



Value-added expertise for
stock preparation and paper machines

These are not empty words on a piece of paper

They reflect how we do business.

Our mission is to create value in two ways:
improving the value of your mill's production, and adding value in the way we work with you.

CONTENTS

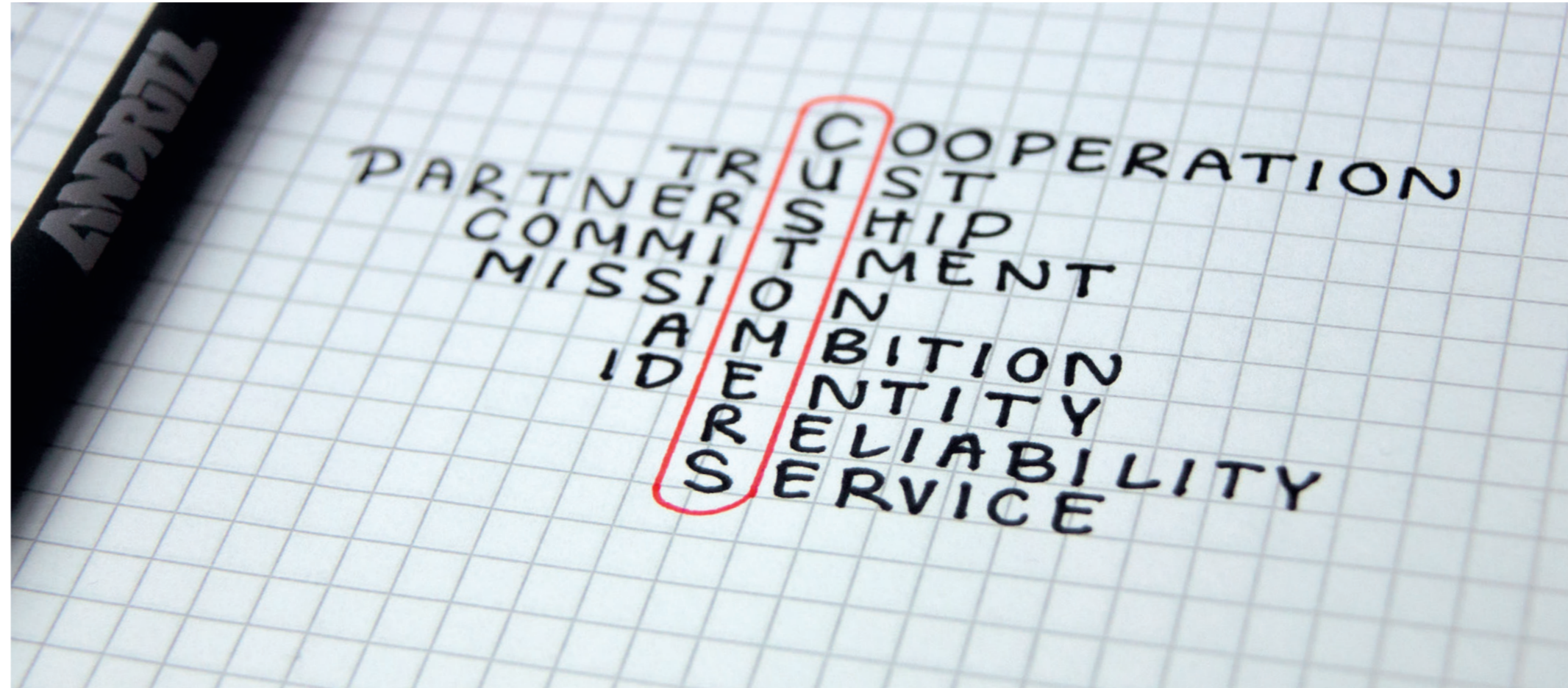
Values: These are not empty words	02
Screen baskets and rotors	04
High-consistency disperser plates	06
Low-consistency refiner plates	08
Cleaner plant components	10
Paper machine clothing	12
Value-added services and upgrades	14
Overview: The full range of value-added services	22

Our mission starts by ensuring the economic value of our technology and services.

Our roots are in technology – and that is where we add considerable value to your screening, cleaning, refining, dispersing, and other stock prep processes. Even the paper machine itself.

