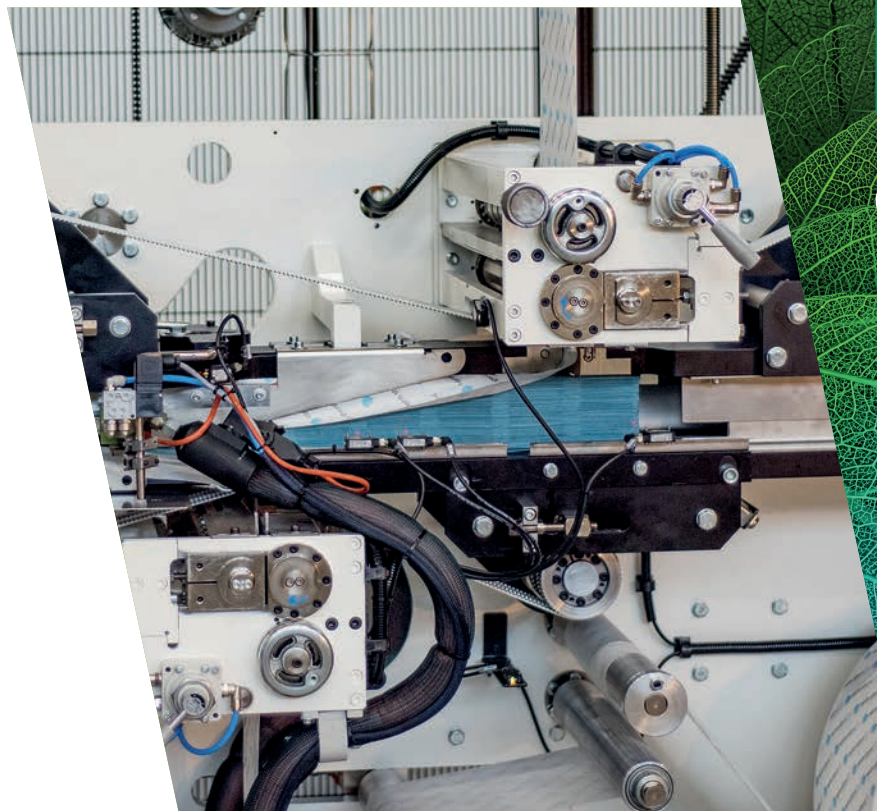
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vacuum system optimization with variable speed and capacity turbo blowers have saved them up to 2,000 kW. Together with **Nash**, another **Ingersoll Rand** brand, and the original innovators in liquid ring technology, we are the only company in the world that can supply both liquid ring pumps and dry vacuum systems, or a combination of them, for a so-called hybrid system. In addition, we offer doctors and save-alls, making our offering complete for paper machine dewatering. With this unique portfolio, we can always find a perfect fit for our customer's demands, needs and budget.

“ **Engineered solutions** for pulp and paper industry worldwide ”

Energy-saving vacuum system rebuilds



In the papermaking process, providing vacuum is an essential requirement. Still, producing vacuum is always a complex and cost-intensive process. The cost of energy used by a vacuum system over its lifetime exceeds its purchase price many times over. Vacuum system optimization projects provide a very efficient way to reach both cost reduction and sustainability targets.

by: Runtech Systems

Hybrid vacuum system

A typical Runtech RunEco vacuum system consists of several smaller size turbo blowers giving clear design and operational advantages over the competition. Quite often a situation has been observed where a single, or a few low air flow consumers (devices) are operating at high vacuum levels, such as a high vac box or a press suction roll high vacuum zone, while the rest use a considerably lower vacuum level. This leads to a situation where the most economical option is to continue the use of the existing Liquid Ring Pump (LRP). Fully rebuilding a system with blower technology is not always the most efficient solution, especially if this means that different vacuum levels need to be combined in one blower. It is proven that a well maintained LRP operating at low speed

to produce high vacuum level can perform at a good efficiency level outperforming systems where a large single blower experiences considerable expansion losses.

Vacuum demand varies for different paper grades, felts and machine speeds, therefore, a tailor-made solution with flexible and variable capacity can balance the supply and demand, resulting in both optimized dewatering and minimized power consumption. Vacuum levels are measured at the vacuum pumps and blowers to identify problem areas. The dewatering elements such as flat boxes, save-all pans and uhle boxes are also reviewed. Specialists study pressure and bleed losses to analyze the energy consumption and evaluate if the vacuum levels are too high. In the following rebuild cases, existing liquid ring pump or pumps are compared to a hybrid system to find

“ Our main target is to bring notable energy savings and highly improved **process efficiency** ”

an optimal balance between investment and operating costs. A tissue producer gained energy savings of 447 kW which was almost 50% of its previous usage; water usage decreased by 75%. The installed EcoFlow dewatering measurement system provided a better control of the process.

Table 1

Old system	kW	New system	kW	Savings
LRP x 4		LRP x 1		
LRP x 1	spare	EP500-D1		
Total	950	Total	500	450 kW
				47%

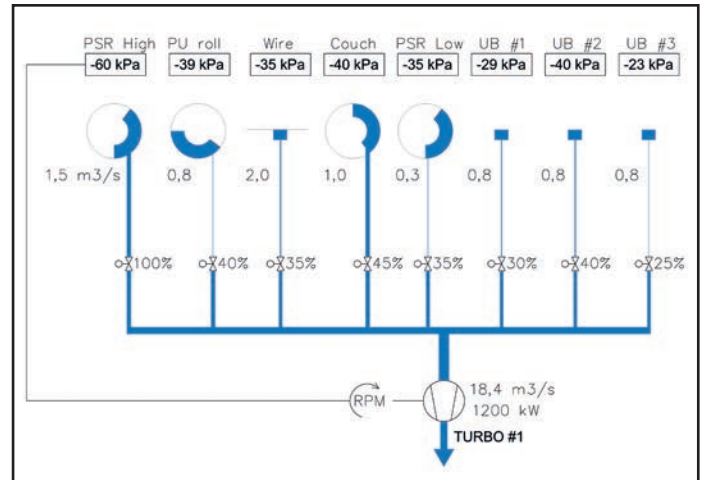
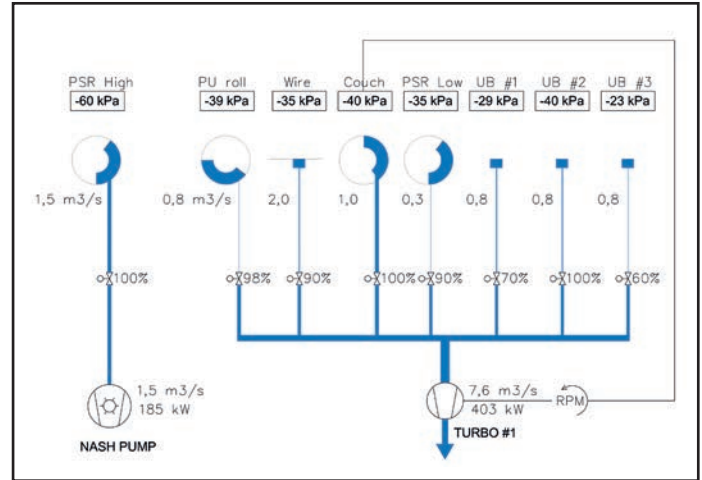
A confidential tissue producer kept two liquid ring pumps for the chester box. A RunEco EP550-T1 Turbo Blower was connected to other vacuum consumers to allow for all energy efficiency targets to be reached. As mentioned above, fully rebuilding a system with blower technology is not always the

Table 2

Old system	kW	New system	kW	Savings
LRP x 4		LRP x 2		
LRP x 2		EP550-T1		
Total	3,037	Total	2,087	950 kW
				31%

most efficient solution, especially if this means that different vacuum levels need to be combined in one blower. In rebuild cases, an economical solution, with suitable airflows, can also be a hybrid vacuum system combining existing LRP with a new turbo blower. The LRP is continued to use for the higher vacuum uhle boxes and/or to assist the turbo blower with higher airflows after a felt change. In a case where the uhle boxes can be operated with moderate vacuum levels, close to the suction press roll vacuum, the LRP can of then be stopped during normal running period and used only for abnormal airflows such as experienced with new felts.

With the experience of thousands of vacuum system audits and dewatering studies at paper mills, we are able to benchmark the effectiveness of existing vacuum systems, dewatering equipment, suction elements, fabrics and felts. All



information comes together in an often step-by-step rebuild or upgrade plan that results in minimized operational expenses coupled with a production increase and/or runnability improvements. Today, over 950 Turbo Blowers have been sold globally. This experience and expertise allows us to work with our customers, help them get the most out of their papermaking process and vacuum systems – and ensure they achieve both their operational and process goals. ●

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Safer and more sustainable broke repulping for towel operations

By: Mark Christopher, Global Market Manager Tissue, Buckman



Towel products account for approximately 20% of all global tissue production. The production and converting of this towel inevitably result in a significant amount of waste that tissue makers need to recycle back into their process as opposed to sending to landfill. The key property of the towel is, of course, its ability to wipe up wet spills, which requires it to maintain its strength, and thereby its very structure, while wet. This property is endowed with the use of polyamide epichlorohydrin (PAE) resins. As might be expected, the very thing which renders its strength in use, inhibits its re-use, since it will resist breaking down into individual fibers that can be effectively re-used in the tissue-making process.

For the longest time, the industry has relied on the oxidative power of hypochlorite (OCl^-) to break down wet strength paper so that it could be recycled into the process. The hypochlorite oxidant functions by cleaving the polyamide backbone of the wet strength that holds the sheet structure together when wet. Unfortunately, hypochlorite and the caustic soda it is typically used with both have serious drawbacks for tissue makers related to operator safe handling due to their NFPA health rating of 3. Furthermore, the residual hypochlorite remaining in the stock after its repulping must be neutralized in order to prevent the oxidation of other chemistries, damage to machine clothing and increased potential for corrosion. In the end, the pulper mix used has disadvantages that tissue makers are familiar with. Disadvantages of hypochlorite to break down wet strength towel:

- Causes alkaline yellowing of fibers.
- Has a negative impact on Yankee coating performance.
- Increases conductivity.
- Contains hazardous materials.
- Requires neutralization.
- Can cause metal corrosion.
- Contributes to AOX in the effluent.

“Buckman can help you improve both the **quality** of your tissue and the **efficiency** of your operation”

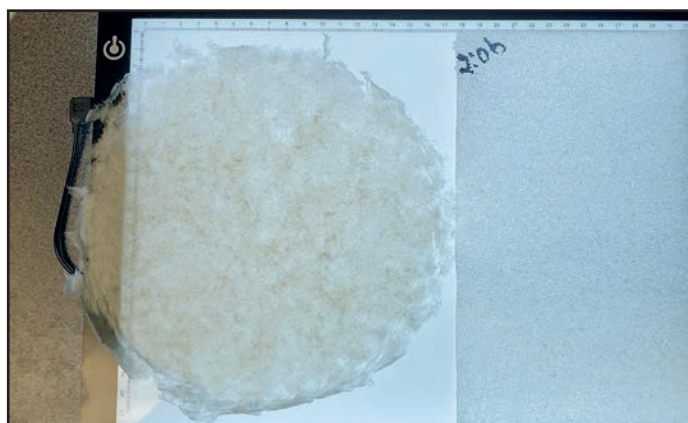
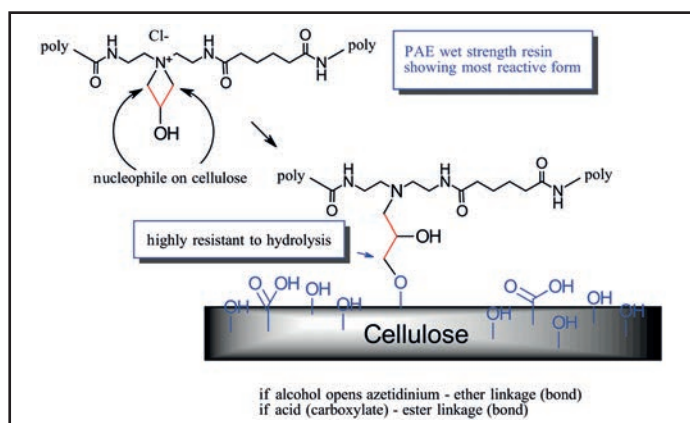
The specialty chemistry industry has devoted years of R&D manpower to finding a more efficient and less onerous way to break down the PAE linkages in towel with limited success. Less aggressive oxidative materials like persulfates have been used with some success but at the expense of increased time and cost while still presenting their own safe handling and neutralization requirements. There was a need for a truly safe and effective approach, and development would require a completely different approach if it was to be successful. It was time to stop trying to solve this problem by attacking the polyamide backbone itself.

“Do not engage an enemy more powerful than you. And if it is unavoidable and you do have to engage, then make sure you engage it on your terms, not on your enemy’s terms.” ~ Sun Tzu.

With fiber modification enzymes, cellulases having been accepted as commonplace for strength development in tissue; they were an obvious potential technology to solve the wet strength broke problem.

CASE HISTORY VS MONOPERSULFATE

Process conditions	Chemistry changes	Mill benefits
pH reduced from 10.5 to 7.5 Temperature 35-40 °C	Eliminated monopersulfate and caustic addition Maximzye® 3511 added at 0.5 kg/ton of high wet broke into pulper	Reduced chemical spend of over \$10.00 USD per ton of broke Reduced pulper time by 30 mins Total ROI of over \$100,000 USD/annum Increased strength of broke pulp



It sufficed to identify the right cellulases that would target the cellulose fibrils to which the polyamide resins were attached. In this way, the bonding sites of the resins and not the resin itself, could be attacked. Eventually, scientific inquiry began to elucidate a specific set of cellulases that can target the cellulosic structure around the wet strength bond. They were successful at cleaving the portion of the fiber linked to the wet strength of the fiber and breaking the linkage network that provides the wet tensile. Using this approach, wet strength broke can be repulped at ambient temperatures, without acids or caustic additives and does not require any neutralization step prior to use. Products like the commercially available Maximzye® 3511 do not have the safe handling concerns associated with the oxidants, acids and caustics and are fed at very low addition levels. These newer enzymes also maintain excellent activity at the typical tissue mill process temperatures so that additional steam heating of the broke pulper is not needed. The result is an approach that is greener, safer for operators, simpler to use and highly effective. ●

▲ Picture of hand sheet and production towel made from enzyme repulped towel broke.

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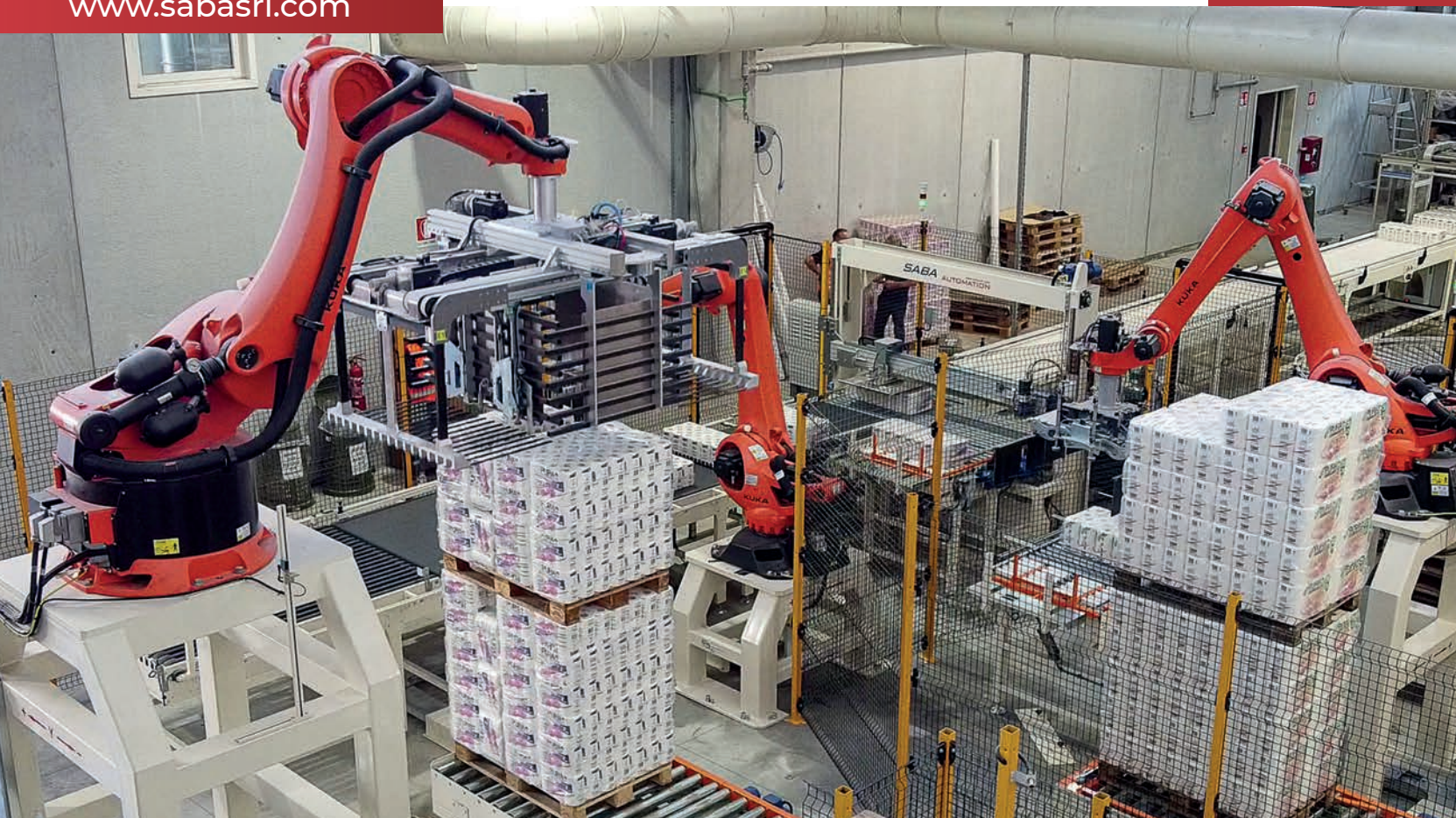
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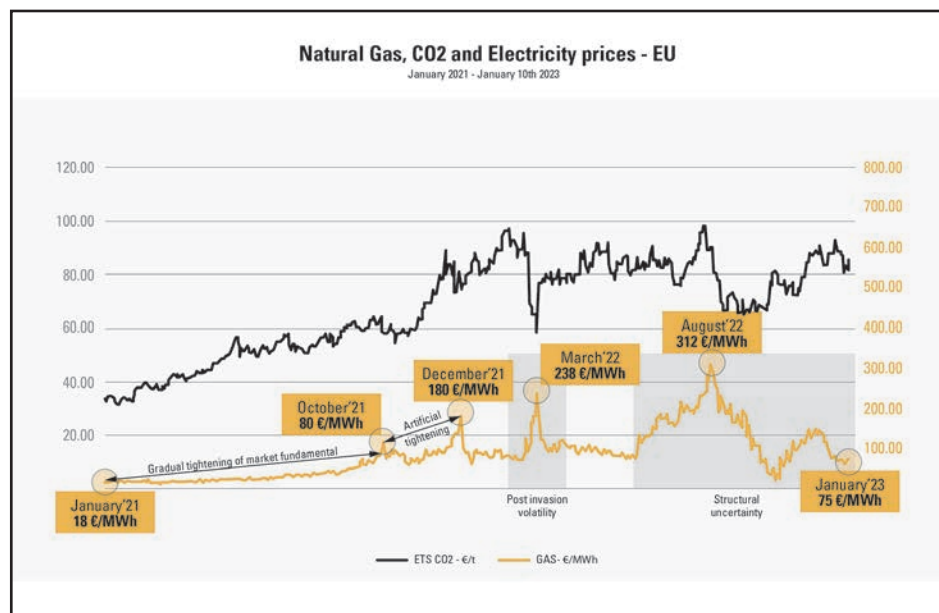
Solar Turbines' Key Enablers for the Global Energy Transition.

by: Solar Turbines Switzerland Sagl

Over the past year, Europe has experienced unprecedented energy cost volatility caused primarily by the unfolding geopolitical crisis and fueled by the consumption recovery after two years of the pandemic. The dramatic surge in energy costs is apparent when comparing the Q3 figures for 2021 and 2022. The countries that have suffered the most are those whose energy mix is skewed toward natural gas as a primary energy source. This is all part of a challenging European decarbonization plan involving industry, mobility and housing with ambitious targets for 2030-35. **Solar Turbines** looks at the energy system as a highly integrated and interconnected whole – a network increasingly benefiting from the contribution of renewable energy, but also affected by the need to ensure its availability and stability. For this reason, Solar is the primary partner for energy solutions based on latest generation turbogas integrated with SMART digital architectures operating in the big data sphere.

Digital SMART systems and energy optimization

This refers to an energy optimization system that can interface with the different energy markets (i.e. Spot, Day Ahead, Ancillary Services) that allows us to increase the efficiency of cogeneration while reducing fuel consumption and CO2 emissions. Through digitization, we can also control, along with the CHP plant,



all production parameters (steam demand, electricity demand, load changes, and paper machine set-up). These parameters are then integrated with each other and the various factors exogenous to the production system, such as the cost of CO2 and hourly carbon intensity, the cost of gas and electricity, the grid frequency, and the nodal electrical load of the area to which it belongs.

The SMART concept expressly consists of this integrated approach to the internal and external world. The energy optimization system developed by Solar Turbines can continuously monitor these parameters. If the customer decides to maximize the yield or minimize CO2 emissions, the system will suggest operational set points to achieve the target.

The optimum with Solar Turbines' Turbogas

Solar Turbines' energy optimization system fits within the framework of decision support systems models based on the integrated management of energy supply and use from disparate sources available in the local grid and their availability or variation. As mentioned above, it can instantly suggest the best way to operate. For example, it will choose whether to favor the make option in electric control over thermal control or the buy option by taking supplies directly from other sources.

Of the possible solutions, it will opt for the one able to provide the company with the most significant benefit, the smallest loss or minimization of carbon intensity.

Hydrogen and bio-fuels: decades of boots on the ground experience

The SMART system's Industry 4.0 approach is then complemented

“ Powering the future through sustainable, innovative energy solutions ”

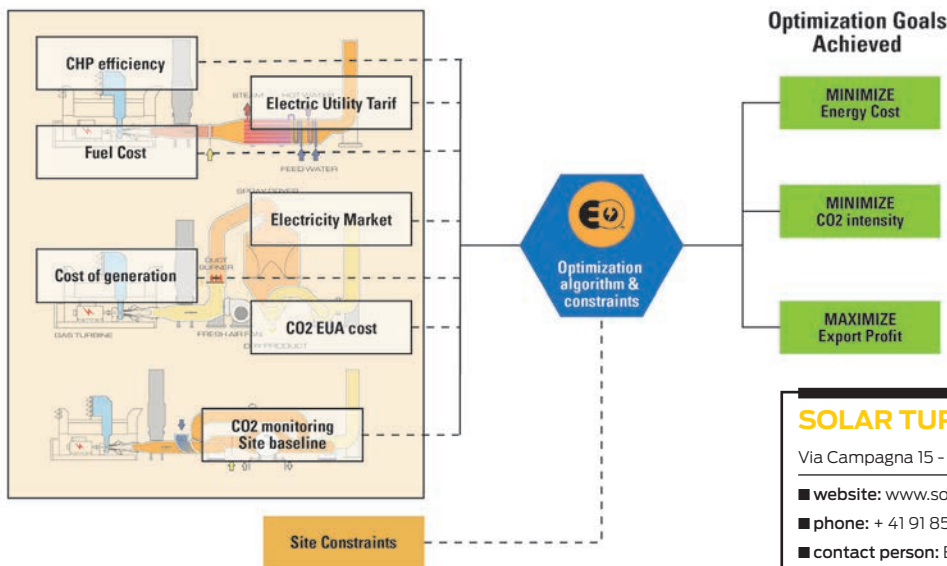
Solar Turbines (Caterpillar Group)

Solar Turbines Incorporated, headquartered in San Diego, California, is a wholly-owned subsidiary of Caterpillar Inc. Solar manufactures the world's most widely used family of mid-sized industrial gas turbines, ranging from 1 to 23 megawatts. More than 16,000 Solar units are operating in more than 100 countries with more than 3 billion operating hours. Solar is a leading provider of energy solutions, featuring an extensive line of gas turbine-powered compressor sets, mechanical drive packages, and generator sets.

by Solar's established turbogas technology, thanks to the operational flexibility of its turbines and the millions of hours of accumulated experience using hydrogen, bio-gas, bio-methane and the main bio-fuels to date on the market with dozens of turbogas units operating in a wide variety of industrial and service sectors.

