

Voith Paper products

Focus on results





Voith Paper products

Focus on results

Developing products that improve your results is our motivation.
We focus on the main cost drivers: energy, raw materials and maintenance.

On the following pages you will find solutions for how to make your paper production more efficient. For example, a liner paper mill in China saves 500,000 euros per year on water and energy costs by using a cleaning system for dryer fabrics (page 52). Energy consumption for primary fiber preparation can be reduced by

up to 30% using a LowEnergyRotor (page 14).

This brochure provides an overview of 43 product families. Each of the presented products are available in the three options BASIC, COMFORT and PREMIUM to offer you perfect solutions to meet your goals – whether to reduce

your costs or to improve productivity or paper quality. Additionally, we are committed to fulfilling your environmental and safety criteria. To ensure plant and product performance, Voith offers three service packages as well (page 118).

Contact us! We are pleased to focus on your results!

Three service packages for the perfect fit



Inspection

Includes all the routinely recommended inspections and complete functional and technical checks.



Inspection
Maintenance

Basic package plus all necessary maintenance activities and a hotline support.



Inspection
Maintenance
Performance

Comfort package plus spare parts are included. Additionally Voith provides the qualified personnel.

Our products...

...allow you to save energy, raw material and operating cost. Read more about our product portfolio and discover ideas for how to improve your results.



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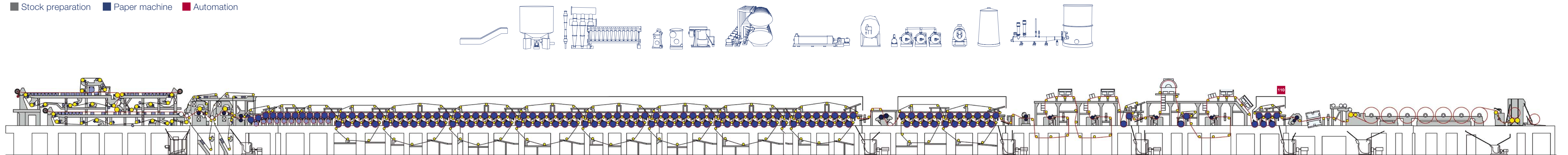
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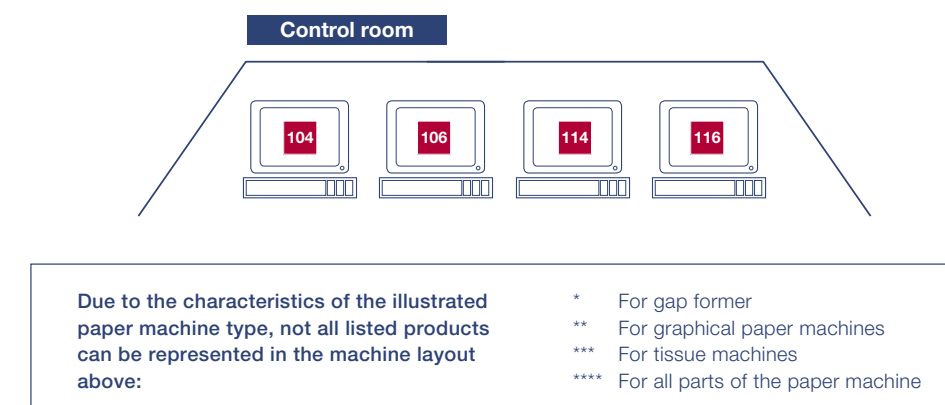
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Product overview

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NDuraRotor for flat screen machines Up to 20% longer service life

The optimized design of Voith NDuraRotor for flat screen machines increases the lifetime and improves performance quality. The working edges are protected with special wear-protection layers, contributing to an increase of the service time up to 20%.

Higher performance due to optimized working edges

NDuraRotor is a re-design based on the latest market knowledge for all kinds of flat screen machines. The working edges are guarded with special wear-protection layers to provide a high performance over their lifetime. The new clamping devices on several rotor types have improved safety and minimized damage to the rotor hub and shaft. These quality improvements result in up to 20% longer life of NDuraRotor.

Voith NDuraRotor and NDuraPlate – a perfect match

A perfect interaction of the rotor and screen plate is necessary for a high-quality cleaning of the holes, the separation of fibers and trash, as well as the deflaking function. The perfect fit of the Voith NDura rotors and the Voith NDura screen plates generates high quality results and leads to a longer lifetime.

NDuraRotor for flat screen machines can be used in combination with NDuraPlate ES, NDuraPlate D and NDuraPlate Standard.

A successful product for all kinds of applications

Voith has installed NDuraRotor successfully in more than 2,000 flat screen machines worldwide. The Voith flat screen rotors are available for all kinds of Voith flat screen machines, such as Fibersorter FS, Combisorter CSM and Contaminex CMV, as well as for a wide range of machines from other manufacturers.

Services

Voith has well-equipped service workshops worldwide that are specialized in refurbishment of wear parts for the paper industry. In these workshops all flat screen rotors can be repaired based on OEM specifications.

Customer benefits

- + Up to 20% longer lifetime for flat screen rotors due to the optimized design and wear-protection layer
- + Lower maintenance costs due to optimized rotor and shaft connection (rotor with shrink disk)
- + Longer life when customer uses the OEM rotors in combination with OEM refurbishment

Product family of NDuraRotor for flat screen machines

NDuraRotor	Usable for Voith Fiberizer, Fibersorter, Turboseparator, Combisorter, Contaminex and IntensaMaXX. Applicable for non-Voith machines
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More information

www.voith.com/fiberizer



LowEnergyRotor

Energy savings up to 30%

Voith's newest, unique rotor design improves in interaction with the screen plate the slushing efficiency in the pulper vat. By replacing a standard rotor with LowEnergyRotor, the consumed power could be reduced up to 30%.

Improved rotor body design

With the newly developed and unique rotor body design, LowEnergyRotor for virgin pulp replaces the old IntensaRotor V model. Due to the enhanced curvature of the rotor, the “aggressiveness” of the shape has been transferred to slushing improvement.

Significant cost savings up to 30%

LowEnergyRotor with its innovative design generates significant cost savings up to 30%. Furthermore, the pumping action or pulping circulation of the stock in the pulper vat is increased.

Significant decrease of the wear

This improvement results in a higher quality of the defibration as well as an increase of the energy efficiency of the pulping process. Moreover, the wear is reduced to a minimum. In addition, the interaction between the rotor and the screen plate is improved.

Area of application

LowEnergyRotor applies in pulping of primary raw materials such as virgin pulp, TMP or similar material and clean recovered paper or broke. The rotor fits for all Voith and non-Voith pulper.

Customer benefits

- + Energy savings up to 30 %
- + Higher operating consistency
- + Best possible pulp circulation
- + Optimized defibration
- + Long service life

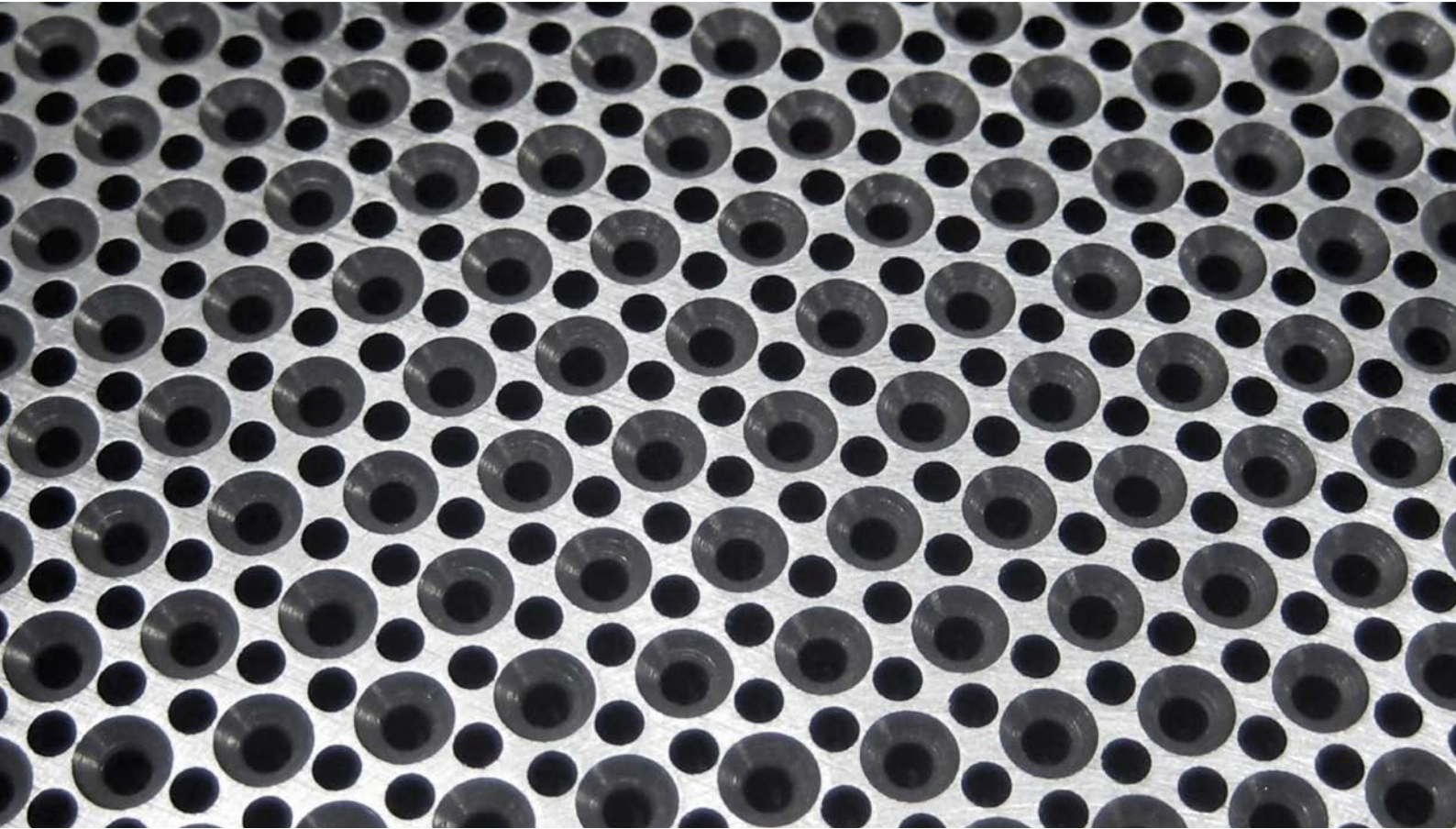
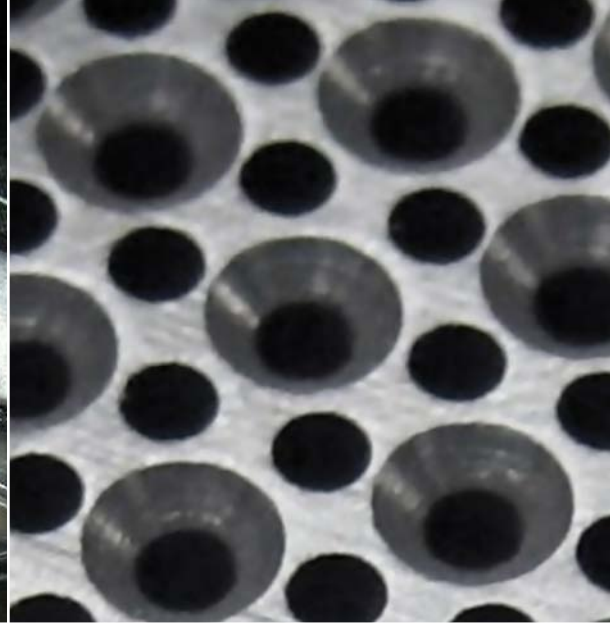
Product family of pulper rotor

Helix rotor	High consistency pulper rotor
CP rotor	Energy efficient rotor for under machine pulper
PlateRotor	High-performing PlateRotor for all types of recycled fiber applications
IP rotor	Specifically for the IntensaPulper family

More information

www.voith.com/plate-rotor





NDuraPlate for flat screen machines New design improves performance

The new design of NDuraPlate™ for flat screen machines results in better performance and longer service life. The extraordinary properties of the hole design and adjustment in combination with the NDura material improves the robustness and wear resistance of the screen plates.

High quality screening process

The screening process is mainly influenced by the functionality of the engaged screen plates and rotors. The NDuraPlate flat screen elements are designed for high-performance screening, pulping, detrashing and extracting.

Improved cleaning process generates higher throughput

Due to the specific hole design and alignment, the plate creates surface microturbulences in interaction with a rotor. The perfect interplay between the screen plate and the rotor results in an improved cleaning process.

Increasing production efficiency up to 10%

In comparison to the standard screen plates, the optimized hole design of NDuraPlate for flat screen machines convinces with an improved hole pattern. This attribute leads to higher and more stable production efficiency up to 10%. At the same time there is no increase of the fiber percentage in the rejects.

Optimized wear resistance enables longer service life

The shape of NDuraPlate D is driven by nature and inspired by the daisy. The proven quality of NDura material in combination with the new hole design enables a high wear resistance and robustness of the NDuraPlate D. The generation of micro-turbulences leads to better purification of the holes and thus to either higher throughput or higher deflaking efficiency.

High cost savings due to new developed hole design

The upgraded hole design of the NDuraPlate D generates an increase in throughput up to 10%. These efficient improvements result in energy savings of up to 6,000 euros per year. The increase of the throughput leads to a return on investment in short time. Furthermore, the conversion to NDuraPlate D improves the quality due to a reduction of flakes up to 15%.

Customer benefits

- + Longer service life due to high wear resistance
- + Higher deflaking efficiency and loss reduction
- + Increase of the throughput
- + Reduction of specific energy consumption

Product family of NDuraPlate for flat screen machines

NDuraPlate Applicable for Fiberizer, Fibersorter, Turboseparator, Combisorter, Contaminex, and IntensaMaXX

More information

www.voith.com/nduraplate-d



NDura pulping screen plates Up to 20% cost savings

The extraordinary defibering property of the NDura pulping screen plates results in an increase of flake reduction and throughput as well as in a higher wear resistance.

Better quality of the stock suspension

Screen plates play a significant role in the accept quality of stock suspensions. They ensure pulp cleanliness by filtering out impurities. The nature and design of their screen openings influences both, the duration and the quality of the pulping process. With the NDuraPlate B, a completely new screen plate design is available, providing significant improvements in yield, efficiency and throughput.

20% cost savings due to the special defibering edge

The round perforation of the standard screen plates has a relatively small working edge. The kidney bean design of the NDuraPlate B provides a growth of the working edge size of up to 75%. This enables an increase in production of up to 15% or an improvement in stock quality levels of up to 30%.

NDura plates with high mechanical strength

The NDura plates convince with high quality material. The good fatigue, abrasion as well as the high erosion and pitting resistance contribute to a long lifetime of the screen plate.

High energy savings with the use of NDuraPlate B

The newly developed perforation design like a kidney bean results in significant cost savings. This improved hole shape of NDuraPlate B generates an increase of the throughput up to 15% and leads to an optimized flake reduction up to 30%. These advantages decrease specific power consumption by 15%. The new defibering design of NDuraPlate B results in an extraordinary return on investment in short time.

Area of application

The pulping screen plates can be used in pulpers as well as detrashing and flat screen machines.

Customer benefits

- + Increased pulping capacity
- + Lower specific energy consumption
- + Longer service life due to better wear resistance
- + Improved deflaking effect due to longer working edges

Product family of NDura pulping screen plates

NDuraPlate B	Kidney-shaped pulping screen plate
NDuraPlate B ML	Applicable for screen plates with a thickness >20 mm
NDuraPlate ES	Eye-shaped pulping screen plate
NDuraPlate ES ML	Applicable for screen plates with a thickness >20 mm

More information

www.voith.com/nduraplate-b



C-bar screening cylinder

Highest efficiency and throughput

In recent benchmark studies, C-bar™ proved to be the most reliable basket in terms of high efficiency and throughput rate with the lowest specific energy consumption and minimum fiber loss. This success is based on the unique C-bar profile, paired with overlapping bar design arrangement.

C-bar – Perfect solution for a wide variety of applications

Voith offers with the C-bar screen basket precise and reliable technology for centrifugal and centripetal pressure screens. The C-bar screening cylinder is applicable for all kinds of stock in the most varied stock preparation and broke screening processes. One major advantage is that the C-bar basket can also be used for high stock consistencies and rotor loads.

Due to a special patented manufacturing technology, the thrust and compressive force acting on the connection between the profile bars and screen basket is better absorbed than with conventional techniques.

Top performer in the market

Clear results were achieved with a recent detail technological benchmark between C-bar basket and conventional slotted baskets.

These representative trials have confirmed the best performance of the C-bar basket. The secret of C-bar's success is the perfect interaction of the unique bar profile and the overlapping arrangement.

70% of the current screening tools waste energy

In 2011 Voith analyzed 80 fine-screening systems of various generations, makes, models and sizes. The results: 70% of screening processes analyzed worldwide use energy inefficiently. The main reasons for the poor results were the wrong choice of screening concept or operation of obsolete systems.

Therefore Voith developed the ScreenFit Navigator: www.screenfitnavigator.com

To get a deeper insight about how to achieve the best screening efficiency for a machine or system, Voith offers an on-site analysis.

Customer benefits

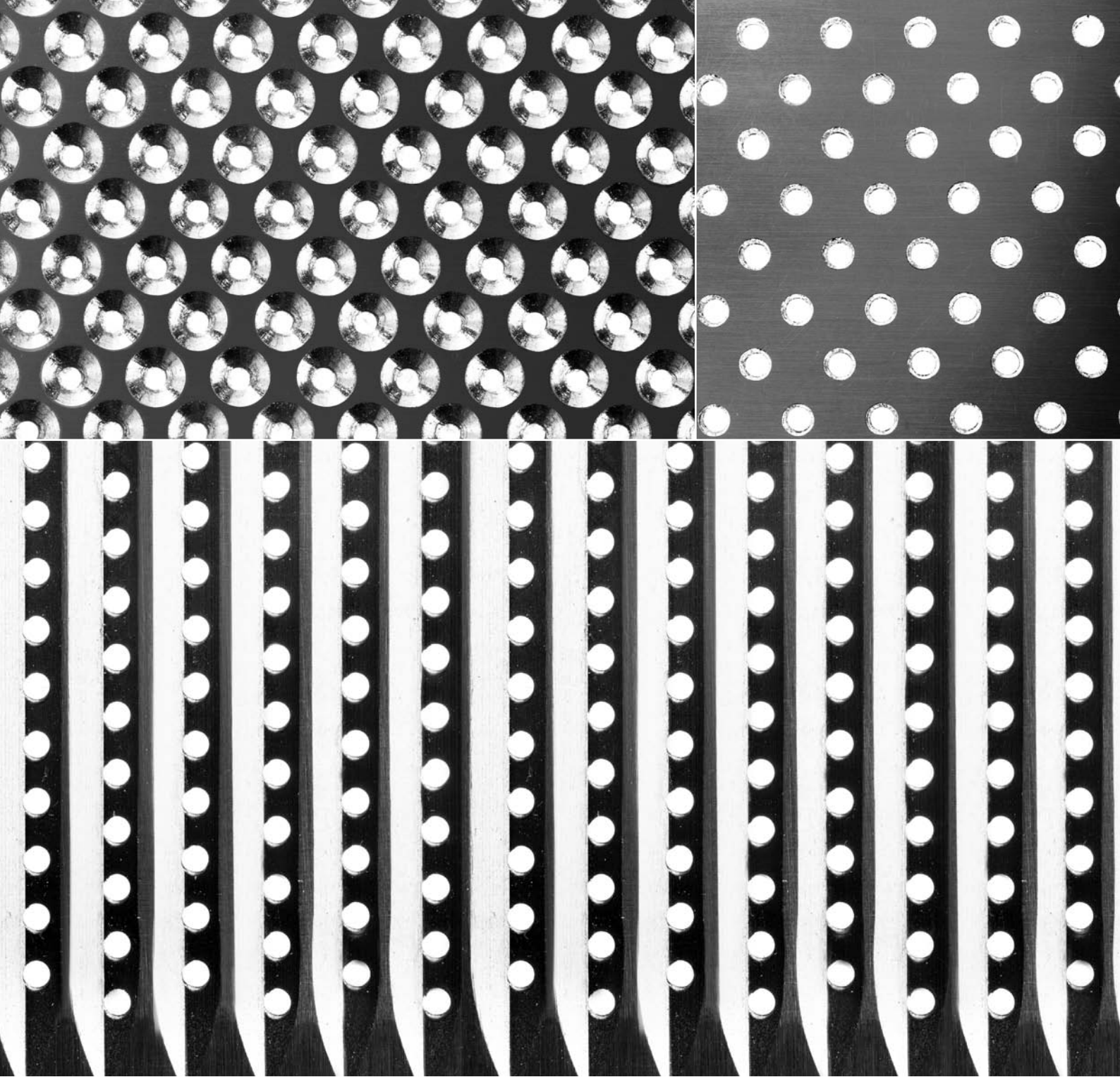
- + Highest throughput because of the large open screening area
- + Maximum screening efficiency and lowest fiber loss due to highly precise slots and unique bar profiles
- + Lowest specific energy consumption
- + Most reliable basket on the market

Product family of basket slot

Basket C-bar C	For all centripetal applications
Basket C-bar M	Extra strong and stable screen basket
Basket C-bar S	Reliable standard basket for all grades
Basket C-bar Q	20% higher open area than comparable screen baskets
Basket C-bar R	Offers capacity expansion for specific applications
Basket C-bar L	For speciality paper screening

More information

www.voith.com/c-bar-q



Hole basket screening

Save fibers with our basket technology

High screening efficiency versus throughput ratio as well as a longer service life time – these are the advantages of our hole basket screening cylinders.