But, the components we deliver are not simple replacement parts that are mass-produced in a machine shop. Every single ANDRITZ component – screen basket, rotor, refiner plate, cleaner, or forming fabric – is engineered to improve your process.

We have 150+ years' Original equipment manufacturer (OEM) experience in equipment design coupled with extensive process design expertise as a full-line supplier for pulp, paper, and power producers. This knowledge is blended into every component you get from us – for ANDRITZ or any brand equipment. Production goes up. Energy demand goes down. Quality improves. Components last longer. Yield is boosted.



Our mission is enhanced in the way we do business – adding value through collaboration and partnership.

Lots of companies talk about partnership, but what does that really mean? A partnership is formed when we share common goals and interests. For us, the common goal is to maximize your production and

efficiency. The common interest is to increase your mill's profitability. We do this by sharing as much information as possible – listening to your concerns, talking with your production and maintenance people, and then recommending solutions based on our experience.

We know that when we do this part well, and help you meet your targets, you will want to continue doing business with us. After all, in these competitive times, you need partners who are focused on your success rather than the need to make a quick sale.

This brochure gives you an overview of our mission: adding value with our technology – and adding value as a true business partner.

Screen baskets and rotors

Increasing value by increasing screening efficiency

ANDRITZ Fiedler is a leading supplier of screen baskets and rotors for the production of pulp and paper.



*Our customers can **trust** that we are applying our knowledge and experience to deliver outstanding solutions.*

Jarno Nymark
Global Vice President Screening & Cleaning

Bar-Tec Nobilis

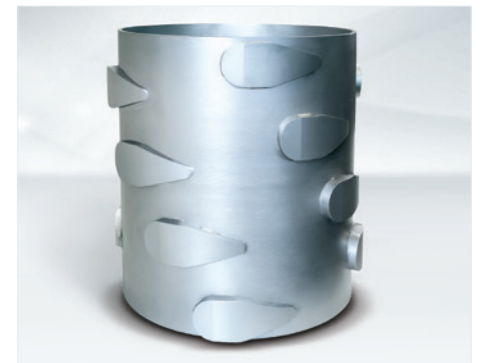
The latest production methods for screen basket manufacturing require no welding, rolling, or clamping. No creation of residual stresses during manufacturing which can impact the strength or durability of the basket. This results in screening performance never seen before: reliability, slot width accuracy, and the highest levels of stickies/impurities removal.



▲ Bar-Tec W and Bar-Tec Nobilis baskets

Bar-Tec Valeo

The Bar-Tec Valeo screen basket is a “next generation” design for pressurized screens. Its unique stability is the result of advanced manufacturing methods.



▲ Ro-Tec Dolphin rotor

Ro-Tec Dolphin

The Ro-Tec Dolphin rotor’s hydrodynamic foil shape is streamlined. This creates minimal flow restriction, resulting in high throughput with low energy consumption. If capacity throughput is not the target, the Ro-Tec Dolphin rotor can be operated at lower speeds, improving efficiency, and lowering energy consumption even further.

ANDRITZ screen baskets and rotors are not simple replacement parts, but are engineered with the right profiles, geometries, and tolerances to noticeably improve the performance of a screening system. Virgin, mechanical, or recycled fiber. It is this engineering expertise that distinguishes ANDRITZ from other suppliers — resulting

in increased throughput, less energy consumption, and lower costs.

Screen baskets and rotors

ANDRITZ screen baskets and rotors are manufactured for all screen types – from all leading OEMs. Engineered for high performance and produced with state-of-the-art

German manufacturing precision. For particularly challenging applications, or where the highest screening performance is necessary, our engineers come to your mill to do on-site process optimization and plant upgrades. This is the type of outstanding expert knowledge you can trust in.



Benefits

- Lower energy consumption
- Improved production efficiency
- Accuracy to target the right level of impurity removal
- Excellent stability and wear resistance

High-consistency disperser plates

A valuable range of customized solutions for every application

Dispersion is not a one-size-fits-all application. ANDRITZ has invested in considerable development work to offer a range of solutions.



Our customers love our technological innovations. Being one step ahead is part of the ANDRITZ identity.

