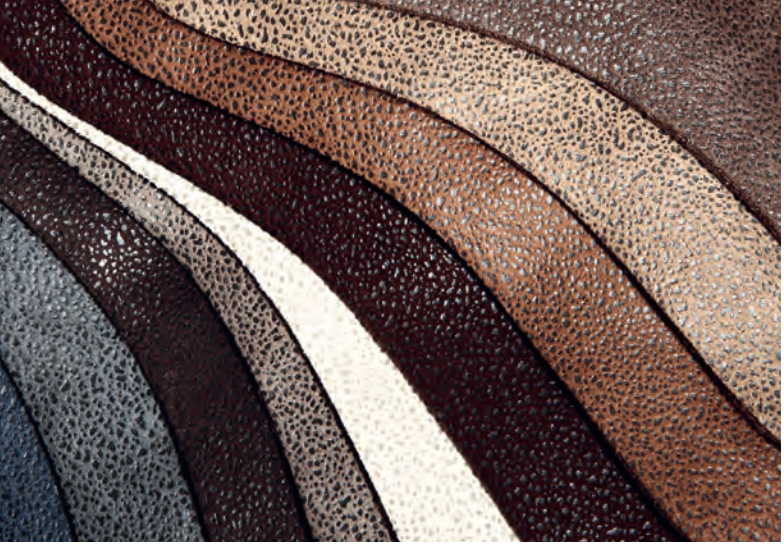
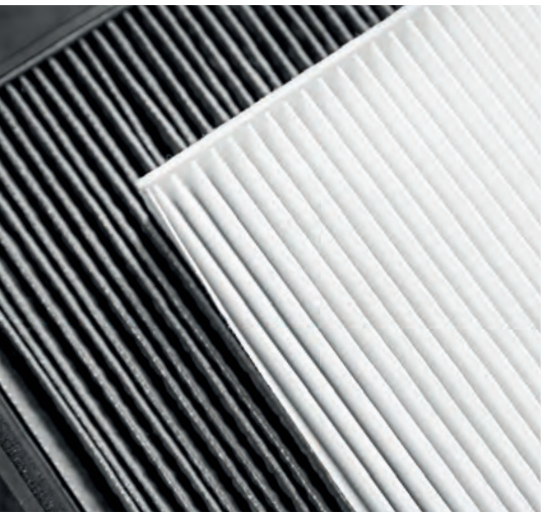
INCREASE YOUR SUCCESS WITH NEEDLEPUNCH

Precision meets versatility across all fiber types

ANDRITZ





HIGH FLEXIBILITY IN MATERIALS

Needlepunching is highly flexible and suitable for use with nearly all existing fibers, from natural to man-made fibzers, and filaments. You can also customize the fabric's tensile strength and weight distribution.

VARIOUS APPLICATIONS

Needlepunch can be used for a large number of markets, such as:

- Geotextiles
- Automotive
- Filtration
- Furniture
- Roofing felts
- Coating substrates
- Artificial and synthetic leathers
- Flooring
- High-tech composite felts
- Ceramics
- Wall insulation panels

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VISIT OUR WEBSITE

to get more information about ANDRITZ needlepunch technology

A vital part of your business and success

Reliability is most essential for your needlepunch production. Your customers will remain happy if they know they can rely on the quality, consistency and reliability of delivery times. The quality and value of the fabrics you produce need to win over your customers.

ANDRITZ needlepunch production lines, which incorporate opening and blending, carding, crosslapping, drafting, needling/ stitch-bonding, thermo-bonding, and end of line control systems & packaging units, will help you make this happen – for years to come.

FOR THE BEST RESULTS

You can count on our innovative technology to optimize your production processes and reduce energy and raw material consumption. Simulation tools help us find the ideal production line for your business and can even help you with your product development.

MAXIMIZING UPTIME

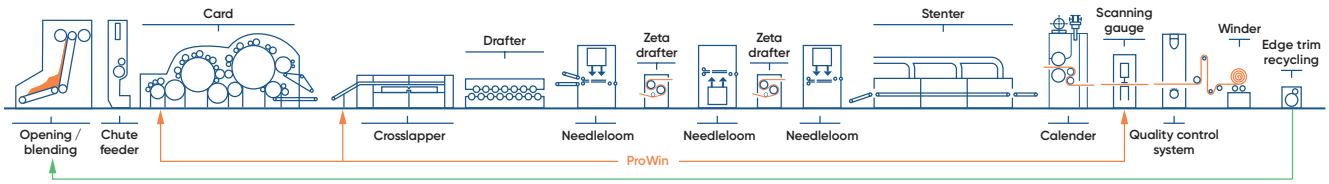
Our technical experts and skilled service teams help keep your assets in perfect condition. This protects your production line and ensures a stable return on your investment. When your production lines run smoothly, your business does too.

WATCH THE VIDEO
for insights of the needlepunch line

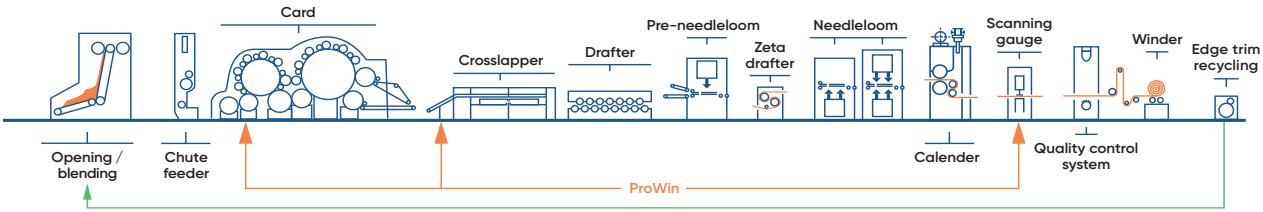
Needlepunch lines and process

Needlepunch lines maximize your uptime thanks to their reliable design, low maintenance requirements, and easy cleaning process. They offer high flexibility and sustainability for use with nearly all existing fibers, from natural to man-made fibers, including filaments.

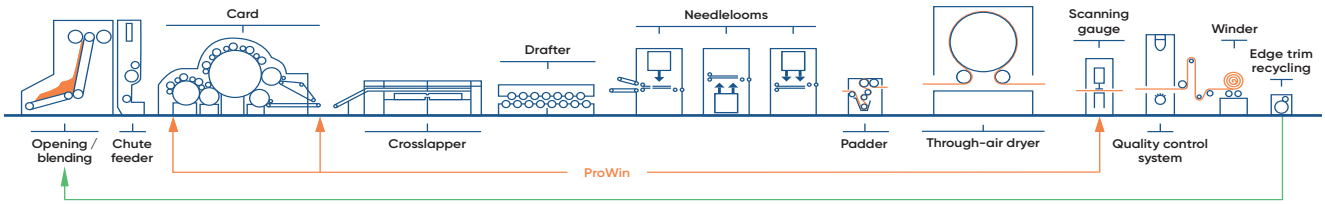
Geotextile, furniture, technical felts
75 – 700 gsm



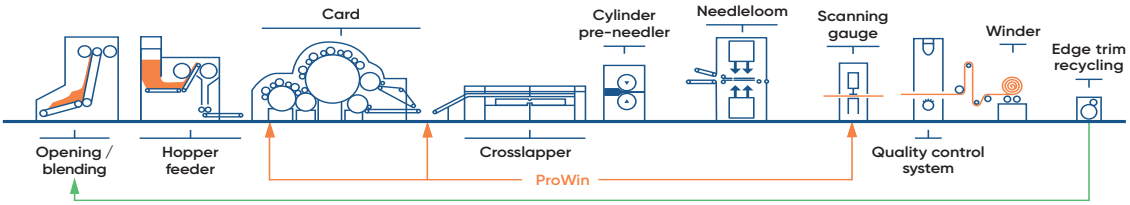
Filtration, technical felts
90 – 1,600 gsm



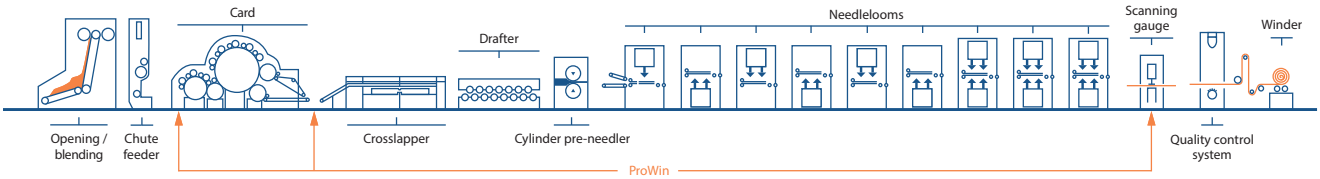
Roofing, filtration
120 – 350 gsm



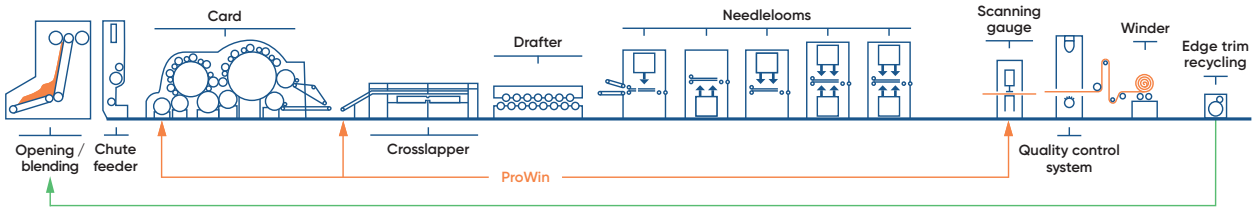
Technical felts
30 – 4,500 gsm



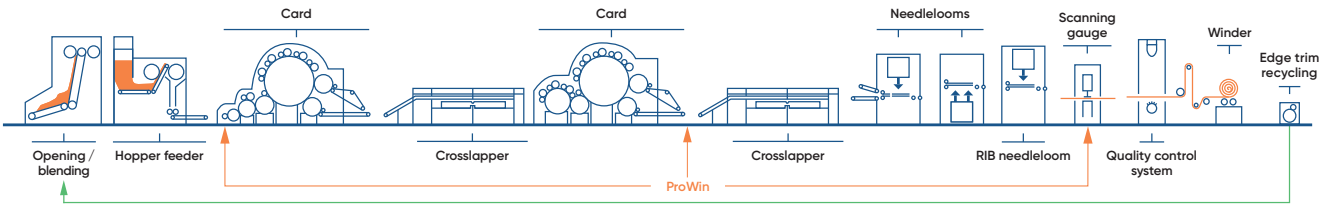
Synthetic leather with special fibers
200 – 800 gsm



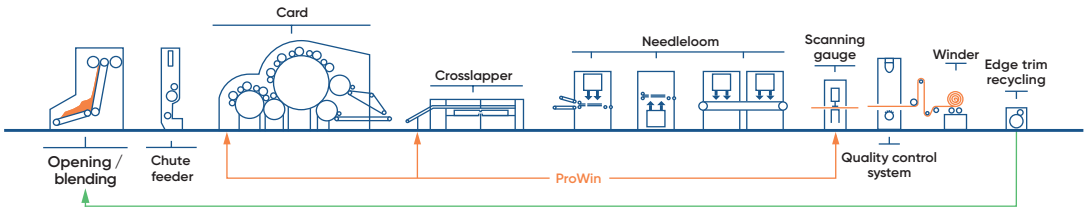
Artificial leather, coating substrates
80 – 400 gsm



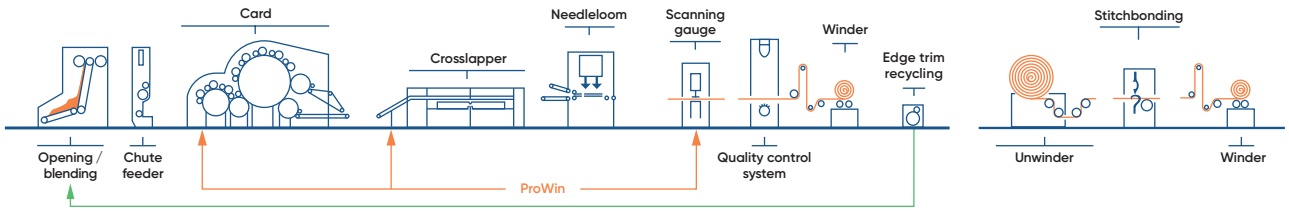
Domestic carpet & RIB carpet
120 – 2,000 gsm



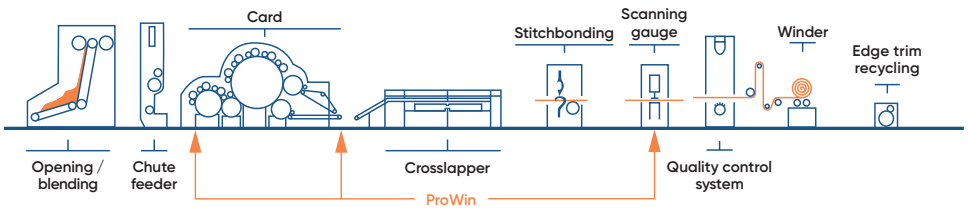
Automotive
150 – 600 gsm



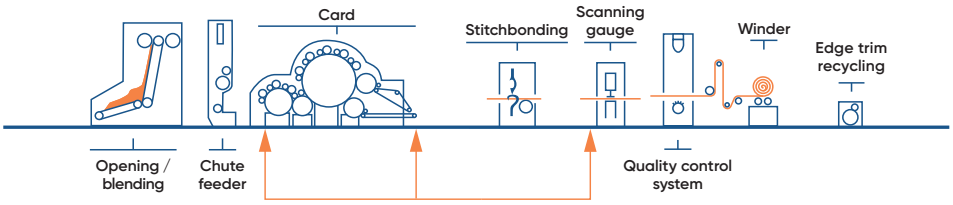
Automotive, stitchbonding
100 – 500 gsm



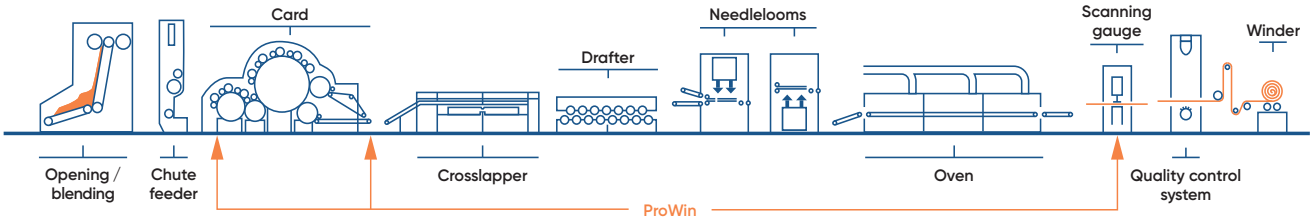
Maliwatt-Malivlies
200 - 700 gsm



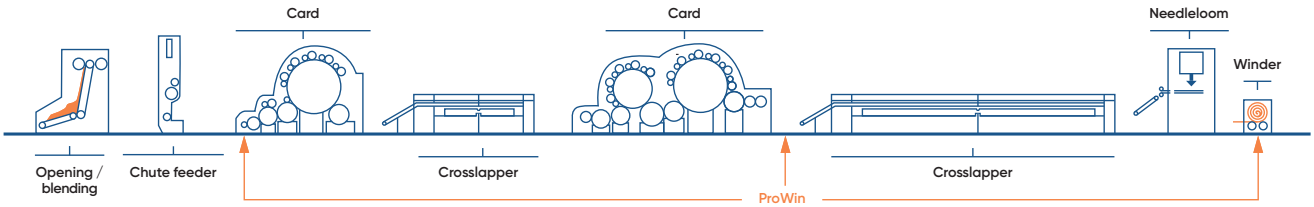
Kunit-Multiknit
100 - 200 gsm



Needled wipes, technical felts
80 – 200 gsm



Paper felts
100 – 160 gsm



Fully equipped technical center

The ANDRITZ technical center in Elbeuf, France, provides tailored support and development. It is equipped with a complete needlepunch pilot line built to industrial scale. This installation brings together all the latest technology developments from ANDRITZ for the needlepunch market.