A Voith hole screen basket offers precise and reliable technology for centrifugal pressure screens. Due to an optimized pitch design, we can achieve high open screen areas with a high throughput rate.

Constant advances in our manufacturing techniques yield a high precision in different hole designs and roundness of the screen basket. Each screen basket is equipped with our ChromPlus wear-protection layer.

To achieve the best screening efficiency for a machine or system, Voith offers an

on-site ScreenFit analysis. This analysis enables Voith to design a customized screen basket and rotor set to maximize performance gains.

All kinds of stock, in the most varied stock preparation, wet end process, broke screening, and pulp screening applications, can be reliably screened, even with high stock consistencies and rotor loads. It can be used for Voith screens and for all current machines and associated rotor combinations of other manufacturers.

Customer benefits

- + High screening efficiency and throughput due to unique profile design
- + Longer service life time due to wear resistant NDura material
- + Low fiber loss due to precise processing

Product family of basket hole

LL-Type Multibar	Basket for tail end screens
CL-Type Contour	Contour gives highest throughput rates
SD-Type Smooth	Smooth drilled hole for various applications
PL-Type Profiled	Profiled hole design for all WEP applications
F-Type Filtrate	Equipment for all kinds of fine filtration

More information

www.voith.com/basket-hole



EclipseRotor

Up to 45% less energy input

Using an EclipseRotor™ for hole and slotted screen application ensures an energy reduction potential of up to 45% at high screening performance. More than 100 rebuilds in thick stock screening applications confirm the success of the EclipseRotor.

The EclipseRotor facilitates optimal screening efficiency with reduced energy inputs because of its novel foil geometry and configuration. It is developed specifically for screening applications that are energy intensive and loaded with impurities.

The foil geometry and configuration allows lower rotational speeds that reduce screen basket surface wear and thus lead to longer running times.

The flat, but effective, foil geometry of the EclipseRotor generates a strong suction impulse and keeps the screen free for maximum throughput, even with pulp consistencies as high as 5%.

Voith EclipseRotors were developed for use in stock preparation, for broke and virgin pulp screening for Voith screens and all other manufacturers.

These rotors can be used in both hole screening and slot screening. Various screen basket rotor gaps are available, depending upon the area of application.

To achieve the best screening efficiency for a machine or system, Voith offers an on-site ScreenFit analysis to maximize performance gains.

Customer benefits

- + Highly efficient screening effect due to ideal differential speed between rotor and pulp suspension
- + Reliable operation even in stock consistencies up to 5%
- + Energy saving screening due to a special foil geometry and configuration

Product family of drum rotor screening

RotorEclipse (FIT)	High screening performance with reduced energy inputs
Eclipse F	5 mm gap between rotor and basket
Eclipse I	7-8 mm gap between rotor and basket
Eclipse T	10 mm gap between rotor and basket

More information

www.voith.com/eclipse



MultiFoil rotors

Designed for energy saving

Less energy and improved screen openness are the main benefits of MultiFoil™ rotors. These rotors offer an ideal combination of screening quality and throughput rates. The innovative blade geometry prevents the spinning of fibers and reduces pulsations.

With no spinning of fibers, the rotor speed can often be reduced, whereby fiber-preserving and energy-saving screening becomes possible.

The dynamic pressure and suction pulse create an ideal differential speed between rotor and pulp suspension. Thus no additional shredding of contaminants or stickies is necessary. In addition, it leads to lower wear on the processed screen basket surface.

The MultiFoil rotor concept allows reliable, efficient operation of the screen with C-bar slot and hole screen baskets. Using Voith's patented foil geometry, with an effect similar to that of an airplane wing profile, the flow facilitates ideal screening.

MultiFoil rotors were developed for use in stock preparation and approach flow system screening for Voith screens and all other manufacturers.

The MultiFoil rotors operate in the most varied applications for graphic paper, board and packaging, tissue, ground-wood pulp, and specialty paper grades and can be combined with all slot and hole baskets.

To achieve the best screening efficiency for a machine or system, Voith offers an on-site ScreenFit analysis to maximize performance gains.

Customer benefits

- + Sustained screen openness and highest clearing frequency, thanks to its uniform through-flow profile with short suction impulses
- + Energy savings, through its unique foil design and optimized foil arrangement
- + No fiber spinning

Product family of rotor screening

- MF-H series** Rotors for approach flow system screening
- MF-E series** For stock preparation applications

More information

www.voith.com/multifoil



Cones for HD Cleaner

Innovative technology reduces costs

Voith's high-density cleaner cones are wear-resistant due to their ceramic insert, enabling them the best cleaning performance.

H-Cone, E-Cone and IndiCone are wear-resistant cones for reliable and efficient use with high stock consistencies. These different cones are adapted to the respective application.

High wear-resistance ceramic leads to extraordinary cleaning quality

H-Cone is especially recommended for applications with demanding requirements. Its conical shell is made of stainless steel and equipped with an insert made of highly wear-resistant ceramic.

Cost savings up to 30% due to the use of alternative materials

E-Cone is the more favourable version of H-Cone for applications with medium requirements.

Its conical shell is made of quality steel, and its insert cone consists of wear-resistant ceramic. This well-chosen material combination results in a price advantage of up to 30% compared to H-Cone.

Electrical wear indication enables a perfect cleaning process

The ceramic insert is an essential part of the cone. IndiCone is a H-Cone equipped with an electrical wear indicator, to prevent damages of the outer metal cone due to undetected wear. The wire spiral detects a wearout of the ceramic insert and triggers an alarm signal. Therewith, unscheduled machine stops could be avoided.

Because of this detection the conical shell can be reused, and only the ceramic insert needs to be replaced. Compared to a complex rework of the inner and outer cone or even a complete replacement, this simple refurbishment can reduce costs up to 30%. Furthermore, the process can be planned at an early stage.

Customer benefits

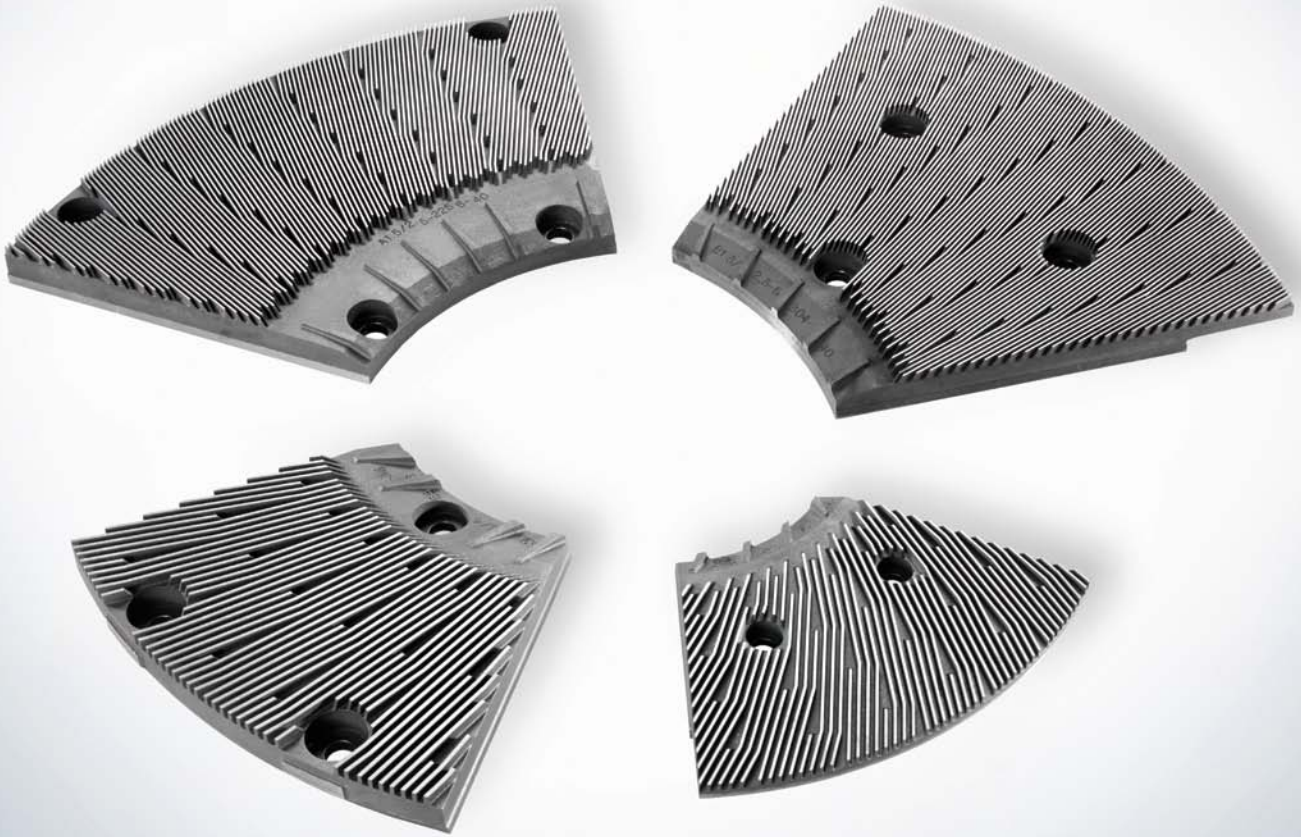
- + Highly wear-resistant ceramic insert
- + Reliable and efficient performance
- + High stock consistencies

Product family of HD cleaner

H-Cone	Developed for applications with demanding requirements
E-Cone	Applicable for medium requirements
IndiCone	Upgraded version of the H-Cone with an electrical wear indication

More information

www.voith.com/hd-cleaner



Pluralis refiner fillings

Cost savings due to less energy use

Pluralis refiner fillings achieve a significant improvement in the effectiveness of fiber refining with their special design. Due to the closed knives and small sector angles, up to 20% of the refining energy can be saved without major system changes.

A plus for the energy balance

Fiber refining has far-reaching effects on the energy balance and offers big potential for reducing energy costs. The new fillings of Pluralis Line facilitate transfer of a high output per refining machine to the raw material. The number of refiners in operation can thus be reduced and the energy requirement minimized.

Optimization of paper characteristics

The refiner fillings were specifically developed for refining systems with high requirements. Due to the adapted bar and groove geometries, fiber shortening is reduced and high strength characteristics in stock refining are achieved. The coordination of the Pluralis Line fillings with the respective raw materials allows strength-oriented refining. This occurs taking into account the optimal specific edge load.

The rebuild pays off

The renovation of a paper manufacturer's refining line yielded convincing optimizations. Due to the replacement of the conical refiners with Voith Twinflo refiners equipped with Pluralis fillings, savings of around 200,000 euros annually were achieved. The fillings allow optimal distribution of the high capacity over the existing refiners and thus contribute essentially to lowering costs.

Area of application

The fillings of the Pluralis Line can be used for nearly all raw material types and paper qualities. They serve as replacements for older fillings of the following refiners:

Voith TwinFlo Refiner TF1x–TF4x, Escher Wyss DSR Refiner DSR1–DSR3 and Voith SDM Refiner (20", 30", 34").

In addition, Voith offers Pluralis Line fillings for use in current machines from other manufacturers.

Customer benefits

- + Reduction in the number of refiners required
- + Demonstrable reduction in energy costs
- + Reduction of raw material costs due to optimal strength development of the end product
- + Extended service life of the refiner fillings due to gentle refining (low-intensity refining)

Product family of Pluralis refiner fillings

Pluralis SSF	Developed for never dried qualities and 100% short-fiber pulps
Pluralis SF	Fiber refiner for short-fiber pulp with up to 10% long-fiber pulp
Pluralis IF	Refining of pulp mixture with up to 1/3 long fiber portion; secondary pulps with short to medium fiber length
Pluralis LF	Applicable for long-fiber and secondary-fiber pulps (medium to long fiber length)
Pluralis AO	Specifically for 100% AOCC and mixtures with AOCC portion > 50%
Pluralis CF	Refiner filling for unbleached long-fiber pulps and "high kappa" pulps

More information

www.voith.com/pluralis-line



BaglessPlus sectors

Savings of up to 200,000 euros a year

Voith's Bagless technology has a strong focus on operational costs and reliability. By using BaglessPlus disc filter sectors, environmentally friendly and cost-saving operation can be achieved. Compared to conventional disc filter sectors with bags, BaglessPlus can save up to 200,000 euros per year in maintenance and operational costs.

Great upgrade opportunity

By installing the latest disc filter technology in an existing wet end process, Voith was able to noticeably increase capacity and greatly improve filtrate quality. The savings are reflected in cost advantages and sustainable production.

The customer is now fulfilling its goal of running an especially environmentally friendly operation by using BaglessPlus disc filter sectors. By upgrading to BaglessPlus sectors, the papermaker is in a position to achieve very clean superclear filtrate with very high filtration efficiency. Instead of 500 ppm before rebuild, a filtrate quality of less than 50 ppm is reached. This filtered water can be reused, which was previously not possible.

The maintenance costs are also lower. Life time estimates for BaglessPlus range from 10 to 20 years.

Total savings is about 200,000 euros per year. After the success of the BaglessPlus rebuild, the papermaker decided to rebuild several other parallel lines with the same technology.

In a different rebuild project, another customer benefits from advanced Voith disc filter technology. Special filter bags are used, that were developed by Voith for rebuilding disc filters of basically any type. The filter can now take up substantially more white water. Its capacity rose by 40% and fiber losses dropped noticeably. The paper machine runs at a production speed that is 10% higher than before rebuild.

Voith offers products such as BaglessPlus sectors to rebuild existing machines. Improved operation is achieved for a fraction of the cost a new installation would involve.

Customer benefits

- + High constant filtrate quality during complete lifetime of discs
- + Increased capacity by 20-30%
- + Lowest operating and maintenance costs
- + Increased lifetime

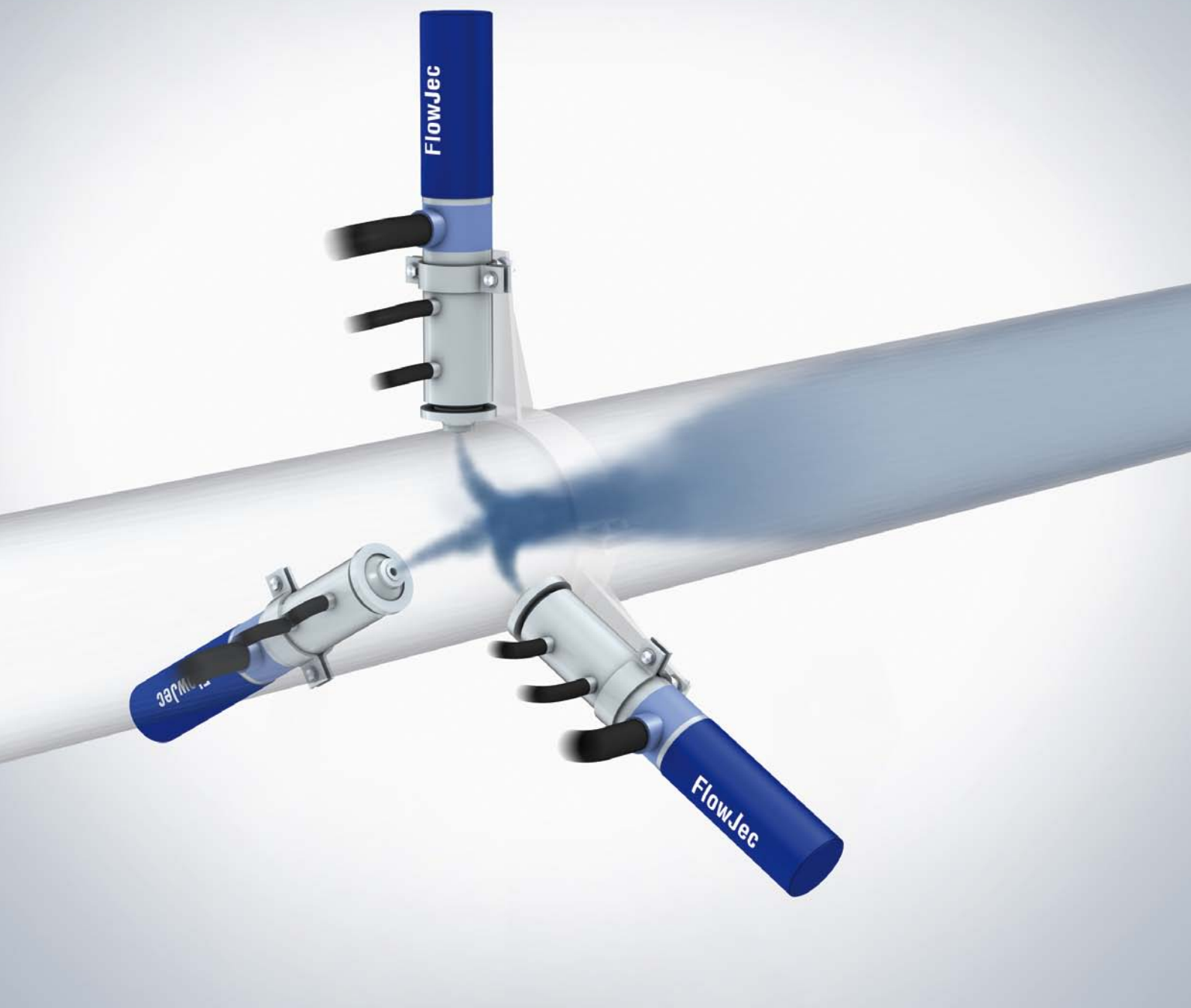
Product family of disc filters

BaglessPlus sector	Increases capacity and performance
HiCon Bagless	Expands the operating window of the disc filter
V-bag C, P, S, K	Customized for any application
V-sector F, C, R	Higher durability and longer bag life
Thune LipSeal	Provides leak-free operation
Filtrate Valve	Offers high and stable vacuum for increased capacity
Double Knock Off	Improves knock-off performance and reliability
Shower Assembly	High availability of the disc filter

More information

www.voith.com/bagless-plus





FlowJec

Chemical cost down, efficiency up

Improve your cost situation by efficient dosing of chemicals! Get a payback in less than one year thanks to chemical savings, improved runability and enhanced product quality. This is the result of the FlowJec dosing system installation in a German testliner and fluting mill.

According to Jochem Meier, Head of Production at Smurfit Kappa Zülpich Papier: “With FlowJec, we are achieving an improved paper quality, savings of up to 10% of the retention agent, fewer breaks, an increased running time and consequently a higher efficiency of the PM.”

By consequently moving the dosing point of e.g. retention aid chemicals behind the screen, the chemical saving effect is considerably higher. But not only retention agent can be saved. Through efficient dosing of process chemicals and additives, consumption of chemicals, fresh and waste water as well as energy is reduced. Moreover, a significant return on investment is achieved due to improved runability and paper quality caused by a homogenous formation and ash distribution. This is a particular advantage of the FlowJec dosing system.

All process and functional chemicals as well as additives can be dosed. Furthermore, several chemicals or additives can be added simultaneously at one dosing point – even immediately before the headbox.

The unique integrated cleaning function reduces the maintenance effort and increases the process availability.

Save up to 70% of fresh water

Up to 70% of fresh water can be saved in the preparation of chemicals, and also the use of fresh water is dispensable when dosing chemicals with the innovative AddJector. With AddJector, the chemical is initially mixed with only part of the process flow. This results in the reduced consumption of chemicals and it saves on energy costs, since a smaller amount of water has to be heated to process temperature.

Customer benefits

- + Improved runability due to uniform flocculation and evenly distributed stock consistency
- + Less chemicals because of efficient dosing in substantially higher concentration
- + Less fresh water needed because of mixing the chemicals with part of the process flow, thus also reducing waste water

Related Products

OnQ FormingSens

Water weight measurement in the former using high-frequency, ultra-precise microwave technology, without sources of radioactivity

More information

www.voith.com/flowjec





DuoShake

First choice for fiber savings

Sheet formation has an extensive influence on paper quality. DuoShake ensures a more homogeneous distribution of the fibers and a greater alignment in cross-machine direction, resulting in better formation and a lower MD/CD tensile ratio. Your benefit: an overall better quality level!

DuoShake's functional principle allows shaking frequencies that cannot be achieved with conventional shaking units. A more homogeneous fiber distribution is thus achieved, even with fast-running machines. In addition, the formation is improved, and the tensile strength ratio is reduced, which is indispensable for good dimensional stability. Other advantages result with further processing, coating, impregnating and printing of the paper.

Lower consumption of resources pays off

Along with an improvement in quality parameters such as formation, MD/CD tensile ratio, tensile strength, energy absorption and transverse strain, fibers and operating materials can be saved.

Perfect physics

Two rotating pairs of unbalance masses are arranged on the hydrostatically supported carriage of DuoShake. Due to the rotation, forces are created that are transmitted with a shake rod to the breast roll. In contrast to conventional shakes, the system vibrating freely in a horizontal direction transmits only negligibly small frictional and centering forces to the foundation. The unbalance masses move in opposite directions within a pair of masses and are arranged so that the vertical forces cancel each other out. The stroke results from the position of the pairs of masses related to each other.

What you get from it

DuoShake allows infinite adjustment of the shake stroke and frequency during operation of the paper machine. There is no mechanical adjustment of the stroke, the system is extremely robust and can be used with little maintenance.

Customer benefits

- + Lower fiber consumption
- + Improved formation
- + Improved strength properties

Product family of breast roll shaker

DuoShake	High-frequency shaking unit for the breast roll without transferring of reaction forces
FloatBearing	Hydrodynamic bearing ensures minimized friction and vibrations

More information

www.voith.com/duoshake



EdgeSaver

Saving 800 euros/day of fibers

White edge fibers in multi-layer paper grades are by far too valuable to be “thrown away” in mixed suspensions cycles. That is where the edge cutting system EdgeSaver comes into play. By saving fibers at an early stage, the investment is amortized in only a few months!