Luc Gingras
Global Vice President High-Consistency Plates

Successful processing of secondary fibers significantly reduces operating costs without compromising paper quality. Unfortunately, the level of contaminants in recovered fiber is increasing, making the dispersion process a critical step in secondary fiber processing since it has great influence over stickies and dirt removal. The disperser plate transfers energy to the fibers, detaching printing inks which can be

removed in the flotation stage, and reducing the size of dirt specks and stickies to below the visibility threshold. Borrowing from applications knowledge gained in the development of refiner plates, ANDRITZ has created new disperser plate designs to optimize the spacing between the surfaces of teeth, retaining sharpness of leading edges, and increasing the plate life, throughput, and energy efficiency.

It is part of the ANDRITZ identity to support customers in achieving their targets for pulp cleanliness and yield even in the most challenging environments. ANDRITZ is clearly the market leader in this area, benefiting from a wide range of patented features in its plates.



Durapulse

Our patented Durapulse tooth design increases the number of pulses generated between crossing teeth, which increases the dispersion effect at a given energy input level. The Durapulse design can be used on both rotor and stator, or one side only, and can be combined with the ANDRITZ V-tooth and X-tooth geometries.



▲ Disperser plate with Durapulse and V-tooth design

V-tooth and X-tooth

Our patented V-tooth and X-tooth geometries have a special edge geometry that keeps them sharper longer. This maintains dispersion efficiency longer and extends the productive life of the plate. Mills enjoy the longer period between plate changes, with the flexibility to schedule the maintenance when it is most beneficial. The V-tooth (uni-directional for dispersers that do not change rotational direction) and X-tooth (for dispersers that change direction) can be combined with the Durapulse tooth design when needed.



▲ V-tooth is uni-directional, for dispersers that do not change direction of rotation



▲ Bi-directional x-tooth, for dispersers that change direction of rotation

Benefits

- Lower energy consumption
- High dispersion efficiency
- Significantly increased plate life
- Excellent ink removal
- Low dirt count in the furnish

Low-consistency refiner plates

Best fiber quality and longer lasting plates

Industry-leading performance – the “ANDRITZ Durametal Difference” – comes from blending process knowledge, engineering, alloy expertise, manufacturing advances, and quality control. It also comes from never being satisfied – by having the brains and skill to constantly be asking “What if?”



Our commitment begins with the first contact and extends for the life of our relationship.

Dr. Peter Antensteiner
Global Vice President Low-Consistency Refining

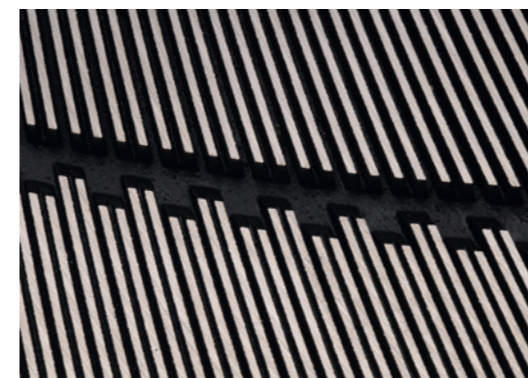
Pulp and papermakers worldwide are on the same quest: better performance at lower cost. In anticipation of this, ANDRITZ delivers considerable value for the refining process, no matter who the OEM. ANDRITZ refiner plates are more reliable, better performing, and more durable. ANDRITZ solutions meet the challenge with commitment and with superior performance in all of the categories.

LemaxX spiral plates

Refiner plates with LemaxX spiral designs significantly improve double-disc refining. The LemaxX spiral design keeps the bar crossing angle constant, regardless of the bar's location on the plate. Fiber preparation is continuous and homogeneous due to the logarithmic spiral design, optimized bar and groove geometry, and open area management.