Immediately competitive and sustainable

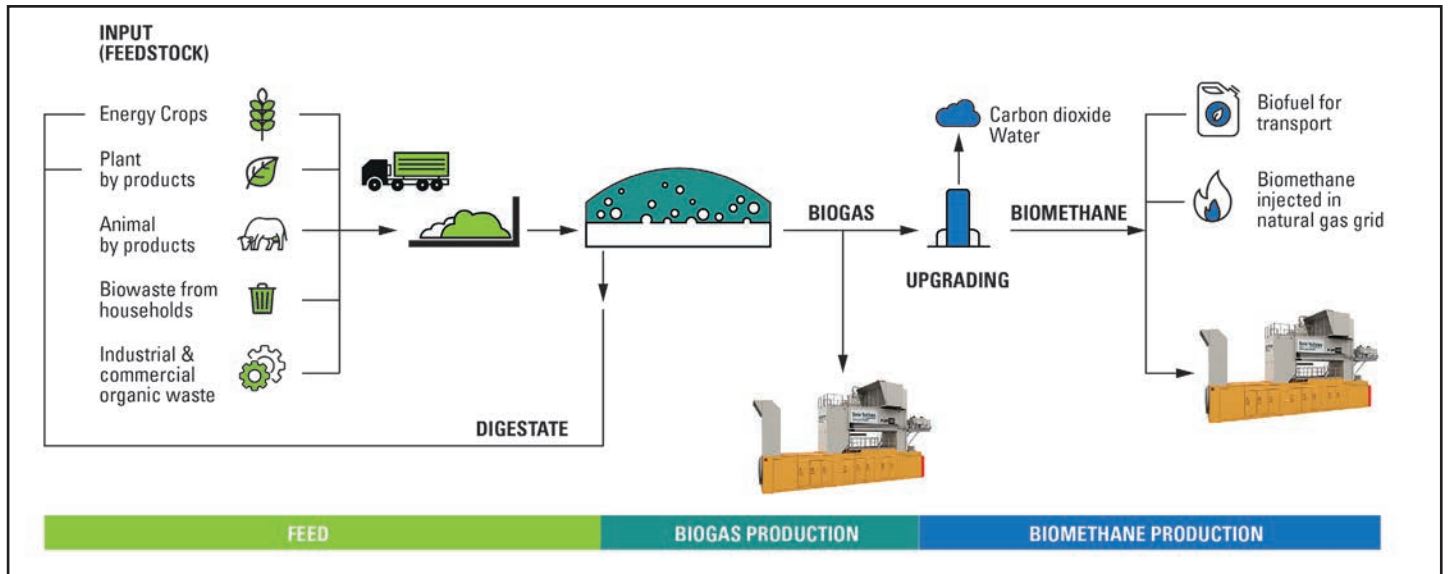
This is the key to improving the performance of pulp and paper companies and increasing their competitiveness. Solar Turbines' solutions are available now on new, state-of-the-art machines up to 40 MWe, while our experts can also support you in retrofitting existing installations. ●



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A perfect synergy for the development of complete lines for the tissue industry

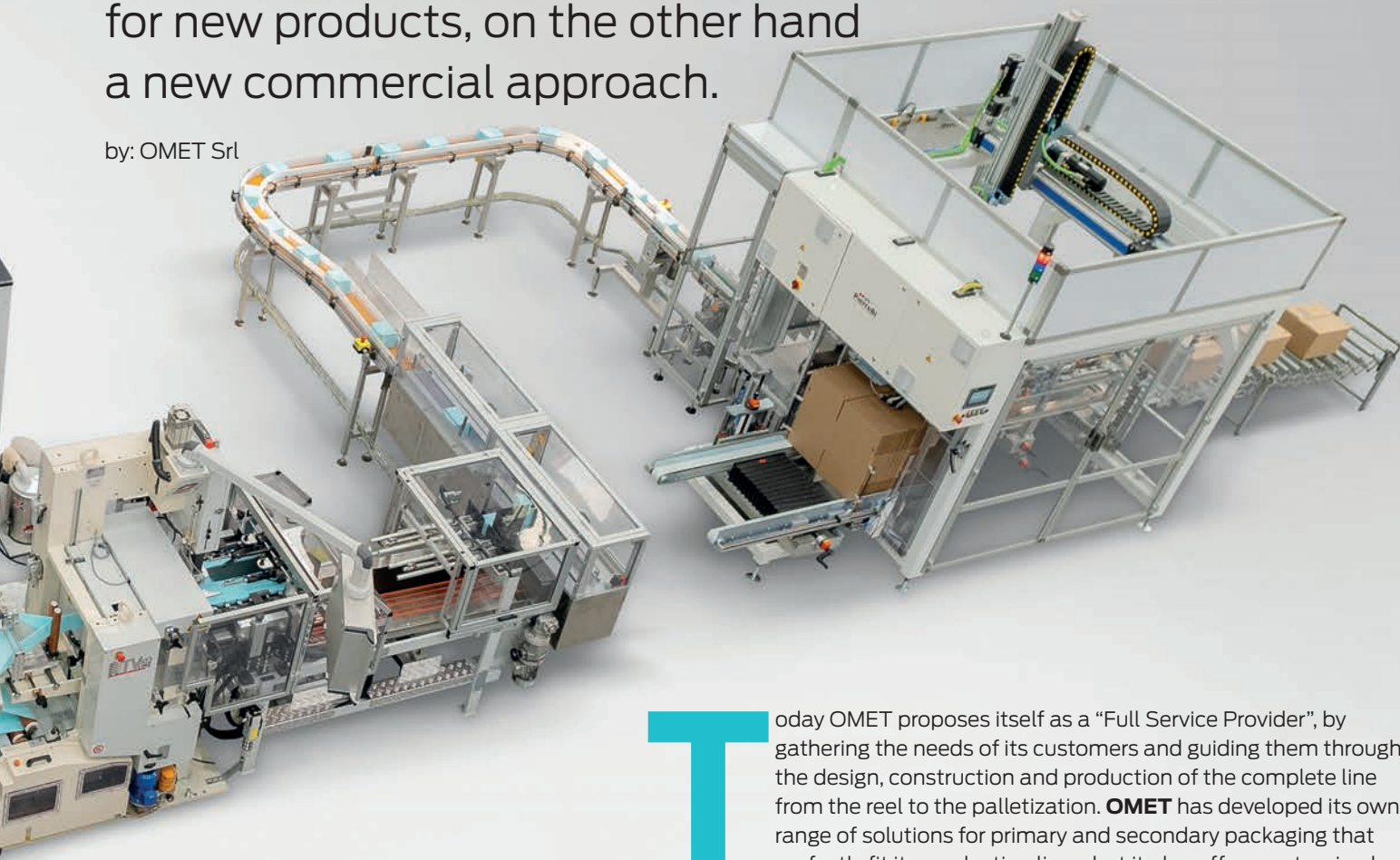
■ OMET as Full
Service Provider: from
the reel to the pallet.



“ Innovation with passion ”

OMET Tissue division is well known worldwide for the high technology and efficiency of its machines for napkins, towels and other disposable tissue and non-woven products. Moreover, the market evolution has brought further innovations: on the one hand the launch of machines for new products, on the other hand a new commercial approach.

by: OMET Srl



Today OMET proposes itself as a “Full Service Provider”, by gathering the needs of its customers and guiding them through the design, construction and production of the complete line from the reel to the palletization. **OMET** has developed its own range of solutions for primary and secondary packaging that perfectly fit its production lines, but it also offers customized solutions for automatic packaging and cartoning, in partnership with specialized and selected suppliers.

In this perspective, in 2022 OMET consolidated a strong partnership with **PRB Innovation**, an Italian company based in Imola (Emilia Romagna) specialized in the production of end-of-line packaging machines. PRB was founded in 1980 in the heart of the *Emilian Packaging Valley* and developed rapidly, transforming itself from a small company into a highly competitive enterprise with flexible and cutting-edge technical solutions. The company was among the first to develop servo-driven machines as early as the 90s, a period in which the market still offered mechanical solutions. PRB's range of machines covers the entire secondary packaging segment, from continuous and alternate cartoners to bundling-overwrapping machines, to horizontal



◀ Perfect packaging solutions.



◀ Fully servo-driven OMET case packer.

and vertical case packers and palletizers. With over 5000 machines installed worldwide, the company has consolidated a tight relationship with its customers over the years, being able to guarantee after-sales service on even very old machines. Long-standing partnerships with the world's leading suppliers of electronic components ensure constantly cutting-edge technological content, also responding to the needs of the geographical area for which the machines are targeted. ●



■ The palletizer P100: the best point of arrival for every packaging line.

The synergy with OMET is based on PRB's acquired expertise in the packaging of products in the most diverse markets, from Food & Beverage to Confectionery to Health care and on the consolidated OMET brand, as well as on its technological and productive strength. Case packers and palletizers developed for these sectors have been optimized and tailored to support OMET in the manufacturing of complete lines for the tissue industry. Today PRB completes the OMET proposal with high-performance machines such as the HC-200 cartoner, the SL-15 case packer and the P100 palletizer. This collaboration will allow OMET to offer customers even more efficient and automated complete lines for the various requirements of the tissue market.



▲ PRB Innovation, specialized in the production of end-of-line packaging machines.

OMET SRL

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www.papertech.ca/tissue-industry



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



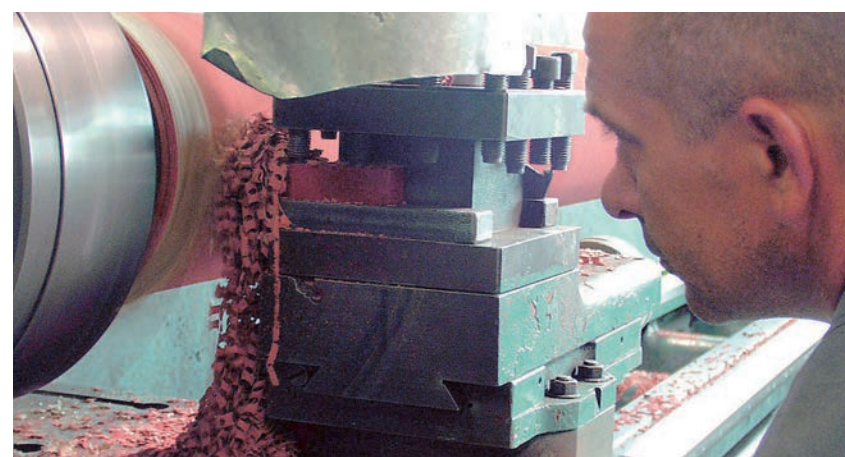
All-encompassing consulting for more security and higher efficiency for ROLL SYSTEMS

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 and tissue manufacturers and converters 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

▼ SchäferRolls Service support for roll covers.



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 provides the paper and tissue industry with an all-round range of maintenance, operating and management solutions for rolls systems and covers - from planning to construction, from implementation to start-ups, from maintenance to end-to-end integration within on-going 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

With the support of the SchäferRolls *SurfaceOptimizer*, a software for the configuration and planning of surface design and dewatering performance of roll covers,



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 m² are located at Renningen (Germany), Brnik (Slovenia) as well as at Farmington, NH and Covington, VA (USA).

“ A leading name in the industry, renowned for its precision, technical expertise and solid track record ”

the SchäferRolls application engineers developed a new surface design for the suction pressure roll cover of a German tissue manufacturer. With the changeover from a cover design with blind and suction holes to a grooved and suction-drilled design an increase of nearly 10% in the open surface could be achieved. The result: a dry content increase of 1% and big potential for energy savings.

Nip measurements und 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 roll covers 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, costumers 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 and tissue 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. ●

SCHÄFERROLLS GMBH & CO. KG

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STRENGTH

Taurus has the same production strength as a standard line

Kairos has announced a new project that represents a real revolution in the world of paper production and conversion.

Taurus was conceived as an alternative to traditional production methodologies, based on high energy-intensive processes, which represent an environmental problem and a high cost for companies.

After an intensive phase of analyses, studies, technical evaluations and tests, Kairos has identified solutions that are closest to the needs of production line users, paying particular attention to production, management and maintenance needs, in addition to the aspect of consumption. **TAURUS - Available soon**



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converting technologies

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info@kairossrl.com

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TKM Group

Improving your cutting performance and life time

By: TKM GmbH



TKM is an internationally leading corporate group for more than 100 years. We have set standards in quality and innovation, technical competence and partnership. Our range of products includes high quality industrial knives, saws, doctor blades and precision consumable parts for industrial applications. Our technologies, products and our technical service are appreciated worldwide across many industries. We understand well the needs and wishes of our customers because we are in close touch with them. It is our goal to develop products and services which provide solutions to these needs.

Tissue Paper Industry

Our range of products for the tissue paper converting industry includes log saw blades (all OEM and all diameters), CBN

grinding wheels (in-house production); lubrication systems; perforation and anvil knives (all types of machines); core cutting knives, blade guards, stainless steel doctor blades, packaging knives as well as knives for sheet products like towels; napkins and handkerchiefs.

TKM Log Saw Blades

The TKM GmbH is well known for its high-quality log saw blades. We are currently able to produce log saw blades for all types of machines, with diameters up to 1200 mm. Each TKM log saw blade is inspected and measured with the most modern and automated inspection equipment available. The most critical of these values, axial and radial run-out, are engraved on each blade for customer reassurance. For each log saw blade we have an internal protocol for future tracking purposes. **Unique:** we check the dynamic runout of every



“ We do not only sell a product, **we sell a solution** ”

blade! The following benefits ensure a superior quality and performance:

- Steel made in Germany
- In-house heat treatment
- Lateral runout 25% below OEM tolerance
- Full automatic production
- Full automatic inspection process.

Unique coating of TKM Log Saw Blades

The friction between the log saw blade and the tissue paper rolls (especially AFH/Jumbo rolls) often causes significant

“ A leading global **manufacturer** of industrial knives, saws and doctor blades ”

heating of the blade. This limits the number of cuts per minute and therewith the productivity of the machine.

TKM developed a type of metal-based coating that reduces the friction coefficient between blade and paper roll significantly. As the coating has a higher hardness than the blade steel it never wears away. The unique coating improves the machine productivity and the cutting quality.

TKM Service - Customer Support and Training

The best possible cutting quality and lifetime of the blades are the goals of every customer. TKM supports this goal with a two-parts training:

- Technical workshops regarding cutting application (cutting technology and trouble shooting)
- User-specific hands-on training

For our customers this training is executed free of charge. We are keen to find also for you the optimal solution. Find more information about the TKM Group on www.tkmgroup.com ●



TKM GMBH

- website: www.tkmgroup.com
- contact person: Thomas Friede, Business Unit Manager Tissue
- phone: +49 (0) 2191 9690 - email: TFriede@tkmgroup.com

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The war did not stop MAFLEX



▲ Consumer Hermes Line.

A recent example is remotely managing the start-up of a new production line in Ukraine. Just months before the start of the war, JCS KOCHAVINSKA PAPER FACTORY decided to invest in its fourth **MAFLEX** converting line.

This time, it was a complete consumer line with all the latest technical innovations.

The line consists of:

- GAIA 100, core maker able to run up to 140m/min, with on-board flying splice for cardboard reels and fast changeover of the core diameter.

- 3 Unwinders UT250 (for reels up to Ø2500mm) with predisposition for Flying Splice.
- HERACLE embosser/laminator (600m/min) with AUTOMATIC ROLL CHANGE feature, a tool-free changeover of the upper steel roll completely from the Operator Panel. This is done in less than 3 minutes without breaking the upper web. The simplicity of the upper steel roll storage offers an endless possibility of embossing rolls. **JCS KOCHAVINSKA PAPER FACTORY** chose 3 upper steel rolls (1 for Kitchen Towel DESL and 2 for Toilet Rolls, DECO).
- Consumer HERMES rewinder, with servo-controlled axes, can quickly adjust



Over the last few years, adaptation has been a pillar of strength for Maflex. Due to the market, the ongoing war, supply chain issues and other uncertainties, Maflex adopted other practices to support customers in certain areas of the world.

by: Ing. Michele Renai, Area Sales Manager Maflex

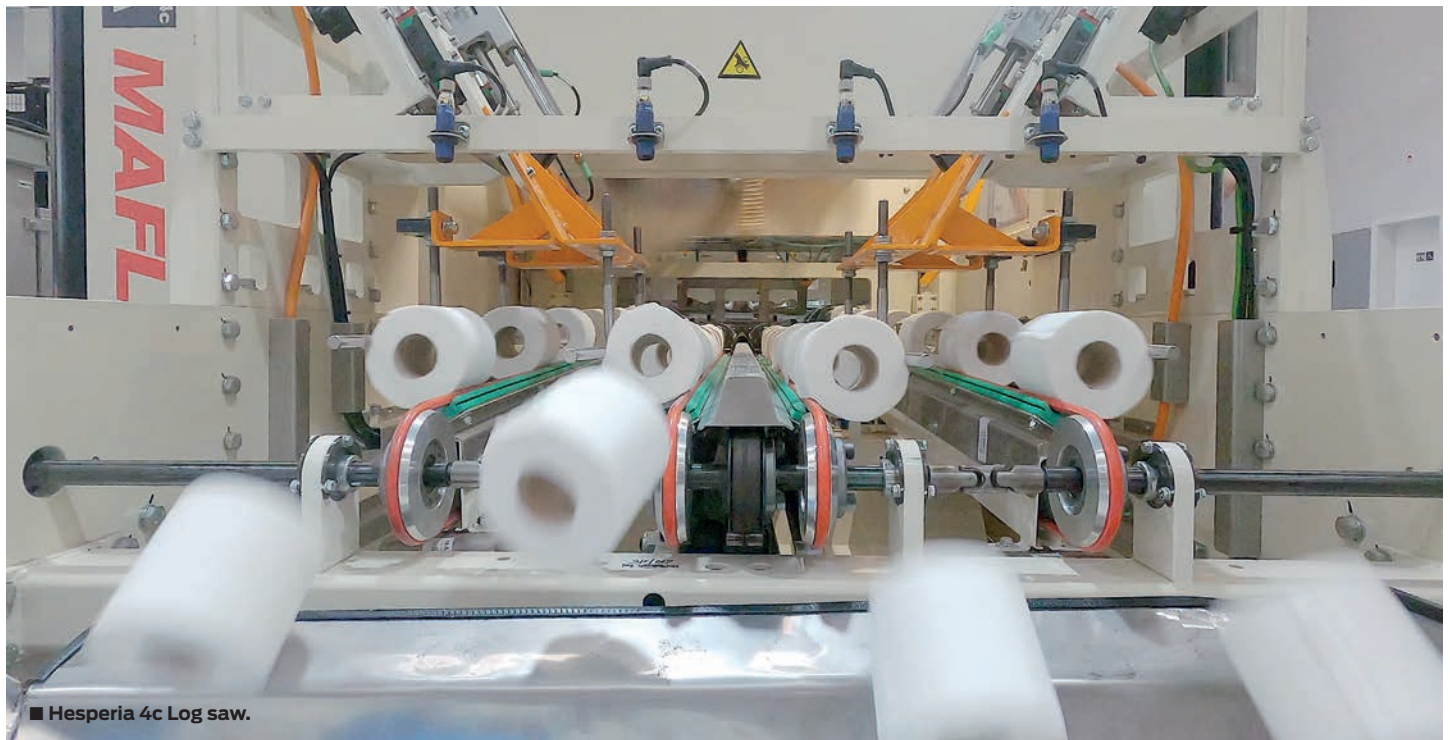


parameters to create perfect winding control. All the parameters can be saved on recipes and can be easily recalled with an automatic setting of the machine (including core size modification). HERMES Rewinder can run 600m/min, up to 40 logs/min.

- IVI Tail Sealer, with latest Seal-up technology, able to run up to 40 logs/min.
- LA200 Log Accumulator, storing logs with max diameter up to 200mm.
- HESPERIA 4c, a 4 channel Log Saw with Automatic Universal Clamps, able to cut diameters from 90mm to 200mm. Maximum arm speed is 240 rotations per minute.

The line is also equipped with the *Maflex Smart Camera System*. A series of cameras are strategically located in the most important areas, allowing for real time control and fine-tuning adjustments. The videos can be viewed directly on the control panel or remotely on any device, and are available for up to 30 days. When combined with PEGASO, Maflex's Smart Monitoring System, operators and production leaders are able to remotely check the line status and efficiencies and make any necessary adjustments. With PEGASO, information can be accessible on the operator panel or remotely, and can check, record, and

▲ Installation and start-up by remote (from Lucca Headquarter).



“ Shaping technology on **your goals** ”

create reports for up to 30 days of production. The system also provides real-time feedback of electronic parts (usage, average lifespan, etc.). PEGASO assists with preventative and predictive maintenance and is integrated with video tutorials for small maintenance adjustments. Personalized pages help operators and maintenance personnel to review drawings and order parts specific to the machines. Because of our machinery's modular design and experience in remote troubleshooting, Maflex proposed to go ahead by remote with the installation and start-up even if the period was difficult for Ukraine. The customer trusted us and accepted the challenge. We shipped the line and the customer installed it without a Maflex technician on site. Our technicians and after sales department, which included people speaking the same language as the customer, were connected to JCS KOCHAVINSKA PAPER FACTORY by phone, videocall and teleservice devices. This allowed us to guide the Ukrainian technicians step-by-step from the first bolt to the fine tuning of the line to the post-install

training sessions. This installation was a great success for JCS and Maflex. Despite the ongoing war, JCS KOCHAVINSKA PAPER FACTORY is proceeding with its operations, but not without troubles. Supply chain and energy stability are just some of the current difficulties, but they have carried on producing paper and converting it. **Stephen Hawking** said: "Intelligence is the ability to adapt to the change". The capability to change and to adapt to the new situation is in the DNA of MAFLEX. The customer's needs are the company's needs. We continue to be ready to accept any challenges the future may present. ●

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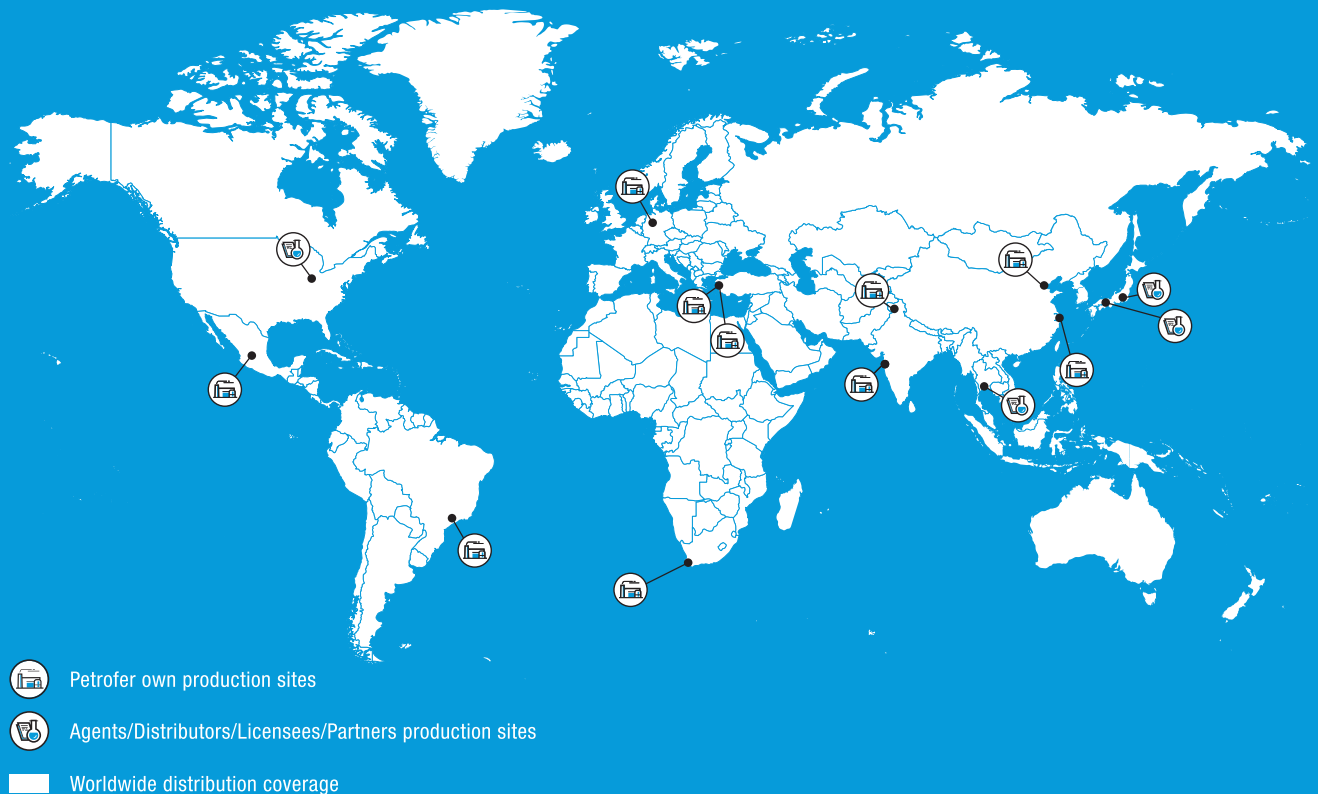
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The PETROFER PAPER product line not only offers products for tissue and towel, but also provides innovative solutions for the paper, packaging, converting and board industries. Our products are tailor-made solutions with approvals including BfR, FDA, Nordic Swan, thus ensuring the user: high productivity, quality, safety and environmental acceptance in paper processes.