On multi-layer machines, the edge cut usually takes place after couching of the individual layers. These mixed cut remnants can only be put back into a lower-quality circuit. Especially in the case of paper with a high-quality white top layer, valuable fibers are lost in the process.

By contrast, EdgeSaver performs the edge cut of the higher-quality layer directly at the headbox. These fibers are consequently put back into the stock circuit, which reduces raw material costs.

Its unprecedented cutting technique is based on its unique blade geometry that was specifically designed for turbulence-free cutting of the suspension jet. The blade's distinctive configuration combined with separate cleaning nozzles efficiently prevents fiber debris.

Profiting from recycling

Since the stock jet is intercepted directly after discharge from the headbox, the higher-quality edge cut can be recycled separately. That reduces fiber consumption and lowers costs. Thus EdgeSaver is often amortized after only a few months.

A clean affair

Along with the clear cost advantages, EdgeSaver also facilitates an improvement in paper quality. Thanks to the adjustable Teflon side plate, ridge formation at the edges of the paper web is prevented and a more uniform CD profile is created. Another positive side effect, of course, is the reduced contamination of the fabric edges due to straight edge limiting and water-saving spray nozzles.

No restrictions

While other systems usually have restrictions and are very complex to set, EdgeSaver offers simple and reproducible setting options. Since mounting is possible on modern headboxes from all manufacturers, existing machines also profit from an upgrade.

Easy handling

EdgeSaver can be mounted on both sides of the web easily in just a few hours during a shutdown. Changing the wire is also no obstacle: The swivel device makes it simple to replace the fabric.

Customer benefits

- + Clear saving of expensive pulp qualities
- + Clean fabric edges without contamination of the surrounding area
- + Clean and straight paper web edges
- + Reduced water consumption
- + Quick ROI after only a few months
- + Especially flexible system, suitable for headboxes from all manufacturers

Product family of edge control components

EdgeCurler	Edge control for large lip openings in combination with EdgeMaster or EdgeDeckle
EdgeDeckle	Edge control for large lip openings on Fourdrinier
EdgeMaster	Edge control for optimal paper web edge
EdgeCleaner	Cleaning device that saves fresh fibers and keeps the wire edges clean
EdgeSaver	Edge cutting system directly at the headbox

More information

www.voith.com/edgesaver



ParaSlice

Don't forget quality

Do you want to produce copy paper with two identical paper sides? Do you have trouble with too high curl values? Then you should try ParaSlice. The new headbox nozzle feature allows optimal sheet symmetry and thus the best possible copying characteristics.

The basis for optimal curl values is a symmetrical sheet structure in the z-direction of the paper. If the paper has a basic structural two-sidedness, then optimization with the aid of process steps like size press or dryer section cannot be achieved in a very satisfactory way. Also, targeted calibration by means of former settings is very limited. Thus a high quality headbox jet is the best way for an optimal sheet structure and good copying characteristics. With the new nozzle type of ParaSlice, the quality of copy paper, which is produced on gap former, is improved significantly.

Conventional nozzles are hardly suitable for this. The side of the paper turned toward the slice blade has a stronger orientation in machine direction (MD) than the lower-lip side. The new ParaSlice reduces this asymmetry to a minimum. Differences in the orientation of the paper sides are thus prevented as much as possible.

The new nozzle type also has advantages in floc structure and the surface of the free jet. Different flocculation on the top and bottom side of the jet is virtually excluded. This can lead to reduced two-sidedness of formation or porosity.

Furthermore, an improved jet surface appears. The occurrence of jet disturbances, which can lead to streaky formation in the end product, is slightly reduced.

With the ParaSlice on gap forming applications, copying characteristics on both sides are nearly symmetrical. This advantage can also be part of your machine, as ParaSlice can be retrofitted in existing headboxes as well.

Customer benefits

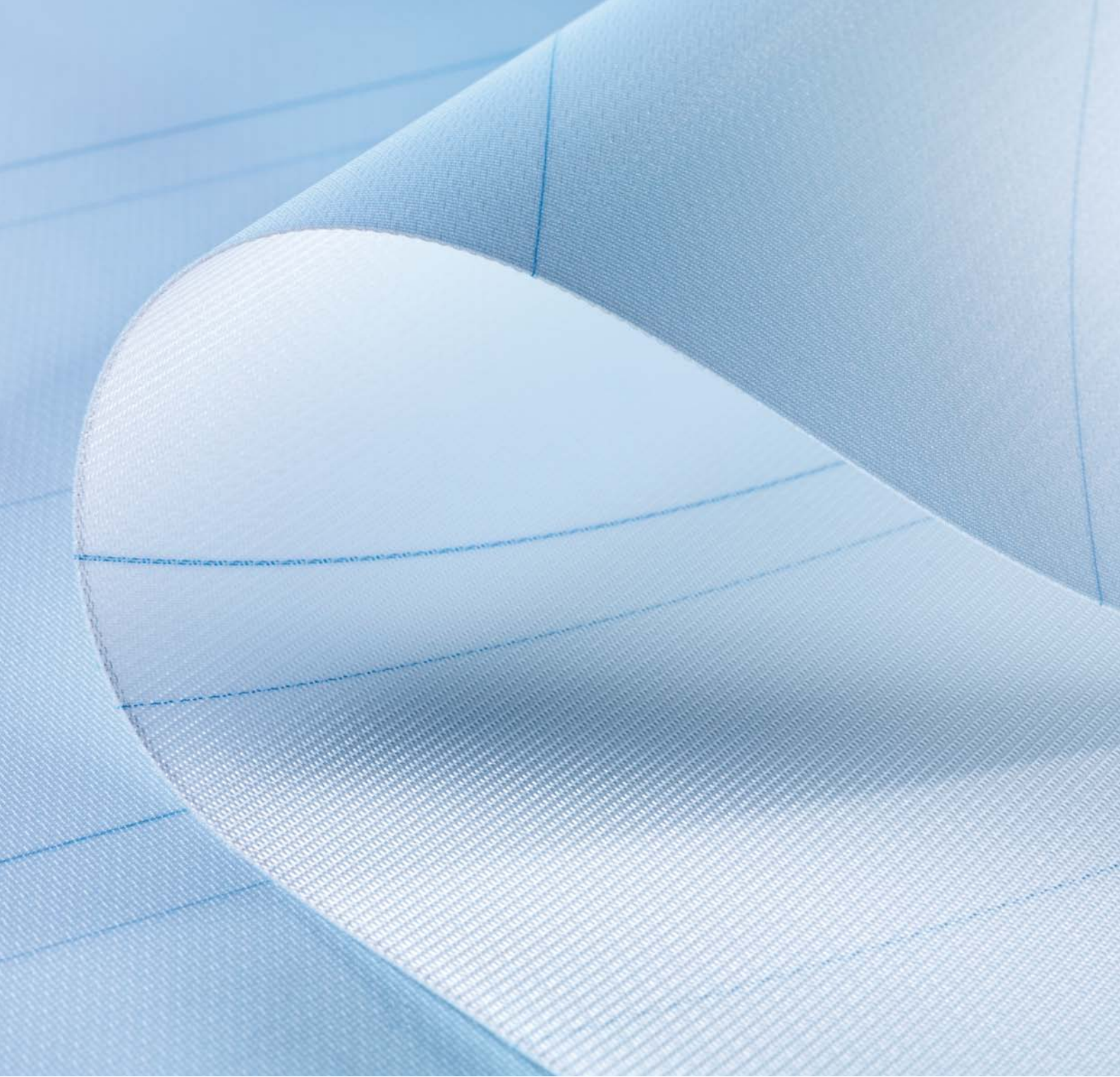
- + Symmetrical sheet structure
- + Less curl reduces two sidedness of the paper
- + Improved formation

Product family of headbox wear parts

SliceBlade	Equipment that creates a sharp relieving edge for perfect cross directional profile
ParaSlice	Headbox feature that allows optimal sheet symmetry
Inserts	Turbulence generating components for optimum deflocculation
Lamella	Nozzle sheets with decisive impact on paper quality and strength
Bottom Lip	Equipment that defines jet direction and impingement point on the forming board

More information

www.voith.com/paraslice



PrintForm IQ

Combining the advantages

High stability, fineness and dewatering performance are familiar requirements from previous forming fabric developments. The innovation in PrintForm IQ is that these features are now combined for the first time without having to make compromises.

The new PrintForm IQ forming fabric combines two technologies: high-shaft weaving and a 3:2 warp ratio. This offers much higher fiber support, leading to better mechanical retention and more uniform sheet formation. The main area of application for PrintForm IQ is in paper machines with very high quality requirements and/or high machine speeds. In a product comparison with standard fabrics, PrintForm IQ is considerably thinner and features 25% more fiber support points.

Thanks to its denser design, PrintForm IQ achieved controlled dewatering as well as excellent paper quality parameters, such as formation, MD/CD tensile ratio and lower susceptibility to marking.

The I-Series is based on the proven warp ratio of 3:2 (three top side to two bottom side). The ratio of warp thread diameters is therefore greater than in the usual 1:1 ratio. This makes the combination of an even finer paper side and a more stable wear side possible. The finer paper side helps to improve mechanical retention and sheet formation, while the stable wear side ensures better CD profiles. In addition, the high-shaft weaving technology used in PrintForm IQ offers a proliferation of binding options. With more than 50 shafts, it has more than double the number of shafts required to produce standard SSB fabrics. This allows for a binding system that can use discontinuous diagonal patterns, for example, which reduces the marking tendency of fabric designs.

Customer benefits

- + High fabric stability for good CD profiles
- + High level of fiber support
- + Very good dewatering performance
- + Less marking on paper
- + High mechanical retention
- + Improved sheet formation
- + Good MD/CD tensile ratio

Product family of the I-series forming fabrics

MultiForm IR	Right choice for demanding light-weight board and packaging applications
MultiForm IC	Forming fabric for board and packaging paper machines
PrintForm IQ	Special forming fabric for high paper quality
PrintForm IS	Reliable forming fabric for improved running time and high quality

More information

www.voith.com/i-series



Press fabrics

Modular system for each application

Voith creates the press fabric specifically for your needs! With this modular system, the main performance functions can be selected to target specific papermaking benefits from improving dewatering to enhancing surface properties or a combination of both.

Specially designed base modules can be combined with established non-woven components like the triaxial Vector layer or the elastomeric Spectra substrate. This gives Voith the ability to supply the perfect press fabric for each application.

Triaxial non-woven components enhance the uniformity and openness, which improve the water handling capacity. The elastomeric layers provide additional resiliency for vibration-prone positions and to increase nip dewatering. To improve the wear resistance, co-polymeric surface fibers are used.

Modular categories are non-woven yarn arrays, non-woven multi-dimensional filaments, elastomeric base structures or embedded polymers.

Two examples of press felts built on the modular systems are Revolution and S3 Planar.

Revolution for board and packaging papers

Revolution offers an increased dewatering performance, reduced break-in and enhanced sheet properties for board and packaging machines. This press fabric consists of a polymer layer embedded inside the fabric structure, which provides a consistent internal pore volume even under compression.

PrintFlex S3 Planar

S3 Planar combines the benefits of non-woven yarn arrays and the elastomer membrane. The result is immediate performance.

The advantages of non-woven press fabrics are uniform pressing and low flow resistance. The elastomer membrane is extremely resilient and maintains volume. These characteristics promote optimal fabric saturation to increase dewatering.

Especially on a Single NipcoFlex Press, S3 Planar can capitalize on its strengths.

Customer benefits

- + Fast startup and high nip dewatering
- + Low flow resistance for improved water handling capacity
- + Virtually no caliper loss ensuring steady-state performance

ProTect Easy and save measurements

The new press fabric measurement system ProTect ensures the safety of the operating personnel while giving reliable fabric measurements at various positions in the press section of the machine. This new development is extremely easy to operate and allows flexibility for different measurement equipment.

Product family of press fabrics

Planar	Unique selection of monofilament yarn types which are oriented in MD or CD pattern depending on customer needs for low flow resistance and compaction resistance
Vector	Selection of fine monofilaments arranged non-homogeneously to create a tri-axialbase for useable void volume and enhanced dewatering and smoothness
Spectra and HT	Elastomeric base structures with uniform mass density for quick saturation provide a fast startup, steady-state performance and vibration resistance
Evolution and Revolution	Embedded polymeric compounds in the fabric structure to enhance specific performance requirements and to provide dewatering, paper quality and dryness

More information

www.voith.com/press-fabrics





SolarFlow and SolarPress

Polyurethane roll covers for high dryness

Optimum polyurethane stability allows increased operating void volume and open area for maximum paper machine speed and low energy consumption.

SolarFlow and SolarPress are the premium polyurethane roll covers for suction press and press rolls. The Solar covers allow maximum machine speed, increased felt life and production output as well as improved paper quality.

Maximum speeds in spite of low energy consumption

The polyurethane layer of the Solar covers has an unachieved chemical and wear resistance providing highest hardness and surface stability. It offers increased void volume and open area for maximum paper machine speed and low energy consumption. The unique material stability maintains effective void volume even under extreme nip conditions.

WebNet Technology for best cover properties

The innovative WebNet Technology connects the polyurethane functional layer and the multi-layer base like a net. The advantages are enormous: Because of the three-dimensional cross-

linking of the polymers, the connection between functional layer and roll core are improved tremendously and represent the best solution in the market.

The roll covers show better temperature and chemical resistance as well as unmatched mechanical strength.

Solar covers perfectly adjusted to your needs

The high-strength polyurethane material allows for a variety of surface designs. Suction holes, deep/wide grooves with or without blind drilling are possible. Based on Voith's experience, the surface design will be adapted to the specific requirements of the application. The toughness and wear resistance in the polyurethane cover system help achieve consistent performance during each cycle.

SolarFlow and SolarPress do not require a dry-out period and thus can be re-ground immediately after dismantling.

Customer benefits

- + Enhanced dryness with highest operating void volume due to the unique surface layout
- + Optimum surface stability allowing maximum machine speeds leading to higher productivity
- + WebNet Technology for best cover properties

Reliable & flexible service

Total Roll Service is a customized solution for the most effective, reliable and fast roll servicing available. The perfect interplay of RollCare, RollRep and RollUp solutions minimizes unscheduled downtimes and improves roll efficiency.

Product family of polyurethane roll covers in the press section

SolarPress	Premium press roll cover with increased void volume
SolarFlow	Premium suction press roll cover with increased void volume
AquaPress	Standard roll cover for press rolls
AquaFlow	Standard roll cover for suction press rolls
G2000	Premium roll cover for extremely challenging applications

More information

www.voith.com/solarflow
www.voith.com/solarpress



HDU Guide

Save process air

Would you like to ensure the exact straight run of your machine clothing, while minimizing wear at the same time? The HDU Guide enables optimum fabric and felt run control and guarantees trouble-free operation of your paper machine.

Due to various influences, felts and fabrics tend to run out of the direction, leading to more rapid wear. The guide roll with the low-maintenance HDU Guide ensures absolutely straight running of the clothing in the wet and dry ends and reduces fabric edge wear.

Clever system for trouble-free operation

Straight running of the machine clothing is continuously monitored by a tracer. A pivot-mounted adjusting lever and spring-compensated adjusting cylinder inside the HDU Guide control the guide roll in case of deviations. This forces the machine clothing back onto the right track. Since even the smallest deviations in the straight running of the machine clothing are detected by the palm unit, only small compensation movements are necessary.

Flexible application for different requirements

For application of HDU Guide for example in the dryer section, Voith has developed a slightly modified version designed for special operating conditions. Base adjustment is no longer performed with a hand wheel but by an air motor with a suitable gear unit, for example. The adjusting lever position is displayed in the control center and can therefore be monitored and corrected accordingly.

The HDU Guide can be used in the forming, press and dryer sections and can be mounted in various positions within the paper machine. Even overhead placement is possible.

Customer benefits

- + Low operating costs due to low air consumption
- + Reliable and proven operation
- + Belt edge wear is very low, resulting in longer run times

Product family of stretchers and guides

HDU control upgrade	Replacement of pendulum sensor and pneumatic controls in older belt-guiding systems
Thune Guide	Reliable felt and wire guiding system based on cassette design for quick and simple wear part replacement
Bellows	For high temperatures of up to 120°C
EasyGuide	Low-wear felt and wire guiding system based on a pivotal design enabling easy wear part replacement
HDU Guide	Felt and wire guiding system for directional stability of the clothing
SensoTension P	Felt tensioning system for constant and reliable press felt tension
SensoTension DE	Fabric tensioning system for the dryer section
SensoTension LC	Belt force sensor for precise determination of wire tension

More information

www.voith.com/hdu



DuoStabilizer & ProRelease⁺

Better runability, less energy costs

ProRelease⁺ optimizes the web run, particularly in the sensitive area of the first dryer groups. Thus, web breaks are reduced and the runability of your paper machine is improved. In combination with DuoStabilizer, Voith provides the leading stabilization equipment with the newest sealing technology for stable machine run and lowest energy consumption at the same time.

DuoStabilizer

DuoStabilizer provides web stabilization in the single-tier dryer section and is installed above drilled stabilizer rolls. The stabilization zone is applied with a vacuum that allows for the web tension and shrinkage to be reduced and the runability of the paper machine to be improved.

Sealing of the stabilization zone is done with a cost-effective and energy-saving sealing concept. The mechanical seal prevents the boundary air layer carried along with the dryer fabric from getting into the stabilization zone. For ropeless threading of the transfer tail, a threading zone can be separated in the system from the entire operating zone.

ProRelease+

ProRelease+ ensures stable web pickup in the first dryer groups of the single-tier dryer section. The additional high vacuum in the release zone supports stable web release of the drying cylinder and thus enables the reduction of the draw level. This is achieved with the unique sealing system consisting of the MultiSeal holder with the newly developed SkySeal Plus sealing elements.

The reduced stress on the relatively wet paper web improves the runability and as a result helps to reduce the draw level up to 0.5%. Alternatively, it is also possible to increase the paper machine speed with the same draw level.

DuoStabilizer and ProRelease+ can be equipped with an online cleaning device for maximum performance.

Customer benefits

- + Low energy consumption
- + Improved runability due to less breaks and ropeless threading
- + Online cleaning device available

Product family of web stabilizer

ProRelease+	Perfect web stabilizer for stable web pick-up and stabilization in the first dryer groups of the single-tier dryer section
DuoStabilizer	Reliable web stabilization equipment for increased runability in the single-tier dryer section
S-Stabilizer	Web stabilizer for increased web runability in the double-tier dryer section
VentiStabilizer	Combination of web stabilization and pocket ventilation in the double-tier dryer section
DuoFoil	Reliable stabilizer for stable web transfer above dryer section suction rolls in the single-tier dryer section
Bubble Sucker	Device for stable and crease-free web run in the press section
TransferFoil & DuoTransferFoil	Equipment for web stabilization from press into dryer section

More information

www.voith.com/duostabilizer
www.voith.com/prorelease





DuoCleaner Express

500,000 euros savings per year

Have you heard that a cleaning system for dryer fabrics can save up to 500,000 euros annually in energy and water costs? On a liner machine in China, producing corrugated medium (90-200 g/m²), DuoCleaner Express makes this happen.

There has been a significant improvement in cleaning effectiveness and performance of the dryer fabrics since the installation of DuoCleaner Express.

The system substantially reduces the steam consumption of the paper machine and with improved paper quality at the same time. This has resulted in higher productivity and reduced the operating costs by approximately 500,000 euros.

It only took two days for Voith to rebuild the pre-dryer section of the liner machine. Voith upgraded the original DuoCleaner on the top dryer fabrics of the first and second dryer group and on the bottom dryer fabric of the fourth group with the improved DuoCleaner Express system.

The DuoCleaner Express is easy to retrofit in existing machines and the original DuoCleaner can be easily upgraded. Effective cleaning is obtained with up to six traversing concentrated high-pressure cleaning jets that spray onto the dryer fabric at a defined angle. A water jet injector in the cleaning head and vacuum reliably remove the contamination and deflected water. A small amount of water penetrates through the fabric into a tray and is discharged. An air knife blows out the remaining water.

The improved design pays off: It typically eliminates chemical cleaning, increases drying efficiency, improves sheet stability and tail threading, reduces web breaks and plugging of vacuum roll holes, and the cleaning head is easily serviced onsite for maximum availability.