EXPERIENCE NEW PRODUCTS

ANDRITZ Nonwoven & Textile offers you the opportunity to test the neXline needlepunch pilot line. It is the perfect opportunity to experience new products that will provide access to different markets.

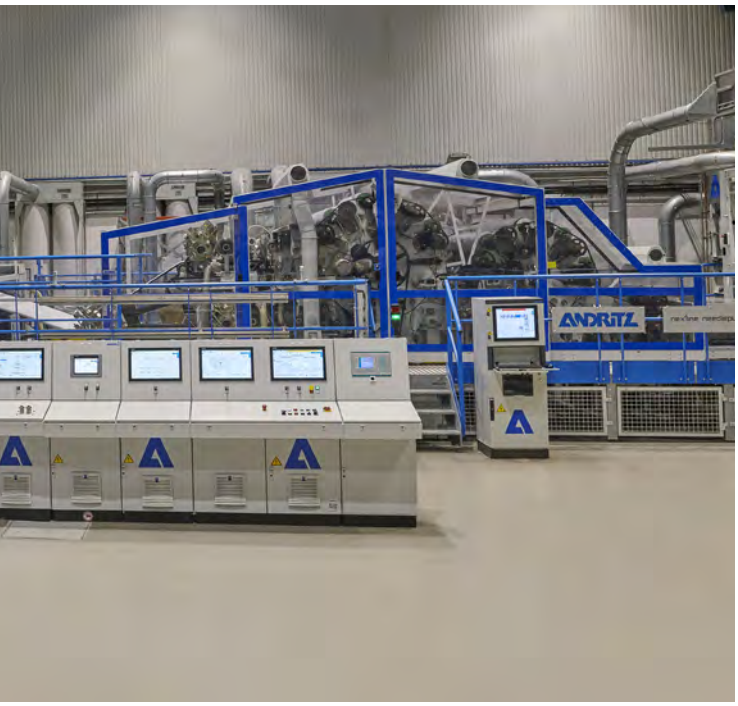
EQUIPPED WITH THE LATEST DEVELOPMENTS

This installation combines all the latest developments from ANDRITZ, such as the high-performance eXcelle double card with eXcelle profile crosslapper and the neXloom needlelooms, which are capable of needling from one side only or from both sides.
ANDRITZ Metris digital solutions are available for complete production line management.

The technical center is designed to run short and long staple fibers with an even card web aspect despite throughput capabilities in excess of 500 kg/h/m. ANDRITZ process experts support you in your R & D during trials with your own fibers, helping you to improve your equipment efficiency.

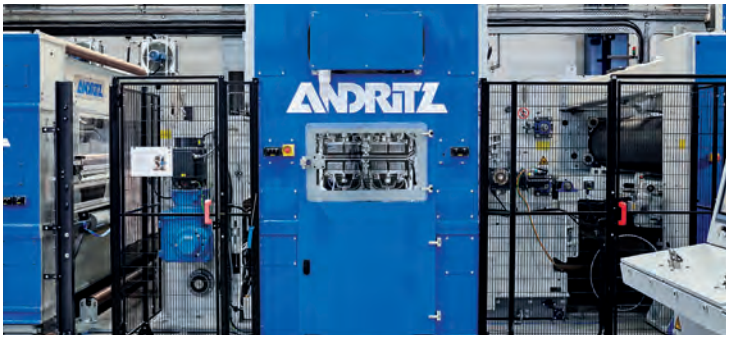
YOUR BENEFITS

- Complete needlepunch line built to industrial scale
- Latest technology development: ProWin, neXloom elliptica type DF-4 , neXloom orbital type 3000, Battcruise and more
- Process expert support
- Integrated laboratory for testing nonwoven fabrics
- Simulation tool and Metris technologies for Industry 4.0 solutions



TAKE THE VIRTUAL TOUR

Virtual tour of the needlepunch technical center



ANDRITZ technical center in Elbeuf, France

Simulation tool Matrix

The ANDRITZ mission is to be a reliable partner at every stage of your industrial process. This starts with the sales approach, driven by ANDRITZ technical experts & a dedicated sales manager. The Matrix simulator from ANDRITZ is a distinctive tool to support you in making the right investment decision.

COMPARE DIFFERENT TECHNICAL SOLUTIONS

The Matrix simulator helps you to work out alternative line set-ups. On your premises, ANDRITZ can conduct a comprehensive comparison of different technical solutions on your site in terms of:

- production and final width
- production versatility
- complexity
- investment payback

VALIDATION AND TESTING IN THE ANDRITZ TECHNICAL CENTER

The results achieved with the Matrix simulator are, of course, analyzed and discussed with the skilled ANDRITZ process experts, who provide appropriate advice. In addition, you have the opportunity to check and approve line performance in the ANDRITZ technical center.

YOUR BENEFITS

- Save time in your project design
- Choose and validate the customized line configuration
- Develop the appropriate fabrics
- Full support by process experts

Line parameters overview - ANDRITZ Matrix tool

Digital foresight with Metris

Industrial Internet of Things (IoT), Industry 4.0, digitalization - current buzzwords that industries use when seeking to improve their performance and equip themselves for the future of industry.

ANDRITZ DIGITAL SOLUTIONS

As a technology leader with extensive and long-term experience in supplying industrial measurement, control, and optimization solutions for various industries, ANDRITZ combines process and equipment expertise with the latest enhancements in the digital era. The result of this powerful combination is Metris: a portfolio of ANDRITZ Digital Solutions.

METRIS ALL-IN-ONE

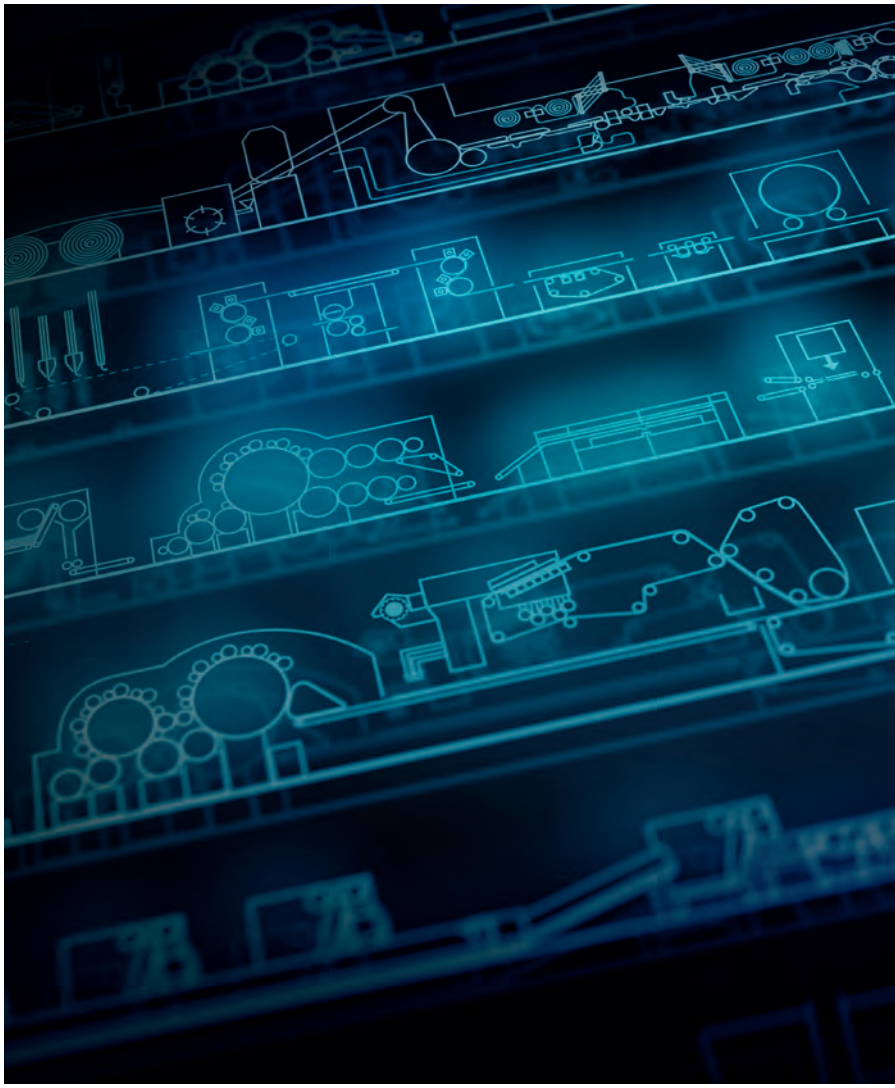
One of the flagship capabilities of the Metris assortment is its ability to optimize industrial processes with Metris All-in-One. It has been developed over the past decade within the pulp and paper sector and has been introduced to the nonwovens industry. It combines powerful analytical and data mining software with the pooled knowledge of the world's top process experts to deliver a smart service initiative for customers.

A CONSTANTLY GROWING PORTFOLIO

The depth and effectiveness of the Metris portfolio continues to improve thanks to ongoing R&D, collaboration with key customers and institutions, and venture activities. Portfolio options all rely on the three strategic focus areas of the Metris brand: Industrial IoT technologies, Smart Service concepts, and Venture activities. The main technological advancements that are incorporated into individual Metris products are derived from big data analytics, smart sensor technologies, and augmented reality solutions. The Metris All-in-One platform providing full support throughout the entire lifecycle of a plant is the most recent of our IoT developments. With Metris solutions, enjoy digital foresight thanks to the continuously improved portfolio and its performance – and thanks to ANDRITZ being a one-stop shop for tailored and fully-integrated digital solutions.

YOUR BENEFITS

- IIoT solutions across business segments
- Combined know-how from 10+ years' experience with Metris All-in-one
- Using the latest smart sensor technologies
- Big data analysis with tried-and-tested models for deviation analysis
- Providing information locally with augmented reality
- Extensive solution and process engineering expertise
- Cyber security solution to safeguard data on the network



Metris Scada Expert supervision

ANDRITZ helps you to control parameters and enhance performance. We developed a monitoring system to guarantee smooth operations and improve your process and plant profitability. It constantly allows to control the line parameters and creates the best configuration to enhance production.

INDUSTRIAL IIOT FOR SMART PRODUCTION

Sensors on the machines record sensitive data and send it automatically to the monitoring system. This not only summarizes data in comprehensive reports and helps you to improve the line's performance, but also ensures efficient predictive maintenance to minimize downtime.

CONSTANT IMPROVEMENT

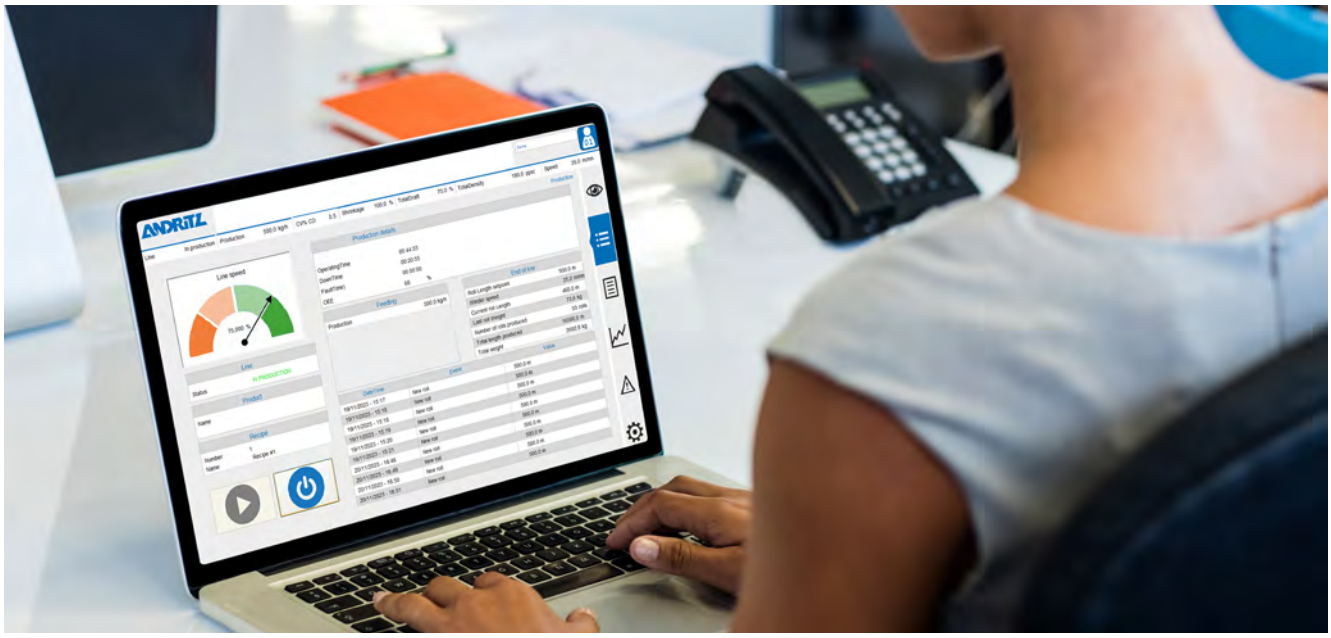
ANDRITZ reporting systems offer clear guidance on results at a glance to better drive and improve production capacity. Third-party equipment can also be integrated into Scada Expert, offering supervision for the complete line.