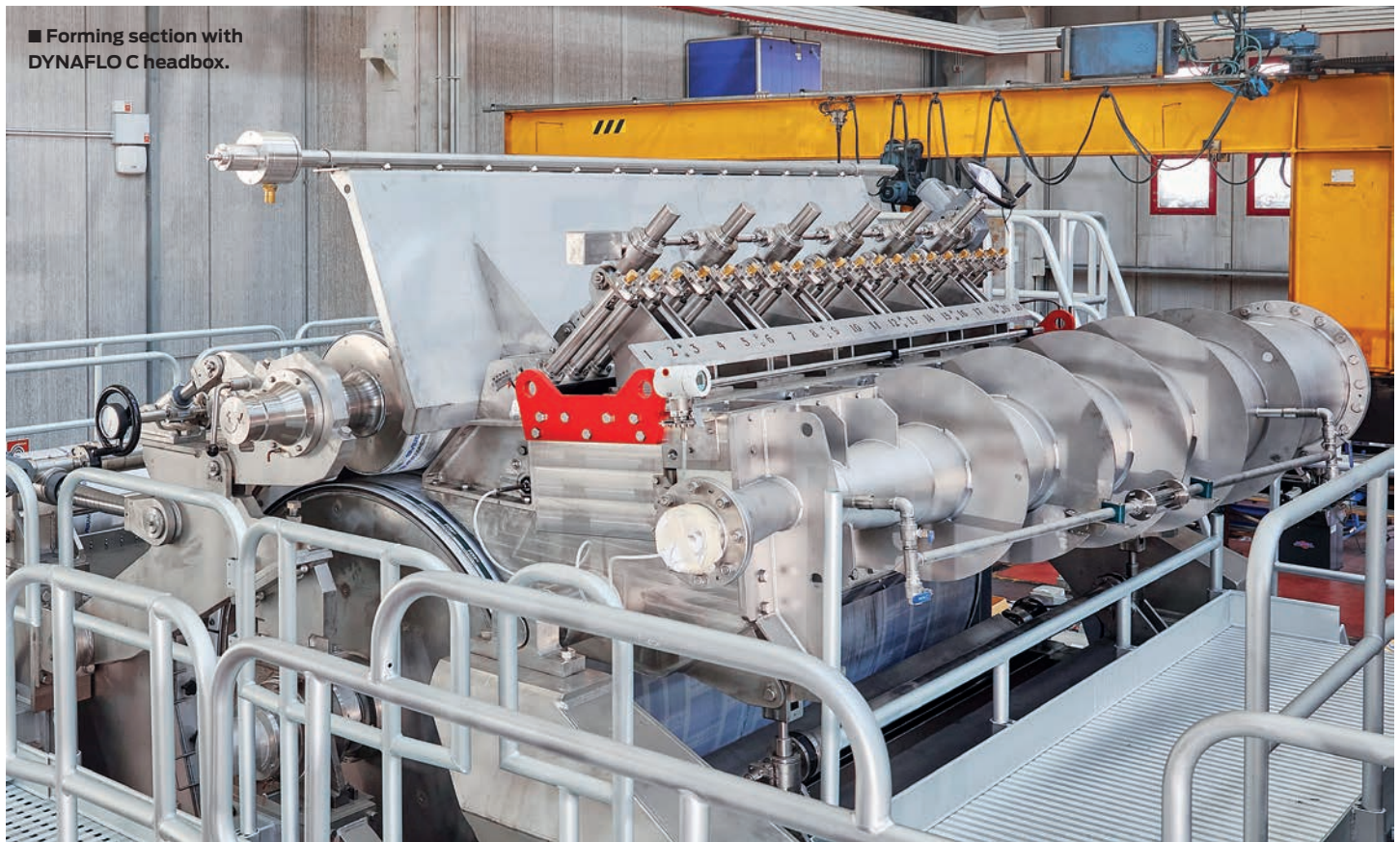
THE NEW TISSUE COMPLETE LINE supplied to North America

▲ High efficiency double intake mechanical drive.

Overmade has delivered in the first quarter 2023 to **Convertipap** the “Nico Project”: a complete tissue plant for the production 35,000 TPY of high-quality tissue from virgin and recycled fiber.

The customer has committed the entire line to Overmade on the base of a turn-key supply. The complete scope of supply includes the softwood and hardwood feeding line, the approach flow system, the water and fiber recovery plant and all the auxiliaries such as vacuum system, steam system, high efficiency hood with recovery boiler, mist and dust removal systems. On top of that,

the electrification of the entire tissue mill as well as the Sectional Electrical Drives system, the DCS (Distributed Control System) and QCS (Quality Control System) has been supplied. The machine is the *OVER CRC 20* capable to produce the softer tissue taking into consideration the use of recycled fiber as well as virgin fiber, using the DYNAFLO C headbox (the latest development of the DYNAFLOW TWC) capable to OVER perform in fiber distribution at high consistency thanks to its micro-turbulence generator. Excelling in the fiber distribution at high consistency with a reduced the softwood needs in the paper, savings are achieved in both



■ Forming section with DYNAFLO C headbox.

Overmade, the Italian Tissue and Paper & Board machine manufacturer, has delivered the “Nico” project to COVERTIPAP in North America: a complete line for the production of 35.000 tpy tissue paper.

by: OVERMADE Srl

fiber and energy costs. The line is conceived to work at a speed of 2,000 mpm and includes all the technological solutions for a thermal energy saving tissue production supplied by **POWERMADE**: the partner branch in the MADE group that complete the Overmade's products portfolio permitting to supply, from a single platform, integrated solutions to all the tissue and paper & board producers. The project includes the supply of a high efficiency hood with recovery boiler, steam system with economizer to generate steam “free of costs” using hot fumes (330°C) coming from hood exhaust of the tissue machine and

generating more than 1,2 ton/h of steam (around 25% of the total yankee consumption). The integrated steam system is specially design to manage main steam boiler and recovery steam boiler supply. The deadline for delivery has been met, and **OVERMADE** is performing in these weeks the erection supervision and assistance at the start-up of the line. Such on-site services are entirely performed by Overmade's qualified personnel, who is in charge of the coordination and control of the work during all the erection and the commissioning phases. 60 years after the delivery of the first OVER



▲ New Overmade headquarter.

▼ The supplied CRC 20 machine.

tissue machine, the management shows enthusiastic about this delivery in the high-demanding North American market, and considers this project as a preparation of the battleground to further grow.

Mr **Stefano Marocchio**, President and CEO of the group has expressed his contentment about the project by stating: "The vast knowledge present in OVERMADE allows us to work starting from solid foundations, but we didn't want to stop there, with loyalty and dedication we offer

“ OVERMADE is passion behind paper ”

to our customers 'tailor-made' solutions, able to satisfy their widest needs; our machinery and systems demonstrated to be top-performing, flexible, easy to manage and less and less energy eaters. We always wanted to move towards rationalization, following an ECO and LOGIC perspective, and put our technical-technological skills and our "global know-how" at customers' disposal. We are proud about this new line supplied to an experienced tissue producer as COVERTIPAP, who is constantly growing and increasing its market shares, while we are committed to supply our solutions in the North American market. Always following the motto: OVERMADE, made in ITALY, made in OVER". ●

OVERMADE SRL

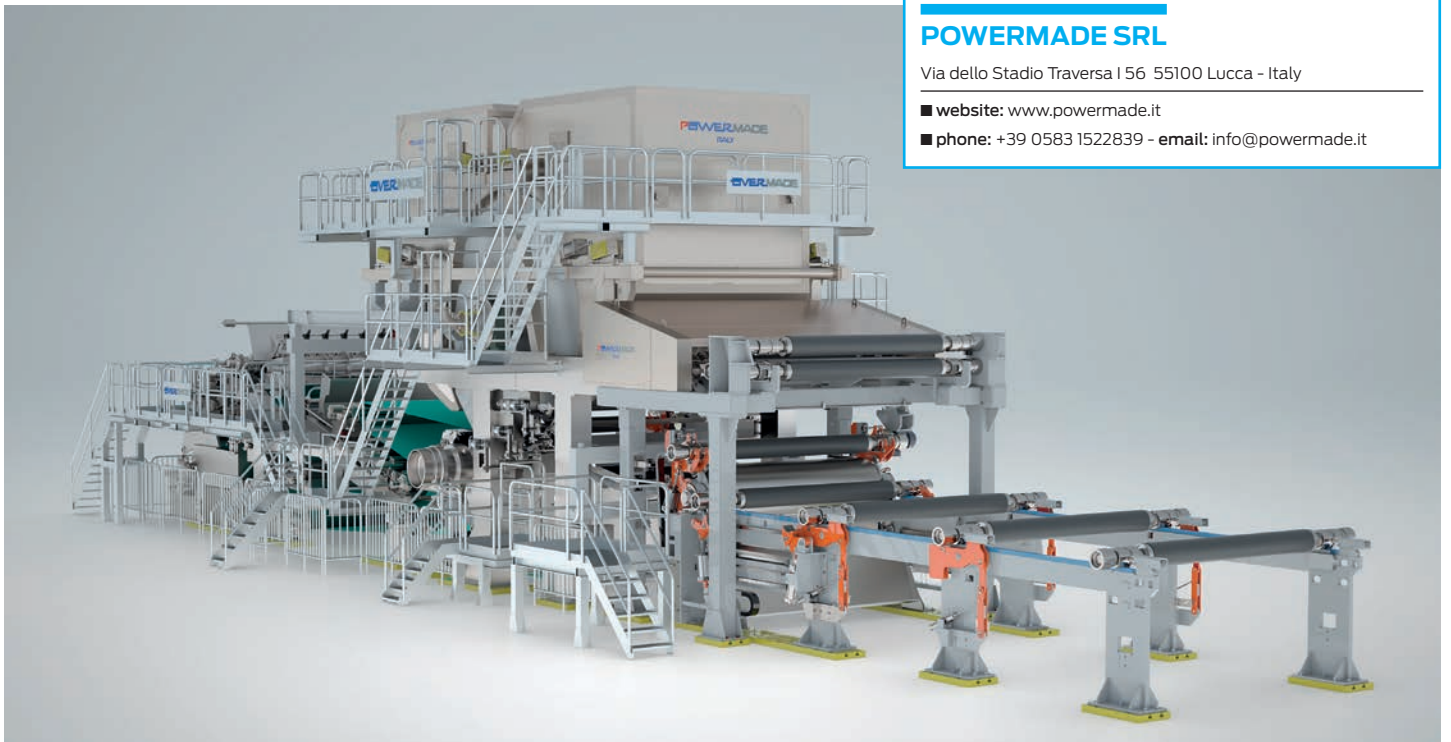
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POWERMADE SRL

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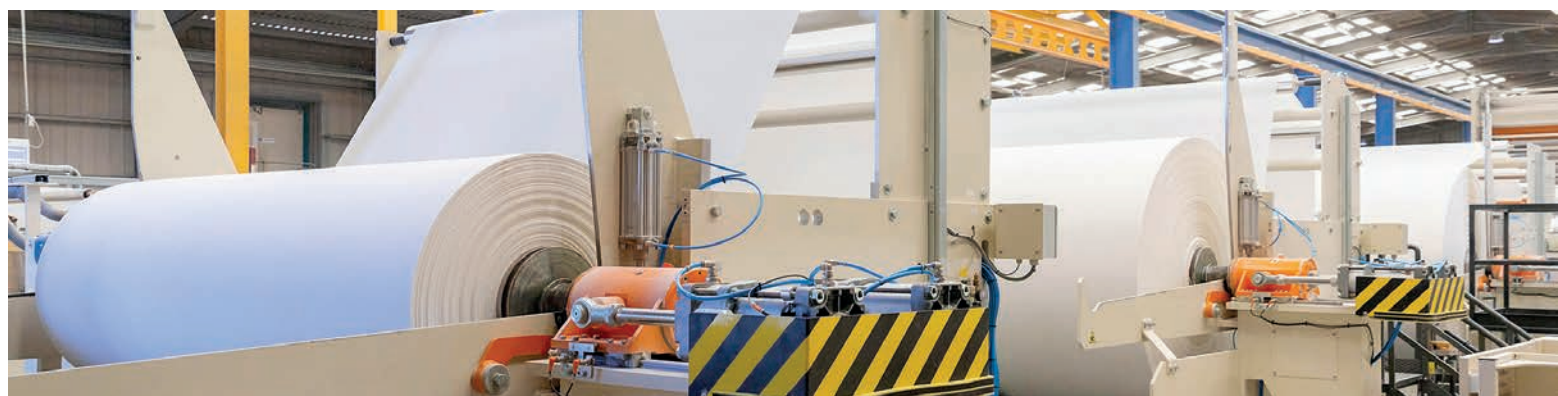
SICK - KEB - ELAU - BECKHOFF - SIEMENS - SCHNEIDER - CONTROL TECHNIQUES

The Cominter Group recommends the **Maxidry System** by Tecno Caucho Rolls & Covers for suction presses and blind presses

By: Tecno Caucho Rolls & Covers



▲ Profile view of a Maxidry cover where the Triplex - Multilayer confection can be noted.



▲ Production of tissue paper in one of the Cominter Group's paper mills.

For more than two decades, **Tecno Caucho Rolls & Covers** has been using and perfecting multi-layer technology by combining different qualities and elastomer hardnesses in its rubber covers.

This technology, combined with the need to develop an effective solution to improve suction and blind press covers, has resulted in the development of the Maxidry System, based on the Triplex - Multilayer confection system.

This system was designed to increase drying capacity, while also improving paper quality. Thanks to the Maxidry multi-layer cover, the nip contact zone absorbs the Yankee deformations by forming a constant nip along the entire generatrix. This automatically means drying capacity is improved, energy consumption is reduced, paper quality is enhanced and even long fibre consumption can be reduced.

The *Maxidry System* is comprised of three or more cover layers, depending on the specific work conditions of each client and the set position on each machine: the top work layer consists of hard material, the soft intermediate layer has maximum elongation, and the bottom layers are for fixing.

“ High quality solutions to **improve the efficiency** and functioning of the machinery ”

The main advantages the Maxidry System offers the pressing process when manufacturing tissue paper are as follows:

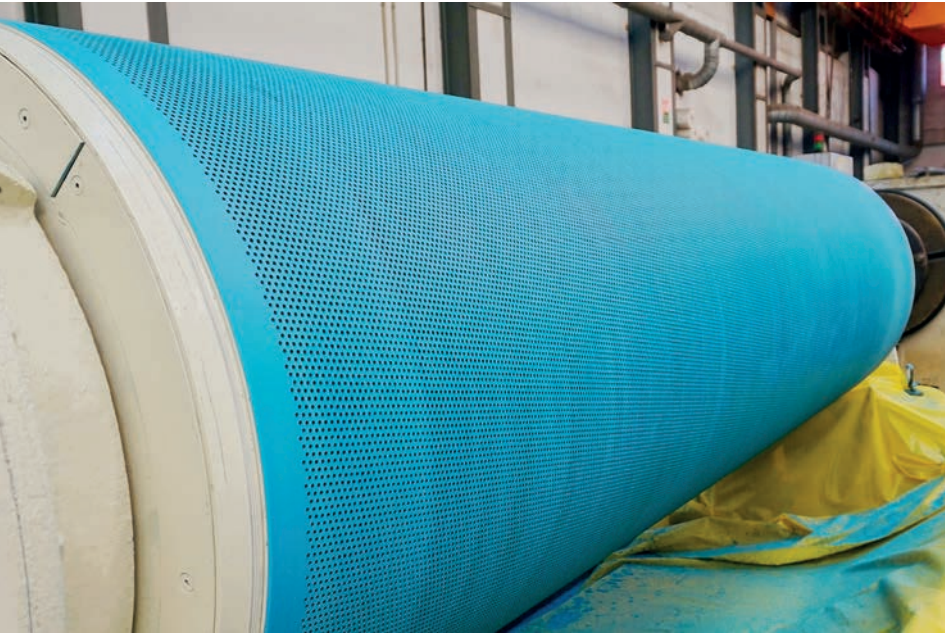
Better quality of tissue paper: Thanks to a reduction in the specific pressure, a reduction in hydraulic pressure and maintaining the contact NIP along the entire generatrix of the Yankee, more paper quires (thickness) can be obtained. This translates to greater resistance and final softness of the paper.

Extended useful life of felts: By increasing the

▼ Table compiling the Maxidry covers the Cominter Group has acquired from Tecno Caucho Rolls & Covers for its different paper mills.

COMINTER Quality Commitment		TC ROLLS & COVERS			
Kartogroup Paper Mill (Burrina, Castellón)					
Date	Roll Dimensions (mm)			Cover Quality	Roll Model
	Shell O.D.	Cover O.D.	Roll Length		
16/09/2021	845	895	3.100	MAXIDRY	Suction Press (MP-2)
13/09/2021	705	755	3.100	MAXIDRY	Blind Press (MP-2)
19/08/2021	1.010	1.060	3.300	MAXIDRY	Suction Press (MP-4)
13/10/2020	705	755	3.100	MAXIDRY	Blind Press (MP-2)
16/12/2015	705	755	3.100	MAXIDRY	Blind Press (MP-2)
09/06/2014	845	895	3.100	MAXIDRY	Suction Press (MP-2)
14/02/2014	845	895	3.100	MAXIDRY	Suction Press (MP-2)
Cominter Tissue Paper Mill (Hernani, Gipuzkoa)					
Date	Roll Dimensions (mm)			Cover Quality	Roll Model
	Shell O.D.	Cover O.D.	Roll Length		
03/05/2021	555	605	3.150	MAXIDRY	Blind Press (MP-3)
20/11/2020	730	780	3.250	MAXIDRY	Suction Press (MP-3)
12/02/2020	555	605	3.150	MAXIDRY	Blind Press (MP-3)
03/10/2018	555	605	3.150	MAXIDRY	Blind Press (MP-3)
20/01/2017	555	605	3.150	MAXIDRY	Blind Press (MP-3)
16/05/2016	730	780	3.250	MAXIDRY	Suction Press (MP-3)
08/04/2015	555	605	3.150	MAXIDRY	Blind Press (MP-3)
07/04/2015	730	780	3.250	MAXIDRY	Suction Press (MP-3)

“ Our expertise enables us to offer a very **complete service** ”



▲ Cover press with the Maxidry System during a grinding operation.

contact NIP, two highly beneficial effects are achieved. Firstly, the pressure on the felt per surface unit is reduced and secondly, the hydraulic pressure is reduced as a result of increasing the effective open area.

Reduced vibration level: Thanks to the exceptional ability to absorb the geometric differences caused by wear of the Yankee and the combination of the Maxidry System’s hardesses.

Increased drying capacity: This is the result of increasing NIP width, increasing contact along the entire generatrix of the Yankee and configuring the double-section through-hole to aid the Venturi effect and grooving with a trapezoidal section to maintain the open area even under pressure.

Increased useful life of the cover between grinding operations: By developing elastomers with maximum flexibility and resilience in their soft intermediate layer and with maximum resistance to abrasion on the top working layer.

Lower energy consumption: The increased drainage capacity offered by the Maxidry System

allows it to directly and considerably reduce energy consumption in the hood.

One of the different manufacturers of tissue paper to have opted for the Maxidry System is the **Cominter Group**, which has been working with Tecno Caucho Rolls & Covers for covers for its suction and blind presses for several years now. Comprising Cominter Tisú, S.A. and Kartogroup España, S.L., the Cominter Group has a total of three paper machines and seven converting lines distributed between its plants in Hernani (Gipuzkoa) and Burriana (Castellón), producing 84,000 tons per year of tissue paper rolls. The excellent quality of the tissue paper made by the Cominter Group allows it to produce and market a wide range of products - including toilet paper, paper towels, industrial rolls, kitchen rolls, napkins and wipes - through different brands, such as Garbi, Sil and Milmo. At the same time, the extraordinary properties of its products allow it to use different marketing ranges, from hospitality and supermarkets to B2B exports to countries like France, Portugal, the United Kingdom and the United States. ●

Pascual Gómez, Head of Operations at the Cominter Group

says: “The Maxidry covers of our suction and blind presses have helped to increase both the quality and quantity of the tissue paper manufactured in our different machines, allowing us to achieve an optimal level of production. The advice and simulations for press sections offered by Tecno Caucho Rolls & Covers have been extremely helpful when it comes to preventing machine stoppages and avoiding possible issues involved in tissue paper production”.