Customer benefits

- + Lower energy consumption and greater evaporation from cleaner fabrics
- + Fewer dirt spots, fewer web breaks and more uniform drying due to cleaner fabric surfaces
- + Better runnability due to higher fabric permeability retention from off-roll cleaning

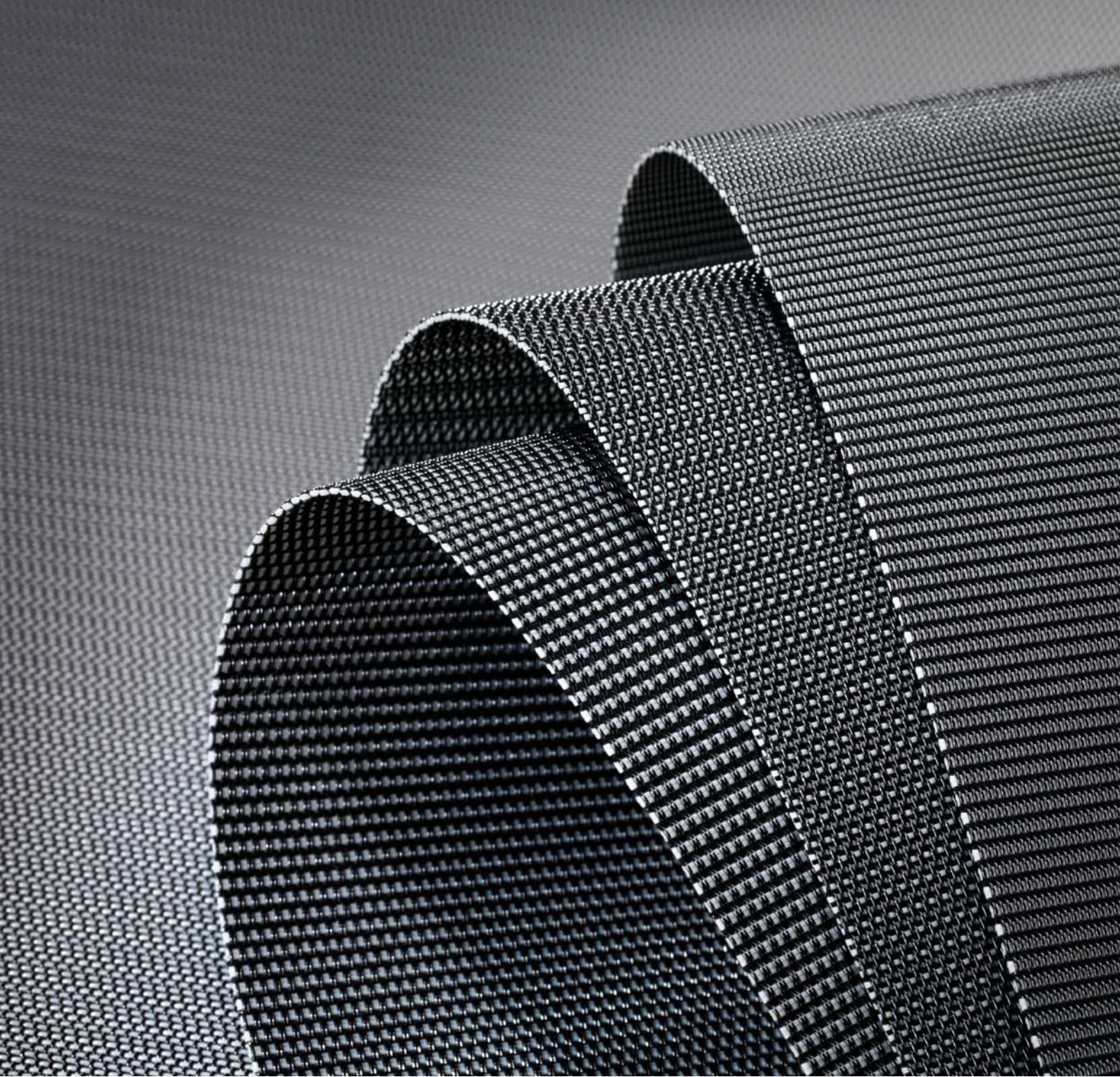
Product family of fabric and roll cleaners

DuoCleaner Excell	Online high pressure cleaning system for forming and press fabrics
DuoCleaner Express	Online high pressure cleaning and extraction system for dryer fabrics
JetCleaner	Uniform cleaning and drying of forming fabrics
RollCleaner	Online cleaning system for roll surfaces
ProLub	Uniform lubrication of press fabrics at the uhle box

More information

www.voith.com/duocleaner-express





Evaporite

Clean and robust dryer fabric

Dryer fabrics are often chosen based only on permeability and caliper. Evaporite has proven that the weave structure plays a significant role in ensuring that fabric performance is maintained throughout its life.

Improving drying efficiency

The new Voith dryer fabrics range is characterized by strength, durability and hydrolysis resistance throughout the whole fabric life. The fabrics are designed to minimize the build-up of contamination within the fabric structure and to manage the extreme conditions found in a dryer section.

Optimum evaporation with Evaporite

Evaporite is a robust dryer fabric with a single-layer structure and high contamination resistance. The proven combination of flexing points and minimum cross-over points resists the build-up of contamination inside the structure. This ensures effective evaporation of moisture from the sheet through the entire fabric life.

Cleaning made easy

The tight fabric construction enables easy removal of dirt deposits from the surface. This means that Evaporite works effectively with all types of cleaning, including DuoCleaner Express, mechanical devices or manual cleaning.

Focus on runability

The flexing points are positioned across the weave to ensure an even air flow from the sheet control systems and stabilizer rolls. This guarantees easy sheet separation from the cylinder and effective vacuum control for efficient runability.

The material makes the difference

SynStron yarns are developed for improved performance in the dryer section. They provide increased resistance to abrasion and fibrillation plus a higher tensile strength. SynStron offers superior performance compared to conventional polyester materials.

Why is Evaporite the best choice?

Evaporite clearly distinguishes itself thanks to its high wear resistance and ease of cleaning. This is due to the CleanWeave technology utilized in this single-layer design construction.

Customer benefits

- + Improved evaporation for higher drying efficiency
- + Open structure maintained for optimum runability
- + Contamination resistance and easy cleaning

Reliable cleaning system

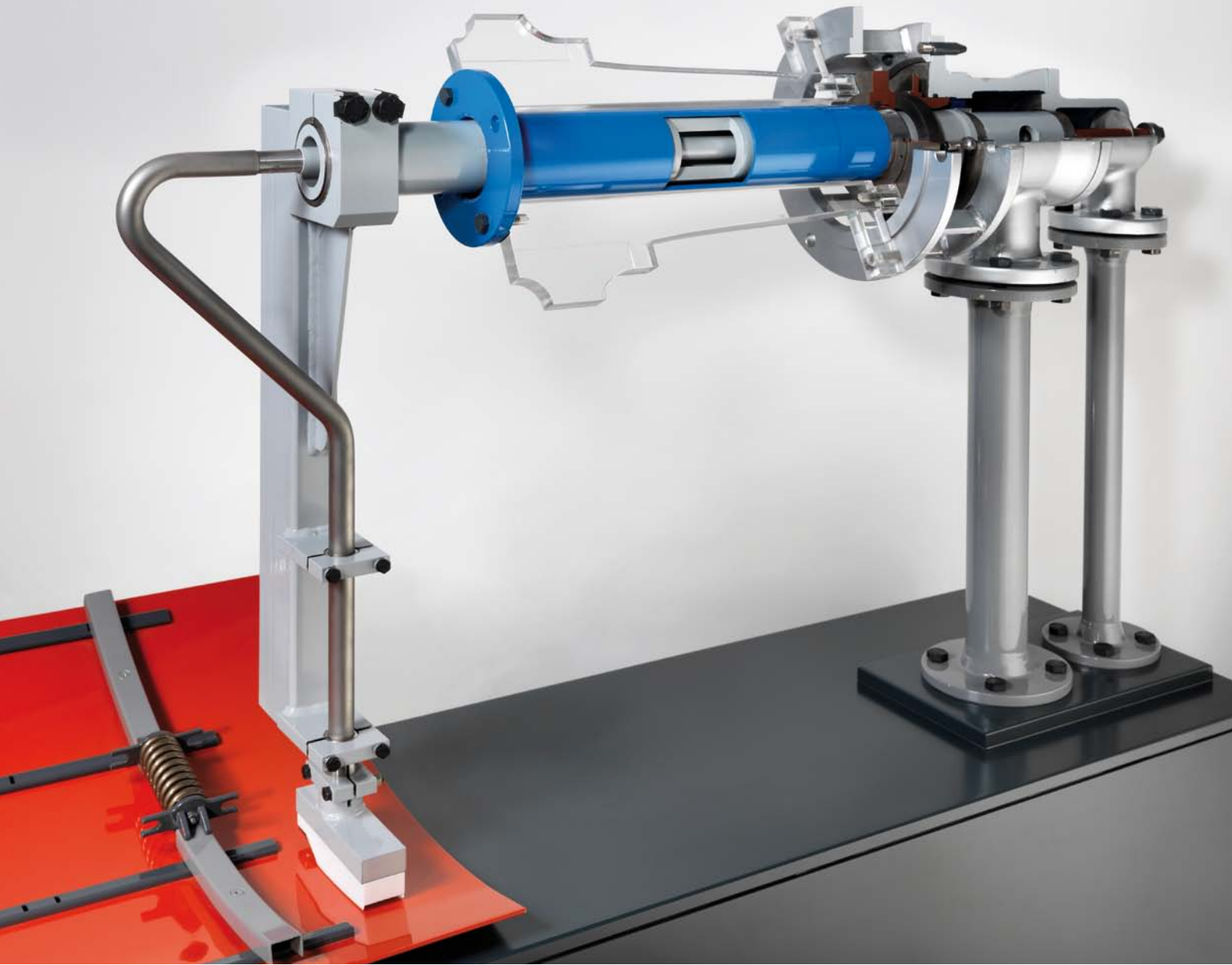
DuoCleaner Express is an efficient cleaning device for dryer fabrics. It is available with up to six concentrated high-pressure cleaning jets ensuring reliable operation of the machine clothing in the dryer section at all times.

Product family of CleanWeave dryer fabrics

Evaporite^{High}	For applications that require a higher air flow for sheet runability and evaporation
Evaporite	For high contamination resistance ensuring effective evaporation of moisture from the sheet

More information

www.voith.com/new-dryer-fabrics-range



SteamJoints and ThermoBars

Perfect combination for energy saving

SteamJoints ensure reliable dewatering of the drying cylinder, while ThermoBars provide optimized heat transfer in the drying cylinder. Together they form a harmonizing team for enhanced performance in the dryer section.

SteamJoints for increased drying performance

Voith SteamJoints with stationary siphons provide optimized drying cylinder performance at any speed, any pressure and for all paper grades. They can be easily adapted to almost all local conditions.

The economic solution

Conventional steam joints with rotating siphons often cause dewatering problems in the drying cylinder. Voith SteamJoints with stationary siphons offer an economic alternative. They ensure reliable dewatering at the lowest differential pressure. In addition, the blow-through steam remains at the lowest level when the siphon diameter is optimized. The optimized use of steam achieves considerable energy savings. SteamJoints are heat-stable and guarantee a secure positioning of the siphon with constant siphon distance to the drying cylinder shell and therefore a consistent heat transfer from the drying cylinder to the paper.

ThermoBars for improved heat transfer

ThermoBars increase the condensate film turbulence in the drying cylinder. The heat transfer in the drying cylinder is improved and drying performance increased.

For production speeds greater than 400 m/min the condensate forms a laminar layer in the drying cylinder, which reduces the relative heat transfer of the steam to the shell of the cylinder. ThermoBars break up this laminar layer by creating turbulence and thus increasing the heat transfer leading to higher drying capacity. In turn, an increase in production speed is possible. In addition, ThermoBars prevent different condensate thicknesses along the width, which therefore improves the moisture cross-profile in the paper web.

Mini-ThermoBars for the edge area of the cylinder prevent wet streaks on the edge of the paper web.

Customer benefits SteamJoints

- + Lowest differential pressures and blow-through steam flows for reliable operation
- + Energy savings due to less fresh steam demand
- + Lean maintenance

Customer benefits ThermoBars

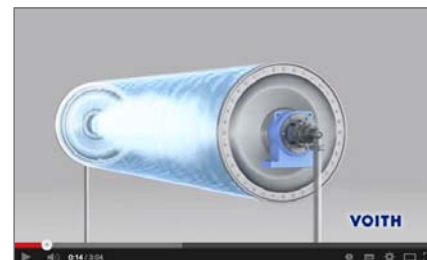
- + Production increase through improved heat transfer
- + Improved paper quality through improved CD moisture profile

Product family of steam and condensate

EcoHeat	Energy savings through the reuse of flash steam in the process heating system
SteamJoints	For dewatering of drying cylinders through stationary siphons
ThermoBars	Improved heat transfer in drying cylinders by increasing the condensate film turbulence

More information

www.voith.com/steamjoints
www.voith.com/thermobars





EcoHood

Energy efficiency through heat recovery

With EcoHood 65, savings of up to 30% of the amount of exhaust air are possible due to the higher due point of the dryer hood. As a result, significant energy savings can be realized and the investment pays off quickly.

Customers satisfied with EcoHood 65

DS Smith Paper Deutschland GmbH has installed the new Voith EcoHood 65 on the pre-dryer section of the PM 1 Witzenhausen that produces corrugated cardboard base paper. "We are very satisfied with the new dryer section hood," reports Ralf Schwarzer, Project Manager at DS Smith Paper in Witzenhausen. "The hood is functional and of high quality. The rebuild proceeded smoothly, and the new hood enables us to save a significant amount of energy in the pre-dryer section."

Less exhaust air

Before the rebuild, the pre-dryer section hood operated with a dew point of about 57°C. This required the input of 400,000 m³/h of exhaust air. With the new hood and a dew point of 65°C, the amount of exhaust air can now be reduced by 30% to just 270,000 m³/h.

Profitable investment for existing machines

EcoHood is an ideal choice when optimizing existing machines.

High heat recovery rates can only be achieved if the hood dew points are high. EcoHood can thus be an important component for high energy savings – and quickly pays off.

Improved hall climate

Compared to open hoods or hoods with less insulation, very little heat and moisture get into the hall due to the superior insulation and modular design of EcoHood. Thus, almost all of the steam vapor fumes produced when drying paper can be utilized in the heat recovery system. Negative impact of the climate in the hall is mitigated, and the building is actively protected.

Better recovery of energy

On the one hand a thorough capture of vapors is key to heat recovery for high energy efficiency in drying. On the other hand the dew point of the hood is decisive, i.e., the possible moisture in the exhaust air due to the hood design. The higher the dew point, the less supply air and exhaust air is required, which also reduces the power and steam consumption.

Customer benefits

- + Considerable energy savings in drying due to high dew point
- + Smaller air system possible due to reduced amount of air
- + Effective heat recovery system

Service options

Voith offers an overhaul of load safety devices to EN 360, which is required once a year. Load safety devices prevent the lift gates of the dryer section from falling.

Product family of dryer hoods

EcoHood 62	Standard hood with an operating dew point of up to 62°C
EcoHood 65	Premium hood with an operating dew point of up to 65°C

More information

www.voith.com/ecohood





Yankee hoods

Optimum drying in tissue machines

With Voith Yankee hoods you can significantly reduce your energy costs or increase your drying performance. Voith offers perfectly matched and customized systems to enhance the performance of your tissue machine.

The right solution for high-quality tissue paper

Impingement jet drying using high-capacity hoods is one of the most energy-intensive drying methods in paper manufacturing. Design and production quality have a decisive impact on the uniformity of the drying process. In turn, this also affects the moisture CD profile and thus paper quality, as well as energy consumption and service life of the hood.

For your standard application, Voith offers Yankee hoods with an operating temperature of up to 510°C including best fitting air systems.

Ultra-Hood – The premium Yankee hood

The Voith Ultra-Hood is the right choice if you wish to achieve substantially higher production outputs compared to conventional Yankee hoods. With Voith Ultra-Hood, operating temperatures of up to 650°C can be achieved. For brief periods, up to 700°C are possible.

It allows maximum drying capacities at lower power requirements, resulting in optimized energy costs for your tissue machine. Voith Ultra-Hood is very flexible thanks to the option of varying operating modes. Voith's premium Yankee hood thus not only optimizes your energy costs but also achieves best results in bulk and softness.

The whole production hall in view

Additionally, Voith offers different heat recovery systems and finds the right solution for your local requirements. Whether reboiling systems for steam generation, heat recovery for combustion air, for hall ventilation or for process water, Voith application engineers use their expert knowledge to fulfill your needs and offer energy-saving components. The high dust formation within the production hall can be actively diminished by installing Voith dust removal systems.

Customer benefits

- + Maximum drying capacities
- + Optimized energy consumption
- + Also suitable for retrofitting

Improved hall conditions

The Voith hall ventilation system ensures improved working and production conditions for man and machine – with reduced operating costs. The system provides for reduced corrosion and mold build-up and better building protection along with low energy consumption.

Product family of Yankee hoods

Yankee hood	Standard hood with an operating temperature of up to 510°C
Ultra-Hood	Premium yankee hood with operating temperatures of up to 650°C and for brief periods of up to 700°C

More information

www.voith.com/yankee-hoods



qDry Pro

Up to 40% energy savings

The new non-contact drying system qDry Pro needs up to 40% less energy compared to other gas-fired systems, because the waste heat of the infrared dryers is re-used for heating of air dryers downstream. This results in considerable less energy consumption annually.

qDry Pro is a hybrid, non-contact drying solution, containing a unique super-insulated IR-Dryer, energetically coupled to any type of downstream air-dryer. In optimal cases, the whole drying system is energy balanced, so the air-dryer requires no additional heating.

In a real example of non-contact drying with a required energy transfer of approximately 2.9 MW after the top coat for white-top testliner, both investment and operating costs were lower with qDry Pro.

While the investment costs for a conventional, separated system was around 2.1 million euros, the qDry Pro costs 1.9 and the energy costs are much lower: 1.1 million euros per year compared to 1.6 million for the conventional system.

qDry Pro can be used for all paper and board grades that are coated on one or both side(s). It may be equipped with any gas-fired Voith infrared emitter and provides a tailored solution for all applications.

To reach this high flexibility qDry Pro is designed as a modular system. The type of IR-emitter, number of IR-Rows, as well as type, length and amount of downstream air-dryers are configured to your individual needs. If required, an additional heating for air dryers can be installed.

qDry Pro may also be used in rebuilds to increase both quality and energy efficiency. It is possible to connect existing infrared and air dryers with a new air system according to the new qDry Pro concept.

Customer benefits

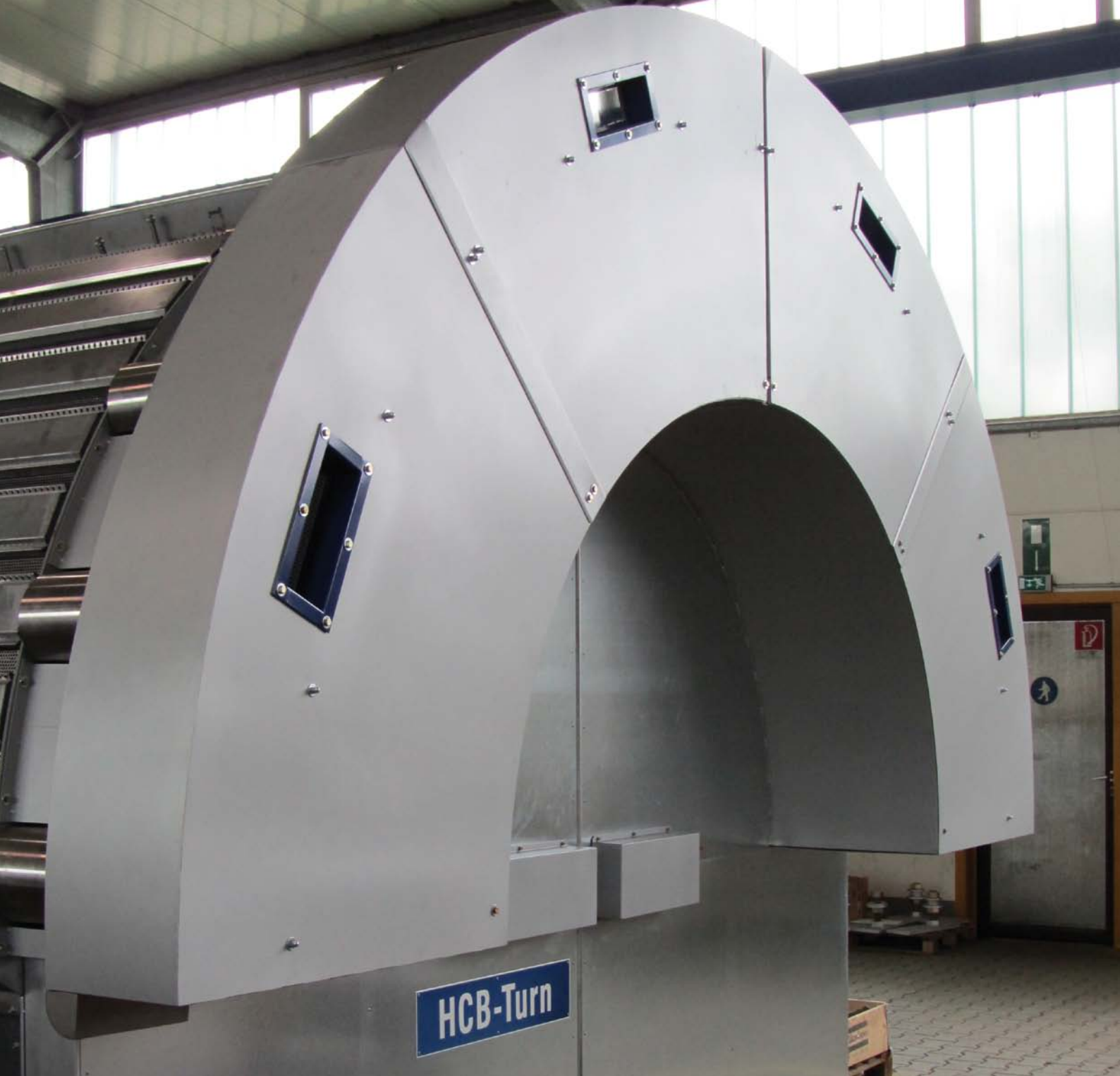
- + Low operating costs thanks to heat recovery
- + Excellent drying quality as well as flexibility, due to the modular combination of two drying concepts
- + Optimum runability due to non-contact web run

Product family of non-contact drying

qDry Pro	Energy-saving compact combination of infrared and hot-air drying
MCB-Dryer	Hot air dryer
CCB-Dryer	Compact air dryer for one-sided applications and working widths of up to 7,500 mm.
HBC-Turn	Combination of hot-air drying and non-contact web turning
InfraAir	Infrared dryer that uses gas
InfraElectric	Electrically heated infrared dryer with the highest energy transfer density
InfraMatic	Gas-heated infrared drying system for correction of CD profile
OnQ ModuleIR	Electrically heated infrared drying system for correction of CD profile

More information

www.voith.com/qdry-pro



HCB-Turn

Hot-air drying with high efficiency

HCB-Turn offers hot air drying and non-contact web turning simultaneously. This saves space, while the optimized air system allows a high degree of efficiency as well as a reliable web run.



HCB-Turn achieves a uniform web run with short web draws and highly efficient, homogeneous web drying. Because of the combination of hot-air drying and non-contact web turning, HCB-Turn is very space-saving and requires comparatively low investment and operating costs.