Recipe management, alarm management, issue reporting options, energy consumption monitoring, production batch comparisons and statistics, and easy access to instruction manuals are just some of the benefits that make Scada Expert supervision indispensable, saving you time and money for years to come

In addition, ANDRITZ can integrate Scada Expert supervision data into a customer's ERP system for smooth and lean data communication exchange, making interactions user-friendly and very effective.

YOUR BENEFITS

- All data at a glance
- Enhanced textile and line performance
- More predictive maintenance
- Better productivity through less downtime
- Recipe management
- Instruction manuals
- Production batch comparisons
- Alarm management
- Optional energy consumption monitoring



ANDRITZ monitoring system to manage the nonwoven needlepunch production line

Dedicated service

We know how important uptime is for your production efficiency. That's why we do everything to keep interruptions to a minimum. With remote maintenance and a highly responsive service team, we can deal with any issues in the shortest possible time.

SPARE PARTS

To ensure the longevity and the performance of your equipment, we recommend using only original spare parts from ANDRITZ. Our spare parts sales team is at your disposal to help you choose the right parts.

UPGRADES AND RETROFITS

Our specialists are available to inspect your production lines and propose improvements to extend the product life of your equipment or increase productivity.

MAINTENANCE SERVICE CONTRACT

We offer a wide range of services, including call-out support, spare parts warehousing, remote assistance, and preventive maintenance.

SKILLED TECHNICIANS AT YOUR DISPOSAL

To provide as efficient and responsive a service as possible, we can dispatch dedicated, rapid-response teams of skilled technicians and automation and textile engineers all over the world.

ONLINE SUPPORT

We want to support you at all times. We are always there for you as a competent partner for any textile, mechanical, or electrical/electronic issues that you may have.

IN-HOUSE OR ON-SITE TRAINING

We offer a wide variety training for your operators, maintenance or process department, either at our technical center or at your production site.

YOUR BENEFITS

- Service centers around the globe
- Technical and electrical diagnosis by experts
- Complete stock of original parts
- Assistance with installation, operation, maintenance, and training
- Improve your production operations
- Enhance the performance of your equipment

CONTACT OUR SERVICE TEAM

24/7 support-hotline
phone number : +33 426 700 500

Opening and blending

Ultimate precision guaranteed: Our opening and blending machines are designed to supply a consistent, accurate and intimate blend of opened fibers to downstream equipment. With the self-optimizing speed adjustment, our new weighing feeder does not require any action from the operator, leading to higher production and better weighing control.

Ease of operation, visibility, productivity, reduced maintenance, and lower power consumption have been the key concepts in the development of our new weighing bale opener.

The weighing bale opener is available with a working width of 1.2, 1.6, and 2 m with a reinforced bale feeding conveyor from 2.4 to 9.9 m. The new design of the weighing bale opener has a higher blend accuracy thanks to new load cells and self-optimizing speed adjustment with a capacity of up to 1 t/h/machine.

This standard weighing bale opener is designed to process all types of fibers, including all recycled and natural fibers, from a length of 1 mm to at least 150 mm and from 0.8 to 200 den as well as cut/shredded parts.

We offer the flexibility to customize the weighing bale opener according to your end use – with options such as a dedusting unit, positive pressure on the spike conveyor, automatic gap adjustment, various types of evener roller, and galvanized coating or a stainless steel finish.

ANDRITZ weighing bale opener

YOUR BENEFITS

- Operator-friendly
- Extremely flexible
- Accurate and high capacity
- Self-optimizing setting
- Tailor-made according to end use
- Low space and energy footprint

Card feeders

ANDRITZ provides multiple and comprehensive solutions for every type of drylaid web forming process. To ensure even feeding and meet your production capacity needs, ANDRITZ offers a range of card feeders tailored to your requirements.

YOUR BENEFITS

- Long-term weight evenness up to ±1%
- Accurate and reliable
- Minimal cleaning required

TCF-X card feeder

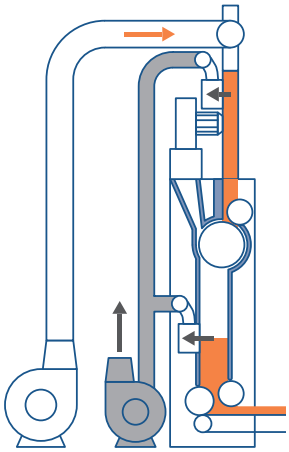
CARD FEEDERS

You can choose between two card feeders depending on the fiber range characteristics.

Thibeau Chute Feed (TCF-X)

- Throughput over 500 kg / h / meter
- Cross direction card evenness up to ≤ 2.5 %
- Fibers up to 120 mm
- Self-regulating fiber distribution system in cross direction
- Compatible with intimate blends and well-opened fibers

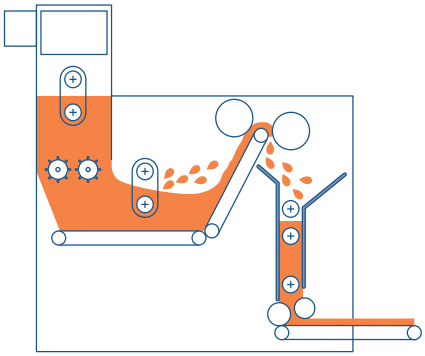
TCF-X: Self-regulating fiber distribution system in cross direction



Option: Dedusting system
Air + dust
Fibers

Continuous Flux volumetric hopper (CFX)

- Throughput over 500 kg / h / meter
- Fibers up to 150 mm
- Suitable for high-density fibers
- Synthetic and natural fibers



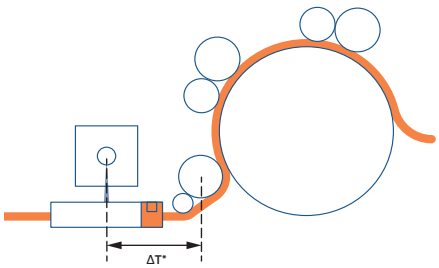
CFX volumetric hopper

CARD INFEED REGULATORS / AUTO-LEVELERS

ANDRITZ offers you two types of card infeed auto-levelers for maximum accuracy.

X-ray measurement (Servo-X)

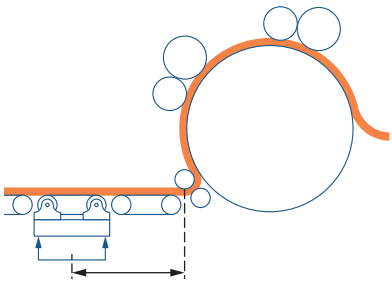
- Density measurement
- No wear parts, very limited maintenance
- Customers' preferred solution



* Calculation time for adaptive speed

(ACE) Weight measurement

- Weighing system
- No reset needed for a wide range of fiber densities



Cards

ANDRITZ offers a full range of solutions to ensure flexibility in web forming. The cards meet all your requirements in terms of capacity and web properties, and are available with various carding power options. More than 50 card configurations are available to suit your specific needs.

A WORLDWIDE MARKET LEADER FOR CARDS

The success of ANDRITZ's cards can be attributed to several key factors. First and foremost, we place a relentless focus on research and development, staying at the forefront of technological advancements. This commitment ensures that our cards remain at the pinnacle of efficiency, incorporating the latest breakthroughs to meet and exceed industry standards.

Moreover, ANDRITZ's dedication to quality is unwavering. Our cards undergo rigorous testing and quality control measures throughout the manufacturing process, ensuring durability, reliability, and optimal performance. Customers trust ANDRITZ not only for the immediate benefits of our products but also for the long-term dependability.

In addition to technical excellence, we place a premium on customer satisfaction. Our products are designed with the end user in mind, addressing specific needs and challenges faced by businesses in the industry. This customer-centric approach has established a strong relationship with clients, fostering loyalty and making ANDRITZ the go-to choice for businesses seeking top-tier solutions.

YOUR BENEFITS

- Production performance up to 2 tons
- Consistent web quality and homogeneity
- User-friendly & time effective maintenance

Single or double card set-up and different web structure solutions:

- Parallel
- Condensed
- Randomized

In combination with the number of doffers, the card enables you to obtain various web weights.

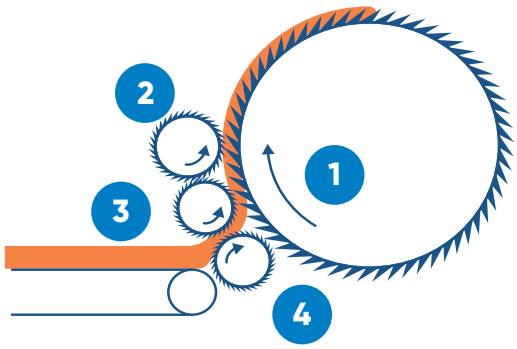
ANDRITZ double card - needlepunch technical center

Card configuration

Card entry

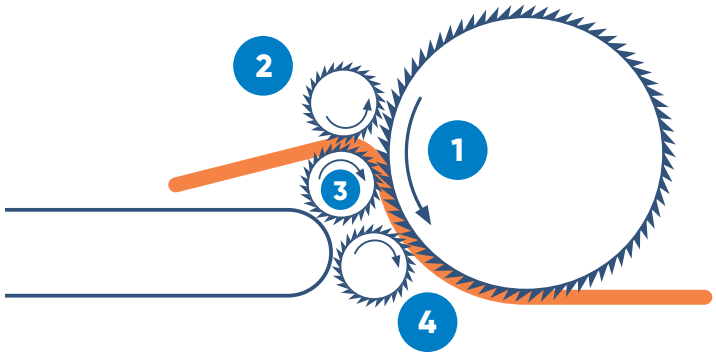
"A" INVERTED FEEDING ROLLERS

1 – Licker-in roller
2 – Cleaning feed roller
3 – Upper feed roller
4 – Lower feed roller



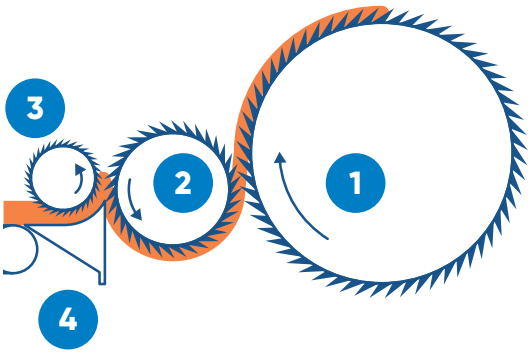
"A" FEEDING ROLLERS

1 – Tacker-in roller
2 – Upper feed roller
3 – Lower feed roller
4 – Cleaning feed roller



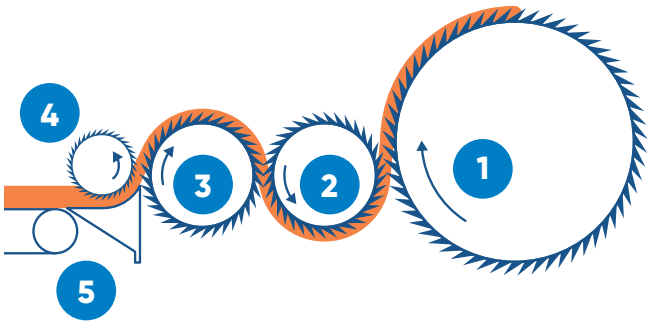
"R" FEED PLATE

1 – Breast cylinder
2 – Tacker-in roller
3 – Feed roller
4 – Feed plate



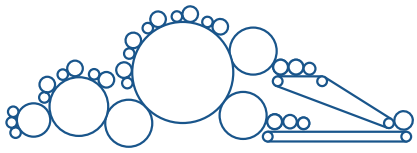
"S" FEED PLATE

1 – Breast cylinder
2 – Transfer roller
3 – Licker-in roller
4 – Feed roller
5 – Feed plate

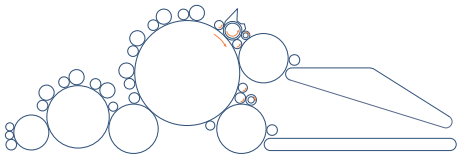


CARDING POSSIBILITIES

A 35 PPLL



A 34 VPP



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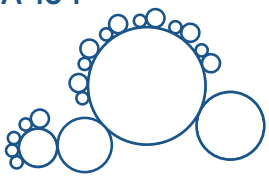

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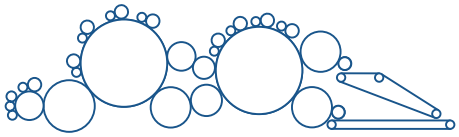
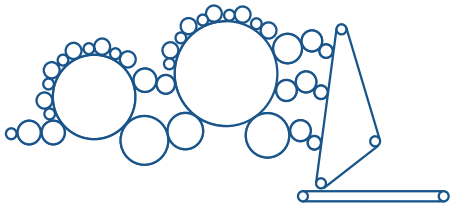


S 35 Varioweb



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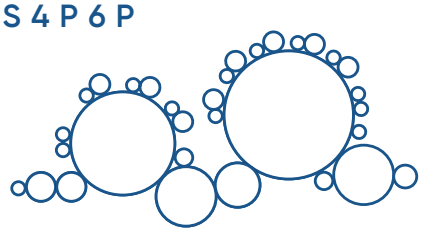

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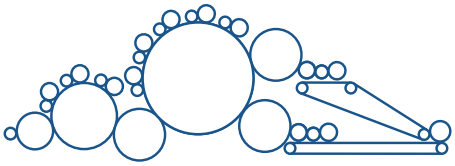

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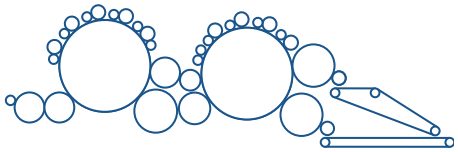
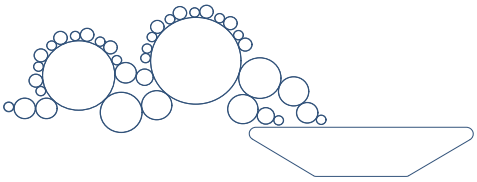
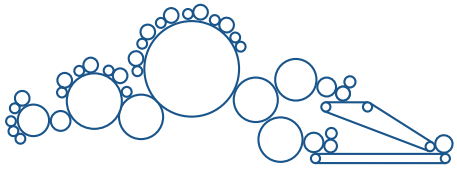


S 5 PP 6 TT



136 TT



ALTERNATIVES FOR CARD WEB STRUCTURE

LDS TAKE-OFF

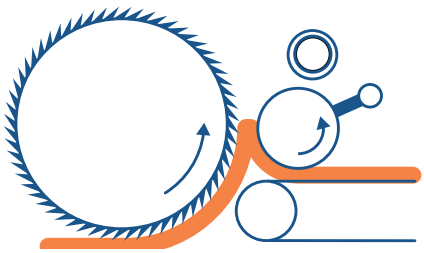
- Web aspiration at card exit ensures the web is pressed onto the conveyor belt
- Prevents the web from wrapping and increases exit speed