TECNO CAUCHO ROLLS & COVERS

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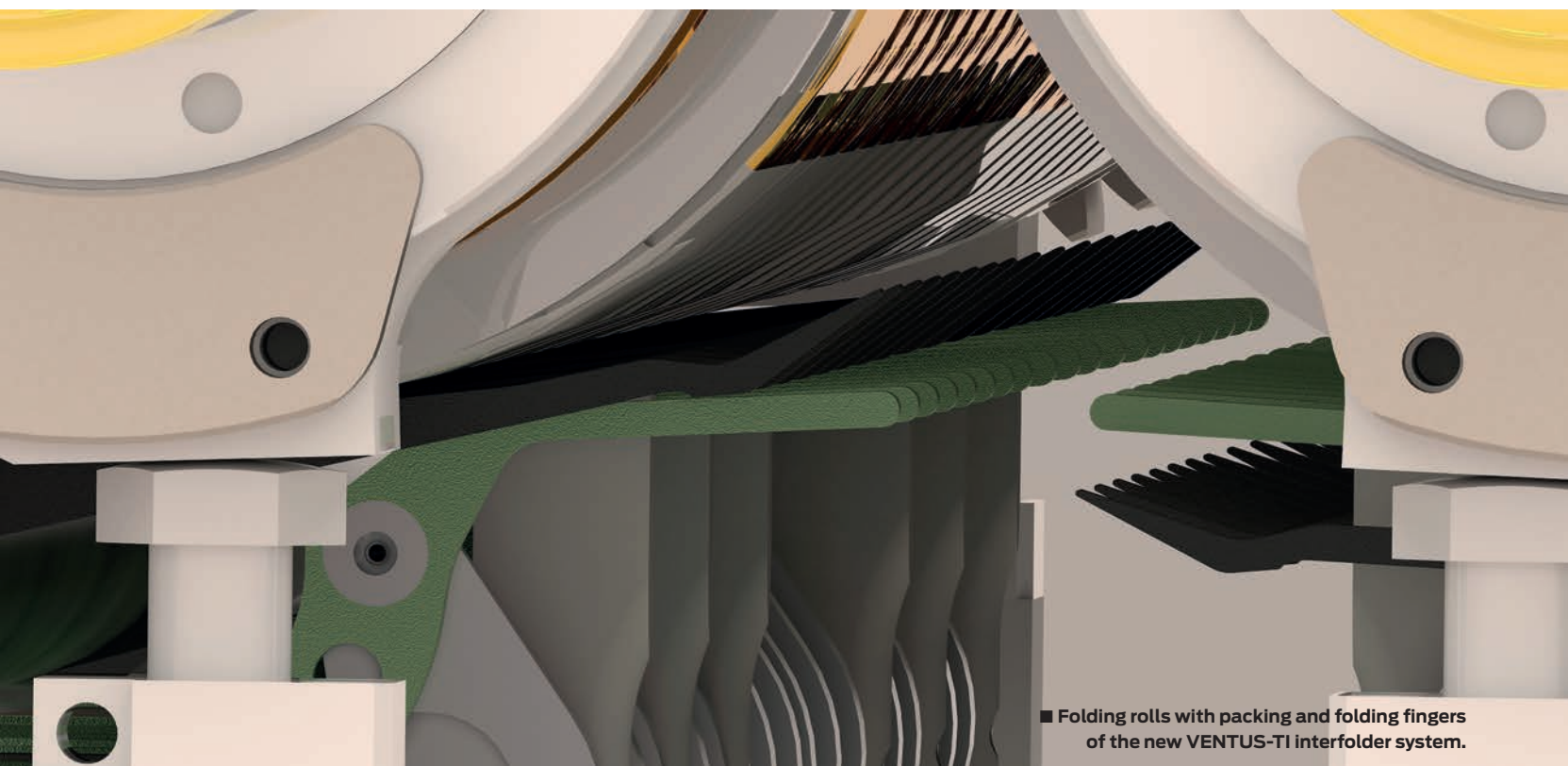
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G R O U P

VENTUS-TI

The new tissue interfolder production line





■ Folding rolls with packing and folding fingers of the new VENTUS-TI interfolder system.

Sometimes the time is just right for a new technical development. Recently the BW Converting Solutions platform decided that they wanted to substitute their long-time existing interfolder system W+D 619 by a state-of-the-art production line for folded facial tissues. The result is the new VENTUS-TI interfolder system which is made for high-speed production with up to 25 cycles per minute or 300 m/min of web speed.

by: Winkler+Dünnebier GmbH

It is one of the first joint developments of Winkler+Dünnebier GmbH (W+D) and PCMC as part of the BW Converting Solutions platform which combines five leading converting brands under the umbrella of **Barry-Wehmiller**. That Hygiene Solutions division, which was formed in 2022, stands for system solutions for the manufacture and packaging of tissue folding and hygiene products. The VENTUS-TI is a further step of its success story, as the first machine has already been sold. The new VENTUS-TI inherits the expertise and enhances the facial tissue product production capabilities of its predecessor, the W+D 619, but goes even further by broadening the possible product assortment capabilities to also include hand towel products. This is not only due to vacuum based folding but to the wide range of tissue web unwind options and the versatility of the web treatment

processes that offer the possibility to produce a broad portfolio of different interfolding products. The *VENTUS-TI* is meant to be more sustainable than its predecessor and uses a new energy saving vacuum folding technology. The modular design provides not only the well-known flexibility of W+D systems but it also allows for later upgrades of the machine which makes it also sustainable by its longevity. Furthermore, the flexible design renders a quick cut-off length changeover which provides the possibility of producing several product options within a short-time period. The compact machine layout and unique design ensures high efficiency standards, easy operation and maintenance procedures. Especially the smart and simplified “SmartTouch” HMI Design facilitates the operation of the interfolder system and immensely relieves the operator’s everyday work life. For producers of interfold products, all these technical features make the new interfolder *VENTUS-TI* one of the best investments into the future. Winkler+Dünnebieer GmbH (W+D) and Paper Converting Machinery Company GmbH (PCMC) are part of global equipment manufacturer Barry-Wehmler and its BW Converting Solutions (BWCS) platform.

“ W+D has been setting benchmarks as a **global leader** in tissue handkerchief production technology ”



Together, these two companies represent the hygiene sector of the BWCS platform and offer a wide range of high-performance machines and services to the hygiene industry worldwide. The comprehensive product offerings include converting lines for Dry and Wet Wipes, Baby Care,

Fem Care, Light Inco, Adult Care and Face Mask. The direct strategic exchange between these leading brands now opens up even more benefits for their customers: the joint expertise creates innovative and powerful machinery for best possible manufacturing conditions and profitability leading to best performance. Quantum leaps in the development of leading-edge technology are implemented, thanks to joint R & D forces and cooperation synergies. Finally, a global team of more than 150 service technicians is now available for fast and efficient service in order to maintain and to optimize their customers' operations. For more information, go to www.w-d.de ●



■ The *VENTUS-TI* offers a wide product range from facial tissues to hand towels for everyday purposes.

WINKLER+DÜNNEBIER GMBH

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- email: sales.hygiene@w-d.de



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Sustainability in the paper industry is increasingly prominent, and issues such as effluent reuse and lowering environmental impact are strategic regarding efficiency and consumption reduction.

Membrane processes are the ideal solution for industrial wastewater reuse, and our expertise in this type of biological plant has become a registered trademark, EmbioArt™.

Each plant is tailored to our customer's needs: from the removal of organic compounds by biological process and suspended solids with ultrafiltration to the elimination of dissolved salts with reverse osmosis, we provide state-of-the-art high-performance plant solutions.

EmbioArt™

 **Cannon Artes**

■ NCR Biochemical headquarter
in Bologna province, Italy.

“ Pulp & Paper - **The specialists**
in papermaking chemicals ”



INNOVATION COULD HELP TO SAVE MONEY AND IMPROVE TISSUE PRODUCTION QUALITY

By: N.C.R. Biochemical SpA



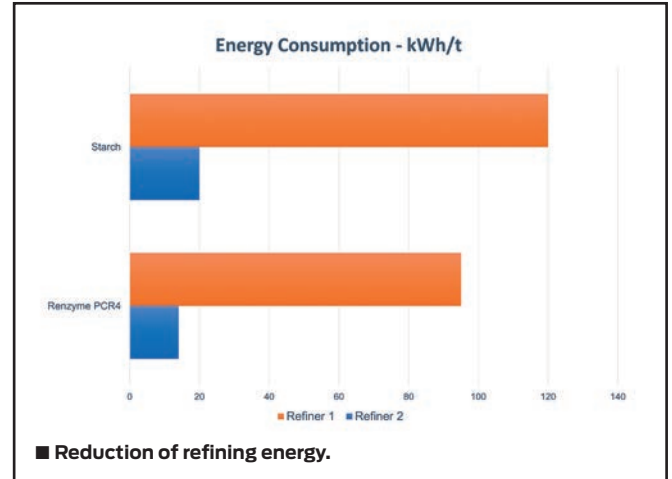
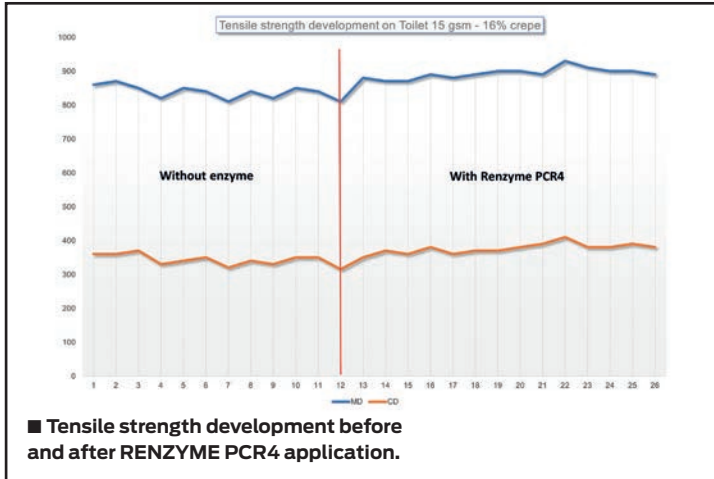
NCR Biochemical has recently developed a new specific line of additives, mainly based on modified Enzymes, able to bring in the tissue pulp and water circuit a much friendly environment to get technical results, enhancing the specific mechanical characteristics intrinsically already present inside the pulp. This new type of additives, named RENZYME, in particular the RENZYME PCR 4, could allow the tissue paper sheet to be produced having:

- Better absorbency.
- Better mechanical strength.
- Reduced production energy.
- Lower impact on costs, then allow higher profits for the tissue producer.

How to get these advantages?

The obtention of specific technical advantages is in the aim of all the process additives that **NCR Biochemical** group and our R&D department study and implement on our customer's facilities. The new line of RENZYME additives, with innovative Enzymatic character, has the ability to refine the cellulose fibers in a very selective way, opening the active sites allowing the creation of a networking of connections between them; the implementation of number and connecting energy between the inter-fiber bonds is the real innovation we can apport. The below details could better explain how the innovative production process impact the application in the tissue production and is able to carry out the required performances.

“FIBRILLATION EFFECT” - RENZYME PCR 4 opens up hornified regions in the dried pulp fibers, allowing better fibrillation, that



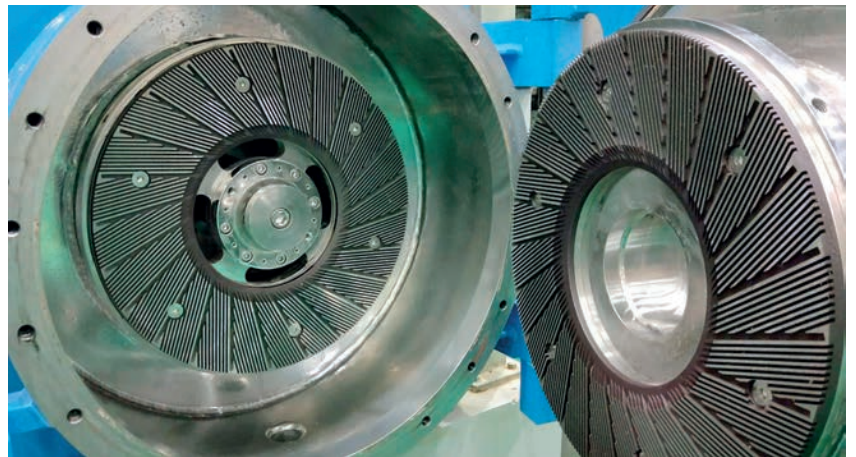
lead to strength benefit and consequently stronger paper.

“DRAINAGE EFFECT” - RENZYME PCR 4 disintegrates colloidal material, then the water can fall freely, increasing drainage and sheet porosity.

“FIBRE COLLAPS” - By penetrating fibres walls, RENZYME PCR 4 encourages internal fibrillation, bringing to fiber collapse that increases surface area of the fibres, with better sheet formation & mechanical strength.

Tissue applications

The below information came from a specific application of RENZYME PCR 4 made in a customer facility and are reported as a *case study*. The customer, located in South-East Europe, produce toilet paper, towel and napkins, with 100% virgin fiber. With a production of approx. 28.000 ton/year, the customer uses Starch to improve the strengths of the paper. However, this caused an increase in picking and dusting. Furthermore, it failed to reduce the degree of refining, such as to provide significantly economic savings. The targets of the tissue mill were to eliminate Picking and Dusting, reduce specific refiner energy and improve paper strength without losing hand-feel softness. Following careful evaluation of the characteristics of the machine and the wide variety of grades being produced, an alternative solution was proposed which involved the use of a modified enzyme, specifically designed to provide a chemical refining: RENZYME PCR4. After replacing the starch with RENZYME PCR 4, the customer met the requested goals:



elimination of Picking and Dusting, reduction of specific refiner energy to get the same strength values and improvement of paper strength by average 10-15%. In addition, the customer faced an increase in the drainage, with a consequent increase in the average speed of the machine by approximately 5 - 6%, also improving paper softness. Last but not least, the lower energy consumption of the refiners has allowed an average saving of around 6,000 €/month, also being able to benefit from the complete replacement of the starch. ●

▲ Renzyme PCR 4 involving Fiber refiner.

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■ **contact person:** Mr. Giampiero La Pietra - Tissue Division Manager

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- long-lasting maximum performances
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*excellence
in tissue*

ACelli

A.Celli has long-standing, proven expertise in the construction of complete tissue plants. Basic and detail engineering, electrification and automation are performed by internal engineer teams to optimise the overall plant performances. All activities are oriented to offer proven and granted solutions through extensive research and development activities that, since the foundation, have been of strategic importance for the company.



Consolidate relationships with custom palletization projects



Completing the development of complex projects and receiving customer appreciation for the results obtained is always a great satisfaction. When requests represent a real challenge, it's necessary to find an efficient relationship between the quality of the proposed solutions, the optimization of space and a price in line with customers' demand. These are the elements that guided us in the development of a project requested by GH Production to make two production lines that dealt with palletizing manually more efficient.

by: MAC DUE Srl



Working for more than 50 years in the AFH sector, GH Production is a subsidiary of **Global Hygiene Group**, a French group specializing in tissue products. The company has developed many business opportunities that have allowed it to expand its market and close 2021 with a turnover of 25 million Euros. The opening of the first tissue mill in Grenoble in 2020 and an ongoing project for a new integrated site in Begles, have stimulated the company to invest in more efficient and automated lines, to follow the dynamic of the group. The customer's need on this project was to complete the automation of two converting lines that dealt with different products and whose end-of-line was managed manually. One, in particular, dealt with heavy products and, for both,

the spaces available were limited. At the beginning of its history, **MacDUE** produced only standalone machines. During the last ten years, we established ourselves as leaders in the industrial field for complete lines too. We built a strong reputation on this offer but decided to increase our effort to cover every aspect of product handling, even just end-of-line. Having a single point of contact for the entire system has significant advantages for the customer but poses new challenges to the supplier company: potential concerns and extra variables that need an adequate structure and reliable after-sales service. The challenge we set ourselves years ago was to offer our customers "turnkey" lines, up to the stretch wrapper. The addition of end-of-line to our offer is why we were ready to answer GH Production's request. We provided the customer with two

“ Experience, qualified resources and **continuous research** ”

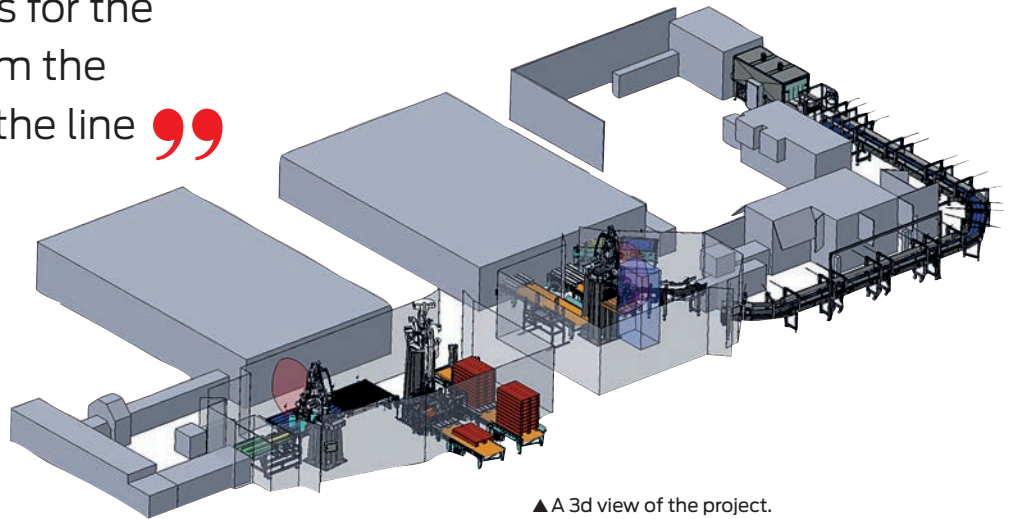
“ Innovative solutions for the **world of packaging** from the beginning to the end of the line ”



▲ Luc Brami, CEO GH Production.



▲ Fiorenzo Donetti, Managing Director MacDue.



▲ A 3d view of the project.

palletizing islands: one consisting of a robot for boxes and bundle, and the other of two robots, all grippers are developed by MacDue, which can handle display-type bulk packs and bundles. The island includes an automatic pallet picker, the management of the half pallet, and the application of the layers. We designed these islands to interface with the customer's centralized wrapper where LGV vehicles carry the finished pallets. The supply of custom grippers for industrial and consumer products, depending on the island, was the focus of the project. Very often the end-of-line treats the products too little delicately, causing damage and unacceptable stress for the industrial and consumer sector, especially during the compression and pick & place phase. The challenge is to manage palletization by reducing the impact of handling on products, without decreasing the efficiency and speed of the line. The solutions that we

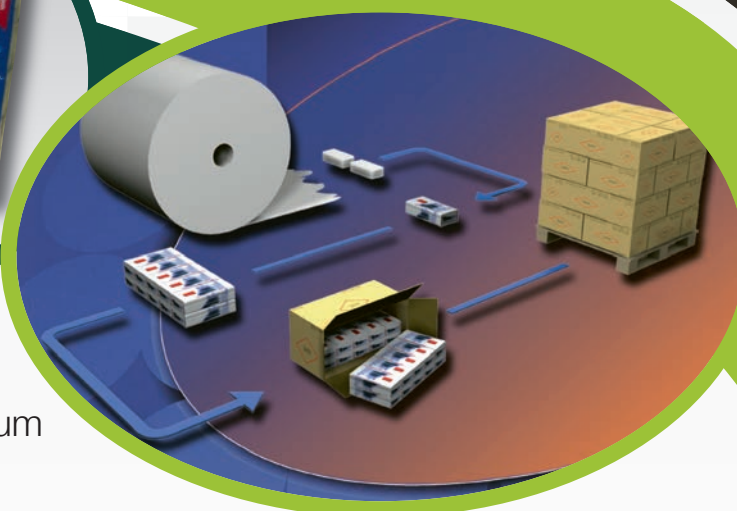
have developed in MacDue to meet these needs are a custom gripper and software for intuitive management of the island that allows quick changes of the pallet configuration. Thanks to this project, **GH Production** has managed to increase the efficiency of the two lines, which have become fully automatic, despite the space limitations. An extra request from the customer was not to stop production: through the checkout in our factory and the customer training in MacDue, we made the startup of the lines much easier; furthermore, we reduced the shutdown time to a minimum because we coordinated with the production department to carry out the project with the lines almost always in operation. We began working with GH Production back in 2018 with the supply of a single machine. During the years, we grew our business together and this exciting project marks a further step towards an even closer and lasting collaboration. ●

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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.



A sustainable business is just not happening by itself, we need to create it together!

By: Valmet

For Valmet, sustainability has been high on the agenda for decades. One of the most important focus areas has been reducing the environmental footprint during the use phase of the technology. The footprint development for an Advantage DCT 200 tissue production line with equal scope and boundary limits, producing an 18-gsm bath product at 2000 m/min has been followed regularly over time. The results from the long-term commitment can be seen from the development of the energy consumption, that has been reduced by almost 50% while the water consumption is reduced with around 80% since the 90's. The CO2 emission has been reduced in relation to the reduction of energy used. "Today we can reduce energy usage in every part of the line and we can also recover, transform and return it back to the process. Tissue mills can use Valmet solutions to generate hot air, steam or electricity from renewable sources substantially reducing the carbon footprint. We also have the know-how and solutions to achieve lowest possible water consumption" - says **Ulf Johnsson**, Manager Sustainable Mill Solutions within Valmet Tissue.

Let's do it together!

Valmet's target is to substantially reduce the energy consumption and enable carbon neutral



■ Ulf Johnsson,
Manager
Sustainable
Mill Solutions
Valmet Tissue.



“Technologies, automation and services for **tissue production**”

tissue production as the standard by 2030 at the latest.

We offer many opportunities to reduce CO2 emissions and other environmental impacts in tissue production through a combination of process technologies, services and automation solutions. With Valmet's latest solutions, enhanced heat recovery and minor technology improvements it's our projection that until 2025 the total energy consumption in tissue production can be lowered further to 1687 kWh/ton. We can see that in 2022 the CO2 emissions have been lowered already from 387 kg/ton to 161 kg/ton by using renewable fuels for hot air and steam, such as hydrogen. Now only remaining CO2 is from the grid supplied electricity. Improved heat recovery is also affecting the water consumption in a positive way. Technology has a vital role in the process. It can serve like a bridge between different processes and businesses. By applying best available technology in a traditional meaning and in new ways existing technology has the potential to extend the lifetime of current assets from a climate impact perspective

during the transition time while developing new technology towards the carbon neutral society.

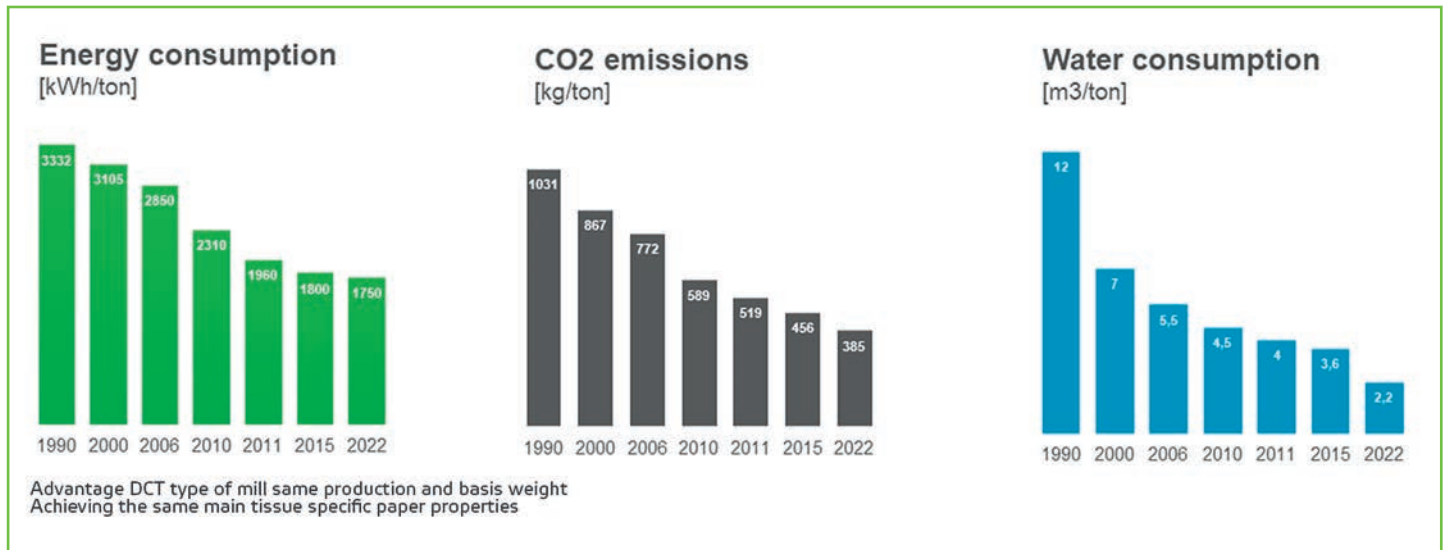
▲ Control room.