This hot air drying and non-contact turning system can be heated with steam, gas or even just with exhaust gases to high maximum temperatures, comparable to a normal, straight air dryer, while still being capable of carrying high web tensions.

As a turn must be operated with over pressure to carry the web, Voith invented the patented re-feeding system at the web edges in order to prevent thermal loads in the surrounding area and associated energy losses.

The smart internal air distribution allows a reliable, stable web run without gap variations. Furthermore, in combination with the specially redesigned geometry of CB2 air nozzles that enable comparably high web tensions of the paper, the system achieves far higher heat transfer and mass transport rates with the same energy input compared to conventional air dryers with slot nozzles.

HCB-Turn is the ideal drying system downstream of coaters that coat the bottom side of the paper or board web.

With HCB-Turn, no cleaning shutdowns caused by deposits on guide rolls are necessary.

Finally, HCB-Turn is the perfect partner to complete a qDry Pro system, as it offers a long air dryer in a small space.

Customer benefits

- + High and consistent drying rate due to CB2 nozzle geometry
- + Low overall investment cost thanks to innovative web guiding concept
- + Perfectly stable web run
- + Ideal for modifications in confined installation spaces

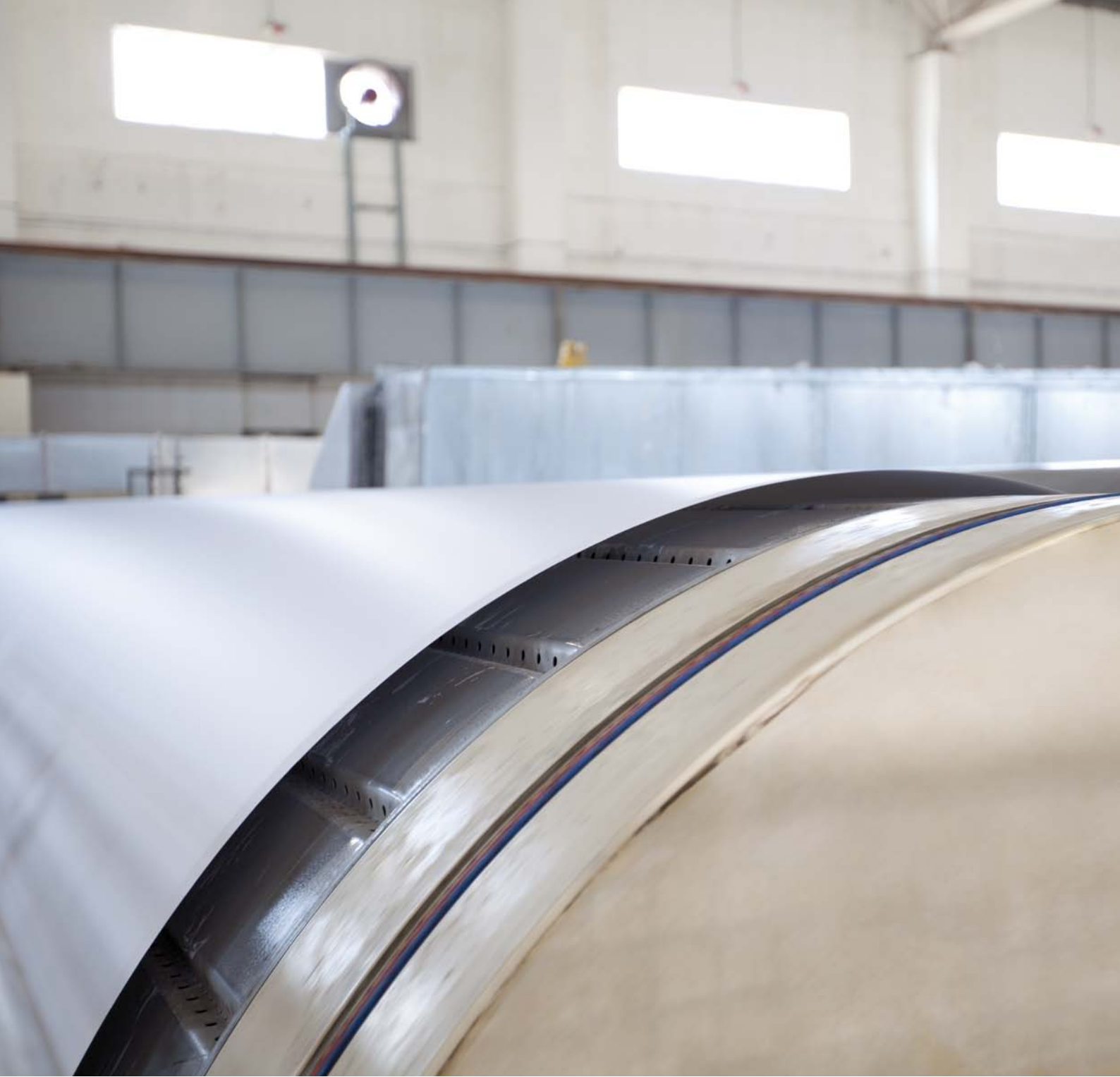
Product family of non-contact drying

qDry Pro	Energy-saving compact combination of infrared and hot-air drying
MCB-Dryer	Hot air dryer
CCB-Dryer	Compact air dryer for one-sided applications and working widths of up to 7,500 mm
HBC-Turn	Combination of hot-air drying and non-contact web turning
InfraAir	Infrared dryer that uses gas
InfraElectric	Electrically heated infrared dryer with the highest energy transfer density
InfraMatic	Gas-heated infrared drying system for correction of CD profile
OnQ ModuleIR	Electrically heated infrared drying system for correction of CD profile

More information

www.voith.com/hcb-turn





CB-Turn

Up to 25% less energy

CB-Turn is a very energy-efficient, non-contact web guiding system. Since it has a substantially larger pressurized area compared to airturms with conventional nozzle bars, CB-Turn does not need as much air pressure and thus the required air volume is reduced by approximately 30%.



After size or film presses, CB-Turn guides the freshly coated paper or board on an air cushion, followed in most cases by non-contact drying of the web. CB-Turn has been used for web widths of up to 11 meters and turning angles of up to 200°.

The special nozzle geometry of the CB-Turn surface builds up a homogenous air cushion over the entire circumference, thus CB-Turn has a substantially larger pressurized surface area compared to conventional airturns.

As a result, up to 30% less air is required to create an equal supporting air cushion. The energy consumption drops, and a very stable web run is ensured.

Customer benefits

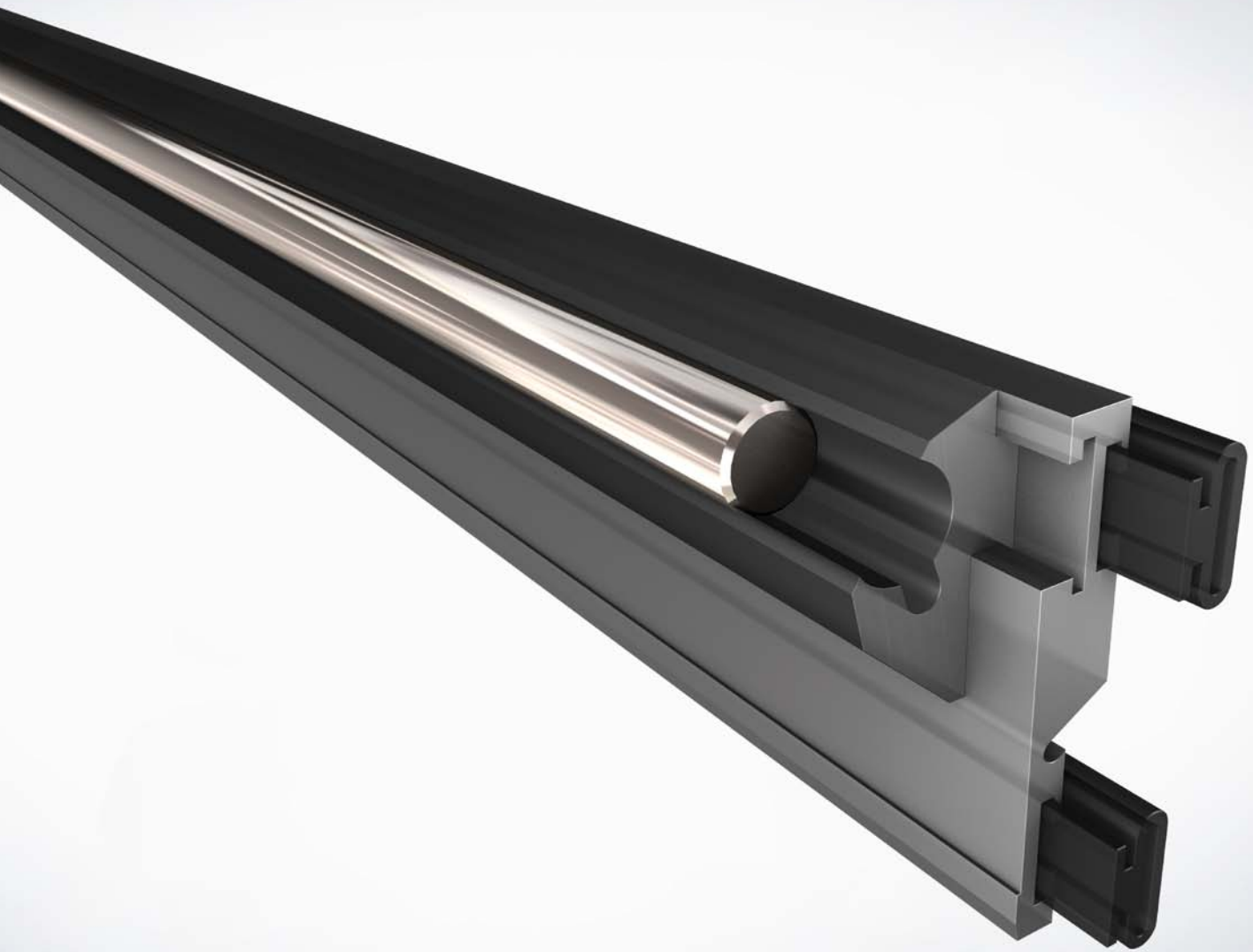
- + Optimum surface quality
- + Stable web run
- + Low energy consumption

Product family of non-contact web guiding

CB-Turn	Contactless web guiding system from coating units into dryer section
CB-Floater	Reliable contactless web guiding system for smaller web turns up to approximately 7°

More information

www.voith.com/cb-turn



SpeedRod M

Save time and materials

The rod bed system largely prevents hose damage and thus reduces shutdowns by up to 90%.

In a German paper mill producing WCC and LWC paper, the upgrade to SpeedRod M brought a real benefit. The yearly number of hoses torn or burst in the machine was reduced from 14 with the previous system to three with SpeedRod M.

Conventional systems cause production losses

Standard solutions consist of individual wear parts in the area of the rod holder in coating units. In case of malfunctions, it is complicated to locate the problem and carry out a replacement. Replacing the loading and clamping hose in particular is very time consuming and creates production loss.

SpeedRod M – The clever solution

The patented system is an optimization in the area of the rod holder in coating units. The metering rod, metering rod bed, loading hose and clamping hose are integrated in one component.

The supporting plate of SpeedRod M functions as an integrated holder for all wear parts and can be reused repeatedly. In case of a malfunction, the entire system is replaced and wear parts are changed outside the machine. Malfunctions in this area can thus be easily, quickly and reliably eliminated. SpeedRod M clearly saves time and as a consequence minimizes production losses.

Simple rebuild possible

All Voith SpeedSizers, SpeedFlows and SpeedCoaters that were produced after the year 2000 can be upgraded to SpeedRod M without any problem.

Older designs and integration in third-party systems have to be individually checked.

Customer benefits

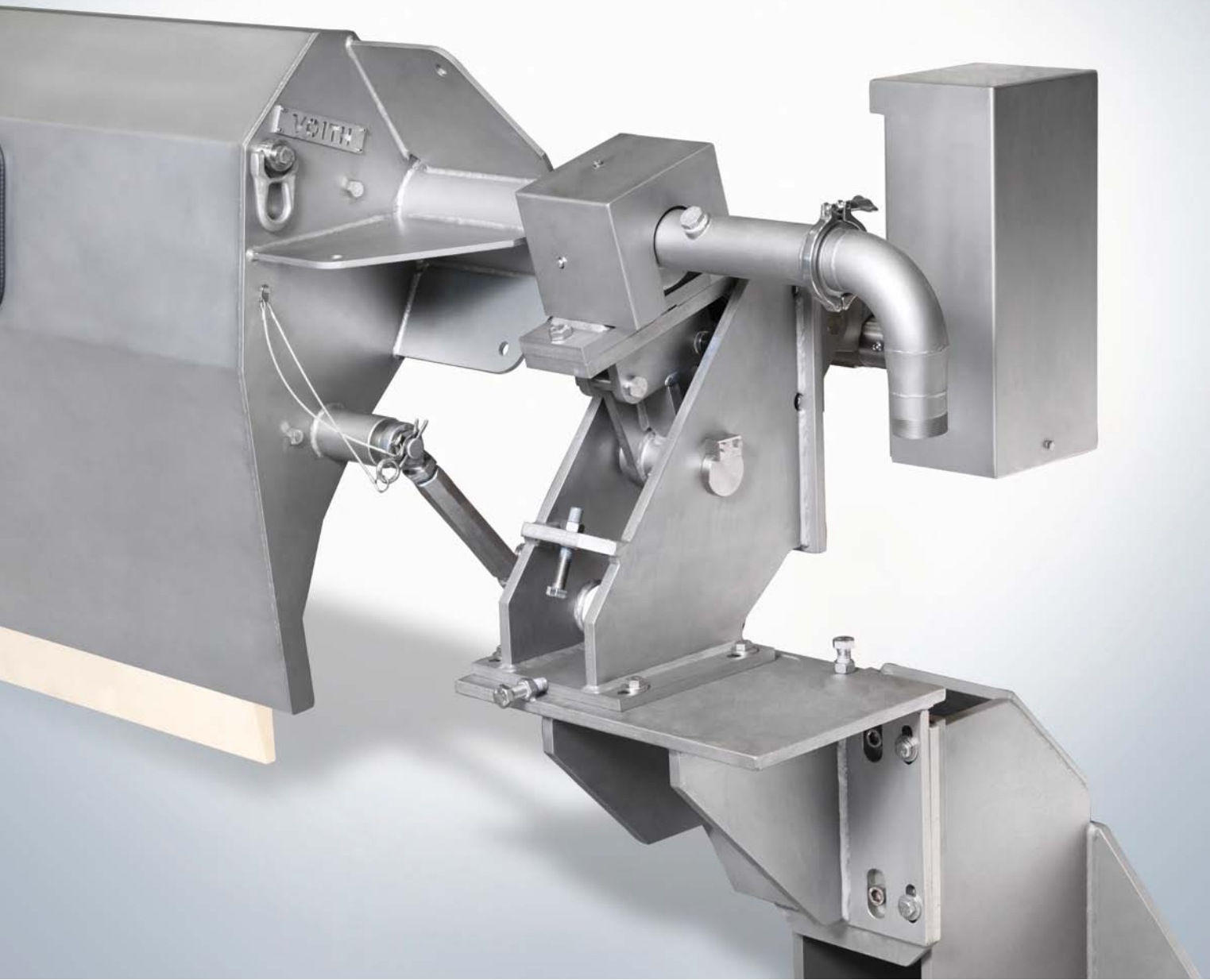
- + Significant time savings and thus minimal production losses
- + Quick replacement of wear parts outside the machine
- + Pressure-tested hoses cause fewer malfunctions during ongoing operation

Product family of coating and sizing components

SizeWings	For introduction of size directly into the sump of the size press
AirEx	Cyclone effect for extraction of most of the air carried by size solutions and coating colors
AirEx AT-V	Advanced deaerator for curtain coaters
SpeedRod M	Optimization in the area of the rod holder on coating units

More information

www.voith.com/speedrod-m



SizeWings

Increase production and improve quality

SizeWings allow non-splashing starch supply to the roll nip and thus ensure a turbulence-free sump surface across the entire web width. SizeWings allow non-splashing starch supply to the roll nip and thus ensure a turbulence-free sump surface and improved coating profiles.

Paper machines running at high speeds usually suffer from strong dynamic forces induced by the moving web and rolls. These dynamic forces influence the sump of a size press, making its surface very turbulent.

This results not only in a bad penetration profile of the starch contained in the paper, but also in splashes soiling the surroundings. A lower lifetime of the transfer ropes and higher amount of web breaks are the consequences.

Higher production and better quality

To address this problem in the paper industry, Voith has developed a simple, reliable solution: SizeWings. They do not spill the starch on the rolls, but immerse it in the sump.

Reduced turbulences

SizeWings improve flow dynamics within the bond and thus ensure less

turbulence occurring on the surface of the sump.

Improved coating profile

Together with the end dams, SizeWings allow the sump level to be increased and the calmed sump to penetrate more evenly in the web. Both factors improve the coating profile significantly.

Increased speed

By setting a higher limit for turbulences in the sump, SizeWings enable a speed increase of the paper machine as well as the solid content of starch.

One contact for all components

SizeWings consist of the main body immersed in the sump. At the drive side and front side, two end dumps regulate the height of the sump. A swiveling movement for SizeWings can be acquired as an optional device.

Customer benefits

- + Improved coating profile
- + Less web breaks
- + Less sump splashing, thus cleaner surrounding

Product family of coating and sizing components

SizeWings	For introduction of size directly into the sump of the size press
AirEx	Cyclone effect for extraction of most of the air carried by size solutions and coating colors
AirEx AT-V	Advanced deaerator for curtain coaters
SpeedRod M	Optimization in the area of the rod holder on coating units

More information

www.voith.com/sizewings



eVenFilm

Save over 470,000 euros annually

A new rubber polymer matrix makes it possible: eVen roll covers are specially developed for applying high-quality pigments and starches in size and film presses. They provide consistent performance and high machine availability.

Paper makers are convinced of eVenFilm

The Turkish producer Modern Karton trusts in the consistent performance of the eVenFilm rubber roll cover on its PM 4. „The excellent performance of the cover convinced us during the last year,“ says Ali Ihsan Aras, Technical Director of Modern Karton. „Running our film press with this new rubber roll cover from Voith Paper saves us up to 472,800 euros per year.“

Consistent application and reliable performance

eVenFilm for film presses is the latest product of the Voith rubber roll cover family for most challenging applications. They were developed to achieve consistent application, reliable performance and ultimate running times. The physical characteristics of the new polymer matrix include greater tear resistance, enhanced wear resistance and reduced hysteresis to provide additional benefits to the application quality and machine runability.

Strong cover for reliable service life

In addition, eVen covers demonstrate a lower risk of thermal barring, which can occur primarily through a combination of speed, cooling and nip load. The result is a reliable machine service life and lower running costs. A multitude of field tests has confirmed that eVen roll covers are stronger and more resistant to impact damages caused by paper wraps after a sheet break and are less sensitive to thermal influences.

Maintaining the surface roughness

Loss of cover roughness leads to an unsatisfactory size and pigmenting structure resulting in a negative impact on paper quality. Consistent surface roughness and wear resistance are improved in the eVen cover through the use of unique surface fillers. Field tests have shown that the cover rarely swells and the fillers in the polymer matrix help to maintain a consistent surface roughness.

Customer benefits

- + Higher mechanical strength for improved impact resistance
- + Improved thermal barring resistance
- + Better reset rate and elasticity for improved performance
- + Lower maintenance cost due to consistent performance

Reliable & flexible service

Total Roll Service is a customized solution for the most effective, reliable and fast roll servicing available. The perfect interplay of RollCare, RollRep and RollUp solutions minimizes unscheduled downtimes and improves roll efficiency.

Product family of eVen rubber roll covers for sizing and coating

eVenSize	For puddle size presses
eVenSize T	Superior impact resistance for the most demanding size presses
eVenFilm	Cover for applicator rolls in film presses
eVenFilm T	For the most challenging film press applications

More information

www.voith.com/evenfilm



NipcoScoop

Reduce drive power consumption

Upgrading existing Nipco rolls with an oil scoop system significantly reduces drive power consumption and brings a fast return on investment. This also facilitates higher production speed without increasing the installed drive power capacity.



The NipcoScoop oil scooping system for Nipco rolls combines two important advantages: It allows energy savings and an increase in production speed from the same drive power.

Optimal functioning of deflection compensation rolls depends on, among other things, their oil scooping system. The NipcoScoop is a device for continuous emptying of rotating deflection compensation rolls. The system ensures a defined oil ring on the inside diameter of the roll sleeve during rotation.

The remaining quantity of the oil supplied is rerouted back into circulation. Effective scooping reduces the paddle losses in the rotating roll, thereby reducing the required drive power. Higher production speeds are possible without increasing the installed drive power.

Nipco rolls that are equipped with the NipcoScoop oil scooping system save energy due to reduced power input. Thanks to the oil film on the inside surface of the roll sleeve, it operates wear-free.

In a rebuild, no changes are required in the peripheral equipment.

Customer benefits

- + Energy savings thanks to significantly lower drive power consumption
- + Higher production speeds possible without increasing the installed drive power capacity

Product family of calender components

NipcoCool	Internal roll cooling system for Nipco rolls with oil injection
NipcoScoop	Oil scooping system for Nipco rolls
NipcoSeal	Modernized sealing system for Nipco rolls
FlexiTherm	Heating system for improved calendering of new or modified paper qualities
FlexiThermEdge	Heating module for the web's edge
CalTronic Flex	Future-compatible hardware for roll calculation and operation

More information

www.voith.com/nipcoscoop



FlexiTherm

Improved gloss and smoothness

With an upgrade of the FlexiTherm system, a higher and more even temperature profile of the heated ThermoRolls in the calender can be achieved. The result: improved paper quality in terms of gloss and smoothness.