ROTOCOMB

- Web detachment at card exit prevents fibers from wrapping around the take-off roller

Take-off + LDS roller

Take-off roller + Rotocomb

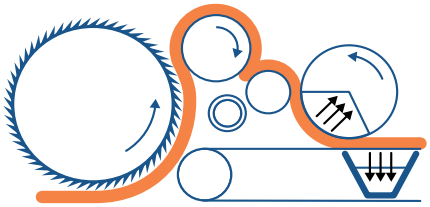


CONDENSERS

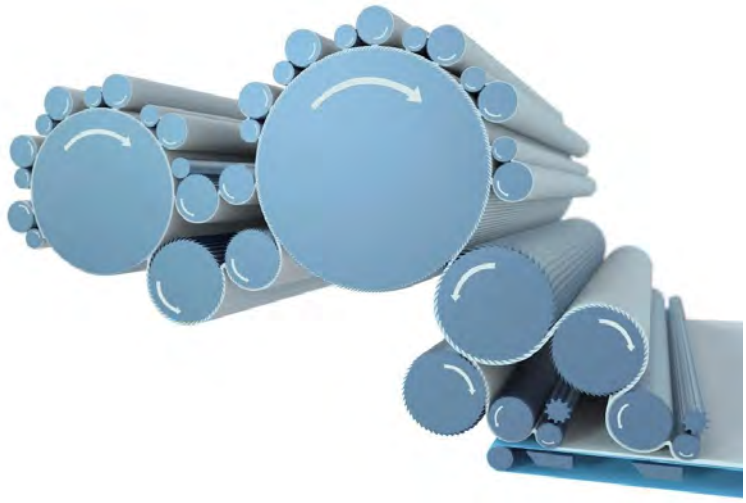
- Improve the MD/CD ratio compared to parallel webs

C2 condenser (type L)

C1 condenser (type C)



TT card



TT CARDS FOR INLINE CARDING

- No recycling on TT card´s main cylinder minimizes dust accumulation
- Higher card throughput
- Improved card web quality
- Supports web weights up to 200 gsm for 3.3/4.4 dtex fibers
- Matches or exceeds the output of 2 conventional cards production (for web weights > 80 gsm)

YOUR BENEFITS

- Customized to meet your requirements in fiber range, throughput, web qualities, and much more
- Consistent web qualitties
- Air management system including air cushion solution
- Enhanced visibility
- Easy accessibility for maintenance
- Minimal cleaning required

ENHANCED OPERATOR EXPERIENCE

One of the key innovations is 100% visual accessibility, allowing full visibility of the carding zone during production. This ensures real-time monitoring, allowing an immediate response to any irregularities, which enhances both quality control and safety. Additionally, the system features tool-free side plate removal, even when the card's modules are closed.

This simplifies maintenance and reduces downtime, making the equipment more user-friendly and efficient.

Card	w.w. [m]
Inline	from 1.5 to 5.1 m
Crosslapped	from 1.5 to 3.5 m

WATCH THE VIDEO

to see, how easy it is, to do the maintenance of cards

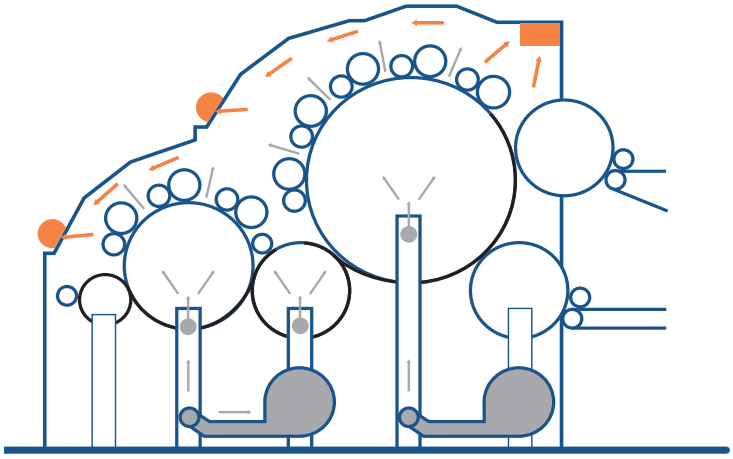
ANDRITZ carding machine in operation

AIR MANAGEMENT

Thanks to a sophisticated air management solution in the card, which combines both air blowing and dust extraction, ANDRITZ cards ensure optimal web quality without any process-related dust pollution. The design also enables fast, easy cleaning, particularly via the clean roller edges, which minimizes downtime and laborious operator work.

YOUR BENEFITS

- Cushion air blowing
- Card side formers
- Air extraction system
- ISSP control system (option)

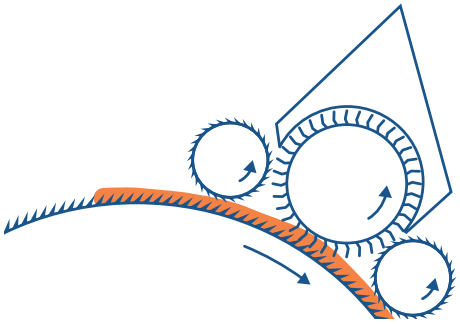


Clean rollers' edges

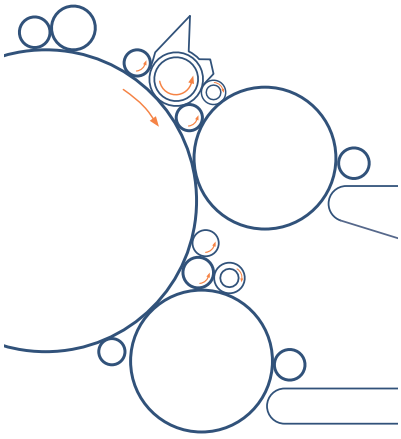
Specifications for natural and mineral fibers

Needlepunch technology allows a wide variety of raw materials to be processed, from natural to glass fibers, basalt, carbon or panox.

- CFX Volumetric hopper feeder
- Fancy roller
- Doffer cleaner



Fancy roller



Doffer cleaners

Flax

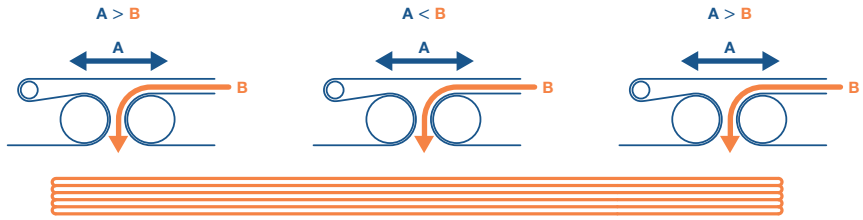
Cotton

Hemp

Glass fiber

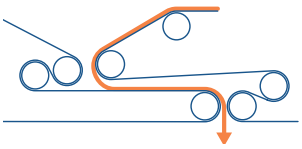
Crosslappers

The ANDRITZ crosslapping technology is based on 60 years of experience and continuous innovation. Today, ANDRITZ offers you the complete crosslapper range.

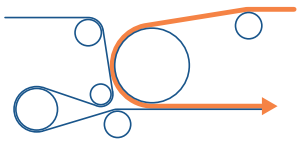


Profiling batt shaping – speed principle

Thanks to their short textile paths, profiling capabilities, and infeed speeds, our range of profile crosslappers perfectly complement new production lines that require higher productivity and improved web weight profiling. Profile crosslappers can be equipped with a double exit. Our opening options are 500 and 800 mm.



Short textile path



HSC top carriage

Entry width	Mechanical infeed speed	Mechanical layering speed
2.50m	90-200	117-266
3.00m	110-200	143-260
3.50m	110-165	143-214

ANDRITZ crosslapper in operation

The ANDRITZ X-Pro™ crosslapper

Redefining crosslapping through advanced web transfer and superior productivity. Setting new standards in precision, performance, and quality.

SETTING BENCHMARK CAPABILITIES

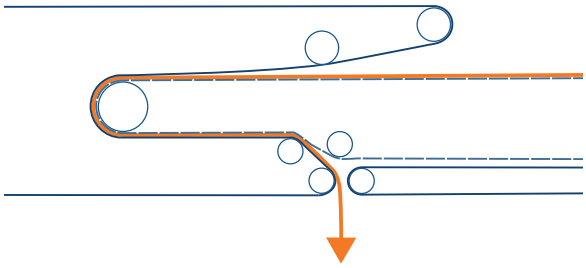
With an unwavering commitment to innovation, ANDRITZ introduces a next-generation crosslapper designed to set new benchmarks in speed, capacity, and quality. This machine represents the pinnacle of performance, redefining industry standards and delivering unmatched results in textile production.

ANDRITZ X-Path ADVANCED WEB TRANSFER

A revolutionary textile path expertly guides and handles fibers from entry to delivery while maintaining precise control of the web structure. This minimizes transfer at the feeding point, optimizing strength distribution in the finished product – regardless of web weight or thickness.

X-Path advanced web transfer integrates all varieties for superior performance. The added conveyor in the textile path moves the web from the card exit to delivery while accommodating web characteristics. The web is held between a plain apron and a mesh conveyor, providing fully controlled guidance that prevents any deformation.

This approach ensures a consistent web structure and outstanding layering uniformity. It removes fiber limitations while boosting productivity and quality in the crosslapping process to achieve maximum efficiency.



The ANDRITZ X-Pro™ crosslapper installed on the ANDRITZ Needlepunch technical center. Elbeuf, France

ANDRITZ
X-Pro™

TOP PRODUCTIVITY WITH TOP QUALITY

The ANDRITZ X-Pro™ crosslapper series represents the ultimate solution for maximizing productivity while maintaining superior cross-laying quality and preventing web distortion. Its innovative design minimizes the drafting ratio between card delivery and crosslapper web entry, preserving web quality during transfer. The system ensures consistently precise overlap, preventing any local variation in weight or weaknesses within the batt.

Additionally, its exceptional performance capabilities allow for an increased number of layers, further enhancing the homogeneity of the final product.

WATCH THE ANIMATION

and explore our latest X-Pro™ crosslapper

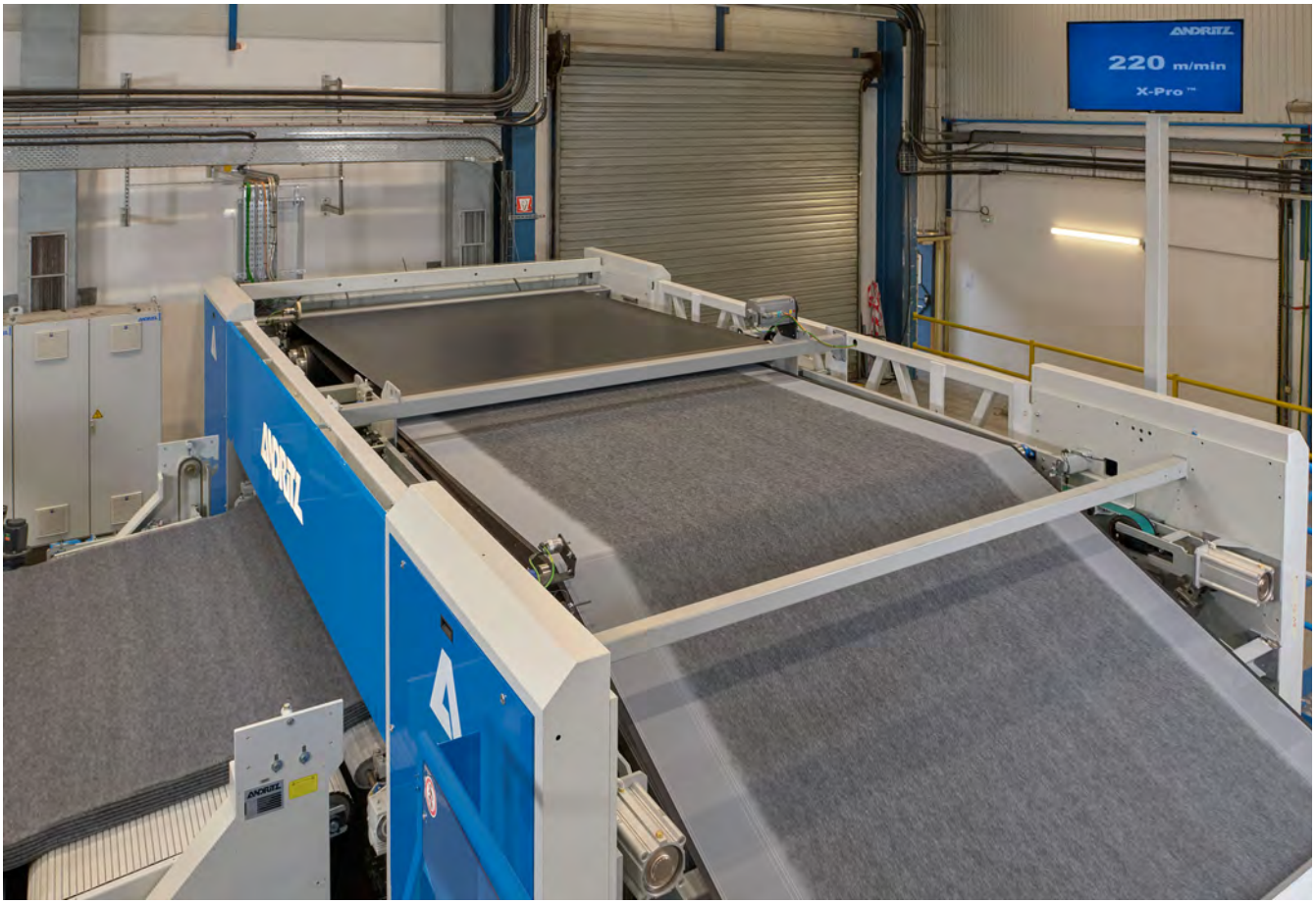
ProWin™ COMPATIBLE

The ANDRITZ X-Pro™ crosslapper is fully compatible with any ANDRITZ web weight profile correction system. The ProWin™ principle is enhanced further still thanks to the new ANDRITZ X-Path advanced web transfer, which controls the web throughout its transfer. The dynamic capabilities of the ANDRITZ X-Pro™ crosslapper elevate it to an unprecedented level of productivity combined with enhanced quality.

ENGINEERED FOR NEEDLEPUNCH

The ANDRITZ X-Pro™ crosslapper was engineered to integrate seamlessly into needlepunch lines, both new and existing.

Its design accommodates the specific requirements of each line, with retrofit capability built in from the very beginning. That ensures consistent web handling and outstanding overall performance.