We need to widen our view

However, technology alone is no longer sufficient. To utilize the full potential, a more holistic approach is needed, involving interaction with other stakeholders, finding areas of symbiosis, and being open to innovative and efficient solutions. The more sustainable tissue mill is based on a long-term understanding of market needs and consumer behaviour. The location, overall physical design, employee competence and efficient technology are also vital to achieve results.

Utilize the full potential

Optimized **Mill design** is crucial when setting up a new mill. It is of utmost importance to have the full understanding of how different equipment, machines and systems interact between each other and with the operators. There can be a substantial difference in electrical energy consumption just by how the layout of the production line is made and how



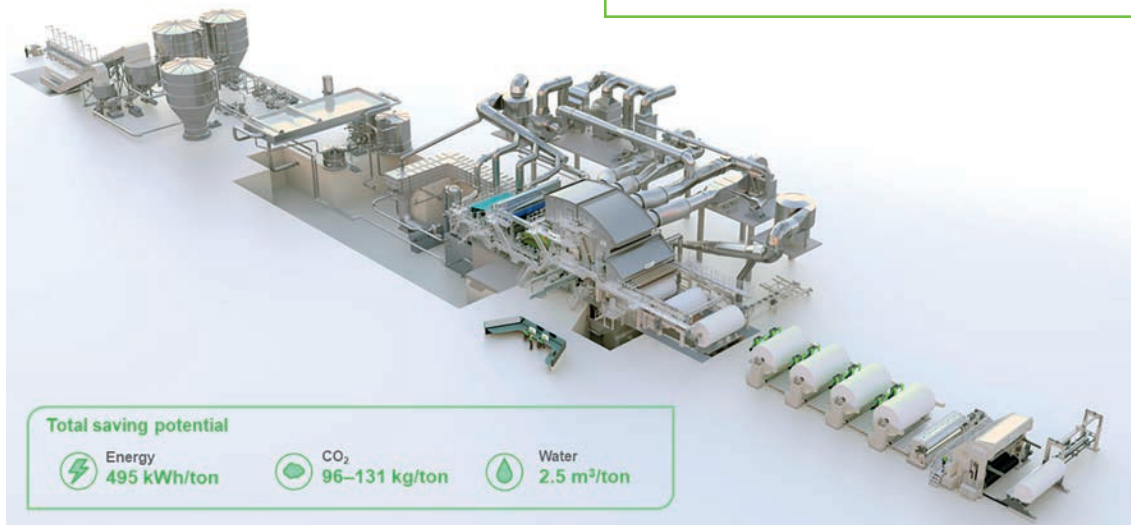
the sizing of main equipment is selected. There is a huge potential in **industrial internet and automation solutions** which brings possibilities to make immediate decisions based on real facts and automated analyze of large amount of data, making corrections to the process without even involving the human mind. Ensuring that the process is operated in the most optimum way in every moment. Utilizing a production line's full capability, minimizing waste, maximizing efficiency with lowest possible specific consumption is positive from all sustainability aspects. "Although we have come a long way, our ambition doesn't stop here. Additional products related to dewatering

efficiency, hot air and steam generation among others, will or have already entered the market in the coming years. We have a bold ambition, targeting a step change in energy consumption by 2030. With combined efforts together with our customers and partners we will continue to lower energy, water and fiber usage and CO2 emissions. A sustainable Tissue production is just not happening by itself, we need to create it together" - concludes Johnsson. ●

▲ CO2 emission intensity for electricity, average EU countries for each year. *Source: European Environment Agency.* CO2 intensity natural gas: 202 g/kWh, CO2 intensity steam, based on natural gas: 222 g/kWh.

VALMET

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- phone: +46 54171000 - email: tissue.info@valmet.com
- contact person: Ulf Johnsson, Manager Sustainable Mill Solutions Valmet Tissue
- phone: +46 705507820 - email: ulf.johnsson@valmet.com



◀ An example of total saving potential for an industrial average full-size tissue mill when utilizing the entire combination of Valmet's process technology, service, automation and Industrial Internet solutions from stock preparation to finished jumbo roll.



Visit us at
koerber-tissue.com

Unlocking the full power of tissue

The Körber ecosystem is a revolutionary business model developed jointly with other Körber Business Areas and highly qualified external partners.

We now integrate the technologies making up a tissue production environment into a single and complete solution to enable tissue converters:

- maximize OEE;
- streamline procurement;
- build long-term strategic partnerships.



Shaping your success in tissue

Is the quality of tissue you produce killing OEE on your converting lines?



By: Papertech

Industry 4.0 is all the rage amongst larger tissue producers and purports, amongst other things, to enable large-scale machine-to-machine communication such that individual manufacturing processes are no longer conducted in functional silos. Instead, holistic knowledge of all processes is to enable a continuous improvement cycle that drives different manufacturing performance measures, such as overall equipment effectiveness (OEE) to new levels, ultimately improving the enterprise's earnings. Unfortunately, production "silos" without cross process thinking still exist even in the most advanced facilities. It is, for example, not uncommon that the quality metric on most tissue machines is to get paper with correct weight, moisture and perhaps caliper onto the reel without a web break. Anything that gets reeled can be placed in the warehouse

and/or passed to converting. Little to no concern is given to how the actual tissue surface quality might affect downstream converting operations. The calculated OEE, a multiple of the tissue machine's availability, performance and quality of the product produced, will reflect an inflated value as the quality measure will be positively skewed. Production looks great while potential problems are transferred downstream. It is no wonder then that most converting plant managers see tissue production as their primary enemy in meeting operational targets. Tissue web defects such as holes, edge cracks and creasing can cause web breaks in the converting line, glue contamination, embosser wrap ups and other process problems. Converting line performance will suffer the most, but also line availability and quality. OEE can often seem stuck at levels below 50% - the room for improvement is



“ Our systems provides **fast and effective tools** for solving a wide range of production line issues ”

almost always huge. But, are line operators or converting plant managers to blame? The answer is typically a resounding No! Fortunately implementing better tissue machine quality control, tissue machine-to-converting line communication and converting line quality control is not difficult today. *Papertech's TotalVision* web inspection and web monitoring solution makes true quality readily apparent and will assist production to:

- Detect and classify defects and mark their locations on a reel defect map.
- Provide the ability to trace defects to their root cause with visual information.
- Provide the ability to detect repeating defects and to match these with machine components that exhibit the same or similar rotational frequencies.
- Provide the ability to determine the root cause of web breaks or other visible process problems.
- Provide the ability to differentiate between dust and the actual web so that only true defects are recorded.
- Provide the ability to pass parent reel quality records to downstream processes.

Most importantly, *TotalVision* will prompt action to improve quality as the corrected machine OEE will beg for upward adjustment. Tissue machine-to-converting line communication is made possible via Papertech's *Slow-on-Defect* solution, which allows for automated control of the converting line speed based on the classification of reel defects that are to pass through the converting process.



Slow-on-Defect will have a big impact on converting line performance, but also on quality (e.g. by allocating parent reels of better quality to outer plies on a multi-ply product) and on line availability (e.g. by avoiding line setup events). Converting line OEE can be further optimized via Papertech's QualityVision solution for online quality inspection that:

1. Inspects the base tissue web, embossing and print and provides immediate quality feedback.
2. Provides a final product quality record.
3. Assists in rapid embosser and printer setup.
4. Eliminates setup waste and reject waste.

Papertech's cross process solutions make some of Industry 4.0's promises reality today. The "wall" between tissue production and converting is being broken down with very positive results.

Significant OEE increases on tissue machines and converting lines are not uncommon and investments in Papertech's tissue solution set are often paid back in less than 6 months.

Papertech welcomes collaboration with all those endeavoring to improve the future of tissue making.

Please contact us for more information. ●

IBS PAPERTECH

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IS MAKING ADJUSTMENTS TO YOUR YANKEE COATING WORTH THE RISK?



In many mills, the Yankee coating is a legacy application that hasn't been significantly changed in years. It's viewed as too risky to mess with—particularly with market demand and internal pressures pushing you to make more tons more efficiently. As such, mills often eschew upgrading the Yankee coating in favor of wet end or converting changes. Even with these approaches adding value, by avoiding a potential short-term disruption of a Yankee coating trial, you may have locked in sub-optimal Yankee coating conditions for the long term.

What if you could understand how different chemical packages will perform within your unique process?

With Buckman's proprietary lab testing approach, you'll see how we stratify chemical products and predict performance based on key properties, such as wet tack, set speed, nip robustness, hardness, and

softness at certain temperatures. Using our database of tissue machine run parameters correlated to key Yankee coating properties, you can identify the best-possible process conditions for your choice of Yankee coating package.

Make data-based decisions with confidence

With this scientific data laid out in clear, easy-to-read charts, you can visualize the link between your process conditions and our adhesive properties. As a result, you can make data-based decisions with confidence that your coating solution will deliver concrete, measurable improvement.

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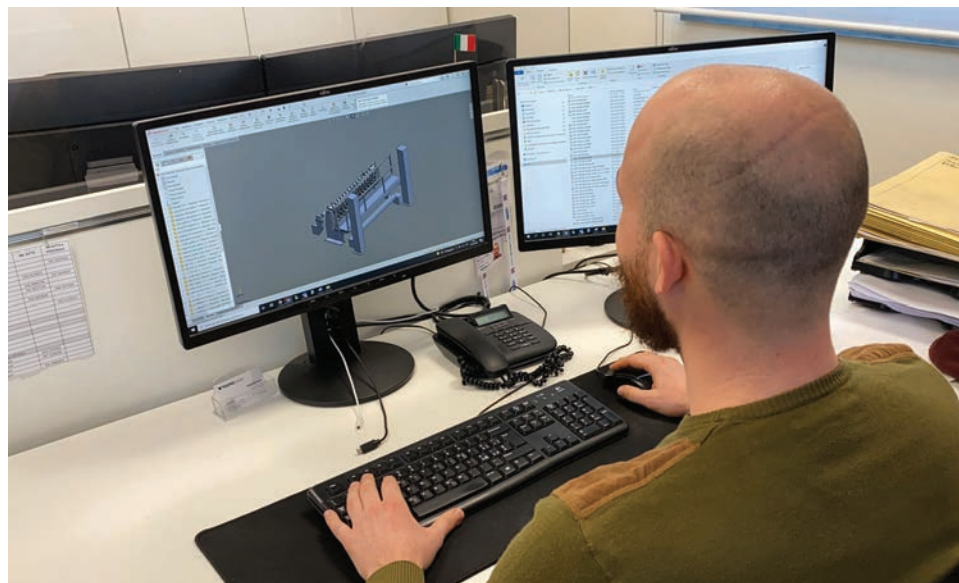


■ Original manual slitting system.

Revamping and compliance of a tissue rewinder

By: Tecno Paper Srl

Tecno 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 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.

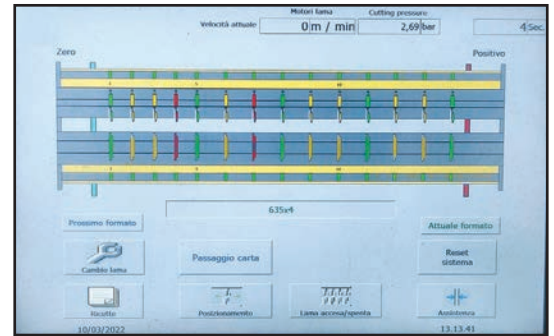
The project was developed by **Tecno Paper** with the help of a 3D design software, in order to make the installation as quick as possible for obvious production reasons, checking in advance all the elements involved in the modification, from the mechanical components to the electrical and pneumatic 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

▲ Design phase.

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

► New touch screen for setting.

▼ New slitting system installed.



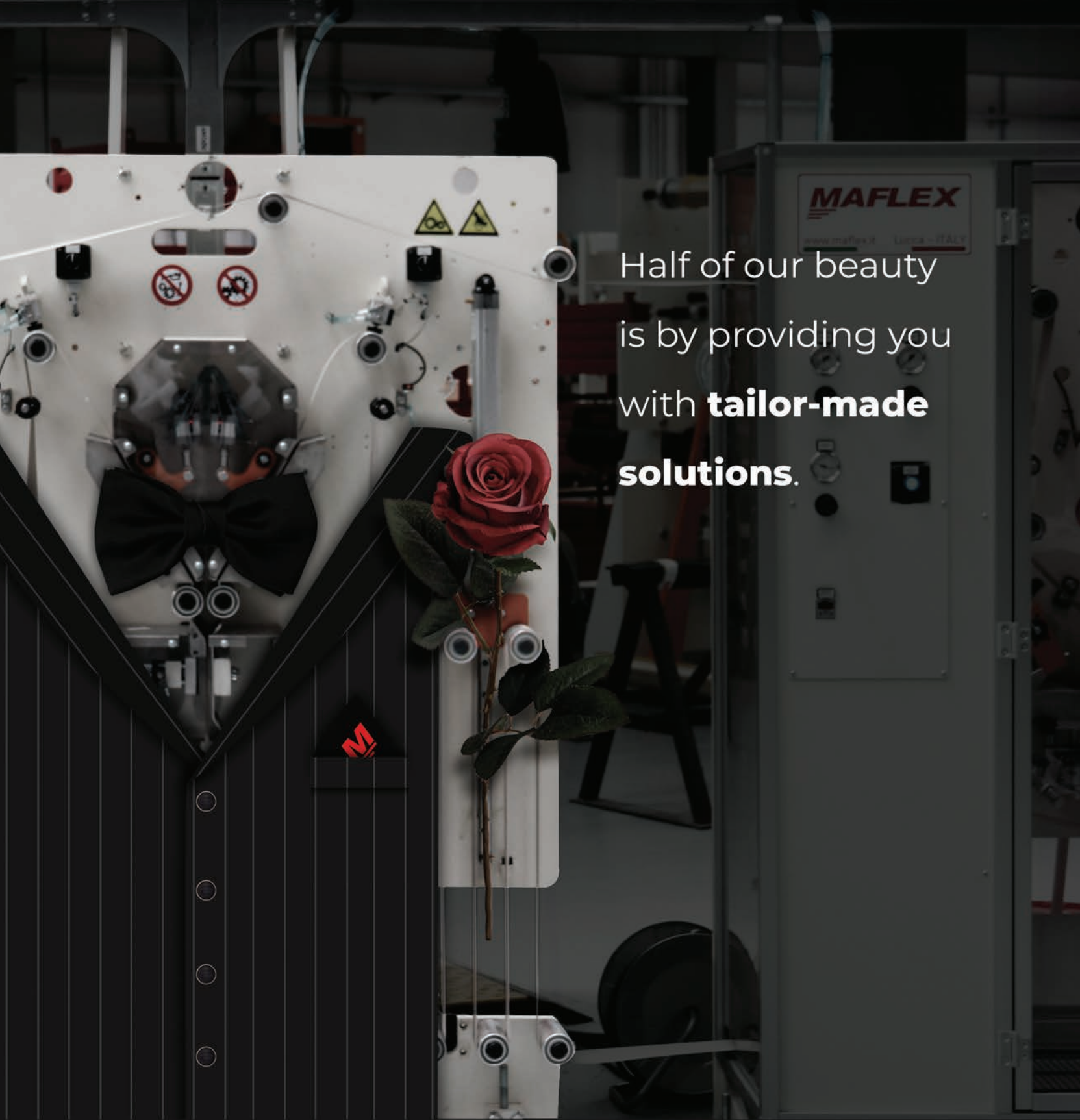
“ Tecno Paper is a company with a dedicated **customer oriented** philosophy ”

a perfect fitting of the new automatic slitting system in the existing carta 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. ●

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Kairos presents Taurus: the sustainable revolution in project production

By: Susanna Gheri



■ Susanna Gheri, Business Manager -
Board Member of Kairos.





■ A true ally in the world of tissue.

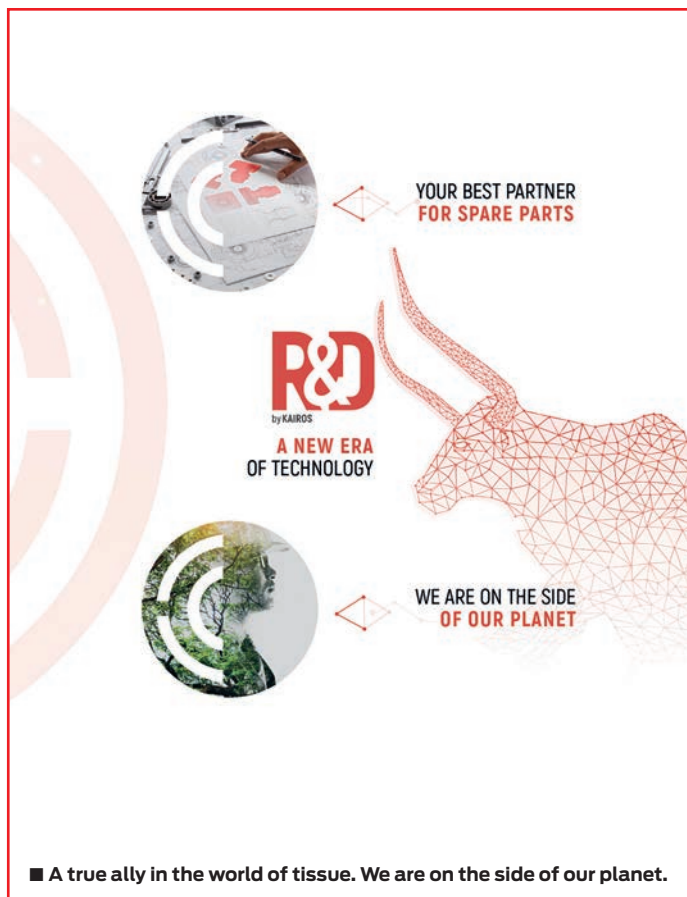
Kairos, an Italian company whose main objective is the creation of innovative and sustainable technological solutions for the paper and converting industry, since it was founded, has made research and development its mission, constantly investing in new technologies and ideas to improve production efficiency and reduce the environmental impact of industrial activities. Kairos' strategy is based on the continuous search for innovative, reliable and sustainable solutions for its customers. The success of the company is due to the constant attention to the needs of its customers, to the ability to innovate and to propose customized solutions capable of satisfying every specific request. The company with only

two years in the business, has developed a vast network of partners and collaborators, able to guarantee the maximum efficiency and reliability of its products and services.

Kairos has recently announced that it will launch a new project on the market that could represent a real revolution in the world of paper production and conversion. *Taurus*, the name given to the project, was conceived as an alternative to traditional production methodologies, based on

“ A lean, agile, accurate, fast service focused on customers' needs ”

“ Innovative equipment and cutting-edge components, compatible and able to **optimize the production**, whether it is fold and rolls ”



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R&D
by KAIROS
A NEW ERA OF TECHNOLOGY

WE ARE ON THE SIDE OF OUR PLANET

■ A true ally in the world of tissue. We are on the side of our planet.

high energy-intensive processes, which represent an environmental problem and a high cost for companies.

After months of analyses, studies, technical evaluations and tests, Kairos has identified solutions that are closest to the needs of production line users, paying particular attention to production, management and maintenance needs, in addition to the aspect of consumption. This innovative technology allows operators to obtain significant advantages and benefits, including energy savings of over 60% compared to traditional machines, an extremely compact layout (with a space saving of 60%), high flexibility and ease of change panel size and number of panels, as well as low running costs. Taurus is associated with two patents and a third that is pending. The production of this product, although very attractive on the market, brings with it numerous limitations which Kairos has brilliantly solved. Thanks to its innovative technology, Taurus represents a real revolution and innovation in the world of folding.

The interest aroused by the Taurus project is very high and in the coming months, Kairos will share the stages that will lead to its complete development.

The paper and converting industry represents a sector of great importance for the global economy, but also one of the most problematic from an environmental point of view. Paper production, for example, requires huge amounts of water and energy and can have a significant impact on the surrounding environment. For this reason, the attention of companies in the sector is increasingly focusing on the sustainability and reduction of the environmental impact of their production processes. Focusing on research and development is the only winning strategy for generating new opportunities and keeping pace with the changing production needs of the entire developer/manufacturer/user chain. Kairos, in this context, stands as a partner capable of intercepting and anticipating new opportunities for the tissue market. ●

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IF TISSUE TECHNOLOGY COULD RUN ON HALF THE ENERGY?

Less energy
Less water
Less CO₂

TT Energy Pack

A package of technological solutions
for paper mills to save their energy.

Photo by Braedon Mcleod on Unsplash

Cannon Bono Energia and Cannon Artes' sustainable solutions for **MG TEC Industry**



■ Cannon Artes EmbioArt™ proprietary membrane bioreactor technology.

The paper industry is one of the most energy-intensive industries in the world, accounting for a significant portion of global energy consumption and greenhouse gas

emissions. According to the International Energy Agency (IEA), the pulp and paper industry is responsible for approximately 6% of global industrial energy use and 4% of total global energy use.

by: Cannon Artes

The high energy consumption of the paper industry is due to the large amounts of steam and electricity required in the production process. Paper mills typically use a range of energy-intensive equipment, including boilers, turbines, and motors, to convert raw materials into paper products. At the same time, they require large amounts of water for various stages of the production process, including

pulping, bleaching and papermaking, which can also have significant environmental and social impacts on discharge. Compliance with environmental regulations necessitates using advanced wastewater treatment technologies to remove contaminants such as suspended cellulosic particles, BOD, COD, and chlorinated organic substances. Given these challenges, finding solutions to reduce energy consumption and improve sustainability in the paper industry is paramount.

“ Experts in tailored **Water and Wastewater** treatment plants ”



■ Cannon Bono Energia SG 1500 Fire Tube Steam Generator.

Innovative solutions, such as those developed by **Cannon Group** through the sister companies Cannon Artes and Cannon Bono Energia for **MG TEC Industry**, a Romanian paper mill, can help the industry to achieve its energy and sustainability goals while improving its bottom line.

Cannon Artes was chosen to deal with the wastewater treatment of a paper production plant. The company provided a solution based on a double treatment step: a

and more savings for the customer. Additionally, OptiSupport provides AR remote assistance services for maintenance activities or system failures. The results of these solutions combined were impressive. Our advanced boilers and wastewater treatments have significantly reduced MG TEC industry's energy consumption, improving the performance of its paper machines and reducing its environmental impact. Both companies offer a wide range of solutions, equipment, and services for the paper industry. Cannon Artes provides tailor-made solutions for paper mill wastewater treatment, including primary, secondary and tertiary treatments, while Cannon Bono Energia offers an extensive range of industrial boilers, including fire tubes, water tubes and heat recovery steam generators. Remote assistance services from the sister companies enable customers to receive real-time aid during routine maintenance activities or system failures. Sustainable and efficient solutions for the paper industry that address wastewater treatment and energy efficiency challenges make the Cannon Group an ideal partner for companies seeking tailor-made and intelligent solutions to improve their production processes while minimizing environmental impact in the paper industry. The success of this project demonstrates the importance of collaboration and innovation in finding solutions to the complex energy and sustainability challenges facing the paper industry. ●

■ Cannon Artes workshop in Oliveto Citra (Salerno), Southern Italy.



“ A rich portfolio of proprietary technologies, and Italian craftsmanship to meet the most challenging specifications ”

dissolved air flotation system (DAF) followed by a biological treatment with EmbioArt™ MBR technology, to be compliant with stringent limits for water discharge and reuse. The solution guarantees the best performance in removing pollutants from wastewater, minimizing the volume of sludge to be disposed of, optimizing operating costs, and significantly reducing overall dimensions. This represents the best choice for the paper sector, which is highly sensitive to process sustainability and attentive to continuous improvement in waste quality and water resource reuse. **Cannon Bono Energia** provided MG TEC Industry with two smart boilers for tissue paper production processes. The boilers use an HE Smart recovery system that keeps flue gas in the stack at a low temperature, making the most of the heat generated by combustion and lowering emissions. The proprietary OptiSpark control and management system allows boilers to work with superior efficiency, resulting in less consumption



■ Cannon Bono Energia workshop in Peschiera Borromeo, Milan Italy.