The upgrade itself is based on the existing hardware that is already available in the calender. If the heating unit is using water as a heat transfer medium, it can be upgraded to oil as a heat carrier. This will allow a higher temperature of the ThermoRolls, which leads to more gloss and smoothness. With this set up, a temperature profile of up to 300°C of the heating carrier can be achieved.

Additionally, the edges of the heated ThermoRoll can be warmed up locally by eddy-current technology to improve the temperature profile. Thus the paper web quality at the edges can be improved.

With the upgrade of the FlexiTherm system, older supercalenders and soft calenders can be modernized.

The heating and cooling systems will be checked, and the necessary components for the upgrade will be identified. Additionally, the cross profiles of the paper will be looked at in order to find deviations across the working width of the calender. These areas will then be examined in detail in order to achieve an even profile of the paper. In addition, the speed can be increased without changing calendering results.

Customer benefits

- + Improved gloss and smoothness due to higher temperature level of ThermoRoll
- + Improved cross profiles due to even temperature profile

Product family of calender components

NipcoCool	Internal roll cooling system for Nipco rolls with oil injection
NipcoScoop	Oil scooping system for Nipco rolls
NipcoSeal	Modernized sealing system for Nipco rolls
FlexiTherm	Heating system for improved calendering of new or modified paper qualities
FlexiThermEdge	Heating module for the web's edge
CalTronic Flex	Future-compatible hardware for roll calculation and operation
EcoSet	Digital system to determine the roll pressure precisely and reliably

More information

www.voith.com/flexitherm



NanoPro

The most reliable calender cover

NanoPro represents a new composite cover design for the most challenging applications in multi-nip, super and soft calenders. NanoPro surpasses all other calender covers with its incomparable vibration resistance, even under challenging operating conditions, and thus reduces barring.

The new benchmark in calendering

The multi-layer, fiber-reinforced composite cover with homogeneous distribution of nanoparticles provides a more uniform TopLayer leading to better mechanical properties and higher wear resistance. The new dampening component in the BaseLayer significantly reduces barring. Its unique properties allow optimum performance in vibration-prone environments.

Pro Vibration resistance

NanoPro provides consistent and optimum performance between regrinds in positions where vibration reduces the cover performance. NanoPro calender covers provide a reduction of vibration compared to conventional roll covers and therefore reduce barring.

Pro Wear resistance

Wear resistance is almost directly proportional to run time, especially for barring sensitive positions.

The homogenous distribution of nanoparticles in NanoPro covers significantly improves the wear resistance, resulting in enhanced performance.

Pro Impact resistance

NanoPro covers are able to withstand further impact damages. The unique production process combined with the latest materials ensures that the functional layer reduces the crack propagation. NanoPro maintains high compressive stresses evenly over the nip and thus creates the best possible sheet characteristics.

Pro Total Cost of Ownership

By applying NanoPro covers, the calender availability is considerably increased. The improved cover performance results in reduced downtime and maintenance cost.

Customer benefits

- + Outstanding vibration resistance due to dampening BaseLayer
- + Optimum surface quality through better fiber distribution in TopLayer leading to enhanced sheet quality
- + Wear-resistant material leading to reduced crack propagation

Reliable & flexible service

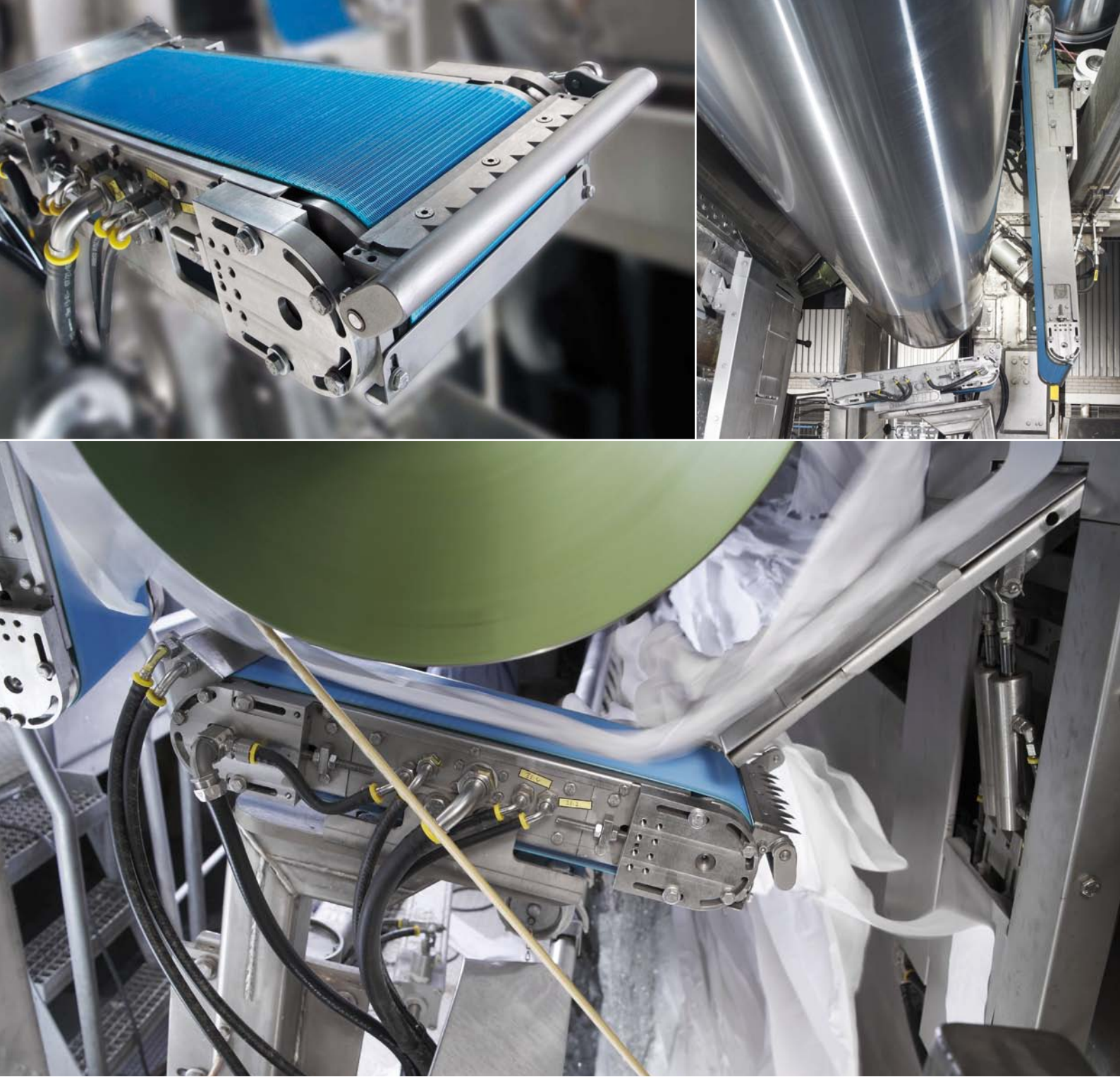
Total Roll Service is a customized solution for the most effective, reliable and fast roll servicing available. The perfect interplay of RollCare, RollRep and RollUp solutions minimizes unscheduled downtimes and improves roll efficiency.

Product family of Nano calender covers

NanoPearl	Premium cover for the highest requirements in calendering and best running time
NanoPro	Vibration-resistant composite cover for the most demanding applications

More information

www.voith.com/nanopro



Threading systems

Safe and reliable threading process

Do your operators have to intervene the threading process manually? Do you lose 5-60 minutes production due to an inefficient threading process per section? Voith's threading systems provide highest safety for operators and carry out the threading process in a time span between 20 seconds and 3 minutes.



Automated threading systems increase productivity and safety

More than 250 threading sections with more than 300 installed conveyors are working to the full satisfaction of our customers – improving significantly the machine runability and the employees' safety.

Most threading issues throughout the press, dryer, size press, coater, calenders or complete end sections can be solved with a Voith threading system. A reliable and reproducible threading process can only be achieved using a fully automated system in combination with a defined control of the tail. In consequence, shortest threading times are achievable if operators do not influence the threading process manually.

Voith's strength is to combine the different products such as tail cutter, conveyor systems and ropes to find the optimum solution for your machine configuration. Nearly any threading time above two minutes can be optimized – how long do you need today?

Reduced web breaks with TailCutters & EdgeTrims

Either in the former or close to calenders or coaters, clean edges of the web without cracks are a precondition to reduce web breaks and lead to increased runability of the machine. Cutting the web to the needed format is an additional advantage.

Especially in tissue machines, an edge trim in combination with one or more center cuts in front of the reel increases the production flexibility and the lifetime of felts. In addition, they create stable conditions at the Yankee, cut the rolls to the final width and save breaks during the combining process.

Customer benefits

- + Higher productivity due to short threading time
- + Reduced pulper reject thanks to shorter threading time
- + Increased operator safety due to fully automated systems

Product families of threading systems and TailCutter & EdgeTrim

Threading systems

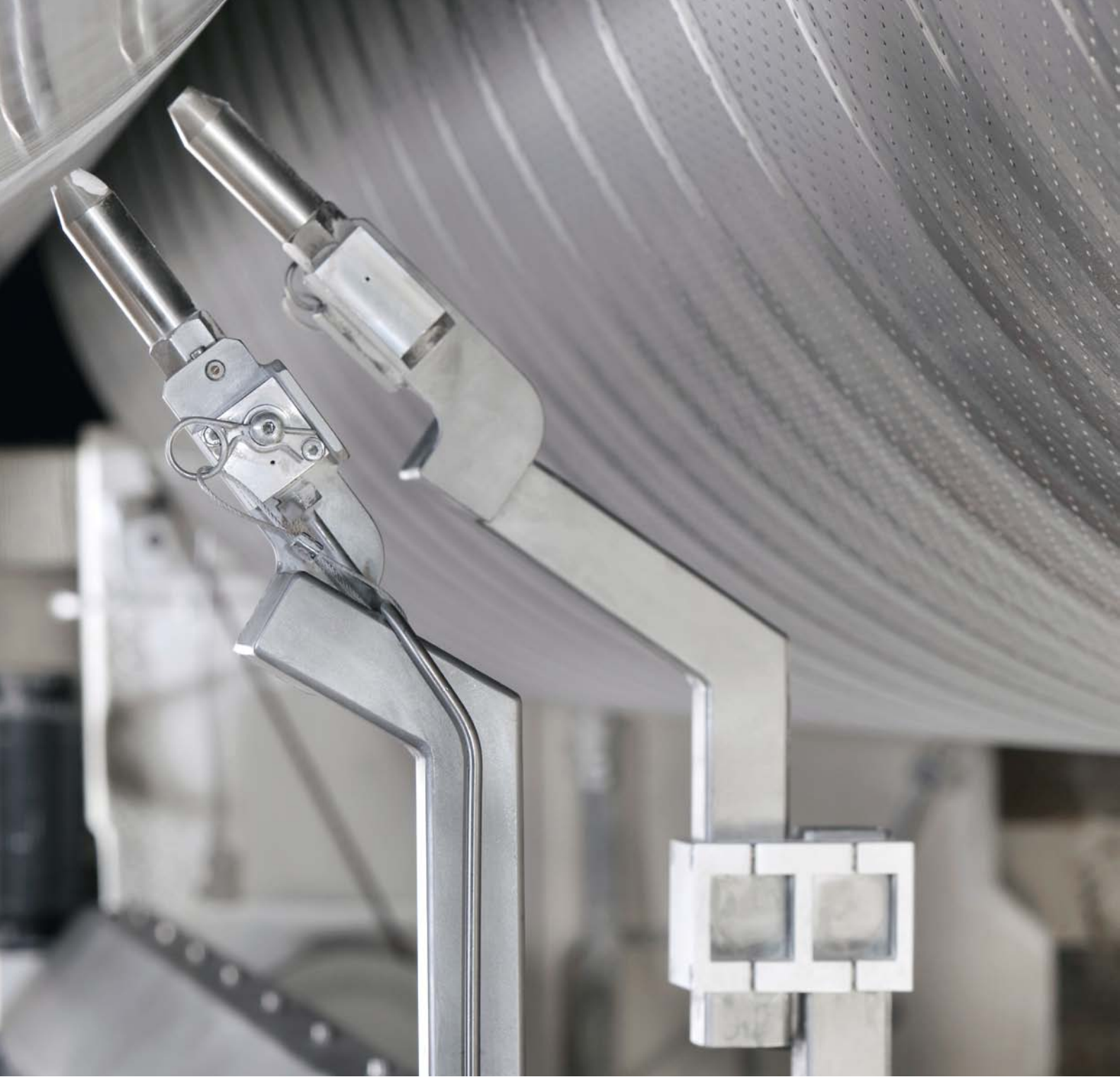
PrevoSystems DryEnd	For any section in the dry end
PrevoSystems WetEnd	For installation in the press or between press and dryer section
TailBlade	Ropeless threading system for the dryer section
PrevoRope Systems	Rope system for tail threading

TailCutter and EdgeTrim

PrevoCut DC	Rotating knife cutter in the open draw of two-tier dryer sections
PrevoCut STC/DTC	High pressure water jet tail cutter for the dryer section
PrevoCut H/DH	Low pressure water jet tail cutter for the wet end
HydroSquirt	Low pressure edge trimming in the forming section
PrevoCut ET	High pressure edge trimming in dry end, often after the calender
MasterCut	Water jet tail cutter before the reel section in tissue machines

More information

www.voith.com/threading-systems



EcoChange W

Improved operator safety, reduce broke

The EcoChange W system provides high turn-up quality, with a nozzle traversing speed that can be adapted to various paper characteristics.

“We were able to reach our goal in full – increasing turn-up efficiency and reducing broke – just a few days after startup,” said Alois Leeb, Head of Technical Planning at UPM Plattling after the rebuild of coater PM 11.

Just two months after startup, turn-up efficiency was more than 99.5%, while the volume of turn-up broke had been reduced by 80%. Working in combination with a rubber covered reel drum, there was even an increase in overall production capacity.

Particularly in the case of offline coaters, a reliable reel change helps to ensure optimum machine efficiency.

In addition, the broke from the core is significantly reduced. As soon as the parent roll has reached the turn-up position, the EcoChange W system uses two high-pressure water jet nozzles to cut a triangular tip out of the paper web. At the same time, a dosing nozzle is used to briefly apply a small amount of water-soluble adhesive onto the empty reel spool in the area of the triangular tip. This helps to thread the paper tail reliably onto the new reel spool without creasing.

Thanks to the self-contained control package, the new turn-up system could be fully tested outside of the coater before being integrated into the reeler. This resulted in a substantial reduction in installation time.

Customer benefits

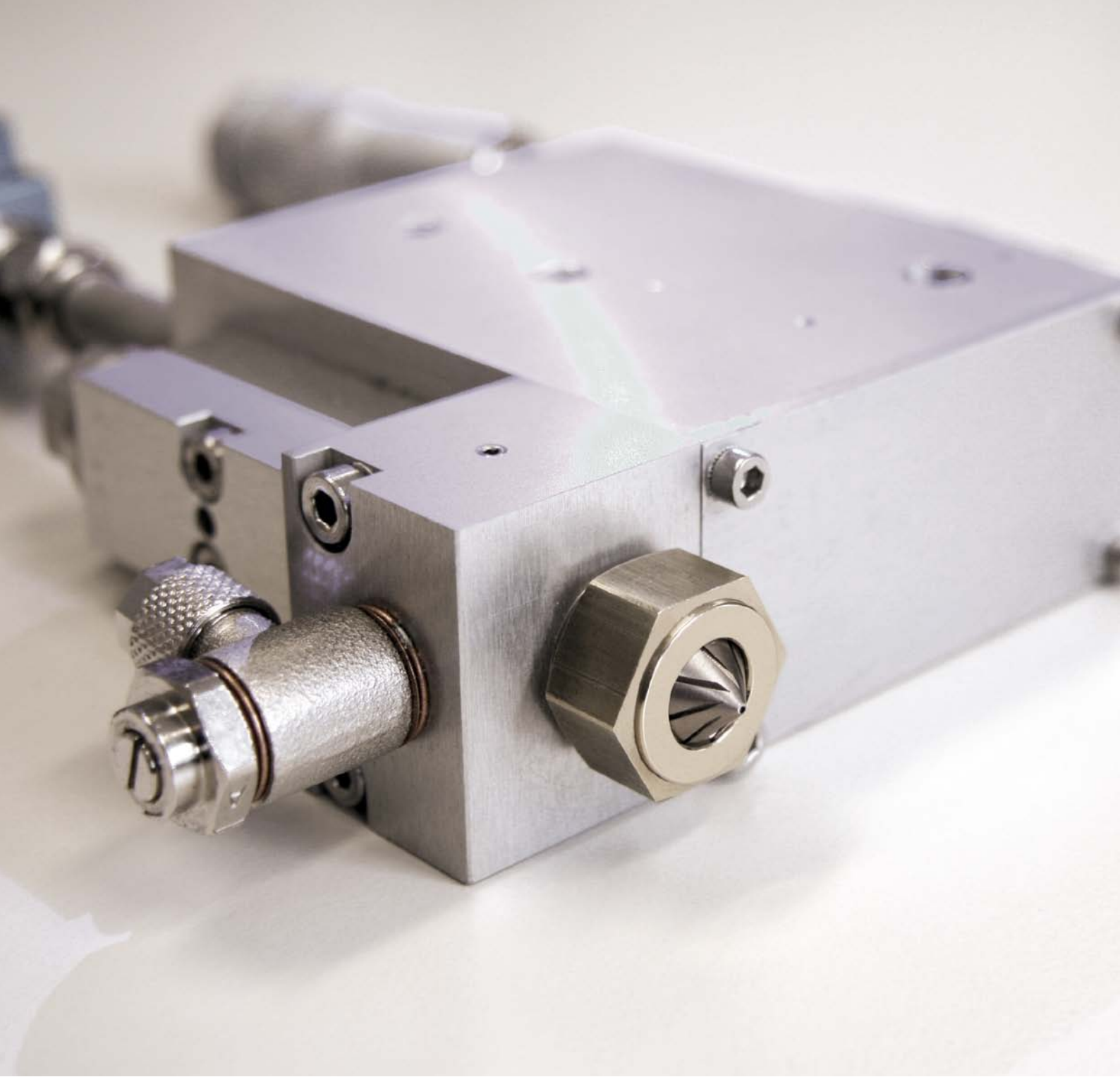
- + Operator safety improvement
- + Less broke
- + Highest turn-up efficiency

Product family of turn-up system

EcoChange W	High-quality turn-up system for all reels, web speeds and paper with a basis weight range of 30-450 g/m²
EcoChange CA	Reliable turn-up system for all web speeds and paper with a basis weight range of 30-200 g/m²

More information

www.voith.com/ecochange-w



Gecko

Minimizes the set change time

More durable and resilient adhesion at the start and end gluing, the new hot melt system for winder does away with the previous disadvantages. Quality and productivity increase noticeably, and the costs of consumables can be lowered.

In contrast to cold gluing or adhesive strips the high running costs of consumables and downtimes for the winder can be significantly reduced with the Gecko. In addition, the new hot melt system guarantees a durable and resilient adhesion.

Gecko is a fast and easy application to spray glue onto the paper web in order to attach the web onto the core for the winding process. At the end, glue will be attached to the web again, and the finished roll will be sealed with the glue. The liquid hot melt is sprayed with the help of nozzles onto the slow moving paper web.

This kind of start and end gluing of the rolls is very reliable and presents no limitations in gluing, web, and set change speeds.

With Gecko, this process can be automated. No manual interaction is needed during the winding procedure. It is easy to maintain and is approved for indirect contact in food processing.

The hot melt system is the perfect conversion solution for all existing winders and most paper grades. Since the Gecko is set up and completely tested before delivery, the time for the rebuild can be considerably reduced.