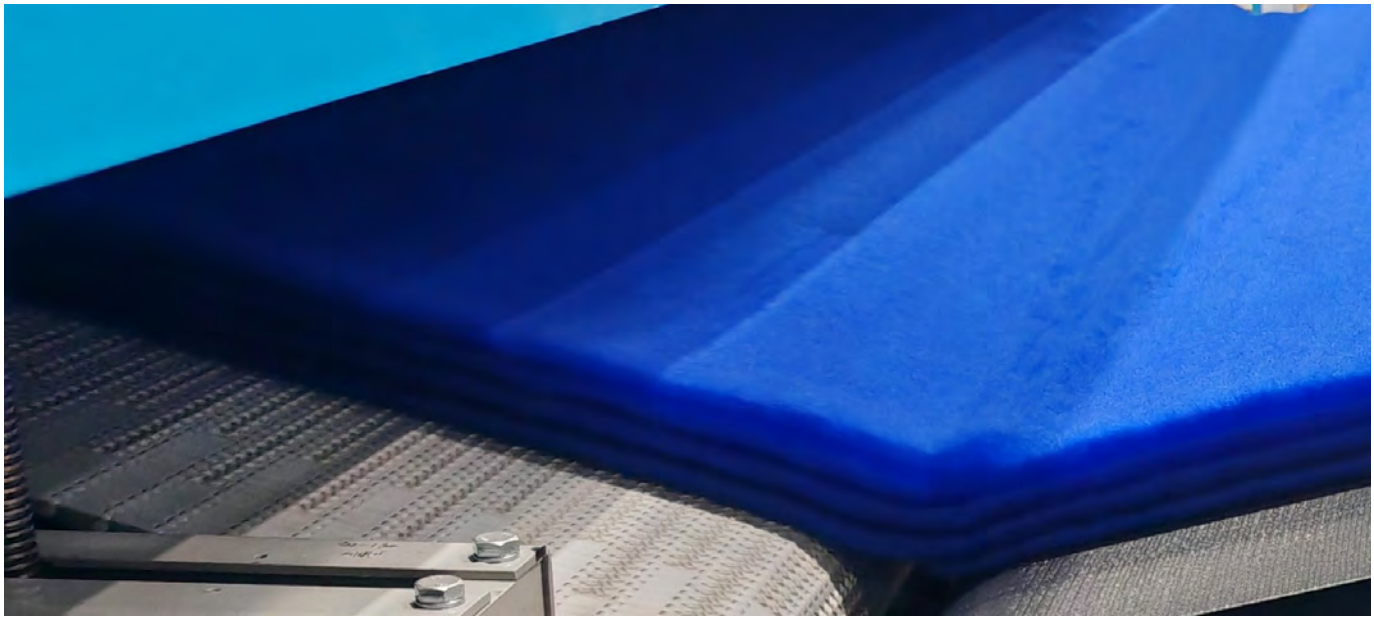
Outlet of the X-Pro™ crosslapper for an automotive application

SPECIAL FEATURES

- Maximum mechanical input speed of up to 250 m/min
- Output working width of up to 8.3 m
- For cards of 2.5 m, 3.0 m and 3.5 m
- Reinforced structure
- Native ProWin™ capability

YOUR BENEFITS

- Higher production speed
- No internal web distortion
- Better output quality with higher evenness
- Straight edges
- Perfect overlap
- Optimized profile correction accuracy



Outlet of the X-Pro™ crosslapper for an exhibition carpet application

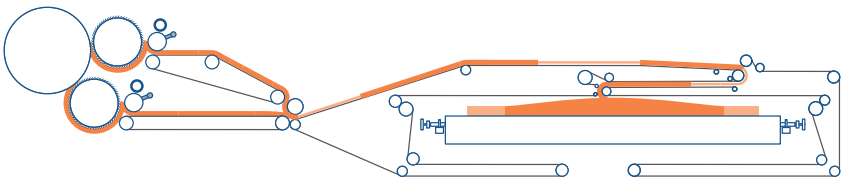
ProWid™ web weight regulation system

ProWid™ can be delivered with an individual ANDRITZ crosslapper to enhance performance in existing carding lines.

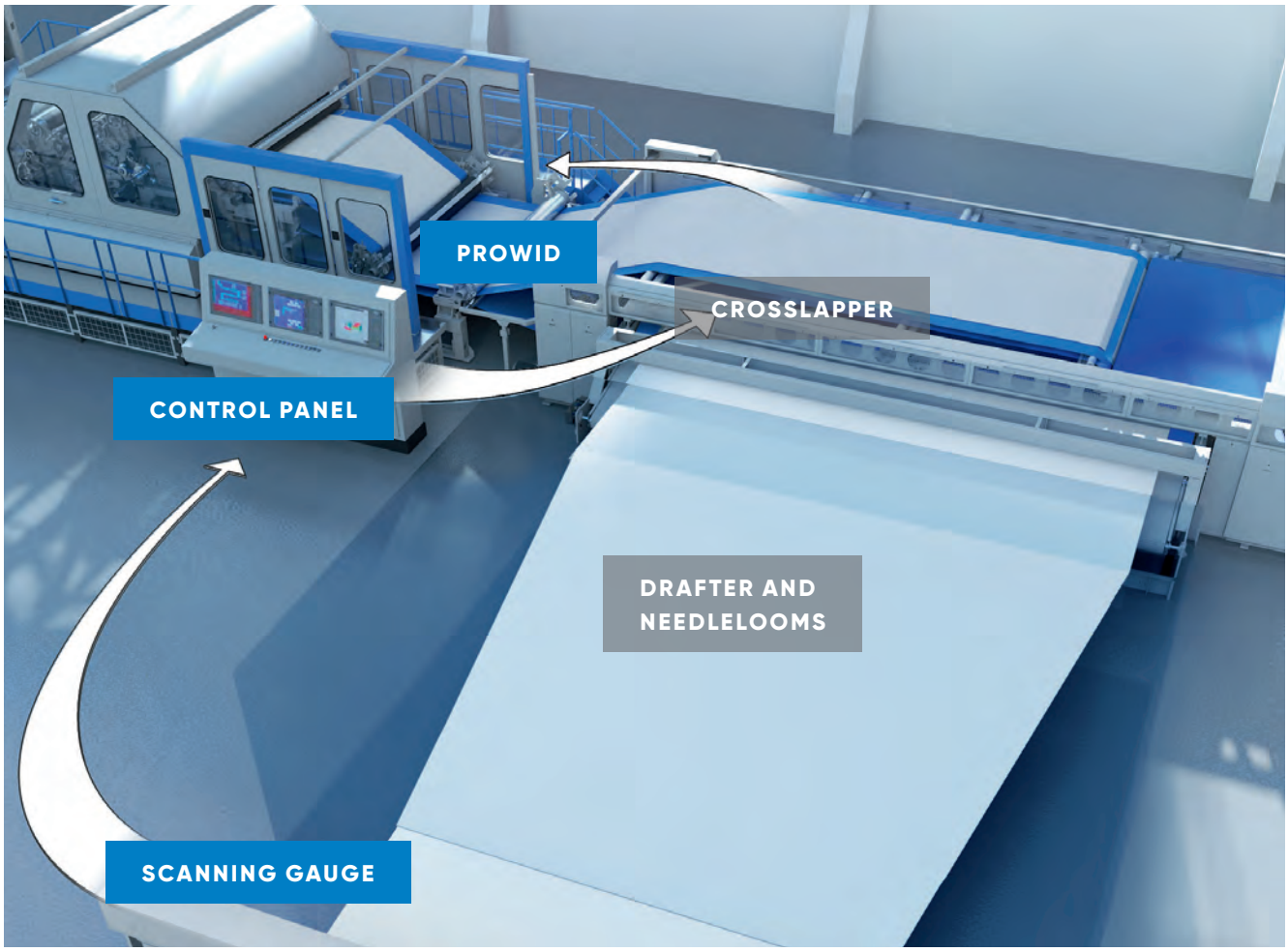
With the ProWid™ control system, the card web weight can be regulated before the web enters the crosslapper, allowing a fiber mat with lighter edges to be laid. It thus anticipates later fabric defor-mation caused by the bonding process. The CV percentage is generally improved by a factor of two, when the CV percentage is in excess of 3 % without the ProWid system.

YOUR BENEFITS

- Improving your final fabric evenness
- Extensive fiber savings
- Affordable investment costs with fast ROI and lower OPEX
- Minimal cleaning required



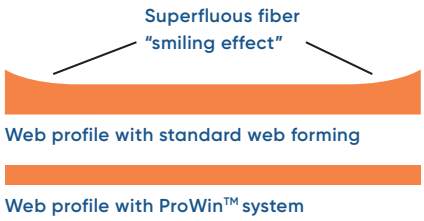
Impact of the ProWid system on fiber distribution



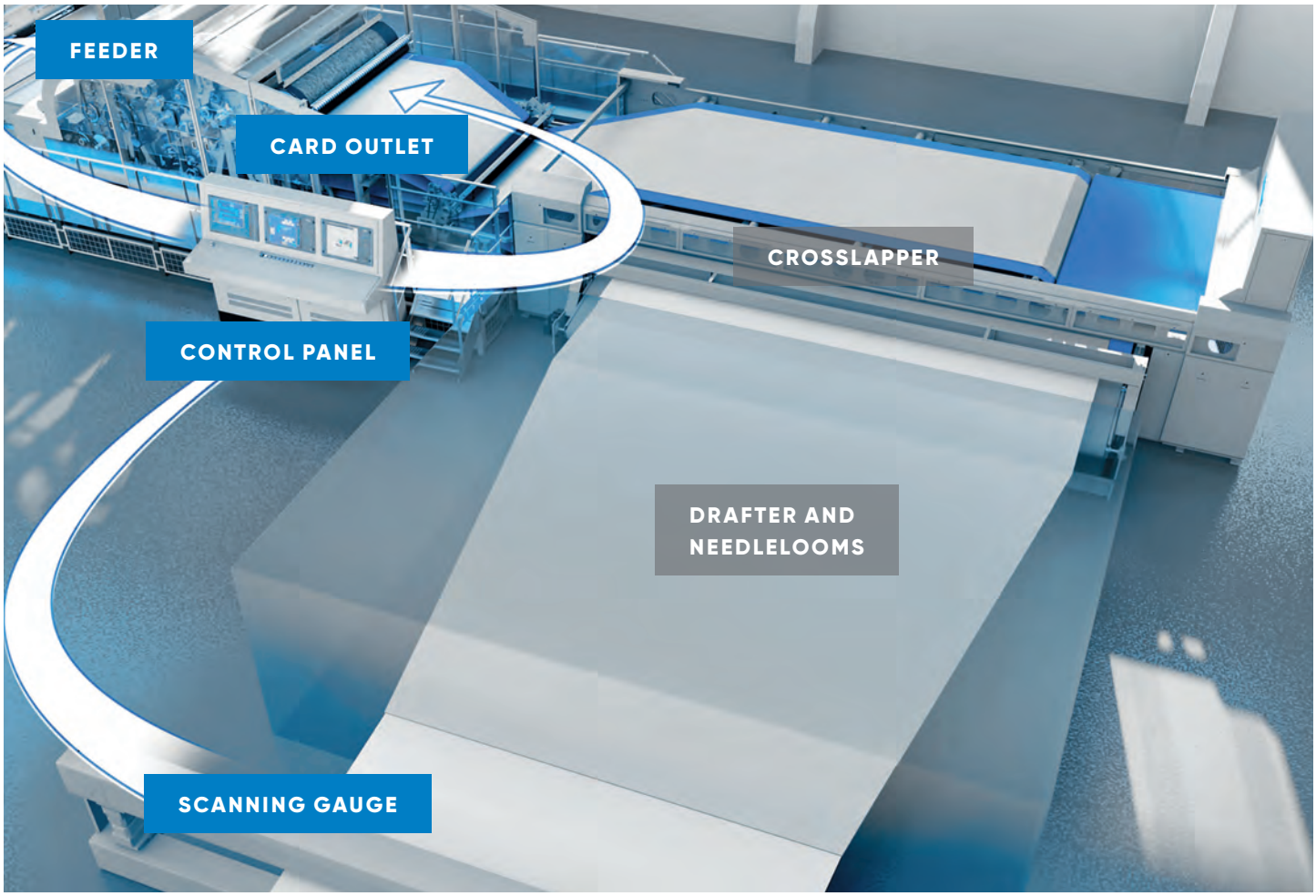
ProWin™ web weight regulation system

Dynamic motion of the card delivery and crosslapper significantly reduces production costs thanks to the improved fabric weight uniformity.

The ProWin™ system combines actions from the card doffers and dynamic speed variation at the crosslapper. This generates a fiber mat with lighter edges and a heavier central area, anticipating subsequent fabric deformation during the bonding process (no "smiling effect").
To minimize cloudiness and variations in fabric behavior, the fiber mat is formed with card web layers with the same consistency and low fiber tension.



WATCH THE ANIMATION
to get a better understanding, of how our ProWin™ technology works



The best compromise between productivity and drafting

CLOSED LOOP SELF-ADJUSTMENT

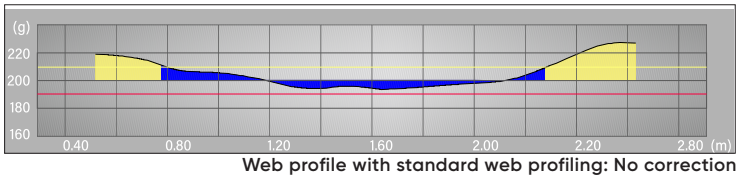
Once the weight profile distribution is displayed on the ANDRITZ gauge, the ProWin™ technology automatically adjusts how the fiber mat is formed at the crosslapper stage – both in the cross direction and machine direction – to compensate for potential deformation during the downstream bonding process.

SMOOTH OPERATION

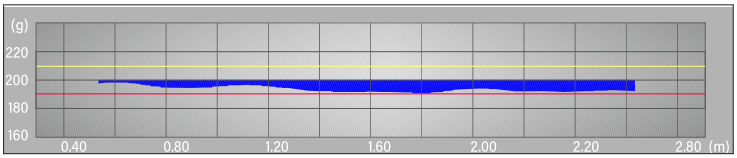
As an additional benefit, the ProWin™ balanced weight profiling correction technology significantly helps reduce card and crosslapper acceleration during high-speed operation, thus lowering maintanance costs.

ANDRITZ SCAN-X GAUGE

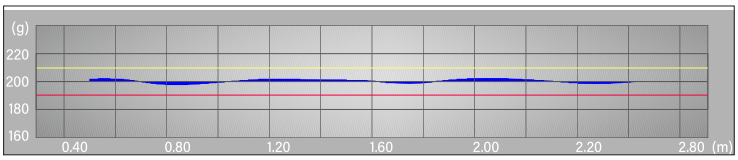
ProWin™ is coupled with the ANDRITZ gauge, installed near the end of the line, which self-regulates in a closed loop process. It accurately controls the product consistency at the end of the line and facilitates automatic data analysis and processing by ProWin™, resulting in improved CV% performance.
The new ANDRITZ gauge is a key device for ProWin™ closed loop ANDRITZ lines.