CANNON BONO ENERGIA

■ website: www.cannonbonoenergia.com

CANNON ARTES

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■ website: www.cannonartes.com

■ email: energy@cannon.com



Innovative machine concept for hygienic and personal care.

"Thanks to Siemens, we were able to complete the application twice as fast, in just one month instead of two. Stefan Meissner, Managing Director, Schott & Meissner Maschinen- und Anlagenbau GmbH. Schott & Meissner relies on automation and drive technology from Siemens for its production machine.
[siemens.com/schott-meissner](https://www.siemens.com/schott-meissner)

SIEMENS



Embolube[®] 120 D

an embossing fluid
technology for a safer,
sustainable future

PETROFER is proud to take care of the safety of converting staff, who can be exposed to fire risk, while generating significant cost and efficiency savings for tissue and non-woven converting.

by: PETROFER

The production of tissue items such as hankies, toilet paper or kitchen towels takes place in several steps. Besides the production, which includes stock preparation and the manufacturing process, the converting to the finished product is also an important part of the process. It is precisely here, in the converting process, that we have seen the opportunity to make a positive contribution to occupational safety and sustainability. During the processing of tissue, a lot of dust is generated, which combines with oil-containing substances that are used to keep embossing lines clean and float around the machine like a cloud. This is where our idea of improvement comes in. We are PETROFER and BFG.

PETROFER develops, produces and markets innovative process chemicals for a wide range of industrial applications. **BFG** as our Italian distributor, are also our service provider for technical problems and questions around the application of lubricants and chemicals in the local paper industry.

What is the challenge on the machine in detail?

The oil commonly used for embossing in tissue paper production has a low flash point. Due to the static electrical charge produced on the machine during converting, sparks often occur, which, combined with the aerosol fog of the oil,

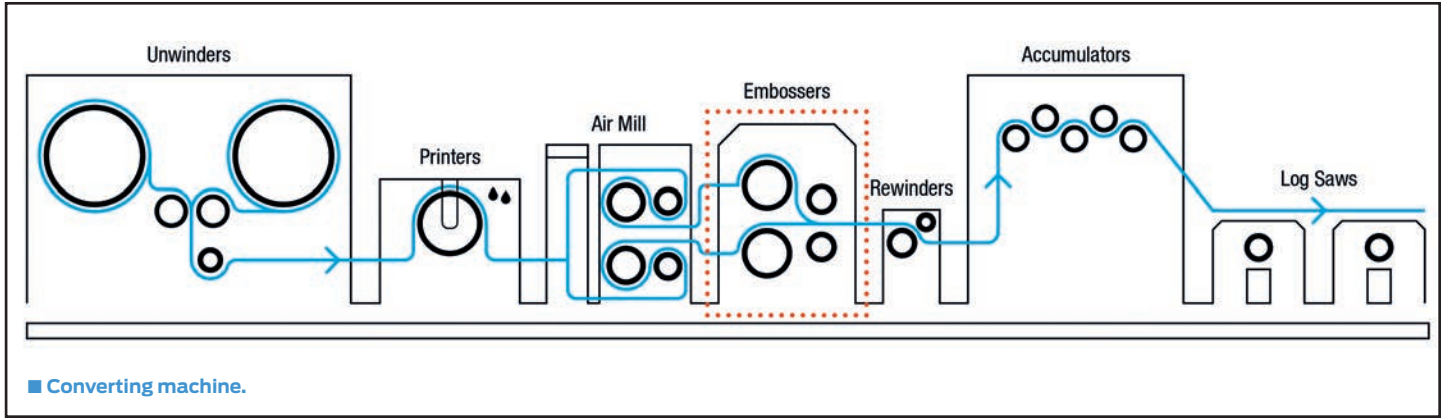
means a high risk of fire. These circumstances pose a huge safety risk to workers and any subsequent fires are the reason for the high costs incurred to repair the machines after an incident. Apart from these problems, the tissue paper manufacturing process brings other challenges.

The conventional and historical process, based on silicone oil, also has disadvantages. Most of the silicone oil available in Europe is imported from China and the supply of this oil presents logistical challenges. Additionally, due to the high energy consumption in the production of silicone oil, the process is extremely expensive and harmful to the environment. It also poses a hazard because it is very slippery, consequently there is a high risk of workers slipping if any of the oil spills onto the floor.

Our product Embolube® 120 D with its water-based formulation combines the excellent embossing and cleaning properties with an increased level of safety:

- high cleaning power.
- ideal lubrication.
- reduction of frictional heat.
- non-flammable product/no flash point
- as water based providing a significantly lower fire risk.
- lower total dosage = lower costs.
- not containing MOAH (aromatics).
- high delivery reliability and availability without huge logistical costs.

“ The **leading oil and chemical** supplier to industry - over 600 high quality chemical products ”



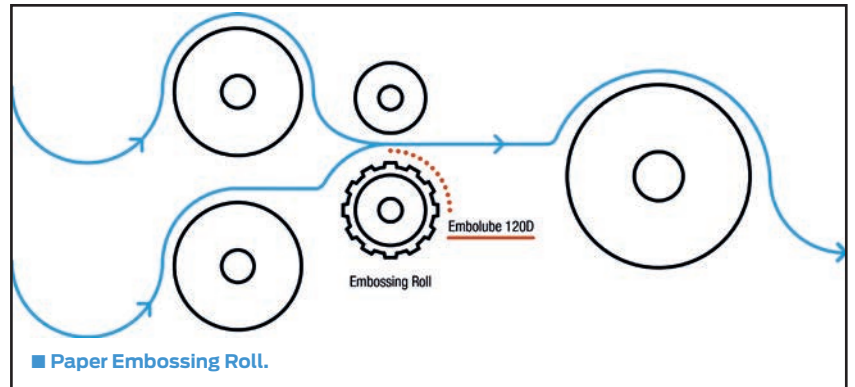
“ Process chemicals specific for tissue production and converting ”

Case study

One customer experienced up to 3 fires a year on their converting line. In addition to the enormous damage to the machine and the safety risk for his employees, this also posed a problem for the insurance company. Resulting in higher insurance premiums. We were given the opportunity to test our product. Right from the start, it became apparent that we could significantly reduce the consumption quantity while maintaining the same production quality/speed. In total, we reduced consumption by 55% compared to white oil. The reduction in consumption also eliminated the excess aerosol fog.

This has the positive effect that dust and pollution debris are considerably reduced. This minimized the cleaning effort and added two further production shifts per month. By using our non-combustible product, the insurance premium for the converting line could also be reduced, as well as the amount for storage and stocking. All this showed our customer that besides the safety advantages, a more cost-efficient product can be realised.

Conclusion: Embolube® 120 D improves efficiency, safety and cost savings in tissue and non-woven converting. ●



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S OMET

ONE FOLD AHEAD!



SABA AUTOMATION: outstanding growth in the tissue industry

“Automated end-of-line solutions”.

by: SABA AUTOMATION Srl





“ We develop **technical solutions**, according to your production process ”

▲ Palletizer Zeus L.

In the global tissue market, which is increasingly characterised by high-tech systems aimed at better control of production processes, SABA AUTOMATION has seen its share increase significantly, thanks to its customised end-of-line solutions, ZEUS P and ZEUS L. Customers who have adopted them describe them as solutions that can really add benefits and make a difference in terms of control, efficiency, simplification and safety. “To date, SABA AUTOMATION is delivering end-of-line systems for companies working in the tissue sector in several continents, and this is the demonstration of how our products and services are appreciated worldwide” - explains **Alessandro Pollini**, Sales Director of SABA AUTOMATION. All these systems, equipped with “Top-range” ZEUS anthropomorphic robots, are designed in close contact with our customers so as to reach the best in terms of performance.

◀ Palletizer Zeus P and Zeus Layer.

Our automatic ZEUS Robotic end-of-line systems are divided into two series, P and L. The P series consists of a single robot that can palletise packed products, coming from packaging machines, carton-packing machines and so on, by picking them and placing them directly on a pallet. The L series is characterised by two anthropomorphic robots, one for forming layers of product and the other for palletisation. These solutions are extremely fast in terms of cycles per minute and can serve even lines with a very high production output. Particular attention has been dedicated to the design of pick-up implements for products both packaged and in display format. These implements grasp the product without causing any kind of deformation; this drastically improves the quality of palletising. All grippers are “motorised with the interpolated axis” to ensure adequate handling of such a delicate product as is tissue paper. This makes picking more accurate with



respect to conventional pneumatic systems, and the product is never damaged.

Another “added value” is the *PAL software* platform, installed on an industrial PC. Thanks to this, you can keep all stages of operation under control: from incoming products to outgoing pallets, ready to be stored in a warehouse.

In the same manner as the system’s layout, the platform can be customised to fulfil the customer’s requirements. As far as the platform is concerned, the real “feather in the cap” is the section dedicated to creation, modification, etc., of various formats; thanks to 3D graphics, operators can actually see what they are creating or modifying. All this can be done in a very short time, using the user-friendly tools. In accordance to the principles of Industry 4.0, this software can be interfaced with the latest management software so that data can be duly exchanged. Digitisation of machines, flexible and automated format changes, remote management and control of production.

In addition to solutions featuring anthropomorphic robots, SABA AUTOMATION designs and builds BD CARTESIAN ROBOTS. These are compact solutions, with a high performance, ideal for lines handling paper napkins, handkerchiefs and inter-folded paper towels. SABA AUTOMATION also offers a vast range of conveyor systems for products and pallets, automatic wrappers, labelling machines, as well as warehouse entrance and exit areas. Automatic guided vehicles complete the range of end-of-line solutions.

“Throughout the years, we have never stopped listening to our customers, following the ever-

▲ Software PAL.

▼ Pallettizer Zeus P.

changing needs of the market and giving suggestions that can really and effectively help. We created SABA AUTOMATION on the basis of a very simple concept: customer satisfaction that does not end after installation of our systems but is actually the beginning of a relationship based on mutual development and growth” - explains **Alberto Pinotti**, Chairman of SABA AUTOMATION. In order to maintain this ‘steady growth’, SABA AUTOMATION is giving more attention to support and additional services. Our team is constantly researching and developing new solutions to facilitate production and use of equipment. Curiosity and the will to become better and better are the driving force of our company. In other words, we never sit back and relax but always look forward. Passion guides us and we want to share this attitude with our customers. ●

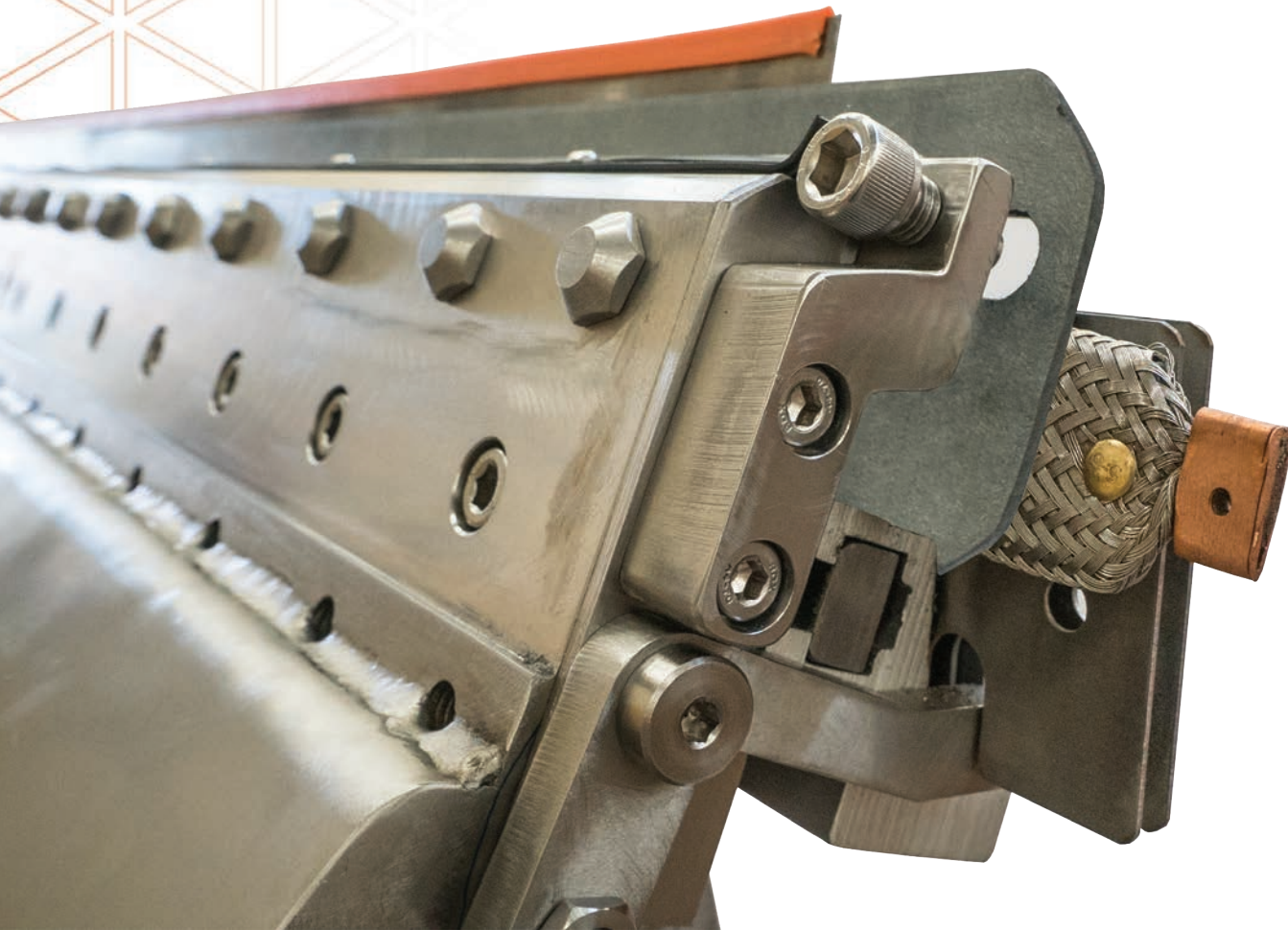
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Expanded testing possibilities thanks to a successful cooperation

Further improving the processing of tissue products together with SAUERESSIG, Gambini and WEKO.

by: Matthews International GmbH - SAUERESSIG Surfaces



■ Part of the SAUERESSIG team that hosted the Open House Event together with their partners from WEKO and Gambini – always at your disposal for your upcoming testing demands.

In the last issue of TissueMAG, the newly installed pilot plant at SAUERESSIG Surfaces was featured – highlighting the benefits of providing customers from the tissue industry with the opportunity to evaluate the performance of tissue products under realistic operating conditions. Now a successful cooperation between three major companies of the industry sets new standards by further driving forward the process of wet embossing. In this cooperation, established between **SAUERESSIG Surfaces**, Gambini, and WEKO, the specific competencies of the three companies merge to form the innovative process in the tissue segment that is known as **wet embossing**.

This procedure can be seen in action at the SAUERESSIG Surfaces' Mönchengladbach site, where the pilot plant is located. During *Tissue World 2023* in Düsseldorf, customers were invited to a three-day Open House Event to personally get an impression of the latest technology and to discover new possibilities for their market segment.

Now expanded: the capabilities of the pilot plant allow for wet embossing

With a production speed of up to 650m/min and equipped with three unwinders, the system impresses with a high degree of efficiency. Embossing technologies, including nested and top-to-top as well as pre-embossing are possible. Gluing of the front and back sheet can be easily implemented thanks to two gluing units. Recently, the patented technology AirMill® developed by **Gambini** has been added to the pilot plant. AirMill® is a wet embossing technology that allows for an effective, resources-saving process, in which the paper is moistened, so that the pulp fibers are plasticized with hydrogen bond, and then treated with heated embossing rollers provided by SAUERESSIG, resulting in textured tissue paper with a well-defined pattern, more bulk and absorbency, while keeping the same tensile strength – just to name one of the benefits linked to this technology. As it is not only heat but also fluid that comes into play to give the tissue enhanced

“ We believe in the **power of new ideas** ”



■ During the Open House Event, customers had the opportunity to take a closer look at the merged technologies of the pilot plant.



■ In-house pilot plant now with expanded testing possibilities.

properties and having the effect of less strength degradation than in a conventional embossing process, water has to be introduced into the converting system. Therefore, a specialized **WEKO** unit in form of a non-contact fluid application system has been installed as well. Based on rotating spray discs, an even stream of finest microdroplets is generated at high speed to give the fabric its individual properties with pinpoint accuracy. In combination with SAUERESSIG Surfaces' expertise in the field of surface finishings, the heated embossing rollers allow for a wide variety of patterns in an ideal combination of creative designs and optimum product features.

In focus: Open House Event during Tissue World Düsseldorf

During the three-day Open House Event, which took place alongside Tissue World 2023 in Düsseldorf, customers had the opportunity to see the **SAUERESSIG** pilot plant with the newly integrated Gambini AirMill® technology and the WEKO spray application system live and on site, to talk to the experts of the involved companies and to get more information about the benefits this process bears for their respective field of business. Samples were produced, so that the actual look and feel of the output became tangible. Asked about the potential of the testing options, it was widely

appreciated that the pilot lane runs under realistic operating conditions, whereas the production speed of up to 650m/min is to be mentioned foremost.

This way, test results can be transferred one-to-one to the production machine. At the same time, the smaller dimensions in width and diameter of the rollers used in the pilot runs result in a cost-effective approach - which in turn makes the testing options even more attractive.

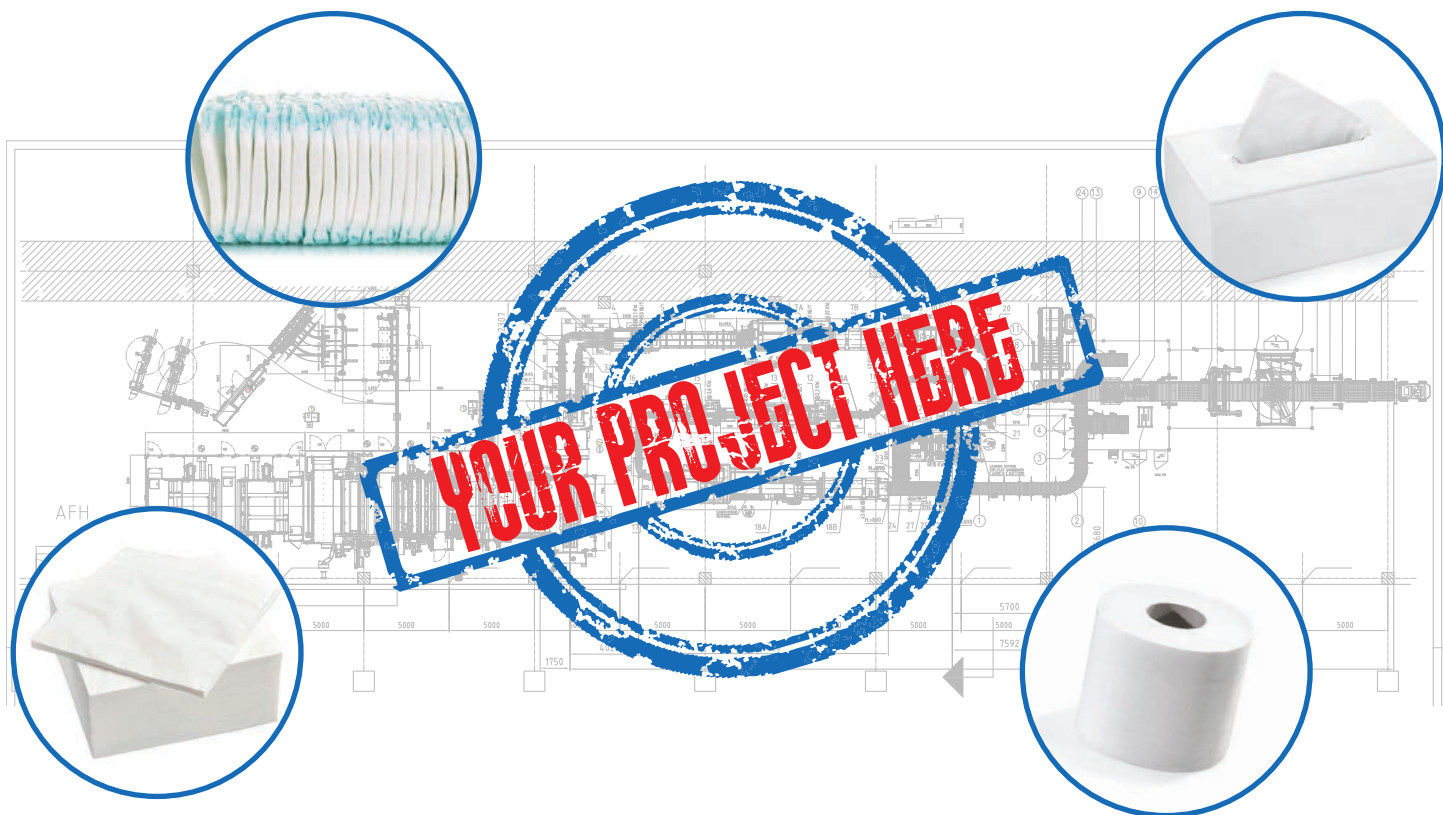
At your disposal: comprehensive testing options for tissue products

These are of course not limited to the three days of the Open House Event only. "We are highly pleased that with our newly expanded pilot plant we can provide a very useful appliance to the tissue industry - states **Andreas Greving**, Sales Manager Tissue at SAUERESSIG Surfaces - and, thanks to the successful cooperation with our partners, can offer even more interesting testing options to customers from now on". Together with the team, he is confident that the pilot plant with its extended capabilities will be used actively in the future to develop new prototypes with various technical properties and to test unique designs in the tissue segment - thus refining the production process and ultimately putting into effect all the individual demands that are placed on the final tissue product. ●

MATTHEWS INTERNATIONAL GMBH | SAUERESSIG SURFACES

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- email: andreas.greving@saueressig.com



Your ideas, our solutions



Our packaging lines are designed with your needs in mind. Product management, available spaces and the operation of your business are the elements that guide our team in developing the most efficient layout and solutions for you.

Each machine in the line has been created to be user-friendly. Discover a more efficient way to work thanks to an intuitive interface and technologies developed to make your production smarter.