Customer benefits

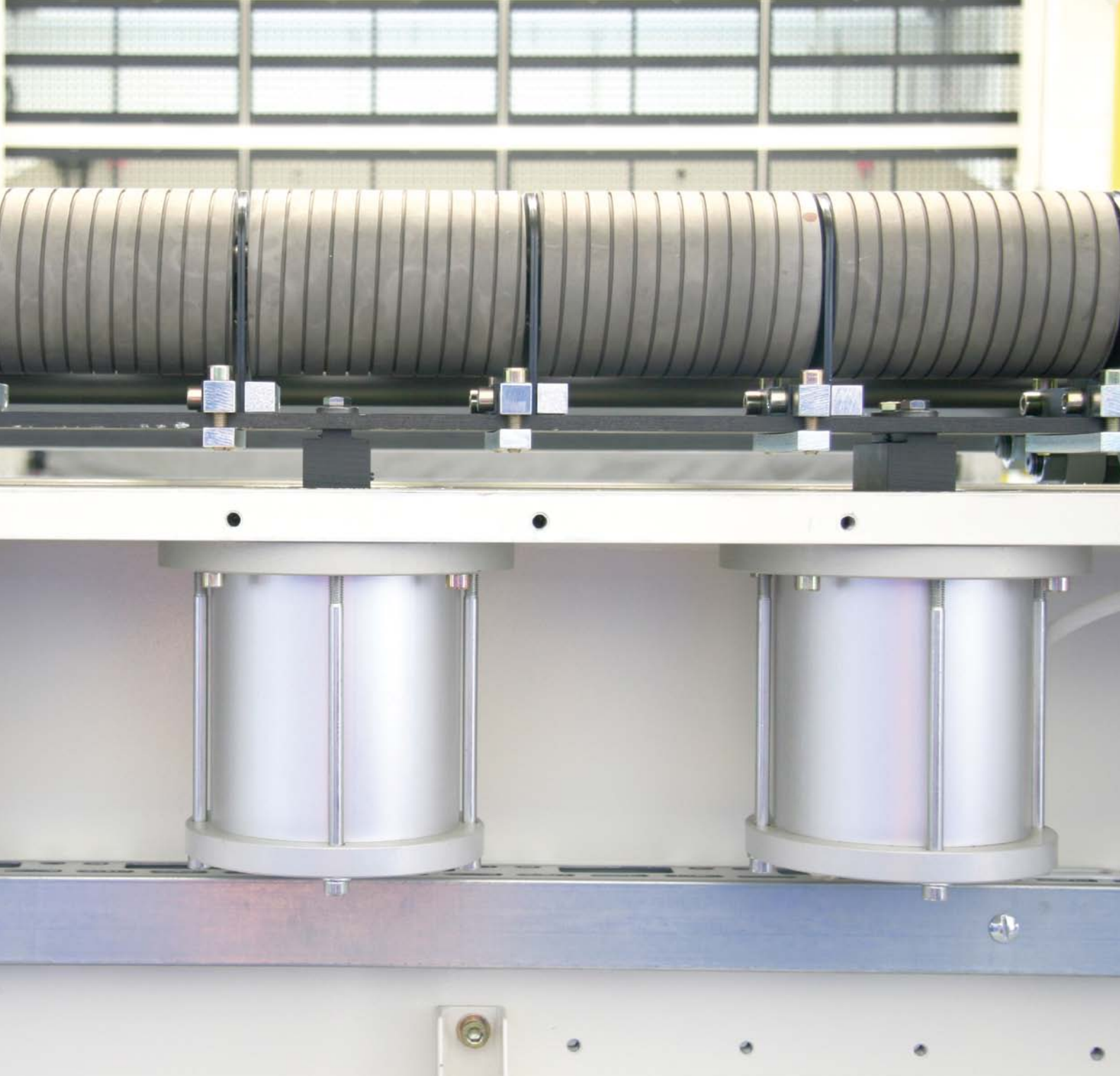
- + Fast, easy and clean approach for joint creation with the usage of hot melt
- + Seamless procedure with no process interruption compared to manual usage of tape
- + Minimizes the set change time by simultaneous preparation of the glue and ongoing winding process (Gecko OneStep only)

Product family of winder components

Gecko	New hot-melt start and end gluing system for winders with a number of nozzles across the web width
Gecko OneStep	Compact hot-melt unit with one traversing nozzle for retrofitting an automatic roll changing system
VariSlit Slitter section	Innovative slitter section that enables short positioning times and faster format changes
Top slitter holder	Device for high cut quality and precise setting possibilities
RollerBar	Reliable slit separation with two-drum winders
Drive control ODC	Highly integrated drive control

More information

www.voith.com/gecko



RollerBar

Telescoping is history

RollerBar is the ideal solution if your single rolls telescope. Moreover, it helps you to react on large variations in the CD profile and to slit small formats of less than 400 mm across the entire web.

Small formats and many slits pose a particular challenge especially in two-drum winders. The slits have to be neatly separated to avoid rolls running into one another. This causes additional work and losses for every papermaker, since in many cases the rolls cannot be separated without damage. Often the cause of this is insufficient spreading after slitting. Poor cross profiles can also be a factor.

Exact separation of slits

For an exact separation of slits Voith offers RollerBar. It comprises individual roll segments, which can be pneumatically adjusted. Hence, the web run can be accommodated to all demands.

RollerBar is installed downstream of the slitter. It consists of roller segments with a width of 100 or 150 mm, allowing to be adjusted via pneumatic cylinders. The optimal spreading effect can thus be achieved specifically in the area of the slit for every application. For operation, pressure control valves are built into the area of the lowering platform or protective screen. The operator can therefore see the influence of an adjustment immediately in the web run.

Customer benefits

- + No telescoping of rolls
- + Optimum spreading effects and slit separation
- + Especially suitable for small formats

Product family of winder components

RollerBar	Reliable slit separation with two-drum winders
Gecko	New hot-melt start and end gluing system for winders
Gecko OneStep	Compact hot-melt unit for retrofitting an automatic roll changing system
VariSlit Slitter section	Innovative slitter section that enables short positioning times and faster format changes
Top slitter holder	Device for high cut quality and precise setting possibilities
Drive control ODC	Highly integrated drive control



Hall ventilation

Best conditions for staff and machine

The Voith hall ventilation system ensures best working and production conditions with reduced operating costs. To protect the building, heat and humidity are safely transported to the outside.



Our machine hall ventilation and air extraction systems ensure safe removal of heat and humidity out of the paper mill. This creates a suitable production environment for the process and the operating personnel and also actively protects the building. Intelligent system configuration reduces energy consumption and maintenance costs, thereby lowering operating expenses.

Custom-made supply air units and well adapted blow out technology convey air to the right places. Ceiling ventilation systems avoid production disruptions resulting from condensation on the hall roof in wet areas.

Intelligent energy supply concepts allow effective use of waste heat from the process and thus reduce the primary energy demand to a minimum. Even existing facilities heated with steam or warm water can be optimized using simple means.

The modular exhaust air units feature good accessibility for maintenance and can be used for smoke extraction, too.

Voith also ensures hygienic production conditions, for example, in the production of coffee filter papers.

Customer benefits

- + Improved working and production conditions for staff and machine due to avoid corrosion and mold build-up
- + Better building protection
- + Hygienic production conditions
- + Low energy consumption and reuse of waste heat

Service options

- + Hygiene inspection to VDI 6022
- + Total air systems management

Product family of hall ventilation

Ceiling ventilation	Safe removal of heat and humidity out of the paper mill
Air conditioning	Reliable process control in the finishing area, control room, operator stations and laboratories

More information

www.voith.com/hall-ventilation



Voith EOS

Lower operating costs

With Voith EOS energy optimization system, power and fresh steam can be saved in hall ventilation systems. This reduces the operating costs.



Many hall ventilation systems have an unnecessarily high primary energy requirement because the system is operated in an energy inefficient manner. Voith EOS offers power and steam savings in hall ventilation systems with a warm water supply and integrated heat recovery system. It can be used in new and existing systems.

Energy savings are achieved through the air and warm water in the hall ventilation being controlled in a manner dependent on need and load, and not via an outside temperature matrix or heat curve, as with most existing systems.

Through temperature and water quantity optimization for heat recovery, their efficiency usually considerably increases with Voith EOS, which further reduces fresh steam consumption.

The modular system architecture of Voith EOS also allows step-by-step improvement in energy efficiency. The savings from the first modules installed can even finance the other modules. Thus, the ROI can often be achieved in less than one year.

Depending on the climate conditions at your location, savings of up to several hundred thousand euros per year are possible. For estimation of the savings potential, a simulation tool for standard circuitry and a questionnaire for the basic data are available. Please contact your sales contact.

Customer benefits

- + Reduces energy consumption, thanks to the energy optimization system
- + Possible to install the four modules step by step

Product family of air system EOS

Voith EOS hall air system	Energy optimization system for power and steam savings in plant ventilation systems
Voith EOS dew point control	Control system for supply and exhaust air quantities in the dryer section

More information

www.voith.com/voith-eos



Terra and Cera

Thermal coatings for complete machine

Cylinder and roll coatings from the Terra and Cera product families are applicable in all parts of the paper machine, from the former over the press, dryer and calender to the reeler and winder. All Cera and Terra coatings provide extreme reliability and offer unmatched value.



Terra thermal coatings in the dryer section

All TerraStick and TerraDry coatings contain a thermal spray coating plus top layers fitting best to the application requirement.

The new coatings for cylinders, guide and vacuum rolls in the dryer group focus on easy cleaning, minimizing dirt deposits, and improving corrosion and wear resistance.

These new coatings can be applied either within the Voith service centers or on site as “Express” at the customers’ premises. The “Express” application brings an enormous benefit to paper-makers as the disassembly of dryer cylinders and the associated downtime is not necessary. The immense costs and loss in production resulting from disassembly of the rolls and cylinders are thereby eliminated.

TerraSpeed designed for the press section

TerraSpeed Trend and TerraSpeed System are ultra-pure, plasma oxide ceramic coatings for center press rolls, paper-contacting press rolls and backing rolls in a single-felted shoe press.

The proven ultra-pure oxide ceramic in the top layer of the coating, combined with a special surface treatment, ensure optimum sheet release over an extended service life. The unique ceramic materials of TerraSpeed combine high wear resistance with long lasting cleanliness of the surface.

TerraSpeed Trend has a minimum layer thickness of 0.6 mm and can be ground once and finished three times.

TerraSpeed System has a minimum layer thickness of 0.8 mm and can be ground twice and finished six times.

Customer benefits

- + Consistent and reliable performance throughout the service life
- + Reduced downtime through utmost corrosion and wear resistance
- + Lower cost and downtime in case of on site application as “Express” version

Reliable & flexible service

Total Roll Service is a customized solution for the most effective, reliable and fast roll servicing available. The perfect interplay of RollCare, RollRep and RollUp solutions minimizes unscheduled downtimes and improves roll efficiency.

Product family of Terra and Cera thermal roll coatings

TerraSpeed Trend & System	Ceramic coatings for center press rolls, paper contacting and system press rolls as well as backing rolls in a single-felted shoe press
TerraGloss	Hard metal thermal coating for calender rolls
TerraDry C, CT and CN	Thermal coatings for dryer cylinders
TerraDry G and GR	Hard metal coatings for fabric guide rolls in the dryer section
TerraDry PG and PR	Effective dirt-repellant hard metal coatings for paper guide rolls
TerraDry HC+ express	Coatings for Yankee cylinders
TerraDry MG express	Coating for MG cylinders
TerraDry V	Special coating for stabilizer and vacuum rolls
TerraGrip P and W	Anti-slip coating for winders, pope rollers and transport rolls
TerraStick	Coating for discharging stickies on doctored paper side rolls in the dryer section
CeraForm S	Protecting coating for forming rolls
CeraGuide B	Coating for ultimate protection against abrasion for guide rolls

More information

www.voith.com/terradry-pg



SkyLine

Perfect choice for covers

SkyLine doctor blades from Voith generate measurable value with extended lifetime, increased paper machine efficiency and cost savings. With its expertise and know-how, Voith is the competent and innovative partner, particularly on demanding paper machine positions.



SkyCoat

This hard metal coated steel blade is produced with very narrow tolerances for coating machines. The coating consists of ceramic hard phases and a special alloy to increase the wear resistance. The desired profile is quickly achieved and a constant, high durable wear rate assured.

SkyTerra S

SkyTerra S was designed in conjunction with TerraSpeed ceramic press roll covers and utilize the same types, sizes and ratios of fillers as the covers. This allows the most advanced cleaning of the cover and produces the best surface condition in the long run. SkyTerra S works equally well with CeraLease Sde ceramic covers and delivers effective cleaning and long lifetimes on TopRock resin covers.

SkyTop Plus

SkyTop Plus is a fiber composite that contains particles graduated according to size, along with the proven combination of cleaning fibers and reinforcement fibers. Together with the low-friction, low-wear carbon fibers, they create a well-cleaned and finely conditioned roll surface.

Additional special liners increase the running time and allow optimal adaptation of the blade to the roll surface. SkyTop Plus also withstands extreme mechanical loads. The reinforcement fibers crosswise to the direction of the paper are stronger than the cleaning fibers in the direction of the paper. Well-adjusted cleaning and polishing materials strengthen the entire composite.

SkyComp

SkyComp doctor blades are fiber composites made of carbon and glass fibers. This mixture combines glass fibers, which have a good cleaning effect, with carbon fibers that lengthen the service life. The combination guarantees optimal cleaning and a long service life of the doctor and is especially economical.

SkySeal Plus

Especially developed for the demanding positions in Voith dryer section stabilizers with MultiSeal Technology, SkySeal Plus contributes to excellent paper quality and superior machine runability. Additionally, the excellent sealing effect reduces energy consumption.

Customer benefits

- + Smooth cleaning thanks to different fillers and particle sizes
- + Minimum material consumption, helpful for longer lifetimes
- + Improved wear profile

Product family of SkyLine doctor blades

SkyLine

Suitable doctor blades for every position on the paper machine, each type and origin of roll cover

More information

www.voith.com/skyline



Total Roll Service

Standing still is like stepping back

Expert service from one single source ensures consistently high performance. Voith's Total Roll Service is a customized solution for the most effective, reliable and fast roll servicing. The perfect interplay of RollCare, RollRep and RollUp solutions minimizes unscheduled downtime and improves roll efficiency.



Total Roll Service is available for all rolls, regardless of their type, size, cover or original manufacturer. In the Voith Service Center, specialists thoroughly inspect, refurbish and upgrade rolls at regular intervals.

RollCare – A view from all angles

Voith technicians carry out in-depth roll inspections. They record the actual condition of all components using non-destructive material testing methods. Detailed records allow diagnoses for selecting the best repair measures. RollCare also includes all surface treatments, such as grinding, groove-cutting and finishing, as well as dynamic balancing and the preventive replacement of wear parts. Operating reliability increases while unscheduled shutdowns due to roll problems are reduced, and paper machines work at optimum efficiency.

RollRep – Precise maintenance and repair

The effects of overloading and corrosion expose the rolls to mechanical stresses in daily use. Voith's roll service comprehensively examines wear and damage on all components.

When inspecting and reconditioning roll journals, press fits, suction roll covers, suction box bearings, sealing strip holder or bearing housings, the priority is to find the best solution for long service life and cost efficiency. The paper machine remains productive and reliable, while long-term ensuring the scope and quality of production.

RollUp Solutions – Tailor-made solutions

Innovations in technology and know-how provide higher quality and faster speeds at lower costs. Voith customers with RollUp Solutions can benefit directly from such advances. As part of their Total Roll Service they will immediately gain access to optimization potentials and customized solutions. Often it only takes a minor correction to resolve a long-standing problem in a fast, effective and inexpensive manner. The logical and positive spinoffs of such improvements are lower expenditures on maintenance and repairs and a further enhancement of reliability.

Customer benefits

Total Roll Service is

- + Reliable
- + Flexible
- + Fast
- + Worldwide
- + Customized
- + Collaborative

HydroSeal

HydroSeal is the latest RollUp Solution product. This patented sealing strip system with integrated lubricating water feed delivers substantial savings in lubricating water and drive power. Each sealing strip is constantly and evenly provided with lubricant, and a more stable production is facilitated as well as less downtime.

Product family of Total Roll Service

RollCare	For an in-depth roll inspection and surface treatment
RollRep	For precise maintenance and repair
RollUp Solution	For customized solutions and optimization potentials

More information

www.voith.com/total-roll-service





Voith LSC Scanner 8000

The lowest total cost of ownership

Voith LSC Scanners reliably measure and monitor all important parameters of a paper machine. In addition, their easy plug and play system supports the entire portfolio of Voith LSC sensors.

Just like the sensors, Voith LSC Scanners are developed and manufactured by experienced and trained engineers, ensuring high quality products. The rugged design with stable measuring platform is designed for the demanding paper mill environment. The scanners support the entire portfolio of the Voith LSC sensors. Their high traversing speed in connection with fast signal processing delivers high-resolution profiles for precise longitudinal and CD profile control.

The Voith LSC Scanner 8000, in particular, is a prime example of its kind and offers space for up to ten different sensors. This model is also available as Voith LSC TecoScan for tissue applications.

All Voith LSC scanners can be operated either as integral components of the OnQ quality control system or as stand-alone systems with direct Ethernet connection to compatible process control systems. The reliability of this innovative measurement technology has proven itself with new world-class paper machines as well as with replacement of older quality control systems.

In addition, a quick remote connection and regional service teams on site facilitate optimal support over the entire service life of the quality control system. The result is an especially high level of system availability and thus the lowest operating costs (total cost of ownership).

Customer benefits

- + Extremely reliable and robust measurement system
- + Innovative measurement technology in compact design
- + Low costs due to the latest technology and high reliability

Product family of scanners

Voith LSC Scanner O-frame	Traversing scanner beams for up to 10 different sensors, also available as tissue-specific Voith LSC TecoScan
Voith LSC Scanner	Single-sided traverses with up to three different sensors
Voith LSC Scanner C-frame	Fixed, single-point measurement system whose one to four sensors can be retracted into the scanner garage
OnQ EnviroScan	Single-sided traversing scanner for moisture and temperature measurement in the wet end

More information

www.voith.com/voith-lsc-scanner



Voith LSC TecoSens

The safe sensor without radioactive source

For safety and cost reasons, a major objective of the paper industry has been to measure moisture and fiber weight without using radioactive beams. Using the Voith LSC TecoSens sensor this is now possible for tissue production.

Voith LSC TecoSens is part of a special quality control system for tissue papers that offers a manageable investment and minimal servicing costs over the entire service life. As part of the Voith LSC product family, it can be fully integrated into the Voith control systems and easily combined with other quality-measuring components.

Safe and inexpensive

The fiber weight and moisture content of tissue paper can now be measured using just one sensor and without any radioactive source. The newly developed Voith LSC TecoSens allows simultaneous online measurement of both values, without the need for an additional radiometric basis weight sensor. The sensor is based on proven technology and measures the absorption of infrared light. In combination with the improved optics and sophisticated algorithms, the sensor provides fast measurements with a superior signal-to-noise ratio and excellent sensitivity.

This type of measurement has significant advantages over radiometric methods. Whereas radioactive sources have to be replaced regularly and serviced by specially trained personnel, maintenance of the Voith LSC TecoSens is quick and easy. This saves costs and improves safety for the operating personnel.

Low costs over the entire service life

The robust scanner Voith LSC TecoScan is a great addition and offers high availability at extremely low maintenance costs. Its stable design guarantees incomparable dimensional stability and accurate measuring results over the entire life cycle. The measuring system was specially developed to meet the requirements of tissue manufacturers and enables stable measurements with minimal maintenance. The Voith LSC TecoScan is therefore equipped with a garage and cleaning nozzles to ensure the best performance of all mounted sensors.

Customer benefits

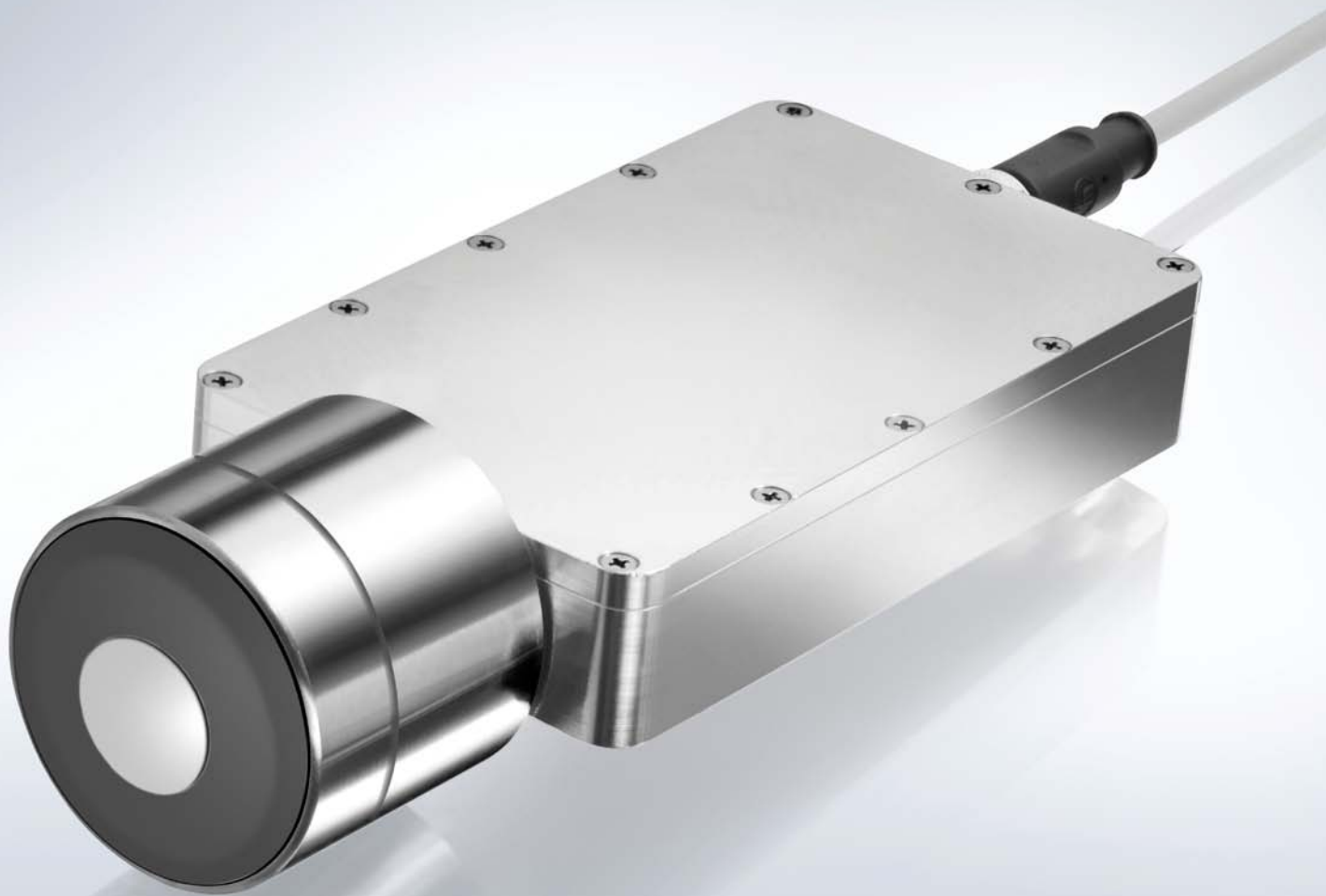
- + Works without radioactivity, thus no health risk, no need for crew training and no regular replacement of radioactive sources
- + Accurate and fast 2-in-1 measurement of fiber weight and moisture without impact of environmental factors or sheet color
- + Quick installation as well as simple operation and maintenance

Product family of sensors for scanner beams

Voith LSC Basis Weight Sensors	Various sensors for all paper grades and the non-radioactive Voith LSC TecoSens for tissue
Voith LSC Moisture Sensors	Highly accurate infrared and microwave sensors, such as tissue sensor Voith LSC TecoSens
Voith LSC Ash Sensors	Sensors precise sensors that measure the most varied fillers
Voith LSC Caliper Sensors	Caliper sensors for all requirements, such as contactless Voith LSC QuantumSens
Voith LSC Gloss Sensor	Gloss sensor for high-quality papers
Voith LSC Color and Whiteness Sensor	Precise sensor for precise and reliable paper color and whiteness degree measurement
Voith LSC Opacity Sensor	Optimization of existing color sensors
Voith LSC Coat Weight Sensor	Coat weight measurement process of coated paper and board grades

More information

www.voith.com/voith-lsc-tecosens



OnQ FormingSens

Constant quality at lower energy input

Cost savings of 65,000 euros per year: That was the Voith answer to a customer request for further energy saving potential on his testliner machine.