Web profile with standard web profiling: No correction



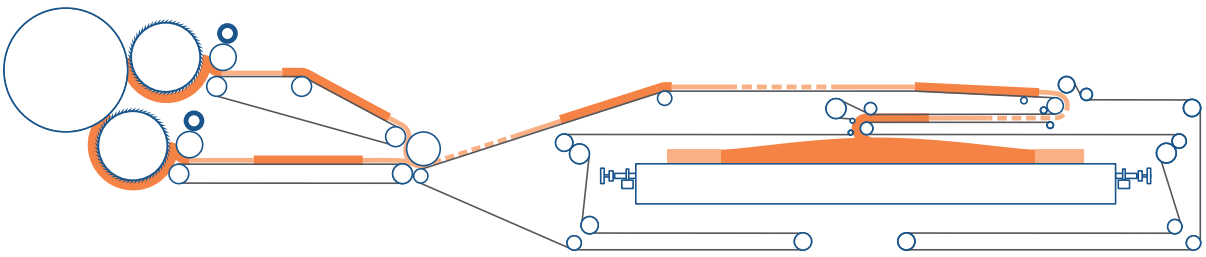
Web profile with previous ProDyn™ system: Dynamic web profile correction



Web profile with ProWin™ system: Ultimate dynamic web profile correction

YOUR BENEFITS

- Up to 15% extra textile process speed
- Lower CV% in weight variation
- Self-regulation of fiber mat (ProWin™ closed loop)
- Significant reduction of card and crosslapper acceleration during high-speed operation



Impact of the ProWin™ system on fibers' distribution

ISOLAYER

As an option for light fabrics, the Isolayer system is able to absorb the speed difference at the outlet conveyor of the crosslapper. It improves the overlap and can modify the fiber orientation across the fabric width if required.

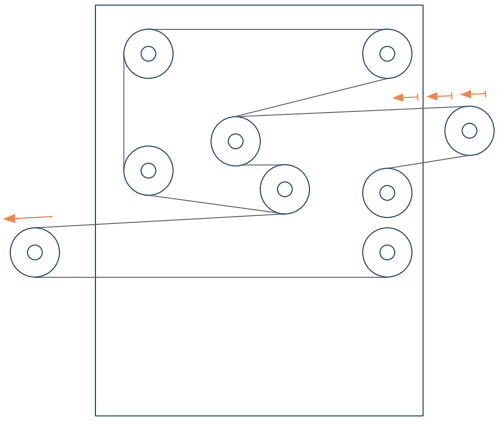
Isolayer equipment in operation

YOUR ISOLAYER BENEFITS

- Enhanced final fabric evenness, overlap control, and production line capacity
- Improved control over fabric shrinkage and MD/CD tensile strength values across the width
- Crosslaying capability with two folds

BATTCRUISE

The Battcruise increases line speed and production capacity while improving overall fabric quality during lightweight fabric processing. The Battcruise is able to absorb the full discontinuous speed from the crosslapper delivery conveyor, even when the speed is set at 100% discontinuous mode, and converts it into a continuous speed for downstream equipment. This ensures straight edges and uniform overlaps, even with a low number of folds (ranging from 1 to 15 folds, or up to 840 gsm at the Battcruise entry point).



Battcruise schematic

YOUR BATTCRUISE BENEFITS

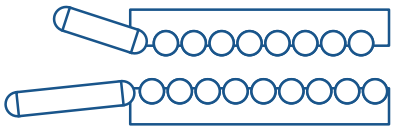
- Enhanced final fabric
- Uniformity, overlap control, and production line capacity
- Capable of crosslaying with a single fold without web deterioration
- Speed up to 40m/min
- Up to 840 gsm batt at the Battcruise entry point

Battcruise in operation

Drafters

ANDRITZ drafters ensure perfect control of the product throughout the process, which increases the line speed and improves the MD/CD tensile strength ratio. When drafting bulky, heavy fiber mat and/or condensed webs, a progressive batt compression is essential to avoid delamination and ensure control over the mat thickness to reduce uncontrolled shrinkage in the mat core. Thus a tight setting (a minimum of 4 mm) at this stage ensures efficient drafting.

ANDRITZ provides you with batt drafters containing between 9 to 27 rolls, located after the crosslapper, isolayer or other.

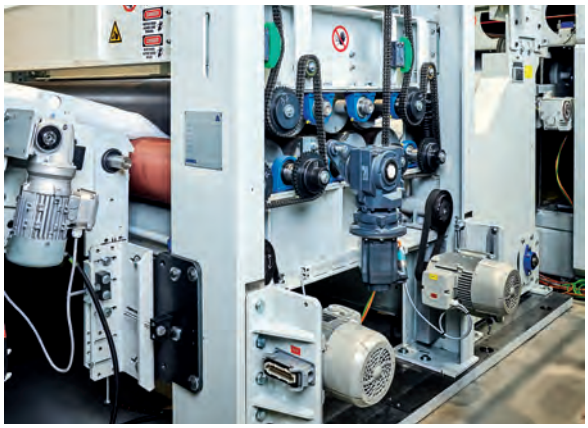


ETO-15 batt drafter with optimal pressing apron

Models without opening bypass	ET-9	ET-15	ET-21	ET-27
Application	Batt drafter after crosslapper			
Working width [m]	2.5 – 8.5	2.5 – 8.5	2.5 – 8.5	2.5 - 5.5
Max textile drafting ratio	1.7	2.5	3.0	5.8
Max. opening (mm)	40 - 45	40 - 45	40 - 45	40 - 45

Models with opening bypass	ETO-9	ETO-15	ETO-21	ETO-27
Application	Batt drafter after crosslapper			
Working width [m]	2.5 – 8.5	2.5 – 8.5	2.5 – 8.5	2.5 - 5.5
Max. textile drafting ratio	1.7	2.5	3.0	5.8
Max. opening when by-passed (mm)	370	370	370	370

ETO batt drafter opening



ANDRITZ drafter as a production booster

Zeta drafters

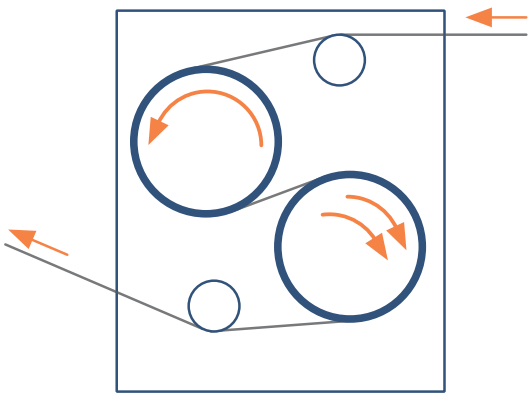
The Zeta drafter boasts high torque drafting capabilities and is designed to ensure minimum felt shrinkage. All drafting rollers are positively driven and equipped with specific wire. Positioned after needlelooms 1 and 2, the nonwoven batt is self-fed into the machine, eliminating the need for the operator to intervene between the needleloom and the Zeta drafter. Integrated with the needleloom's delivery press, the Zeta press drafter helps shorten the line layout.

Models without opening bypass	Torque	Draft	Max. speed
Zeta HDV	16,000 N	Up to 30%	35 m / min
Zeta HSV	11,000 N	Up to 10 %	55 m / min

YOUR BENEFITS

- Optimum MD / CD tensile strength ratio
- Higher production capacity for light fabrics
- Enhanced tensile strength
- Improved dimensional stability in the fabric
- Minimum fabric shrinkage
- Minimal cleaning required
- Reinforced base feet to cope with torque
- Coupled with the upstream needleloom's exit press

Zeta felt drafter



Zeta drafter

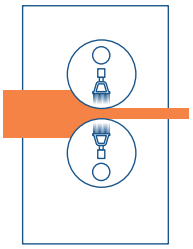
Zeta press drafters after needlelooms

Pre-needlelooms

Pre-needling is a crucial step for processing heavy products and special applications. It ensures smooth handling of dense webs and promotes gradual fiber pre-consolidation, resulting in a high-quality surface appearance.

ANDRITZ neXloom pre-needler orbital type 3000

Elliptical stroke motion synchronized with two perforated cylinders that can be perfect configured for processing heavy and/or special applications. It is available in working widths of up to 6.75 m.



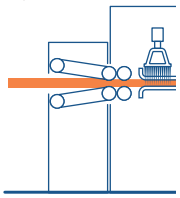
ANDRITZ neXloom pre-needler orbital type cylinder

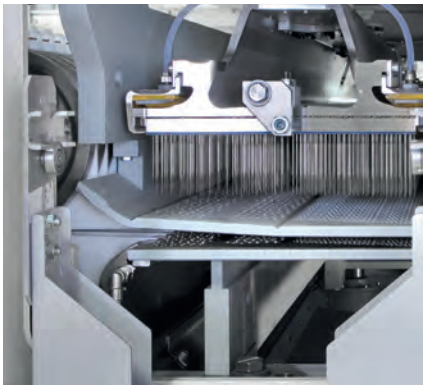
YOUR BENEFITS

- Zero draft
- Maintains the batt evenness
- Pre-consolidates both sides of the fabric in one step
- Processes any kind of fiber, including low-crimp, slippery fibers
- Processes over 2,500 gsm felts
- Minimal cleaning required

SFD FEEDING DEVICE

The compressive fiber batt feeding system is positioned in front of the first needleloom. It allows the batt to be fed to the first row of needles in a controlled manner using driven, positive-engagement cylinders and low-friction guiding fingers.





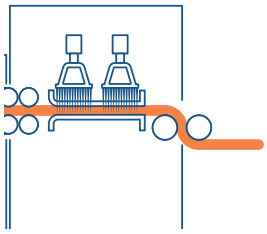
SFD feeding device

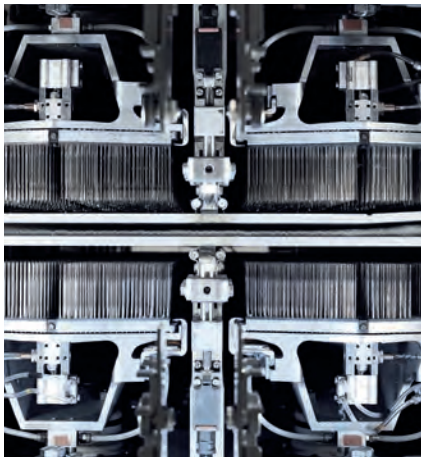
YOUR BENEFITS

- Able to feed a wide range of fiber batts
- Minimizes draft
- Fully adjustable device
- Easy access for maintenance
- Minimal cleaning required

R-TYPE PRE-NEEDLER

Based on neXloom needlelooms with optimized needle pattern for better pre-needling.
Available with 1 or 2 boards.

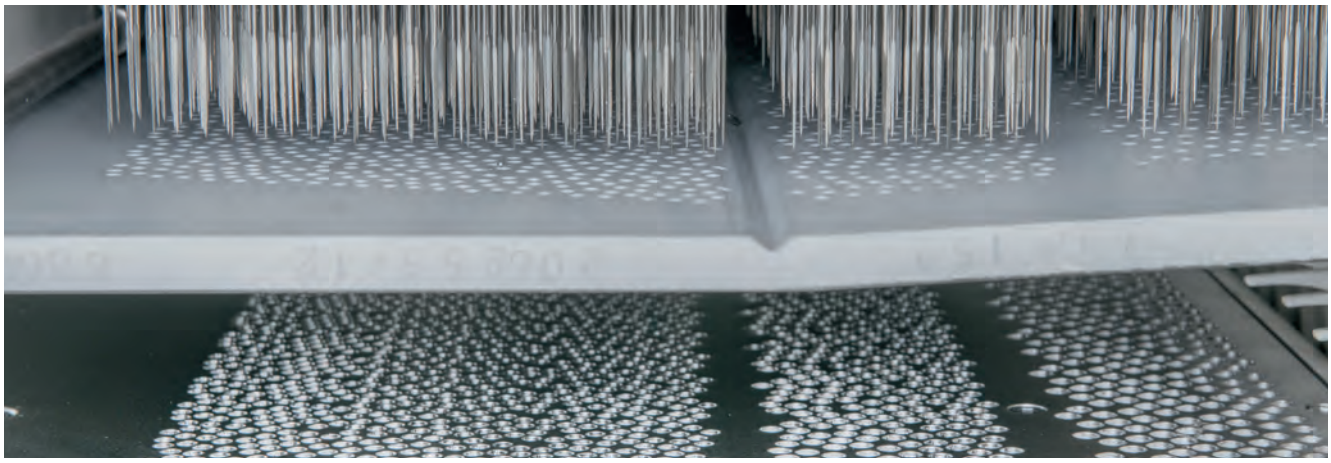




R-Type pre-needler

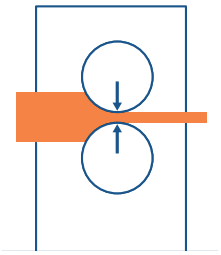
YOUR BENEFITS

- Highly durable equipment
- Various needling patterns
- Progressive needling of the batt
- Low maintenance
- Easy cleaning and maintenance
- Minimal cleaning required

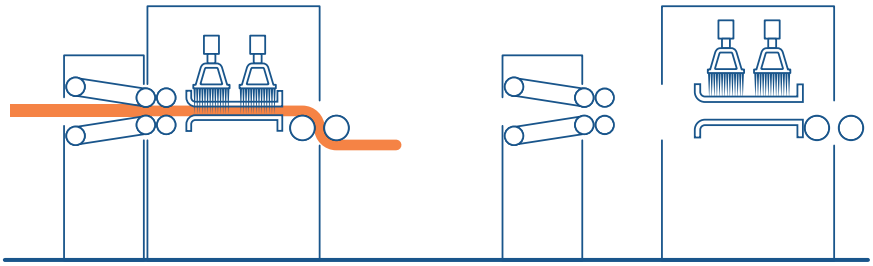


Progressive pattern needling

	Obital type			R-Type	
Pre-needler models	**169**	**2000**	**3000**	**SD-1 + SFD**	**SD-2 + SFD**
Maximum punching speed [rpm]	400	730	0 - 545	1,200	1,200
Punching load	+	++	+	++	++
Working width [m]	1.1 – 4.0	2.6 – 6.0	2.7 - 6.75	2.7 – 8.25	2.7 – 8.25
Board size [mm]	75	90	107	324	324
Needle pattern [needles / m]	924	1,386	2,560	1,500 - 5,500	3,000 - 13,500
Needle board	2	2	1 or 2	1	



neXloom pre-needlelooms



Easy access to the needleloom

Easy maintenance in progress

ANDRITZ neXloom orbital 3000

The ANDRITZ neXloom pre-needler orbital type 3000 enhance nonwoven performance with higher needling capacity and wider line applications.