LemaxX spiral 200 series

The LemaxX spiral 200 series combines the advantages of the logarithmic spiral bar design with an extremely wear resistant alloy. This new combination integrates proven and proprietary ANDRITZ innovations – logarithmic spiral bars, variable pitch, and high-strength/high-performance bar design – for a second-to-none refining solution. For total cost of ownership reduction,

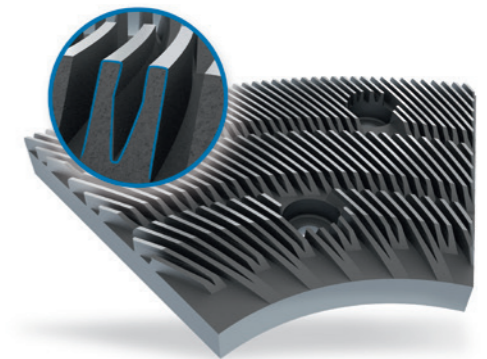


ANDRITZ offers a “dollarization” study for customers who desire it.

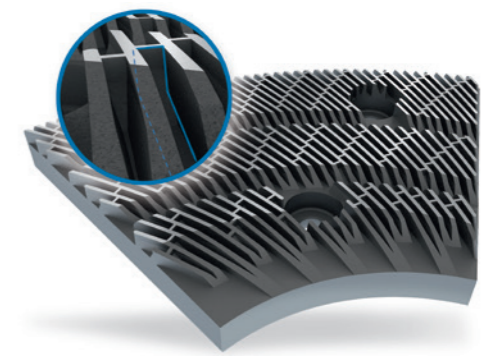
LemaxX spiral signature

The latest development in low-consistency refining delivers maximum energy savings. Special dams in the stator plate of the signature series serve two primary functions: preventing recirculation from the ring room back to the inlet (reducing idle energy consumption significantly) and tailoring the hydraulic capacity of the refiner to a specific application.

The signature series is a milestone in our decade-long R&D program to enhance our technology. Our customers have signed off on accepting this, our most innovative product, which gave rise to the name: the signature series.



▲ LemaxX spiral 200 series



▲ LemaxX spiral signature

Benefits

- Best fiber quality
- Extended plate life
- Optimum hydraulics
- Maximum number of fiber treatments
- Significant energy reductions

Cleaner plant components

Service and wear parts for all brands

ANDRITZ supplies spare and wear parts – and offers upgrade services – to ensure efficient removal of debris from pulp and paper stock.



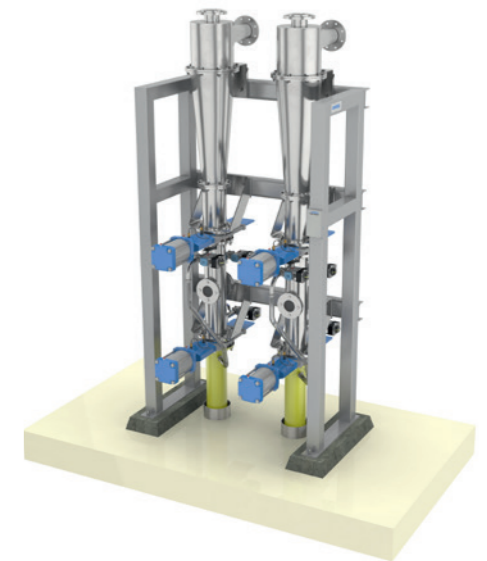
Common goals make a partnership last. This collaboration benefits both partners.

Rainer Cornelius
Regional Director Southeast Asia

Cleaner plant upgrades

Over time, many stock preparation lines are pushed to operate over the design capacity. This usually results in the line being operated at a higher consistency than planned – leading to degraded performance of the equipment. In order to balance the overall stock preparation system, an extension of the cleaner plant can help. Or, an upgrade to cleaner components using Vortex Control.

Vortex Control reduces the rejects thickening, which leads to better operational stability. Fiber loss is also reduced since counter-current washing is used at the cleaner tip. By eliminating the need for a cleaner plant extension, capital costs and the increase in energy costs can be avoided. In some cases, the cleaner cascade can be reduced, resulting in lower operating costs as well.



▲ Cleaner Type RB 300HD

ANDRITZ is an excellent choice as a technology and service partner when it comes to maximizing the performance of a wide range of cleaner plants. Components are manufactured from polyurethane, polyamide, stainless steel, ceramics, and other materials upon request. These components are maintained in stock at strategically located warehouses to meet quick-response demands.