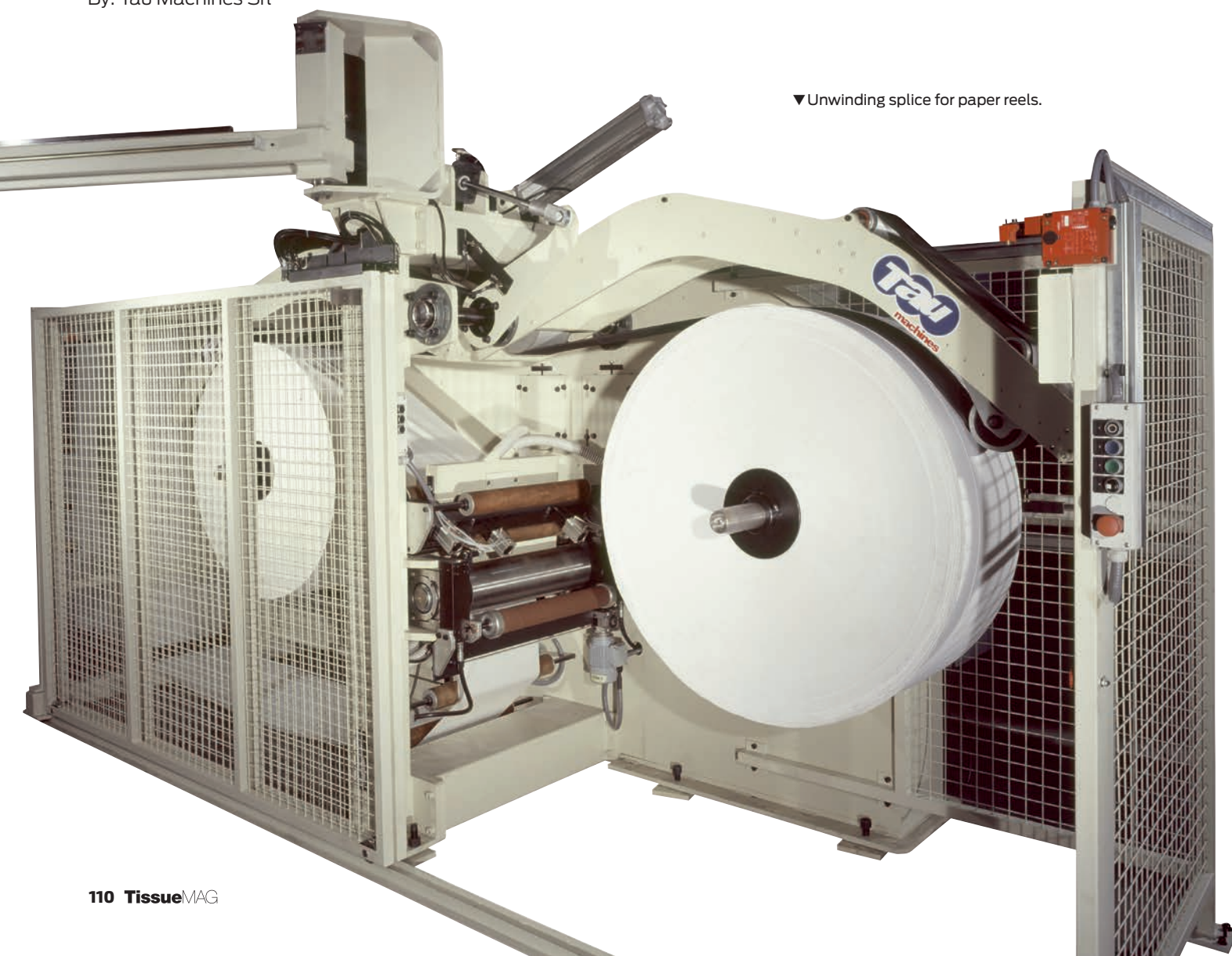
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“New complete handkerchief lines”

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.

▼ Multiple packs bundle machine CS120.



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

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

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.

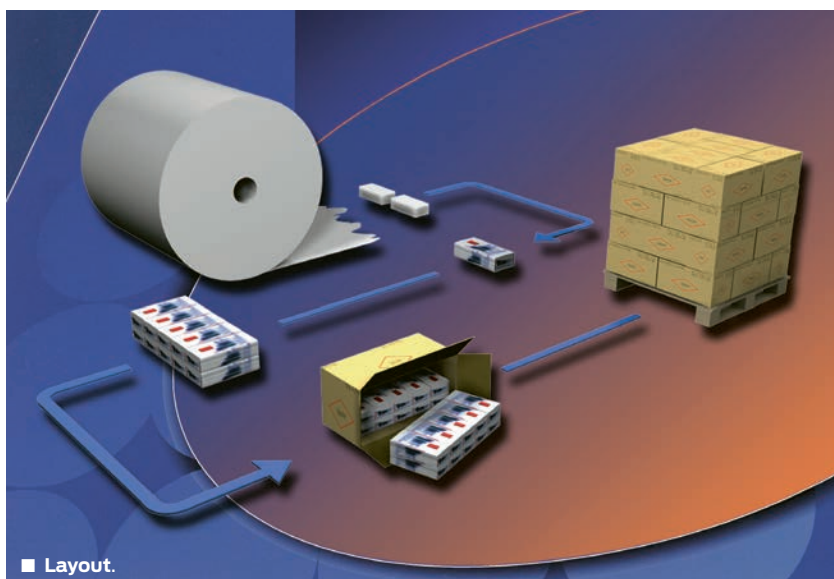
At the beginning of the 2020s, despite a difficult worldwide market situation due to Covid-related events, we introduced further important developments that have reinstated Tau Machines at the highest technological level in handkerchief production, with a special focus on sustainability. Our technology 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.

“ Machines designed for the needs of the customer, with an eye to the future ”

- 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.
- 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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Uniform non-contact fluid application

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■ Uniform non-contact fluid application with WEKO-SIGMA.

“ WEKO, **innovation** with tradition ”

As ply bonding of multi-ply tissue is a hot topic, it can be seen that tissue manufacturers are struggling to achieve a strong bond with a soft hand. Thanks to the precise application of liquid, WEKO offers efficient solution concepts for your multi-layer fabric with layer binding and water binding! WEKO's water bonding process, which uses water during embossing, helps improve ply bonding in a roll converting machine.

by: Weitmann & Konrad GmbH & Co. KG

The innovative company from southern Germany with 70 years of experience and close cooperation with manufacturers of additives has developed a precision system based on proven technology: the non-contact liquid application system.

This offers numerous advantages for the tissue industry. Your Benefits:

- Free in embossing design.
- No knurling necessary.
- Process reliability.
- Precision and reproducibility.
- Less strain on the tissue.
- High productivity and economy.
- Raise in print quality.

The WEKO solution

Based on rotating spray discs, an even stream of the finest micro-droplets is generated at high speed in order to give the fabric its individual properties with pinpoint accuracy. The application quantity can be controlled quickly and precisely for reproducible results. The mechanical tissue strain does not come into play with the WEKO-Fluid-Application-System (WFA). There is no contact with the tissue and therefore it is handled extremely carefully. The rotation of the discs create a 360° spray circle from which a part is used that meets the tissue. The remaining part of the spray circle is kept in the chambers of the rotor carrier and is circulated to the supply unit where it is re-used. By continuous filtering the liquid, contamination of the application bath does not appear.

As a special option for this industry **WEKO** thought about a solution to prevent the tissue web from sticking and so breaking if the machine is being stopped.

WEKO-ProTec

Our encapsulated version WEKO-ProTec provides the rotor carrier with an enclosure which can be connected to an extraction system. Contamination of the working environment is avoided and thus safety generated.

How does it work?



PLY BONDING

Ply bonding with WEKO means bonding the single tissue layers applying a defined small amount of liquid glue. The combination of several plies during embossing forms the multi-layer tissue. For WEKO's rotor spray application water-based glue is suitable. Its fine dispersed micro droplets are distributed even and work perfect on sensitive surfaces without any material strain.



WATER BONDING

Water bonding is a booster for the ply bonding process. With three or more plies an adhesion is possible without extra knurling. Therefore the



▲ Encapsulated rotor carrier WEKO-ProTec for the application of critical fluids.

▼ Stefan Käszmann, Area Sales Manager WEKO.

embossing design is very flexible and cost saving since no extra knurling tool is required. By spraying a defined amount of water, the layer adhesion is massively improved, as the water increases the penetration of the before applied glue in every single layer. Also the swelling properties of the fibers allow improvements of the tissue in dimension, bulkiness and volume. Your process reliability is increasing since the system works very continuously.

“ Solutions for the processing of the finest structures ”



SOFT LOTION



FRAGRANCE



ANTIMICROBIAL



PLY BONDING



WATER BONDING



RAISE PRINT QUALITY



INCREASE EMBOSSING QUALITY



RAISE TISSUE VOLUME

■ Our application possibilities in tissue.

Are you looking for a unique selling proposition for your product?

Whether handkerchiefs, toilet paper, serviettes or facial tissues, create your own touch and increase your product quality and offer added value for your range through the liquid application of additives.

Experience the “Innovation at work”. Together with an international partner, we are currently working on a pilot line where you can test your ideas outside of the running production. Contact us for more information about the improvement of your multi-layer tissue. ●



▲ YouTube Video.

WEITMANN & KONRAD GMBH & CO. KG

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100% Carbon-Fiber expanding shaft allows both faster max speeds and acceleration/deceleration

New expanding, multi-bladder shaft for counter-roller tissue rewinding machines delivers better energy efficiency, tissue production and operator control precision

by: Svecom-P.E. Carbon Fiber

With the intention of maximizing mechanical performance and lightness, Svecom Carbon Fiber combines the experience accumulated in over 60 years of production of expanding shafts with the advantages deriving from the use of carbon fiber. The process includes a production system that allows the construction of tubes with different mechanical characteristics for the construction of expanding shafts, through the use of Filament Winding and Roll Wrapping technology.

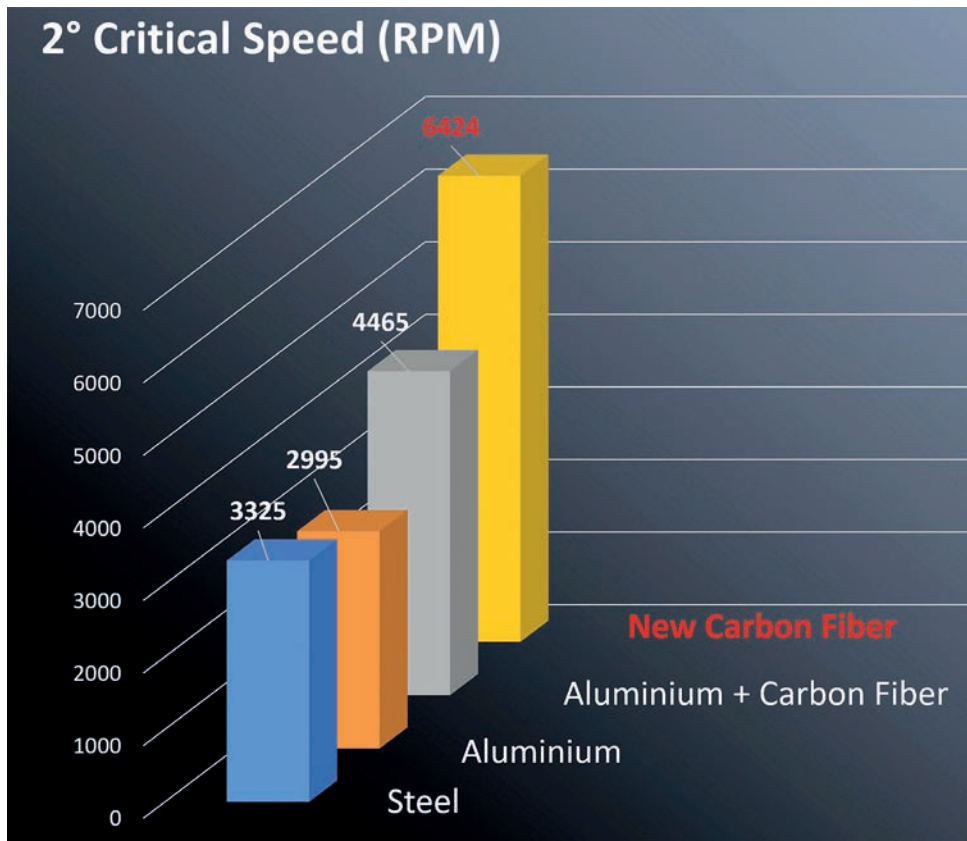
100% Carbon-Fiber Expanding Shaft

The Italian technology company **Svecom-P.E.** has introduced a new patented expanding shaft made entirely of carbon fiber, CF.

The new multi-bladder expanding shaft has three ledges and offers mechanical properties which are unique in the market. A major benefit of the new carbon fiber shaft is that it now allows operators to exceed the usual speed limits for 3" core diameters on tissue rewinders, thus allowing them to run at mechanical speeds of over 1200 m/min.

Reach operating speeds four times faster

The new 100% carbon fiber multi-bladder expanding shaft has been specifically designed to meet today's higher technical requirements on

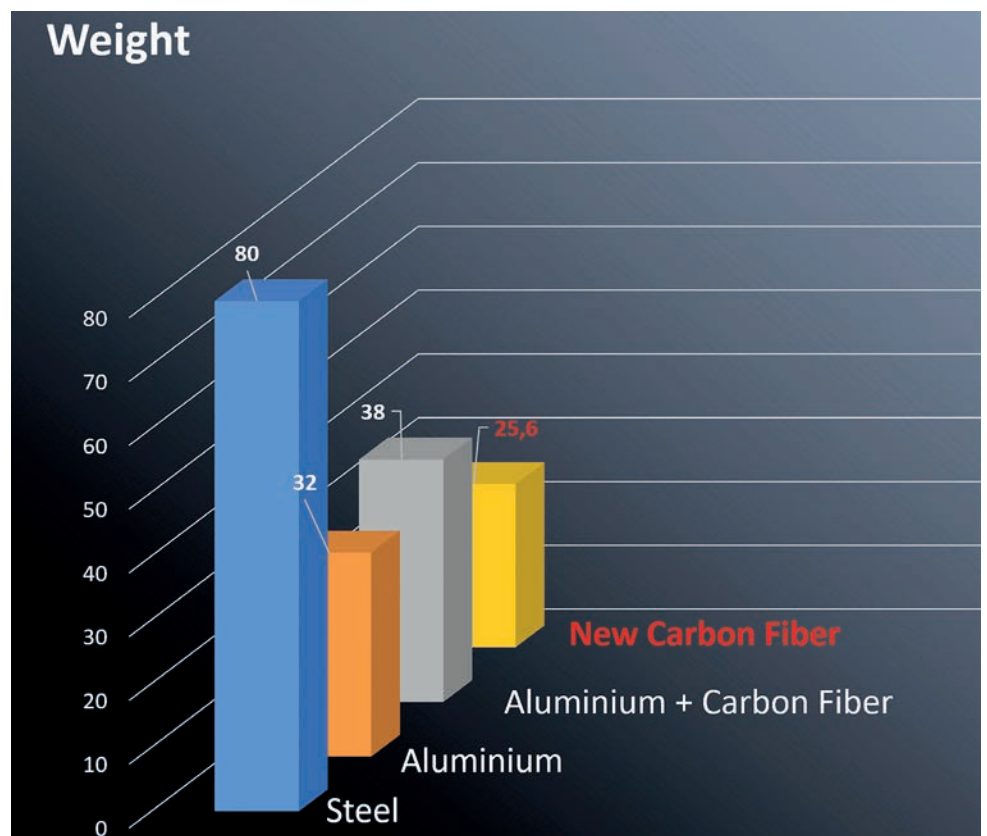


“
Global presence
and experience
since 1954
”

▲ Fig 1: Carbon fiber offers much higher critical speeds, compared to traditional and hybrid shafts.

“
Constant
innovation,
tailored
solutions
”

► Fig. 2: Weight is greatly reduced as well, giving numerous benefits.



**Specs and mechanical advantages of 100% carbon fiber shaft compared to the other types.
In particular, CF has a better UTS (Ultimate tensile strength) and a higher EM (elastic module)**

Material	Bearing ø	Expansion	UTS (N/mm2)	E.M. (GPa)	Inertia (cm4)
Solid steel (Fe510)	74 mm	3 centering ledges + gripping ledges	510	210	88.87
Aluminium	74 mm	3 centering ledges + gripping ledges	310	70	88.87
Aluminium+carbon	75 mm	3 gripping ledges	310	165	110.84
New carbon	75,2 mm	3 gripping ledges	1521	250	90.66

counter-roller rewinding machines. This makes it possible to get very fast acceleration and deceleration times and also reach the operating speed much earlier than traditional shafts. Operating speeds are reached four times faster compared to traditional shafts, consequently increasing the overall productivity. The light nature of carbon fiber also allows much higher maximum operating and peak speeds, with no vibrations from the shaft while achieving them. Critical speeds increase significantly: +98% compared to steel shafts, +119% compared to aluminium shafts, +35% compared to aluminium shafts with carbon inserts (Fig. 1).

Lower weight gives benefits too

As a further benefit, carbon fiber shafts have a lower specific weight, thus reducing the energy required to operate them in the machine. The specific weight is 65% lower than steel shafts, 20% lower than aluminum shafts and 32% lower than a carbon shafts with aluminium inserts (Fig. 2). A higher elastic module also grants greater stiffness and consequently, upon application of a high load, the shaft will undergo minimal deformations. The 100% carbon fiber expanding shaft represents a real revolution for such expandable systems and is an innovation based upon Svecom's lengthy experience with these materials, as well as close collaboration with a leading company in the carbon sector for military and sports applications. The 100% CF solution allows a wide range concerning the geometry of shafts, and therefore the ability to satisfy the customer's needs. ●



SVECOM - P.E. SRL

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■ website: www.svecom.com

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▲ 100% Carbon-Fiber expanding shaft.

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IM CONVERTING



INTERFOLDING LINES of new generation are attractive for the folded tissue producers and make the company expanding on new markets.

by: IM Converting Srl

It has not been many years since IM Converting entered the market, and this company is already talked about a lot. 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.

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.

In the second part of the past year and in the first months of the current year, IM Converting has signed agency and collaboration agreements with well established companies and well known professionals to promote sales on markets like Middle East (Lebanon, Jordan, Kuwait, Bahrain, Saudi Arabia, Qatar, UAE, Oman), North Africa (Algeria, Morocco, Tunisia, Egypt), Spain, Portugal, Poland, Greece, South Africa and others are being discussed. The tissue producers have shown particular interest towards **IM fold**, the interfolding line for towels, toilet paper and facial tissues, which, thanks to a patented mechanical folding system, allows to obtain a very high overall efficiency and a perfect fold of the product; difficult to handle and high basis weight tissue are perfectly processed as well.

▲ IM fold interfolder line.

“ The “Made in Italy” answer to global challenges ”



Other very important targets reached are energy consumption approximately two thirds lower than competitors' machines and high-level production speeds. In fact, the **IM Converting** technology allows the use of a vacuum generator, necessary for the paper transfer phase in the folding area, very small in terms of absorbed electrical power and its size, thus easily installed in very little space that makes it also suitable for all those companies that value space as a cost.

▲ IM hug packaging line.

Thanks to the experience gained in production and to a recent investment in research and development, we have patented the evolution of the consolidated mechanical folding system.

This last generation of our folding heads allows to obtain a considerable increase in production speed keeping the same low consumption. In addition, the time for production changes and set-up and maintenance operations has been considerably reduced and this increase the overall efficiency, thus leading to the already mentioned benefits.

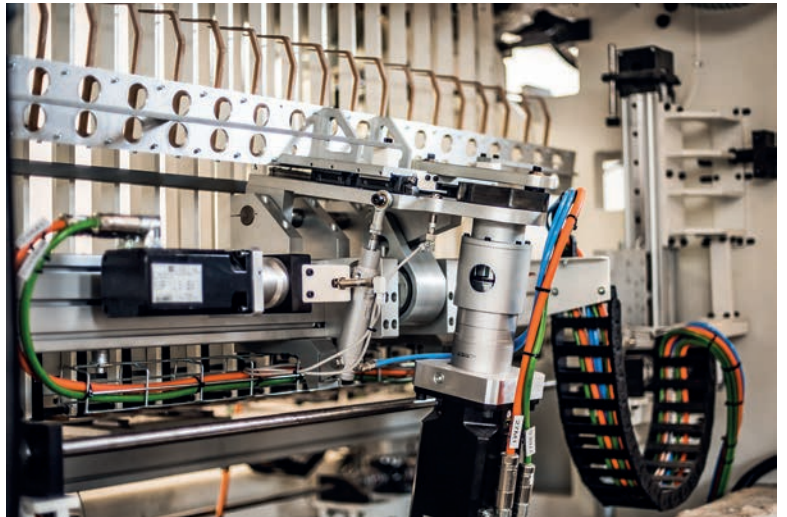
Another very successful milestone reached by IM Converting is the **IM hug** folded product **logs banding machine**.

There are by now many installations of this machine on the market, also in already existing folding lines supplied by other OEMs.

IM hug offer a more *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 products using paper instead of plastic,



▲ Folding head.



▲ Automatic transfer, patented system.

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 1.2 m diam. which allow an only one reel change per shift; 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 increasingly efficient machines paying attention to the conservation of the environment. Energy saving and efficiency increase achieved are the goals that drive our R&D activity, to be always prepared for new challenges. ●

“
More than 25 years of activity in the **tissue converting** machinery and plants industry
”



◀ Mechanical folding roll - patented system.

IM CONVERTING SRL

SS del Brennero snc 55023 Borgo a Mozzano Loc. Socciglia (LU) - Italy

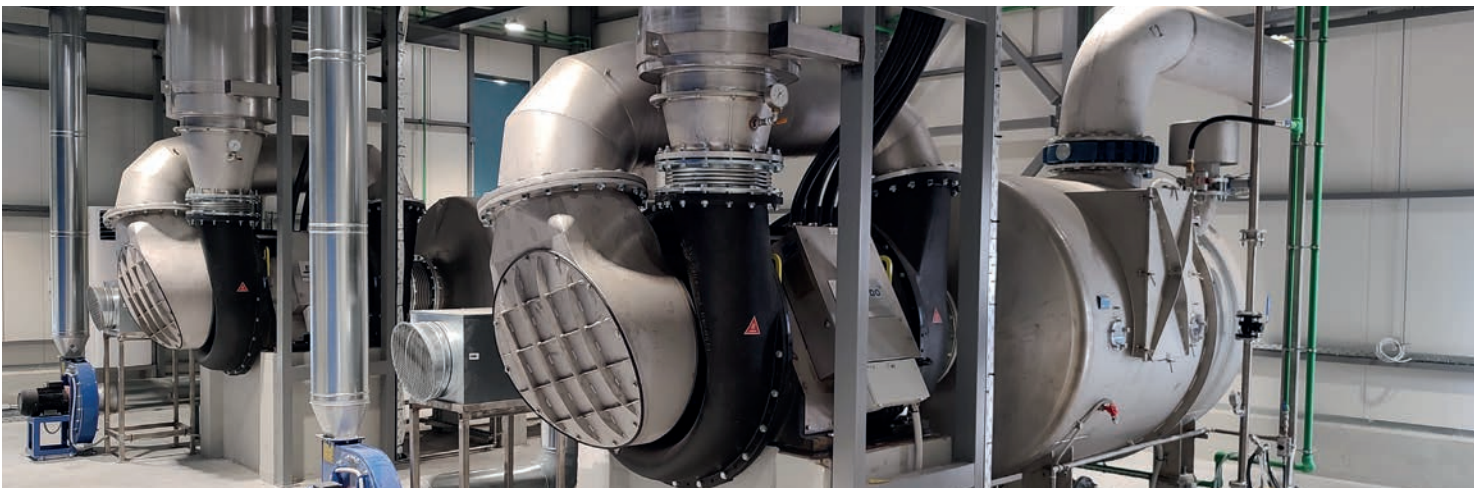
■ website: www.imconverting.com

■ phone: +39 0583 1802122

■ contact persons: Mauro Della Santa, Head of Sales - mauro@imconverting.com

Marco Martini, Ceo - marco@imconverting.com

Maximize the efficiency of your tissuemaking process



Runtech's RunEco paper machine vacuum system provides a reliable, completely water-free vacuum solution. EP Turbo Blowers always feature variable speed and capacity. An integrated high-speed motor makes the system very compact and easy to install. In most cases, an existing system can be replaced with minimum piping and civil work costs. Most of the installation work can be carried out while the machine is running. In typical rebuild cases, energy savings amount to 40–60% compared to the old system.

We are the only company globally who can offer both liquid ring and dry turbo blower technology – or a combination of both. With our portfolio we can always find a perfect fit for customer's demands, needs and budget. Contact us to learn what we can do for your mill.

runtech.sales@irco.com
www.runtech.fi

Single-width tissue machine

Old system	kW	New system (Runtech Turbo)	kW
LRP x 2	680	EP400	220

896,000 €/a
Cost of energy saved

Double-width tissue machine

Old system	kW	New system (Runtech Turbo)	kW
LRP x 5	1300	EP600 x 2	400

1,754,000 €/a
Cost of energy saved

*232 EUR/MWh



PANIKER, Engineering in Adhesives,

with a focus on
sustainable adhesives
for the converting
industry

■ Paniker focus on sustainable water-based adhesives for the converting industry.

Consumers and businesses are increasingly demanding products that meet the needs of the environment, while still fulfilling their primary purpose. In the converting industry, trends show on the one hand a gradual shift from plastic to paper together with a need to optimize and increase resource efficiency.

by: Paniker, S.L.