BEST PRODUCTIVITY FOR LOW WEIGHTS

The elliptical cylinder ANDRITZ neXloom orbital 3000 is the ideal solution for processing fiber mats, offering new capabilities to stabilize fabric evenness thanks to its draft-free operation, and offering superior surface impact needling capacity than the existing technology. It is ideally suited to markets that demand high visual quality and productivity.

The ANDRITZ neXloom orbital 3000 is equipped with a strong carbon fiber moveable beam to accept the higher stroke speed and width with minimum flexion tolerance. The loose fiber mat is compressed and fed into the needling zone without the use of a draft, which is followed by the draft-free pre-needling process. As a result, the layers are stitched together with optimum cohesion to preserve the batt surface evenness, minimizing the risk of creating uneven fiber areas compared to other pre-needler designs.

IMPROVED NEEDLING DENSITY

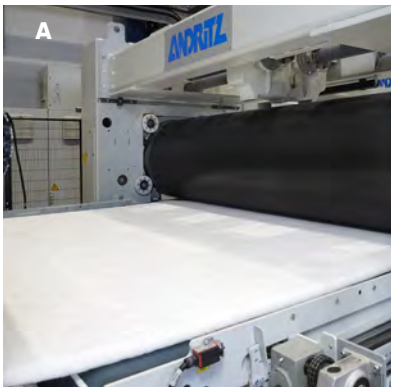
The design of the elliptical ANDRITZ neXloom orbital 3000 allows more needles needles per linear meter (1,280 n/m per board) by reducing the distance between needles. Needle impacts on the fabric surface are then increased by more than 70%. Thanks to the new design and distribution of holes on the cylinders, it increases the number to eight rows of needles over the board width. More needles for processing leads to a uniform finish with outstanding visual quality.

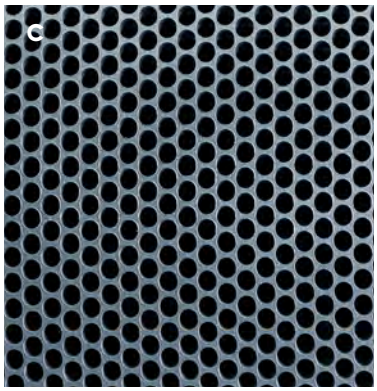
YOUR BENEFITS

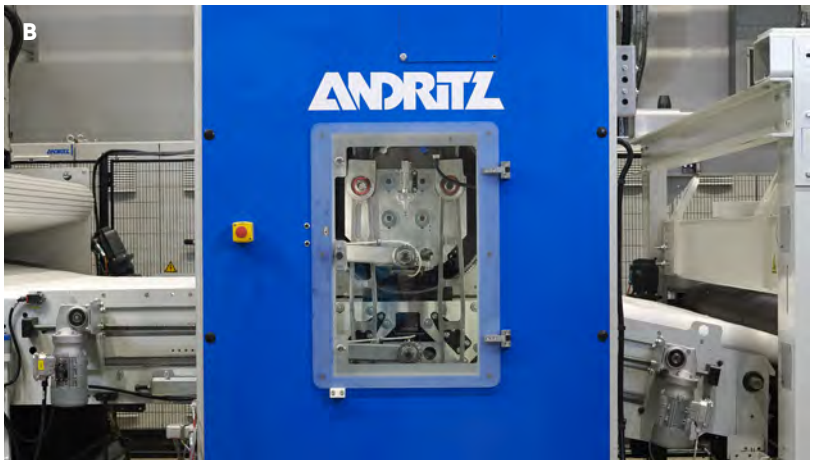
- Increased and improved needling density
- Working width up to 6.75 m
- Highest production speed
- Improved fabric visual aspect
- Operator-friendly (easy to operate)
- Minimal maintenance required

MAIN SPECIFICATIONS

- Working width: from 2.70 m up to 6.75 m
- Advance speed: up to 18 m/min or 40 m/min (stroke unclutched)
- Upper needle beam (optional)
- Needle pattern: 1,280 needles per meter (per needle board)



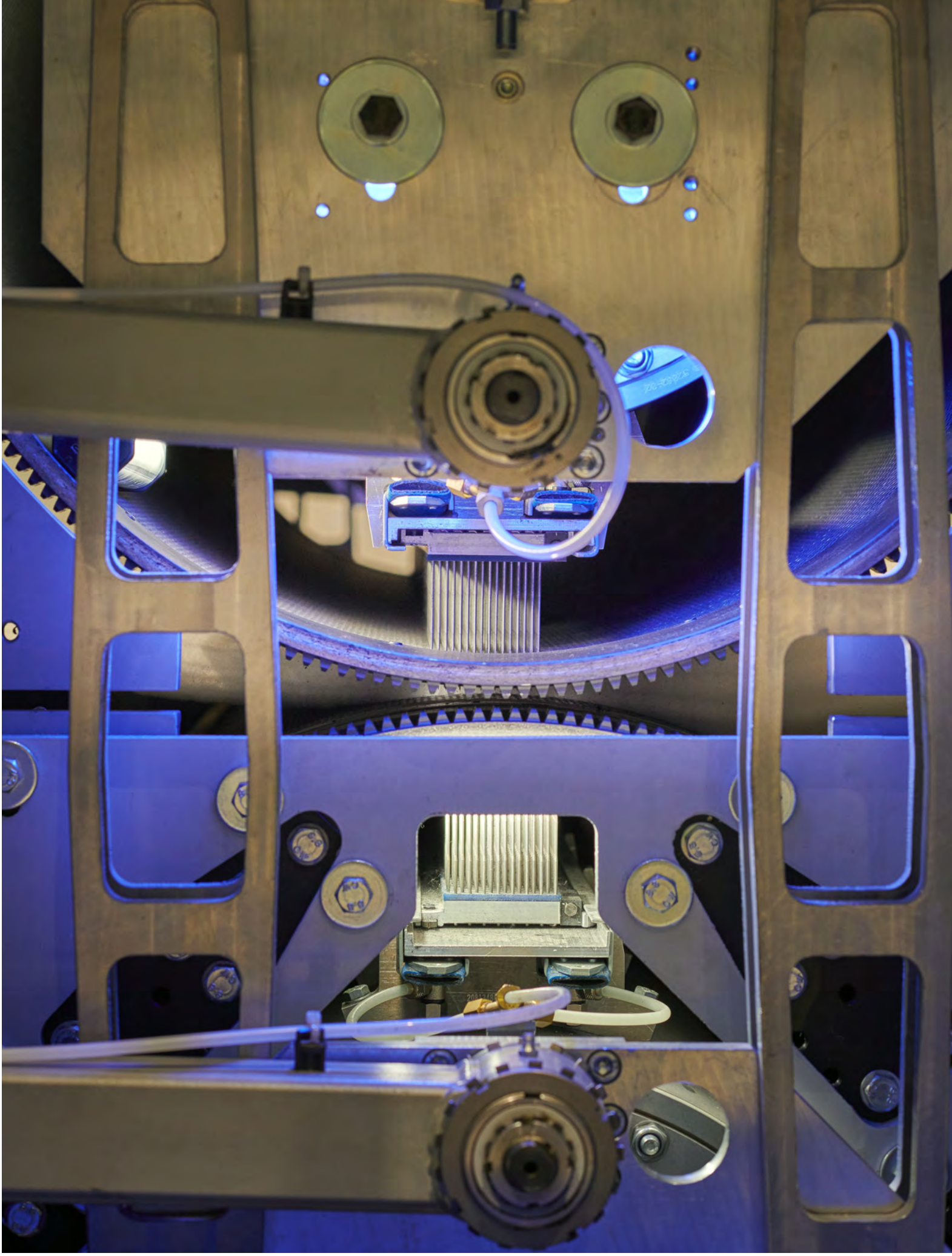




A ANDRITZ neXloom pre-needler orbital type 3000 exit view

B ANDRITZ neXloom pre-needler orbital type 3000 outside view

C Enhanced cylinder pattern



Needlelooms

Robust and reliable, the neXloom needleloom range delivers consistent quality with a variety of punching speeds and working width sizes.

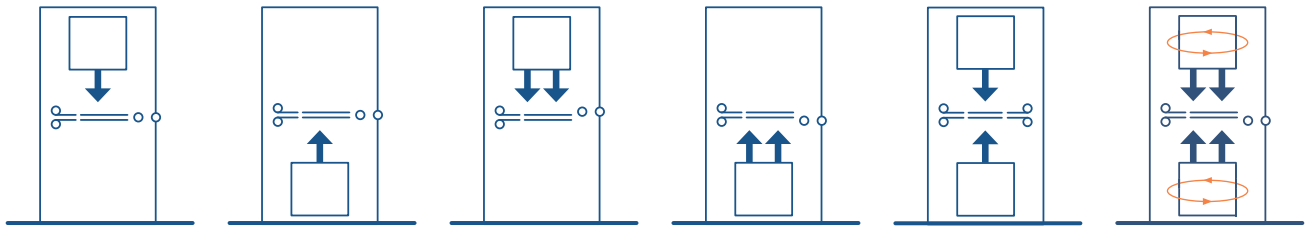
ANDRITZ needlelooms use a technology based on oil-lubricated modules with patented guiding piston design. Oil keeps the bearing at optimum working temperature, ensuring long-lasting use. Needleboard patterns have been adapted fto deliver superior visual quality and high versatility across a wide range of advanced pitch settings.

OPTIONAL EQUIPMENT

- Quick exchange of bed / stripper plate
- Intermittent air blowing network
- Dedusting suction systems
- Heavy-duty delivery press
- Magnetic bars
- Pneumatic centering needleboard pinning system
- Motorized press opening

YOUR BENEFITS

- Highly durable equipment
- Wide range of possible needling densities
- Clean environment
- Minimal maintenance required with change of oil up to each 14,000 working hours
- Easy cleaning and maintenance
- Minimal cleaning required



ANDRITZ needling line

Dedusting suction system (option)

R Type

neXloom models	SD-1	SD-2	SM-1	SM-2	DF-2	DF-4
Maximum punching speed [rpm]	1,200	1,200	1,500	1,500	1,200	1,200
Punching load / Punching speed	++	++	++	++	++	++
Working width [m]	2.7 – 8.25	2.7 – 8.25	2.7 – 8.25	2.7 – 8.25	2.7 – 7.5	2.7 – 7.5
Max. speed [m / min]	50	50	50	50	30	30
Board size [mm]	324	324	324	324	324	324
Needle pattern [needles / m]	2,000 – 8,000	4,000 – 16,000	2,000 – 8,000	4,000 – 16,000	4,000 – 16,000	8,000 – 32,000

HL Type

neXloom models	SD-1	SD-2	SM-1	SM-2	DF-2	DF-4
Maximum punching speed [rpm]	1,200 – 1,500	1,200 – 1,500	1,500	1,500	1,200	1,200
Punching load / Punching speed	+++	+++	+++	+++	+++	+++
Working width [m]	2.7 – 8.1	2.7 – 8.1	2.7 – 8.1	2.7 – 7.5	2.7 - 7.5	2.7 – 7.5
Max. speed [m / min]	50	50	50	50	30	30
Board size [mm]	324	324	324	324	324	324
Needle pattern [needles / m]	1,500– 8,000	3,000 – 16,000	1,500 – 8,000	3,000 – 16,000	4,000 – 16,000	8,000 – 32,000

HLS Type

neXloom models	SD-1	SD-2	SM-1	SM-2	DF-2	DF-4
Maximum punching speed [rpm]	1,700 – 2,100	1,700 – 1,850	1,700 – 2,100	1,700 - 1850	1,500	1,500
Punching load / Punching speed	++++	++++	++++	++++	++++	++++
Working width [m]	2.7 – 7.5	2.7 – 7.5	2.7 – 7.5	2.7 – 7.5	2.7 - 7.5	2.7 - 7.5
Max. speed [m / min]	50 or 100	50 or 100	50 or 100	50 or 100	40	40
Board size [mm]	324	324	324	324	324	324
Needle pattern [needles / m]	1,500– 8,000	3,000– 16,000	1,500 – 8,000	3,000– 16,000	4,000 - 16,000	8,000 - 32,000

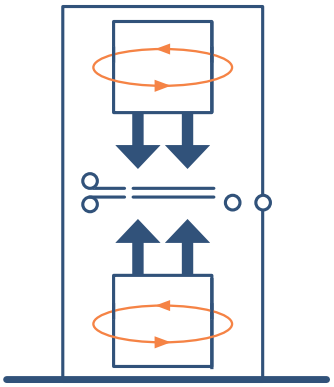
ANDRITZ neXloom elliptica DF-4

The ANDRITZ neXloom needleloom elliptica DF-4 is the perfect solution for processing lightweight products that prioritize visual quality. Delivering up to 10% higher end-of-line speed and designed for large widths, this solution does not compromise on productivity. It provides optimized pre-needling consolidation to ensure an even visual appearance.

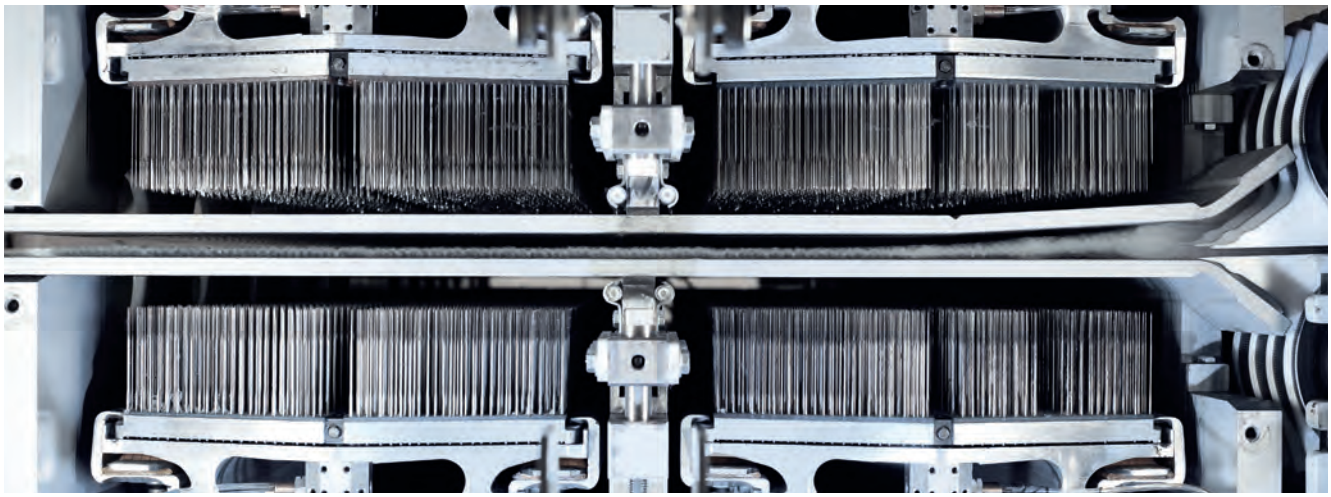
This needleloom is the right equipment when considering the quality aspects of high-grade fabrics. This is achieved thanks to the elliptical motion, which reduces draft and prevents marking. ANDRITZ oil-lubrication technology in combination with the renowned ANDRITZ needleloom frame allows less maintenance and longer service life.
It is a cutting-edge development thanks to its compact floor footprint, a simple and reliable design and, competitive price positioning. It makes the neXloom elliptica type DF-4 an essential asset on modern lines where high-quality fabrics are the priority. Customers can run trials in the ANDRITZ technical center to validate the visual improvements and productivity gains.