Cleaner plant services:

- Mechanical inspections and process audits
- Comprehensive balance calculations
- Component exchange programs
- Stocking programs
- Consignments
- Shutdown services



Benefits

- Minimum fiber loss (maximum accepts)
- Minimum energy consumption
- Maximum efficiency
- Increased return on capital employed
- Components and services for nearly all brands

Paper machine clothing

Specialists in forming fabrics for all grades

ANDRITZ Kufferath is a leading supplier of forming fabrics and technical wires for the production of pulp and paper.



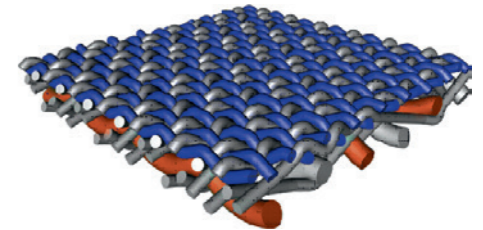
Our ambition is to fully support our customers – setting the highest standards in quality and performance.

Stefan Schreiner
Global Vice President FormWeave
and TecnoWeave Products

WeCare:

Forming fabrics for tissue

WeCare forming fabrics are especially developed for the production of hygiene papers. The fabric design takes into account the paper grade, basis weight, furnish, machine configuration, speed, and other requirements. WeCare achieves the highest dewatering capacities and lowest water restraint with excellent fiber distribution.

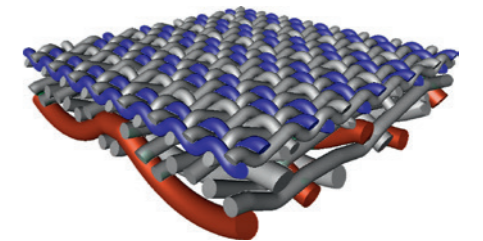


▲ Detail: WeCare Run AP

WeValue:

Forming fabrics for speciality paper

Specialty papers can place high demands on forming fabrics. This is why we invented WeValue – which combines excellent surface characteristics with good drainage for flawless specialty papers.



▲ Detail: WePrint Run

ANDRITZ Kufferath focuses its product development on the forming sections of pulp and paper machines – as well as presses for stock preparation. These areas are demanding. Mastering them makes an important contribution to the quality of the pulp and paper produced.

Meeting these demands to every customer's complete satisfaction is the main driver for our ambition. This entails on-go-

ing development of existing products and new designs. Our comprehensive range of tailor-made forming fabrics and wires comprises solutions for all paper and pulp grades:

WePrint & WePack: Forming fabrics for graphical and packaging paper

A wide range of forming fabrics are available

for paper and board production: from printing/writing grades (LWC, rotogravure, and newsprint) to packaging grades (linerboard and corrugating media). The changing furnishes, higher machine speeds, and more stringent product specifications require fast action and innovation. WePrint are forming fabrics especially for the high demands of graphical papers. WePack exceeds the demands of packaging paper producers.



Benefits

- Excellent drainage and formation
- Lower energy consumption
- Machine cleanliness
- Ease of installation
- Excellent wear resistance
- High efficiency and productivity

Pulping and detrashing

Value-added services and upgrades

ANDRITZ offers a variety of service packages and upgrades for all kinds of pulper and detrashing systems.



*Our customers expect and deserve **reliability** in our products and services.*

Bernhard Goger,
Global Vice President – Pulping, Dewatering, Pulp Drying

Pulper upgrades

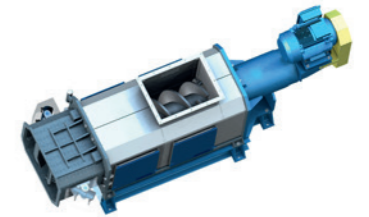
Even with aged equipment, there are opportunities for performance improvement. ANDRITZ offers rebuild and upgrade services to increase capacity, extend life, and lower energy consumption. The result is better performance and a continued return on your original capital investment.



▲ High-consistency Rotor

Reject presses

ANDRITZ supplies wear parts for rejects presses that improve the ability of the press – regardless the OEM brand – to increase dryness of rejects (therefore reducing the cost of waste removal).



▲ Reject compactor

Under-machine pulpers

Under-machine units are quite often a production bottleneck due to their age. ANDRITZ developed a new pumping wing rotor design, allowing significant improvement in the operation of under-machine pulpers.