Installing OnQ FormingSens right before the suction couch roll at a Fourdrinier machine with DuoFormer DK was entering uncharted territory, but the savings rewarded the courage of the small team of customer and Voith engineers: the drives' power consumption was reduced by 14.6%, equating to 65,000 euros per year.

One might think that such changes were only possible at the price of exaggerated vacuum reductions and thus less dry content. However, thorough analyses showed that the suction couch roll could make up for the entire loss in dry content. Consequently, the improved findings with OnQ FormingSens allowed new settings with high overall energy savings. The respective payback time of the upgrade was no more than six months.

No grade restrictions

OnQ FormingSens can be used for almost all grammages and former types. The mounting position within the former can be chosen freely according to the requirements.

Measuring the water weight

Water weight and the corresponding dry content at the end of the forming section are important parameters for optimum former operation. With OnQ FormingSens, the water weight can be measured safely and continuously using microwave technology with the highest level of accuracy.

Furthermore, exchanging the forming wire usually requires effort and time to re-adjust the former parameters. Thanks to the real-time measurement of dry content with OnQ FormingSens, operating personnel can accurately set and control the former.

Long-term tests in the field have shown that the sensor does not cause any wire wear or leave marks on the paper.

Customer benefits

- + Less energy consumption due to smart dewatering and vacuum application
- + Better runability because an optimum water weight can be defined and kept constant.
- + Greater work safety as no hand measurement is required

Product family of sensors without scanner

OnQ FormingSens	Water weight measurement in the former using high-frequency, ultra-precise microwave technology, without sources of radioactivity
FiberXPress	Stock analysis test unit for the laboratory in view of its water removal capability
OnC ConSens 700	Optical sensor with integrated air bubble compensation

More information

www.voith.com/onq-formingsens



Voith ComCore

More time for the essential: Papermaking

The Voith ComCore software platform offers all the important QCS information at a click. Intuitive operation and little maintenance help you do your job as quick and easy as possible.

The Voith approach to a useful software platform is to have all the QCS information at hand. Voith ComCore is extremely efficient thanks to minimal engineering and start-up time, and it reduces the maintenance effort for the entire QCS product family due to the usage of a standardized environment.

With Voith ComCore, you can focus entirely on the essential: Papermaking!

Due to the use of standardized communication interfaces, such as OPC and OPC-UA, the products based on Voith ComCore can easily be integrated into an existing automation system. Intuitive operation of the system is done exclusively via a Web browser. The concept is similar to navigation on the Internet. It is only supplemented with functions that are crucial to the paper manufacturing process. Extensive online functions, like FFT or correlation, to analyze the historical process data are available to the end user.

That's operating with Voith

ComCore: Full overview, no risk at all!

The innovative Voith ComCore technology allows full operation of the QCS via a mobile tablet. Thus, the service employee at the machine oversees the complete process at all times. Voith ComCore is therefore an important addition to ensure your employees' safety!

The platform is very flexible due to a scalable architecture and easy extension possibilities. If you choose a product from the Voith ComCore family, you can easily add modules up to a complete QCS environment according to your requirements. As adding modules requires nothing but deploying the respective software, this all happens in a cost-optimized way.

Customer benefits

- + Efficient due to minimal engineering and start-up time
- + User-friendly and easy to handle thanks to its intuitive operation, easy maintenance and reliable industry standards
- + Scalable and flexible with layouts for stand-alone products and complete QCS solutions
- + Increased flexibility and safety of your service personal through the use of mobile devices

Product family of software platforms

Voith ComCore	Software platform that offers all the important QCS information at a click
OnView	Information system tailored to the requirements of the pulp and paper industry
OnV VirtualSensors	Virtual measurement of quality parameters that previously were not measurable with conventional sensors
OnV FeltView	Moisture and permeability measurement of press felts
NipVision	Online and real time measurement in the roll cover to measure nip pressure, profile and temperature
OnV EnergyProfiler	Localization and visualization of energy consumption throughout the paper production process

More information

www.voith.com/voith-comcore



OnView

The powerful information system

The OnView information system was developed specifically for the paper industry. It archives and visualizes all process-related data. Its intuitive and flexible user interface gives the operator an overview of the entire system's data tailored to his requirements.

Information is knowledge

The requirements for the availability and efficiency of paper machines are becoming ever greater. A quick reaction to process, machine or quality problems calls for rapid and easy access to information about systems and beyond system limits. For this purpose, OnView, with its modular and scalable structure, is the optimal solution for the pulp and paper industry.

OnView

The OnView system integrates various data sources of a plant and provides this data via a common platform. It consists of a powerful database system and is the central communication platform that integrates the data into the process control system and the intranet. Access to historical and real-time data is easily available via the OnView system. Thus the papermaker always knows exactly what is happening in the process, from stock preparation to the finished product.

OnView Portal

The web-based OnView Portal provides access to all information and functionalities via the intranet. With OnView, analyses, online reviews and reports can be called up and controlled through just one access. Because process, machine and quality data are visualized in detailed trend analyses, profile and color maps, the causes of machine and process behavior can be easily identified.

High-capacity graphics modules – such as trends, profiles, color maps and XY diagrams – facilitate intuitive and quick access to current and historical data. Just like the enhanced analytical functions such as FFTs or cross-correlations, they are an indispensable part of process and machine optimization.

Quick support

OnView provides access to Voith's specialized knowledge and many years of experience. Thanks to OnView, Voith technology experts can offer assistance remotely, if a customer so desires.

Customer benefits

- + Integration of different data sources in one platform
- + Specifically developed for the needs of the papermaker
- + Modular structure for cost-efficient and easy expansion

Product family of software platforms

Voith ComCore	Software platform that offers all the important QCS information at a click
OnView	Information system tailored to the requirements of the pulp and paper industry
OnV VirtualSensors	Virtual measurement of quality parameters that previously were not measurable with conventional sensors
OnV FeltView	Moisture and permeability measurement of press felts
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OnV EnergyProfiler	Localization and visualization of energy consumption throughout the paper production process

More information

www.voith.com/onview



OnV FlocSpotter

Integrated formation measurement

The latest image-processing innovation from Voith is OnV FlocSpotter. This is the first system that enables the evaluation of the paper web uniformity right in the wire section.

Reliable measurements as early as possible

For papermakers, formation is very important as it is a measure of sheet quality and relates to other quality parameters, such as printability. In order to gain maximum control over the sheet-forming process, formation should be measured as early as possible. For this reason, Voith has developed OnV FlocSpotter, a formation sensor that works right there, in the forming section.

Information about every ply

OnV FlocSpotter is especially useful for the production of board and packaging grades, as its sensor can measure the formation of every individual ply on a multi-layer machine. Graphic machines also benefit from OnV FlocSpotter, as it provides shorter reaction times on furnish and machine variations. This is not possible with other standard formation sensors available on the market that measure at the reel.

Towards better formation

Thanks to OnV FlocSpotter, papermakers can discover quality issues long before the paper is on the reel and are thus able to react instantly. To set formation back on track, various furnish and machine parameters can be changed, such as consistency, retention aid dosage or jet-to-wire speed difference. Furthermore, OnV FlocSpotter can be used to define certain formation limits for a given quality level.

Accordingly, the operator is able to change machine settings while keeping formation within the desired specifications. Consumption of raw materials, process chemicals and energy can therefore be reduced. All data is automatically transferred to the OnView system for real-time trending and reporting. This allows for correlation with other machine, process and quality data.

Customer benefits

- + Retention aid, fiber and energy savings potential
- + Earliest measurement of the formation online
- + Formation separated for each layer
- + Additional structural indices (streakiness, etc.)

Product family of camera system

OnV FlocSpotter Formation sensor for direct and individual measurement in the wire section

More information

www.voith.com/onv-flocspotter



OnQ ModulePro

Save money with best moisture profile

Costly investments are not always needed to obtain outstanding optimization results. An improved moisture profile, increases in speed or energy savings can readily be obtained with installation of re-moisturizers in the dryer section.

All-rounders for existing systems

For years, nozzle moisturizers from Voith have helped to ensure the best paper quality and highest cost effectiveness of systems. The OnQ ModulePro product line meets the requirements of all paper machines. While the original OnQ ModulePro nozzle moisturizer is mainly aimed at large and fast machines, the strength of OnQ ModulePro compact lies in its space-saving design and low investment costs.

OnQ ModulePro for the highest requirements

Optimal moisturizing results, especially in large and fast machines, presuppose outstanding spray quality and exact spray quantity monitoring. With an optimal spray angle and fine water drops, OnQ ModulePro provides for even water absorption. The combination of high paper quality and outstanding reliability increases the cost effectiveness and runability of the paper machine.

Low investment costs with OnQ ModulePro compact

OnQ ModulePro compact is the solution for machines with a maximum speed of 1,500 m/min. This compact variant also ensures an optimal moisture cross profile, but is characterized by low investment costs, which are achieved by focusing on key components such as nozzles, valves and control software. Consequently, cost effectiveness and profitability of the paper machine are increased.

Upgrade solution for V.I.B. re-moisturizers

Many papermakers know about the advantages of a new OnQ ModulePro, but shy away from investing in an entire system. Voith has developed a simple but innovative solution for these cases: the V30 upgrade nozzle for increased spray volume and quality. Further smart upgrade options include the replacement of control cabinets and/or control software.

Customer benefits

- + Better paper quality through moisture profile improvements of up to 80% and reduction of curling tendency
- + Fiber saving from higher moisture target at reel (selling water instead of fiber)

Product family of actuators (CD profiling)

OnQ ModuleStep	Simultaneous grammage cross profile control to ensure good control dynamics and a clearly improved profile quality
OnQ ModuleTap	Quality control of the basis weight cross profile control in headboxes with dilution valves
OnQ ModuleJet	Basis weight cross profile in headboxes with dilution water technology
OnQ ModuleSteam	Moisture cross profile control in the press
OnQ ModulePro	Moisture cross profile control over the entire paper web
OnQ ModuleIR	Moisture cross profile correction
OnQ ModuleCoat	System for coat weight cross profile control in trailing blade coating machines
OnQ ModuleSpeed	Cross directional profile control of the coating weight
OnQ ModuleNip	Quality parameter control for calenders
OnQ ModuleTherm	Edge and thickness profile correction at the calender with tempered air

More information

www.voith.com/onq-modulepro





OnQ ModuleSteam

The innovative steam box

The OnQ ModuleSteam steam box improves the quality, runability and efficiency of the machine. Its compact design and superior reliability are impressive, providing the best possible access to all maintenance-related components.

The OnQ ModuleSteam steam box and the OnQ Profilmatic software deliver an optimal moisture cross profile in the press. By heating the web with OnQ ModuleSteam, the viscosity of the water is reduced and the performance of the press improved, leading to a higher dry content. With a small investment, the steam box provides a great potential for profiling and to increasing dry content. Due to its small space requirements, OnQ ModuleSteam can be easily retrofitted in existing press sections.

Efficiency

With OnQ ModuleSteam, the dry content after the press increases. Moreover, the steam consumption in the dryer section is reduced and thus energy costs are significantly lowered.

Quality

Precisely controlled steaming of the paper web brings about a uniform moisture cross profile when entering the dryer section.

Runability

Thanks to the higher dryness after press, higher machine speeds and corresponding production increases are possible with OnQ ModuleSteam.

Specifically for tissue paper

OnQ ModuleSteam T for tissue paper allows extensive savings in the dryer section. Moreover, OnQ ModuleSteam T with the OnQ Profilmatic cross profile control ensures optimal dewatering and the best moisture cross profiles in the press section, thus allowing higher operating speeds. OnQ ModuleSteam T impresses with its inspection openings and flushing option for easy cleaning and maintenance. That ensures a consistently high level of performance over the entire operating time.

Customer benefits

- + Dryness increase after press of up to 3%
- + Energy saving due to less steam consumption in dryer section
- + Fiber savings from higher moisture target at reel due to better moisture profile
- + Better paper quality through moisture profile improvements of up to 80%

Product family of actuators (CD profiling)

OnQ ModuleStep	Simultaneous grammage cross profile control to ensure good control dynamics and a clearly improved profile quality
OnQ ModuleTap	Quality control of the basis weight cross profile control in headboxes with dilution valves
OnQ ModuleJet	Basis weight cross profile in headboxes with dilution water technology
OnQ ModuleSteam	Moisture cross profile control in the press
OnQ ModulePro	Moisture cross profile control over the entire paper web
OnQ ModuleIR	Moisture cross profile correction
OnQ ModuleCoat	System for coat weight cross profile control in trailing blade coating machines
OnQ ModuleSpeed	Cross directional profile control of the coating weight
OnQ ModuleNip	Quality parameter control for calenders
OnQ ModuleTherm	Edge and thickness profile correction at the calender with tempered air

More information

www.voith.com/onq-modulesteam



OnQ GradeControl

Improve results with best MD control

OnQ GradeControl is Voith's advanced MD control, based on a self-tuning physical model. The multi-variable control concept ensures the stability of the quality parameters in machine direction for basis weight, moisture, coat weight and ash content.

OnQ GradeControl can be used multi-functionally for all grades. In the case of machines with several layers, it controls the individual material strands according to the requirements of the finished product.

OnQ GradeControl reliably controls the parameters of basis weight, moisture, filler content, color and coat weight.

The basis weight is controlled by means of the thick stock flow rate into the "short circulation". Reliable control of the dry weight is also possible during a break and when starting up.

The moisture in the paper is controlled by adjusting the drying performance of the dryer section. Cylinder dryers, infrared dryers or air dryers can be flexibly controlled.

The desired filler content in the paper is set via control of the filler addition into the "short circulation." In the same way, the chromaticity coordinate of the finished paper is kept constant during production. With coated paper, the amount of coating color is controlled by the contact pressure of the doctor or the blade. The color location of the finished paper should be kept constant during production. This is done by means of the controlled allowance of colors and optical brighteners into the "short circulation."

By adjustments of the rod pressure, the blade pressure, position or the blade angle the amount of coating color is controlled. The amount is directly proportional to the coat weight. OnQ GradeControl CoatWeight is suited for all different kinds of coating applications.

Customer benefits

- + Multi-variable controls for basis weight, moisture, coat weight and ash content of the paper
- + True control of the dry weight also during web breaks and startup
- + Combination of ash and retention control
- + Minimal production of broke during startup through fast model predictive controls

Product family of controls

OnQ WetEndControl	Control and optimization of chemical addition in the approach flow system
OnV VirtualSensors	Virtual measurement of quality parameters that previously were not measurable with conventional sensors
OnQ Profilmatic	Cross profile control software program characterized by high reaction speed and delivering very flat cross profiles
OnQ GradeControl	Multi-variable control of basis weight, moisture, coat weight and ash content
OnQ GradeManager	Grade management with the most modern multi-variable control methods
OnC StepCore57	Device for gradual migration of the controller from SIMATIC S5 to S7 or even PCS7

More information

www.voith.com/onq-gradecontrol



OnC StepCore57

Flexible modernization of SIMATIC S5

With OnC StepCore57, Voith is facilitating gradual migration of existing CPU components into new systems. Existing hardware components can thus continue to be used.

Gradual migration

SIMATIC S5 components have been discontinued by their manufacturer. Voith is facilitating the gradual migration of existing CPU components into the new systems with OnC StepCore57. The complete migration can be carried out later, based on the kit principle and tailored to customized requirements. The investment is thus secure and manageable.

Low and projectable costs

By installing OnC StepCore57, you do not need to purchase a completely new system, but only a new plug-in board. Voith is thus introducing an inexpensive alternative, minimizing total investment costs.

Easy and flexible migration

Voith provides individual consulting and migration. By installing OnC StepCore57, existing components can be retained and production stoppages due to long rebuilds can be prevented.

Discontinuation of legacy systems is challenging

Like SIMATIC S5, Teleperm systems were discontinued by the manufacturer some years ago. Since replacement parts are no longer available, a malfunction means big challenges and cost-intensive decisions. But Voith can provide a solution for every system.

OnC StepCore57 offers high flexibility

The OnC StepCore57 automation device is very robust. It is command compliant with S7-CPU 416 and thus has a high capacity like a S7-CPU 417 with four integrated Ethernet interfaces.

OnC StepCore57 connects S5 and S7 in combination with PCS7 functionalities

OnC StepCore57 is coordinated both with SIMATIC S5 and S7. Various possibilities are thus opened up, as existing S5 applications can continue to be used and integrated in new S7 system parts. Also, OnC StepCore57 can be used alone or in PCS7 multi-projects.

Customer benefits

- + Gradual system modernization and expansion during planned shutdowns, thus small and projectable investments at minimal shutdown times according to customer requirements
- + Expert support in migration of the entire system
- + Reliable and trouble-free migration due to software verification and factory acceptance test

Product family of controls

OnQ WetEndControl	Control and optimization of chemical addition in the approach flow system
OnV VirtualSensors	Virtual measurement of quality parameters that previously were not measurable with conventional sensors
OnQ Profilmatic	Cross profile control software program characterized by high reaction speed and delivering very flat cross profiles
OnQ GradeControl	Multi-variable control of basis weight, moisture, coat weight and ash content
OnQ GradeManager	Grade management with the most modern multi-variable control methods
OnC StepCore57	Device for gradual migration of the controller from SIMATIC S5 to S7 or even PCS7

More information

www.voith.com/onc-stepcore57



Total Equipment Service

Customized service packages

Excellent paper quality and maximum productivity can only be achieved with perfectly functioning process equipment running to or even exceeding its original performance specification. However, the root cause of problems is usually not directly evident. To avoid unexpected downtime, professional technical service and maintenance should be carried out on a regular basis.

Three Service Packages for the perfect fit

BASIC, COMFORT, PREMIUM

Voith offers three customized service packages to ensure high availability of your equipment and superior paper quality. Additionally, full transparency about the condition and necessary maintenance work is enabled. These service packages are also available as service agreements guaranteeing optimal planning, minimized resources, and reducing cost even further.



Three packages for the perfect fit

All service agreements are set up to fit to your production and maintenance schedules. Voith offers a proactive service plan, executed by highly trained and specialized personnel.

Optimized maintenance

Regular inspections ensure that maintenance is limited to the necessary tasks. This results in shorter downtimes, effective spare parts utilization and higher operational efficiency.

Maximized availability

Regular inspections and preventive maintenance reduce the risk of unscheduled downtime and eliminate most failures, prolonging the functional lifetime of the equipment.

Reliable experience

Voith service engineers are backed up with a global expert network with over 150 years of experience. Our customers rely on these resources to get the best results from these equipment.

Proactive service reduces costs

The services are available as single packages as well as service agreements. A service agreement helps you to maintain maximum availability of your equipment in the long term. By utilizing Voith service packages for more equipment, the total maintenance costs can be reduced further.

Portfolio of service packages

Service packages are available for the following paper production line equipment:

- Stock preparation machines
- Headbox
- DuoShake
- DuoCleaner
- NipcoFlex press
- Coater
- Winder

	<div><div><div>B</div><div>BASIC</div></div><div>Inspection</div></div>	<div><div><div>C</div><div>COMFORT</div></div><div>Inspection Maintenance</div></div>	<div><div><div>P</div><div>PREMIUM</div></div><div>Inspection Maintenance Performance</div></div>
Package scope	<ul style="list-style-type: none">• Comprehensive functional test• Technical condition check• Maintenance consultation• Service report, including recommendations for further measures	BASIC service package plus: <ul style="list-style-type: none">• Maintenance planning and scheduling, including critical path• Preventive maintenance supervision according to OEM specification	COMFORT service package plus: <ul style="list-style-type: none">• MRO materials• Full preventive and corrective maintenance execution• Technological consultation
Your coverage (service agreement)	<ul style="list-style-type: none">• Discount on spare parts and hourly rates for troubleshooting• Hotline support	<ul style="list-style-type: none">• Mechanical warranty of the maintained equipment for the duration of the contract• Discount on spare parts and hourly rates for troubleshooting• Guaranteed (location specific) emergency response time	<ul style="list-style-type: none">• Guaranteed equipment availability• Discount on spare parts and hourly rates for troubleshooting
Your benefit	<ul style="list-style-type: none">• Full transparency of mechanical condition and functionality• List of corrective measures and recommendations	<ul style="list-style-type: none">• Trouble-free preventive maintenance execution• Guaranteed functionality according to OEM specification	<ul style="list-style-type: none">• Carefree operation and equipment performance

For all packages are several additional bolt-on packages in the areas of mechanical, electrical and automation services available.

Headquarters

Voith Paper Holding GmbH & Co. KG
St. Poeltener Str. 43
89522 Heidenheim, Germany

Further Information

paper@voith.com
www.voith.com/paper

Regional Contacts

Asia

Voith Paper in Kunshan, China
Tel: +86 512 5799 3600

Europe

Voith Paper in Heidenheim, Germany
Tel: +49 7321 37 6499

North America

Voith Paper in Wilson (NC), USA
Tel: +1 252 265 4405

South America

Voith Paper in São Paulo, Brazil
Tel: +55 11 3944 4966

VOITH
Engineered Reliability