Water-based adhesives, although unnoticed, play an essential role in the converting industry, intervening from the core (tube winding) to the final closure (tail sealing). The different formulations of the adhesives must be adapted to all production processes, allowing high working speeds to be achieved on many types of paper. Along with these technical solutions, widely validated by the market, at Paniker we also believe that we must make a difference.

For several years, our R&D Department has been working on the search for technical solutions that complement our wide range of adhesives for tissue and towel: at this point, sustainability is one of the main objectives that must be set in any innovation project.

Circular economy and sustainability as an everyday goal

It is increasingly important to keep the focus on caring for the environment and all actions, even the smallest, have an impact. At Paniker, we are working closely with our suppliers on the formulation of adhesives within the framework of the circular economy. Many of our new projects involve research and



■ Paniker facilities for IBC/GRG cleaning.

developments both in water-based and hot melts intended for the wrapping of the toilet and kitchen rolls with paper, instead of plastic film. Despite being a change already to be fully implemented within the industrial frame, we must be anticipating the future needs of the market. Also, by taking other steps, **Paniker** is committed to reduce the carbon footprint and unnecessary transport of the used IBC/GRG. Our own new cleaning facilities allows us to recover and reuse the provided IBC. With this action, we are able to reduce and re-use many medium containers that otherwise will have to be transported, recovered and transported again.

Paniker: 100th years of experience as adhesive manufacturer

On 3rd of February 2022, the Barcelona-based company dedicated to adhesives reached the magic milestone of 100 years old. Starting its journey providing adhesives and products for the leather and footwear industry, Paniker has managed to develop a wide portfolio of products with different technologies.

Over the years, Paniker has developed a wide range of adhesives for applications including lamination and tube winding which are adapted to meet the needs of the market and comply with FDA/BFR Regulations.

With a specific plant for the manufacture of the tissue range of adhesives, currently, Paniker is able to produce **15,000 tons/year only for this market.**

The comprehensive range of adhesives for the converting industry has its best-sellers for each application: **EUROPANOL 8550** for tube winding, **TISSUECOL 904** for lamination, **TISSUECOL 915** for pick-up and **TISSUECOL 273** for the sealing of the roll. This range of adhesives are clean, versatile and above all: market proven. If you wish to know more about our company and our technical and sustainable solutions, please contact us: www.paniker.com



▲ Tissuecol range of adhesives: for lamination, pick-up and tail seal applications.

Operational efficiency and sustainability

The concept of sustainability includes actions such as meeting our present needs without compromising the resources of future generations. For Paniker, this means thinking about more efficient production processes: the adhesives in the Paniker tissue range allow a great dilution capacity. This supposes a more optimized consumption, given that a lower grammage of applied adhesive is required, which generates a smaller carbon footprint.

Green goals and achievements within the adhesives range

Paniker's wide range of tissue adhesives has several distinguishing characteristics: it has a **high percentage of bio-based raw materials** (80-95%), and is almost 100% redispersible. The re-dispersion of the adhesive implies that it does not interfere with the paper recycling process, a very important feature that adds value to the product and is compatible with a more sustainable vision of the converting industry.

Moreover, our adhesives are formulated without plasticizers and free of mineral oils (MOSH/MOAH), allowing operation at high speeds on machines (+650 m/min). ●

“ Leaders in **liquid and solid adhesives.**
Company founded in 1922 ”



■ Paniker's one of the R + D + I laboratory.

PANIKER, SL

Crta. Barcelona a Sta. Creu de Calafell, 68 - 08830 Sant Boi del Llobregat (Barcelona) - Spain

■ website: www.paniker.com

■ phone: +34 936 402116 - email: paniker@paniker.com

Powerful –
like our
energy-saving
technology

New facial tissue and towel interfolder



© „JenkoAtaman“, „showcake“ – stock.adobe.com

For the high-speed production of facial tissues, the new VENTUS-TI interfolder is the right solution. High productivity, flexibility, and easy maintenance allow maximum efficiency to produce interfolded facial tissue and towel products.



Its wide range of tissue web unwind options and the versatility of the web treatment processes also offer the possibility to produce a broad portfolio of different interfolding products. Machines with deckle widths of up to 2.900 mm are available. A new energy saving vacuum folding technology is turning it into a very sustainable solution.

W+D leads you into the future of sustainable production, while keeping you competitive through maximum productivity, flexibility and optimized efficiency.

Inquiries and further information:
sales.hygiene@w-d.de | www.w-d.de



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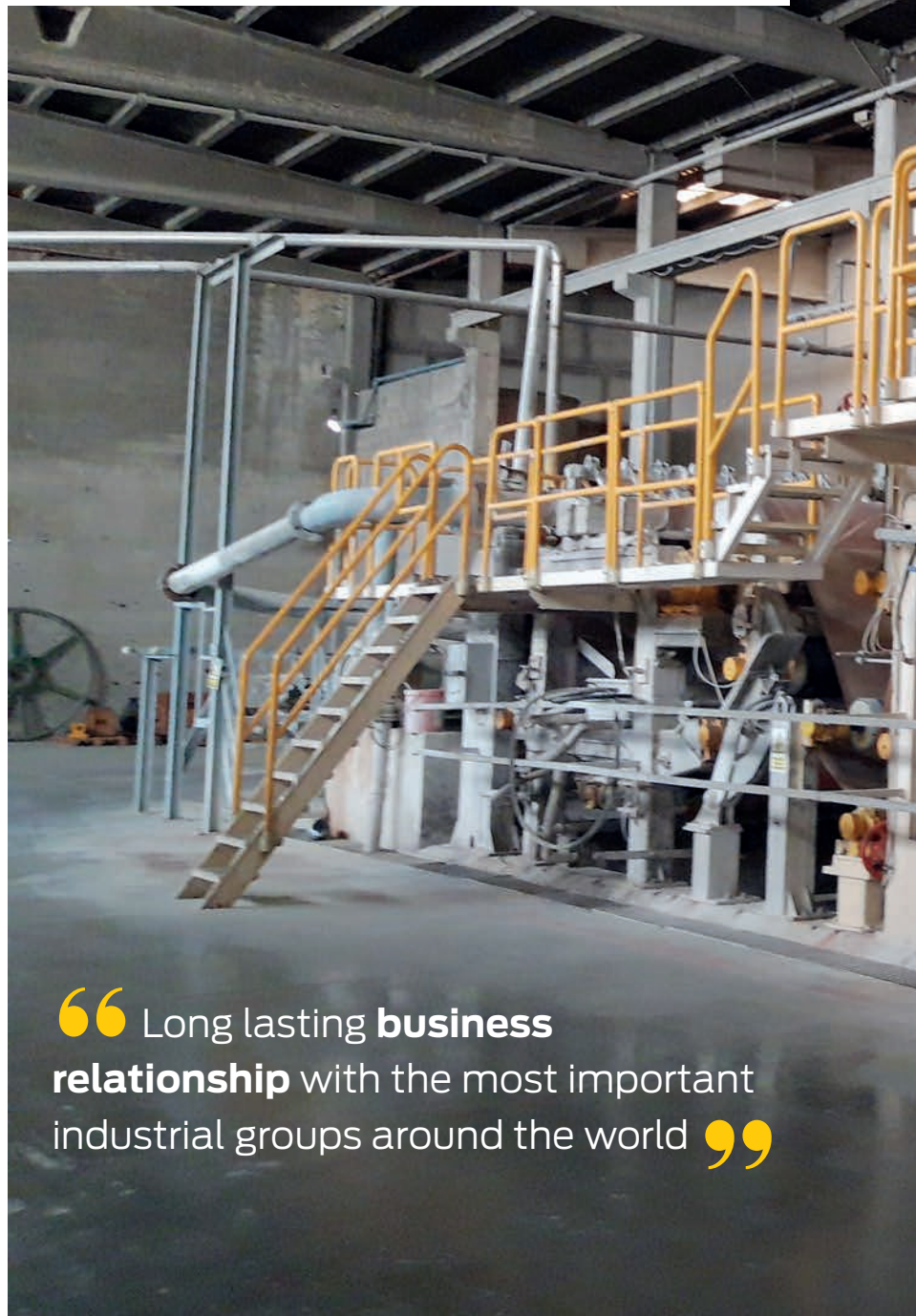
Finding a second life for paper machinery with COINCART

By: Coincart Srl

Coincart is one of the leading European companies in the field of second hand machinery trading for the pulp, paper, board and tissue industry. Since its foundation in 1996 the company has provided to the industry its contribution in order to give a second life to complete plants, paper machines, full lines and also to single pieces of equipment, aiding mainly European companies to recover part of their former investment when they decide to install new equipment, and at the same time assisting also companies from any other part of the world to start new productions or improve their existing ones at a considerably reduced cost.

The possibility to make use of second hand equipment, in general, is essential to start new business or production units, to expand existing ones with a limited investment and in any other case in which the cost of machinery is an important issue. Often saving a significant percentage of the total cost of the investment may be the difference between realising a project or renouncing to it.

Also for well established groups and companies, a ready-to-install solution can be appealing when time is essential and even if a serious overhauling is needed before installation, the time necessary to recondition used machines is much shorter than the one needed to produce a new one for a manufacturer of new machines. Finally, no sound management should look down to the chance to radically change the numbers of a business plan taking into consideration some



“ Long lasting **business relationship** with the most important industrial groups around the world ”



suitable second hand opportunity!

With its record of 37 Paper, Tissue and Board Machines sold, and a big number of important sections of machines (such as complete forming sections, press sections, dryer sections, rewinders etc.), converting lines both for paper and tissue, stock preparation

equipment, corrugators, etc. **Coincart** is a reliable partner ready to assist in any case in which a company desires to sell its old machinery or to find a good opportunity to purchase good used machines. Coincart can also act as a reliable promoter for the sale of important lines on the world market through its global network of clients and colleagues, operating in this case as an exclusive agent for the seller. In fact, during its many years of constant presence in the market, Coincart has established long lasting business relationships with hundreds of the most important industrial groups around the world.

Actually, Coincart's well known and always



“
Full service
for second
hand paper
machines
”

updated Internet site has become a constant focus point for companies looking for second hand equipment around the world. However, Coincart is not only a dealer, but a partner able to provide every kind of side service concerning paper equipment and assist both customers and suppliers in any phase of the business: it can offer a wide range of services from general consulting to dismantling, from transport and reinstallation to overhauling, engineering services, personnel training, start-up assistance, paper-making and production optimization, up to 100% turn-key projects in case it is required by the customer. In order to do so, Coincart relies also on a selected group of well established and long-term partner companies and individual professionals, engineers, technicians operating in any segment of the market, able to provide any kind of the above said services, each one for its own specialised field of competence: all companies that have proved themselves capable and reliable in a constant way during many years of cooperation.

Finally, as a seal of consistently serious and correct behaviour through the years, we can say that Coincart is founding member and sole Italian member of PIDA – *Paper Industry Dealers Association*, an exclusive group of international dealers who have given themselves a code to behave honestly and ethically in business towards clients, suppliers, and among themselves. Therefore we're sure that it will be worth for any operator of our industry to contact this specialised and very well established company for any need or request concerning second hand equipment. Interested readers can easily contact Coincart by email, phone or through the company's Internet site and social networks, communicating freely in English, Spanish, French and of course Italian: info@coincart.it, www.coincart.it, www.linkedin.com/company/coincart-srl ●



COINCART SRL

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- email: info@coincart.it
- contact person: Marco Rubboli

we tiss you.

new standards for tissue manufacturing and converting.

For decades, the name SchäferRolls has been synonymous with outstanding performance where roll covers for tissue manufacturing and converting are concerned. Based on the experience gained through numerous successful applications, all of our tissue roll covers have been developed to comply with the special demands of the respective roll position, the specific product manufactured and the particular preferences of the machine operator. And we do all of this with the object of achieving new dimensions in the productivity, product quality and overall performance of your tissue production.

HybriFlex, P1, P40, tisQ, Q.dura.

For pressure rolls, suction pressure rolls, embossing back-up rolls, marrying rolls, adhesive applicator rolls.

Want to find out more about HybriFlex and other roll covers?

Just ask the experts at SchäferRolls – we'll show you how to optimize your tissue and converting machines.

SchäferRolls GmbH & Co. KG

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71272 Renningen, Germany
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www.schaferrolls.com

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Precision all round.



PROMOTECH: how to deal with the shortage of components?

Will 2023 still be a year of the microchip crisis?
What is happening to the supply chain?
Let's talk about it with Promotech.

by: Promotech Srl

The semiconductor crisis has been going on for two years now. The approximately \$550-billion industry is becoming increasingly important considering the worldwide ecological and digital transition. Many are suffering from a limited offer that cannot keep up with the demand, so companies are looking for different ways to keep production lines running.

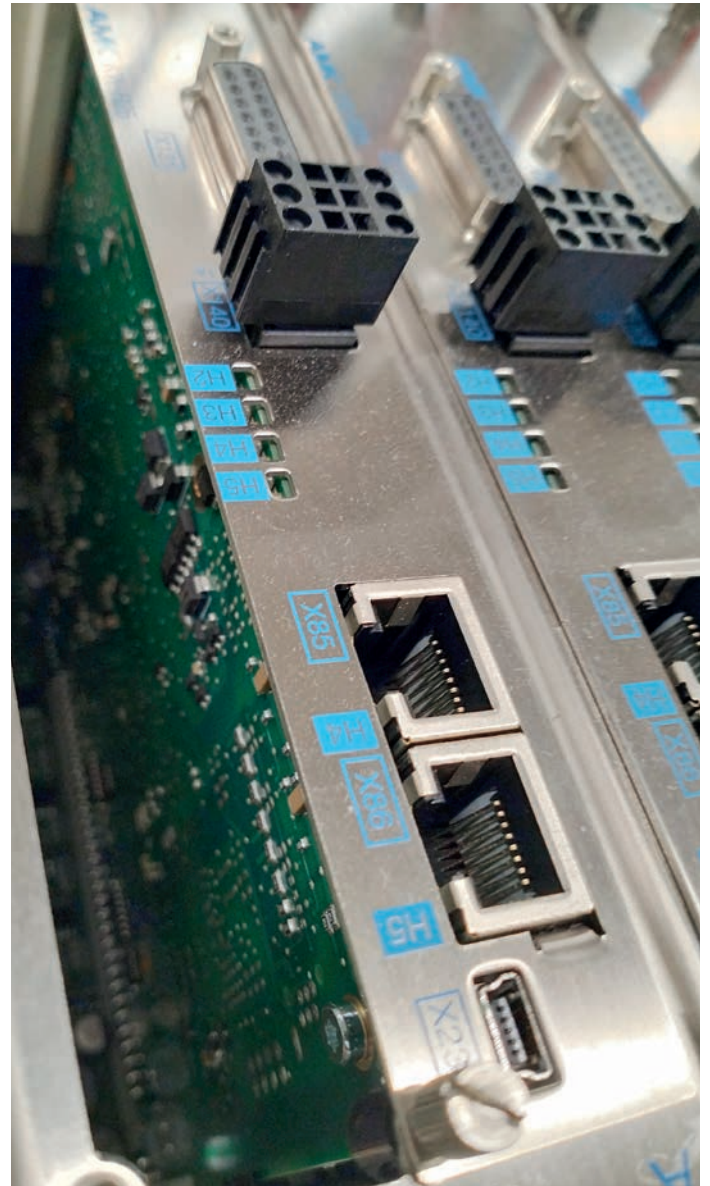
Since the end of 2020, a serious shortage of microchips has been affecting many industrial sectors and the main problem is that demand far exceeds the global production capability, so the total offer consequently. The crisis has various reasons, partly economic and partly political; structural and conjunctural. The following three structural factors are the main causes: the improvement of 5G technology; the production of electric cars and the growing importance of chips in the *Internet of Things*. Also economic factors played their role including the pandemic, the drought in Taiwan but also the misjudgment of technology industry. In fact, the significant increase in demand has been based mainly on inventories, taking late decisions on the increase in production. Finally, the reasons for the crisis can also be explained through trade and geopolitical tensions: trade tensions between China and the United States; the war between Russia and Ukraine, which are also suppliers of chemical gases such as C₄F₆ and neon, essential for the production processes in the semiconductor supply chain.

The **European Parliament** has already confirmed its position and is ready to start negotiations with EU governments to issue the *European Chips Act*

“ Promotech: great stock availability, **problem-solving ability** and efficient repair service ”

(or European Semiconductor Law) which aims to increase the production of semiconductors in Europe. Furthermore, in February 2023, MEPs adopted the Chips Joint Undertaking: an investment programme whose aim is to support the growth of the sector and promote medium- and long-term EU leadership in this field.

Will this come to an end? To customers and suppliers, the current acute shortage of devices is expected to continue at least in 2023 and perhaps onwards. Overall, though, the data show that the industry of electronic components is registering another highly productive year, with a strongly increased demand. In fact, the *Semiconductor Industry Association (SIA)* argues that “the demand for semiconductors is expected to increase significantly in the coming years, as chips are



getting more integrated into essential technologies”. We are witnessing a constant demand in all vertical markets, due to the fact that products used also in industrial automation are becoming increasingly smart. This leads to a multitude of new applications across all sectors, including smart factories, experiencing the so-called Fourth Industrial Revolution.

Are the lead times expected to improve? The delivery times are showing slight signs of improvement. However, the supply chain instability and inflationary pressures are supposed to persist all over 2023. Customers place orders many months in advance, if they can, but most of the time we find ourselves facing delays in deliveries being up to 8 months.

How can designers and buyers manage the lack of supply of automation components? Developers and customers

are always looking for solutions to manage the shortage of electrical and electronic equipment for industrial automation.

Designers and buyers have to examine purchases on sales, carefully planning the receipts of raw materials and components.

They work with trusted distributors, such as

Promotech, sharing their medium-long term production plans.

In order to achieve this, the distributor has to risk its possessions being financially solid. This can increase its stock levels.

Is a plan based on the Design for Availability at the first stages a valid solution? Yes, it is. It can avoid too long lead times or higher costs for a new planning with alternative components. If the designers cannot get the necessary components, then alternatives will inevitably be found. But if this solution is considered at the very beginning, it

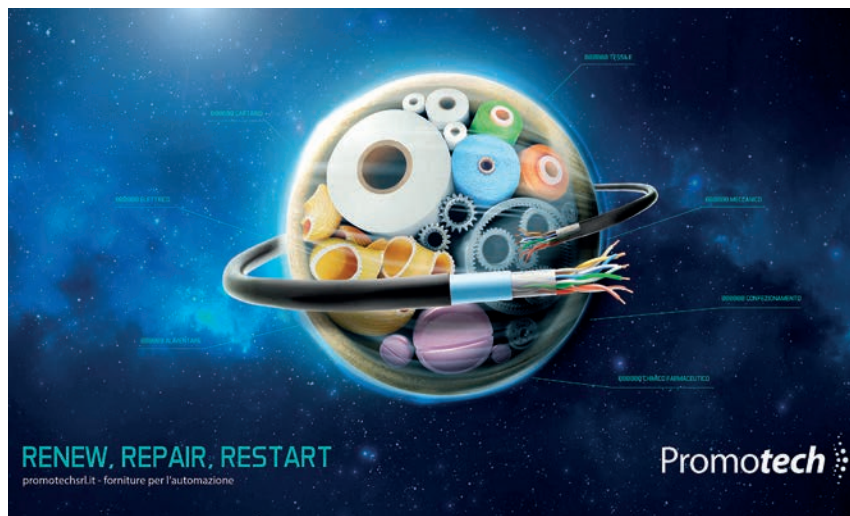
“ Leader in the distribution of **electric and electronic equipment** for automation ”

will be easier to implement the ‘plan B’. Over the years Promotech has built up a team of technicians who, in synergy with the most important brands in the world of automation, have been able to identify alternative solutions, meeting all the customer’s needs.

What are the consequences on the industries? Industries carry out an ordinary and extraordinary maintenance, including preventive maintenance. By maintenance we also mean preventive maintenance with strategic and planned purchases by collaborating with distributors who are increasingly asked to manage the warehouse with methods such as *Consignment Stock* or *Call-off stock*.

Is collaborating with an automation component distributor so important for a player? While the shortage of parts may have been a new experience for some, distributors have already faced this problem many times before. At Promotech, we are always ready to help customers solve their procurement problems. Promotech today places itself on the market as a leading company in the sector with a vision that goes beyond the simple supply. With more than 20 employees and 25 years of experience in industrial automation, Promotech intends to fully meet the needs of customers with a series of services that allow us to overcome the current crisis.

A large warehouse, including a ward dedicated to obsolete products, a 24-hour service to solve a machine downtime that may occur but also a repair service allowing machines to be restarted if the delivery date for spare parts is quite long. A network of partners and suppliers and a young and dynamic team is able to always find suitable solutions for our customers. ●



Promotech in Italy and around the world

Promotech was established and developed in Lucca, a one-in-the-world centre of the paper industry. Since the 1990s, along with the distribution of technologies for industrial automation and sales, we have been developing a hardware and software consultancy support that offers a series of tailor-made services dedicated to the specific needs of each company and sector. Leading companies in the paper, packaging, pharmaceutical, food and other industrial sectors have chosen us as their partner thanks to a dynamic and specialized organizational structure. Our strengths: large warehouse availability of new, obsolete - used and refurbished - components, problem-solving skills, technical support and repair service.

PROMOTECH SRL

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- website: www.promotech srl.it
- email: info@promotech srl.it
- email (Repairs): riparazioni@promotech srl.it



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- APS plasma thermal spraying.



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BOLZONI GROUP

developed the perfect
clamp for handling
tissue paper rolls

By: Bolzoni SpA



■ The Auramo Tissue paper roll clamps have higher and wider contact pads to reduce surface pressure on the soft paper.



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 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 1.500 kg up to 6.000 kg (3,000 to 13,000 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 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.

Bolzoni, Auramo and Meyer are Bolzoni Group brands

The Bolzoni Group is a market leader in the production of forklift truck attachments, forks and lift tables.

The company has manufacturing plants in Italy, Germany, Finland, America and China and through its network of direct branches and independent dealers covering all continents it is able to satisfy all market requirements.



▲ 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.

▼ 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.



“ We are Bolzoni, the **material handling** group ”

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 fork lift trucks, and on Automated Guided Vehicles too. Great investments have been done to support AGV specialists with a complete 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 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. ●

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



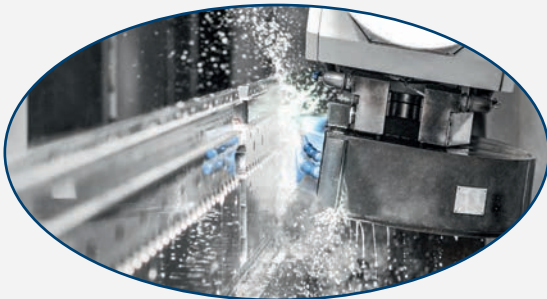
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- contact person: Lars Pettersson Forest Product Handling Specialist
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Carer Forklift's large capacity electric forklift trucks are increasingly becoming the main players in the handling of heavy reels in the paper industry all over the world. by: CARER Srl

Carer Forklift: compact electric forklift trucks for the paper industry



◀ Carer A80X is handling paper rolls.



▶ Carer Z80H2 is picking up paper rolls.

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.

“ 46 years of **experience** in electric forklift trucks field ”

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 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.

▼ Carer A80X in storage.



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 HD² (short for “Heavy Duty”), 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 by calling +39 0545 1938010 or by emailing info@carerforklift.it. Specialized technicians will be pleased to reach you, also for a free inspection. ●

CARER SRL

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- **email:** info@carerforklift.com
- **contact person:** Andrea Orsi
- **phone:** +39 366 4268774

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TissueMAG

International magazine and website on Tissue Paper machinery and technology.

The magazine is distributed to

Tissue Paper Mills and **Tissue Converters**.



tissuemag.com



Next issue November 2023, come with us!

Global coverage for Tissue sector



Italian expertise, know-how and technology: thanks to strategic collaborations worldwide from North America to South-East Asia, NCR Biochemical is able to offer the best solutions in problem solving, supporting all producers' needs in papermaking process and creating added value for customers

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