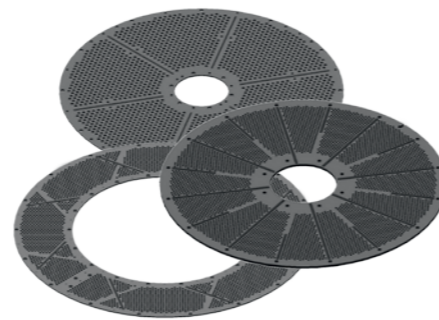
▲ FSV rotor

At the beginning

At the beginning of each stock preparation line stands a pulper. While the pulper itself is seen as a very simple piece of equipment, it is responsible for delivering a very important material – dissolved pulp – to all the downstream processes. Whether it is installed in a virgin fiber line, a broke line, or a recycled fiber line – efficiency and reliability to quickly prepare the pulp with the lowest energy consumption are the prime targets.

Pulper and detrasher wear parts

Unfortunately, the pulper and detrasher are the equipment in the stock preparation line that are subject to the highest wear. Highly abrasive materials find their way to the pulper – directly impacting the performance and life of rotors and screen plates. ANDRITZ produces a range of rotors and screen plates (constructed of different materials depending on the desired wear life) for pulping and detrashing equipment.



▲ Pulper screen plates



Benefits

- Lower energy consumption
- Improved pulping efficiency
- Extended component life
- Upgraded capacity
- For all brands of equipment

Dewatering systems

Services and upgrades for efficient lifecycle performance

ANDRITZ supports you with solutions for a variety of dewatering equipment.

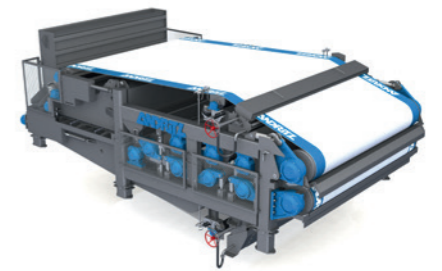


Brilliant ideas often evolve from cooperation.

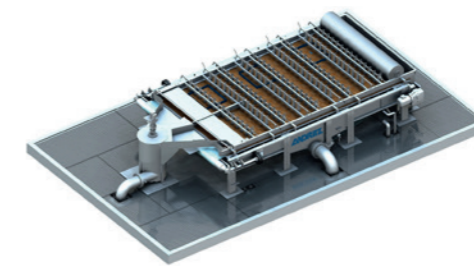
Anna Mayer
Global Product Manager, Screw Presses

Support you can rely on

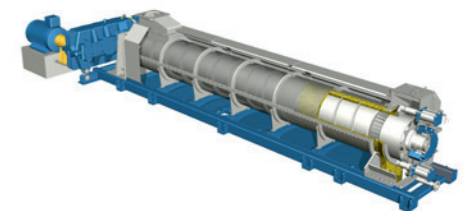
ANDRITZ supports you with tailor-made solutions, flexible stocking programs, supervised maintenance activities, and on-site repair units. Rebuilds and upgrades can often bring an older unit up to the most modern performance standards – and achieve a level of safety and reliability that are state-of-the-art as well. ANDRITZ replacement and wear parts are available for a variety of dewatering machines, independent of the OEM.



▲ Twin Wire Press



▲ Gravity table

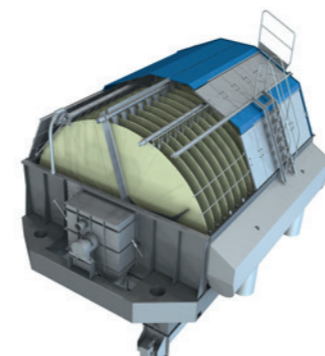


▲ Pulp Screw Press

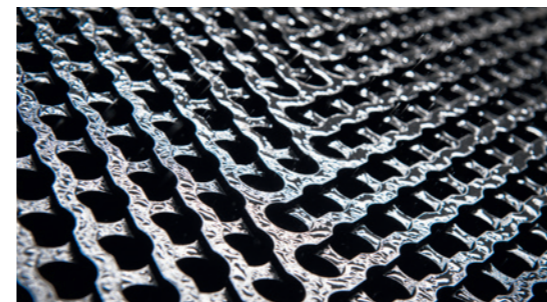
Each dewatering unit prepares and treats fibers to achieve certain characteristics such as strength, flexibility, porosity, or even whiteness. And, each dewatering machine performs best at a certain consistency. Maintaining this expected consistency is a major goal for every service and upgrade offered by ANDRITZ for dewatering equipment.

Dewatering units are also used for fiber

recovery, minimizing filtrate loads, or for extracting water from sludge. These applications require equipment that is well-maintained in order to provide years of dutiful service. ANDRITZ specialists support you in evaluating the mechanical condition of your dewatering equipment as well as suggesting upgrade possibilities to improve capacity and/or lower energy demand.



▲ Disc filter



Benefits

- Lower energy consumption
- Optimized performance
- Process reliability
- Production increase

Low-consistency refiners

Broad range of services to increase the reliability, efficiency and availability

ANDRITZ offers rebuilds, spare and wear parts, upgrades, and on-site services for equipment from virtually any OEM.



Service is more than having the right tools, it is also about having the right people.

Werner Messiner
Global Product Manager LC Refining

Exchanges

Trouble-free operation of an LC refiner line is the foundation for continuous productivity on the paper machine. Minimizing downtime is key. Our exchange program provides you with a rebuilt, as-new refiner. Typically this is done so that the exchanged refiner can be rebuilt without the time pressure of emergency repairs to keep production flowing.

Spare and wear parts

You can get a complete package of all the wear parts required for a standard refurbishment from one source – ANDRITZ. Other spare parts are available in stock as needed. These wear and spare parts are conveniently packaged, competitive in price, and to OEM specifications for fit and wear resistance.

Universal seal

The ANDRITZ universal seal is a “zero-leak” solution to replace problematic stuffing boxes, which require a lot of maintenance. The seal fits in existing housings, is

leakage-free, and reduces friction losses. The economic return from reduced maintenance costs is significant.



▲ Twin Flo refiner



▲ ANDRITZ universal seal

Local machine shops and service suppliers lack of the knowledge of ANDRITZ specialists when it comes to improving energy consumption, pulp quality, or refiner efficiency while performing their maintenance and repair activities. ANDRITZ takes low-consistency refining service to a new level.

Our service programs are designed to

ensure optimal efficiency and reliability of your refiners. As a leading OEM, we have intimate knowledge of the process, the equipment, and how to fine-tune its performance.

Rebuilds

We perform rebuilds on refiners from all major manufacturers. Most local suppli-

ers will replace components that are obviously damaged, usually limiting their scope to bearings and sleeves. With ANDRITZ, your refiner is fully inspected and reconditioned to OEM specifications, significantly extending the life of the refiner.



Benefits

- Reduced energy consumption
- Rebuilds with upgraded components
- Convenient wear/spare packages
- Zero-leak sealing
- Short downtimes due to exchange program

Dispersers

Reliable service in every situation

ANDRITZ offers services and spare parts to keep dispersers performing like new.



Our ambition is not less than 100% customer satisfaction.

Robert Pfeiffer
Product Manager Refining and Dispensing

Whether it is replacement of a single part or modernization of the dispersion line, call on us for support. As a leading OEM, ANDRITZ has continuously developed its disperser systems. The knowledge of how the disperser should perform gives us a major advantage in servicing existing units from any OEM. Plus, the improvements we have made in disperser design can often be retrofitted

during the rebuild or maintenance of an older unit. Your ANDRITZ service engineer can help you determine the improvement potential of your machine.

Feeding screw

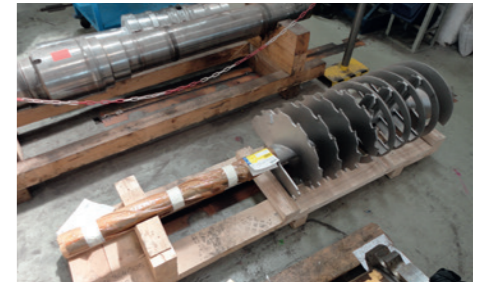
The condition of the feeding screw is critical to ensure stable and safe dispersion. Regular inspection and service of the screw is essential. To extend the productive life of

the screw, ANDRITZ offers a Dual Keralloy hardfacing for feeding screws (two different coatings to ensure a sharp leading edge). Replacement screws and repairs to existing screws are also options.



Center cap

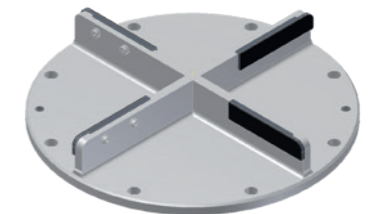
Several different designs of center caps are available for dispersers from major OEMs. The main benefit is reduced wear and an optimized "handover" of the pulp from the feeding screw to the plates, resulting in less power consumption and load variations. For extremely abrasive furnishes, exchangeable wear shoes are available.



▲ Screw repair

Housing liner

Wear in the liner is caused by discharge of the pulp through the plates. If the wear is extensive, damage to the casing can result. ANDRITZ developed inserts to protect the disperser, which prevents an expensive replacement of the casing and ensures safe, reliable operation. Special coatings can be applied to extend the insert life. Different fastening solutions (e.g. welding or bolting) are available for OEM dispersers of most major brands.



▲ Center cap



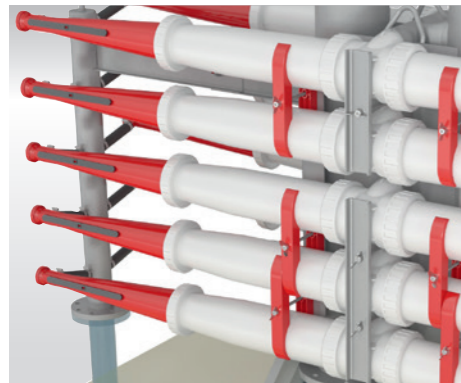
▲ Housing liner

Benefits

- Reduced energy consumption
- Extended run times/product life
- Machine protection
- Safe and reliable operation

The full range of value-added services

From components to OPE



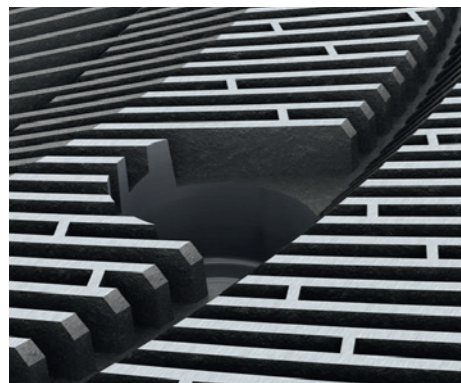
Wear parts/consumables

To complement our service capabilities, we manufacture and stock a full range of replacement parts and engineered wear products for ANDRITZ and other OEM machines. ANDRITZ engineered wear products are often not only drop-in replacements, but will actually upgrade the performance of the screen, refiner, disperser, cleaner, pulper, or press that it is installed in.



Rebuilds and retrofits

Rebuilding existing equipment not only offers substantial cost savings over buying a new unit, it extends the return on your original investment. ANDRITZ can rebuild virtually all OEM makes and models on the market.



Upgrades and modernizations

Upgrading older equipment – from virtually any OEM – turns the old technology into a newer, more productive, and more energy-efficient design. Sometimes it only takes a few smart adaptations to improve performance considerably. For example, a refiner that is upgraded with our new LemaxX signature series plates will achieve a higher level of capacity, fiber quality, energy efficiency, and plate life.



Field services and inspections

To determine the improvement potential of your processes and equipment – and to prioritize the key areas for optimization – we conduct inspections, audits, improvement studies, and other field services.



Shutdown and start-up services

ANDRITZ service technicians can assist you in shutdown planning, on-site coordination, supervision, and the actual shutdown work. We also offer specialized operator and maintenance training.



OPE (Overall Production Efficiency) agreements

With ANDRITZ, you get more than proven technology. You have access to the global expertise to extract maximum performance over the lifetime of your equipment. We work in close cooperation with your operations, management, maintenance, and local partners to apply the most modern maintenance technologies and tools for achieving the best results. Using our best global experts and on-line diagnostics we provide immediate and long-term support. Working as part of your mill's overall team, we look at your millwide production and processes – not just maintenance activities – to help you improve your overall production and equipment efficiency.

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