Elliptica type

neXloom models	SD-2	DF-4
Maximum punching speed [rpm]	1,200	1,200
Punching load / Punching speed	++	++
Working width [m]	2.7 – 8.1	2.7 – 8.1
Max. speed [m / min]	30	30
Board size [mm]	324	324
Needle pattern [needles / m]	4,000 – 8,000	8,000 – 16,000

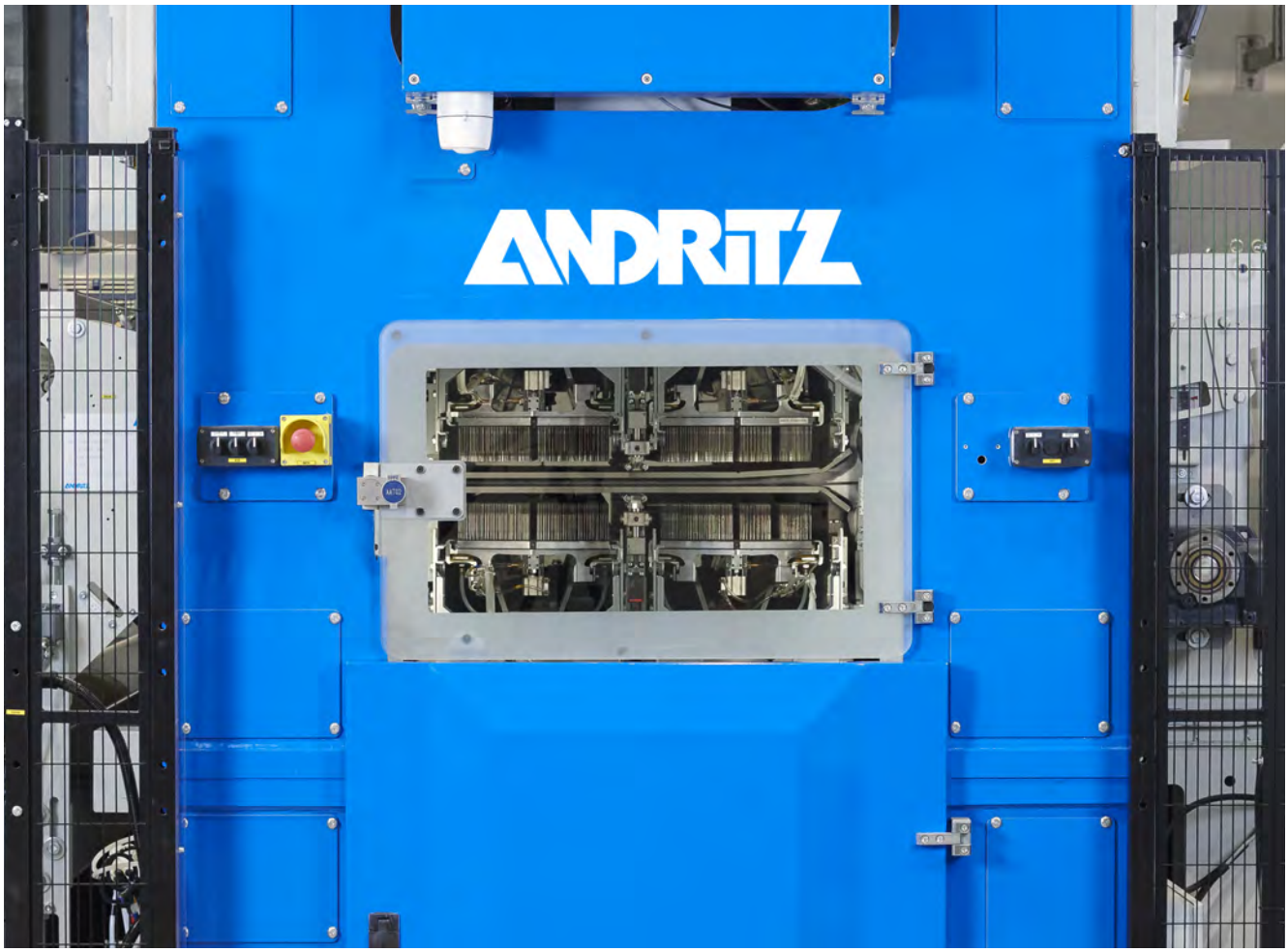


DF-4



ANDRITZ neXloom needleloom elliptica in operation

ANDRITZ neXloom needleloom elliptica DF-4 in operation



Interior of the ANDRITZ neXloom needleloom elliptica

Specialties, customized needlelooms

PILOT LINE NEEDLELOOM

For special or limited-scale applications, ANDRITZ offers the SD-1/2 needlelooms 1.5 m working width, available in either down-punch or up-punch configuration. Typical applications include carbon fiber felts and low-scale production batches.

VELOUR TYPE NEEDLELOOM: SDV-2/SDV-2+2

Developed mainly for automotive and domestic market applications, the ANDRITZ design is based on a patented, angled brush alignment. It ensures a long-lasting, random, and even velour aspect, which requires lower needling density than conventional market solutions.

RIB STRUCTURING NEEDLELOOM: RIB TYPE SD-1

The heavy-duty needleloom with lamella bed plate and high-speed production capacity is used in carpet applications. Its production capacity of up to 20 m/min allows the needleloom to be installed in-line with the pre-needling production line, thus saving handling costs.

FOR NATURAL AND DUSTY FIBERS: SHODDY TYPE SD-1

It is used for processing heavy mats and dusty fibers, making it ideal for applications infurniture, bedding, and automotive insulation felts, including those based on the airlay process. The design and auxiliary equipment allow high production capacity with low cleaning and maintenance requirements.

FOR MINERAL AND CERAMIC FIBERS: MINERAL TYPE DF-2

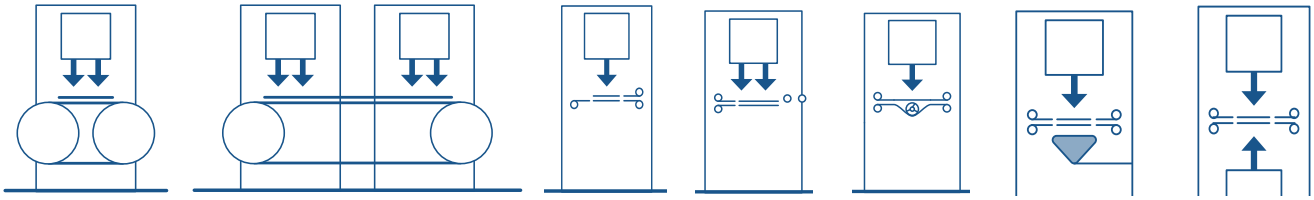
This needleloom was specifically engineered for bonding high-volume fiber mats, accommodating stroke heights of up to 160 mm, and offering a double-stroke process that alternates needling from both the top and bottom. Thus, this needleloom ensures longer lifetime & productivity, thanks in particular to mechanical parts that are protected from dusty & abrasive fibers in the needling zone.

FOR SPECIAL PURPOSE MACHINES: ON DEMAND

In order to respond to very specific needling specifications, particularly in the aerospace or automotive industries, specific needlelooms can be developed, that include 3D needling layer consolidation or other configurations as needed.

Spunbond needlelooms in operation

RIB structuring SDB-1 in 4.40 m working width



Velour type SDV-2 needleloom | Velour type SDV-2+2 needleloom | RIB SDB-1 needleoom | Spunbond SD-2 needleloom | Bentonite SD-1 needleloom | Shoddy SD-1 needleloom | Mineral DF-2 needleloom

Needlelooms	Velour type	RIB type	Spunbond	Bentonite	Shoddy type airlay	Mineral type (ceramic)
	SDV-2 / SDV-2+2	SDB-1	SD-1/SD-2	SD-1	SD-1	DF-2
Maximum Punching speed [rpm]	1,900 – 2,000	1,800	1,850 - 2,100	1,100	1,200	0 - 400
Punching load	+++	++++	++++	+++	+++	+
Working width [m]	2.28 – 5.3	2.6 – 4.4	2.7 - 6.75	2.7 - 6.75	2.7 – 4.5	1.5
Needle pattern [needles / m]	16,000 – 32,000	5,720 - 7,571	4,000 – 14,000	2,900 - 4,700	1,500 – 3,000	4,000 – 8,000

ANDRITZ modules workshop

ANDRITZ neXloom pre-needler orbital type 3000

Velour needleloom

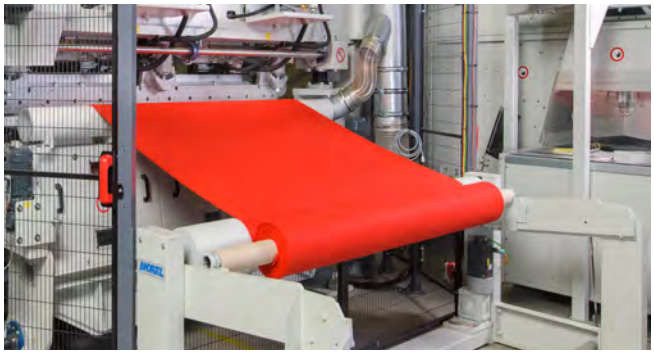
STATE-OF-THE-ART ANDRITZ NEEDLELOOM VELOUR

- Velour needleloom (2 boards) = up to 16,000 needles/m
- Double velour (4 boards/2 + 2) = up to 32,000 needles/m
- ANDRITZ wide boards = 320 mm
- Excellent low and high pile
- Automotive felts from 120 gsm to > 800 gsm
- Up to 2,000 strokes per minute
- From 2.28 m to 5.3 m width
- Up to 20 meters per minute
- Standard horizontal brush conveyor with two needling zones (2 + 2 boards)
- 2-layer composite mechanical binding
- Brush conveyor easy cleaning process thanks to a spiked cylinder with adjustable gap settings and a suction blade to remove dust and fibers

HIGH-EFFICIENCY BRUSHES

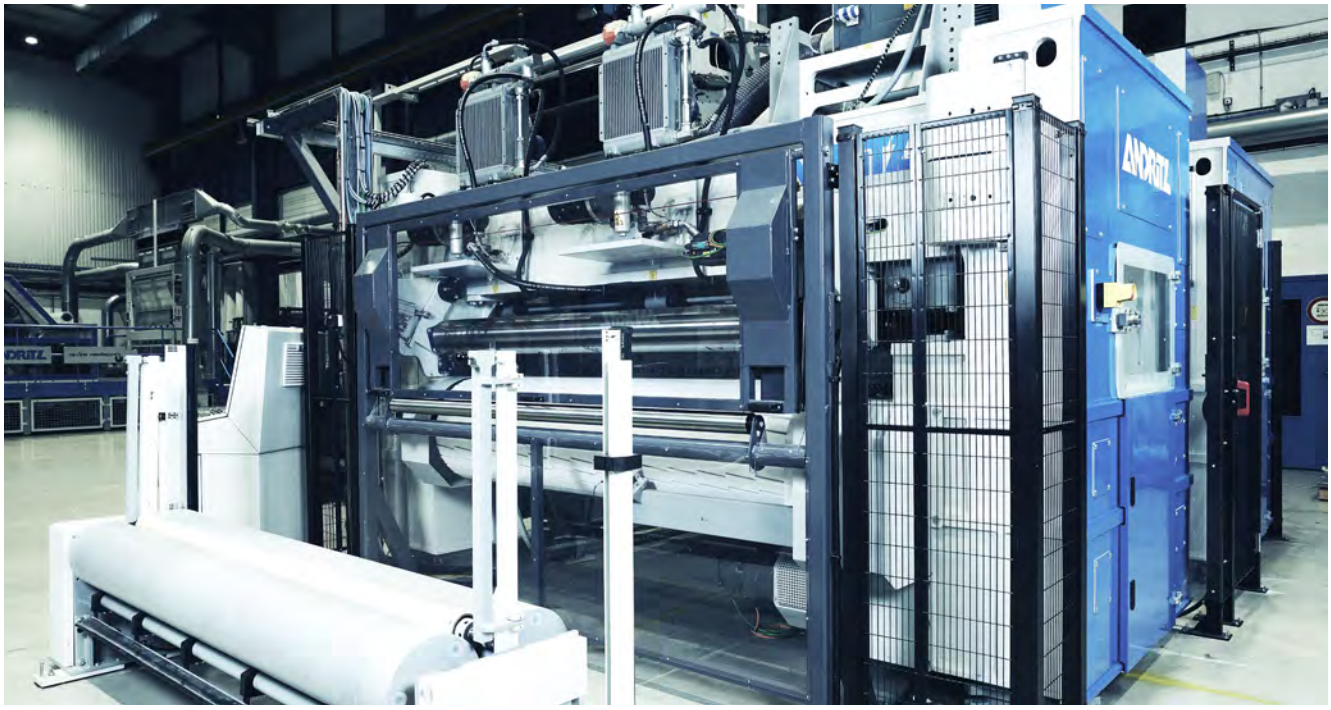
- Angled brush and tighter brush-to-brush alignment breaking the geometric harmonics of the brush rows
- Wide and stable brushes
- Random needling pattern provides greater flexibility in terms of advanced pitch, with the added benefit of no marking
- Great fabric surface evenness
- Uniform bristle density and bristle height, extending brush lifetime
- Uniform brush density
- Consistent loop
- Fast and easy brush replacement (both at the edges or in the middle)

ANDRITZ brush conveyor



ANDRITZ neXloom needleloom velour SDV 2+2 exit view

ANDRITZ neXloom needleloom velour SDV 2+2



ANDRITZ neXloom needleloom velour SDV 2+2

Calender

The ANDRITZ neXcal Xcross calender is a cutting-edge solution engineered to deliver precise results in the compaction and calibration of nonwoven products.

The ANDRITZ neXcal Xcross two-roll calender is designed to deliver precise results in compacting and calibrating nonwoven products. This innovative technology – particularly the highly accurate gap adjustment and the patented neXcal Xcross system – is crucial to the quality of the final product. Efficiency in the operation of nonwoven production is guaranteed as these two key features can be adjusted under running conditions.

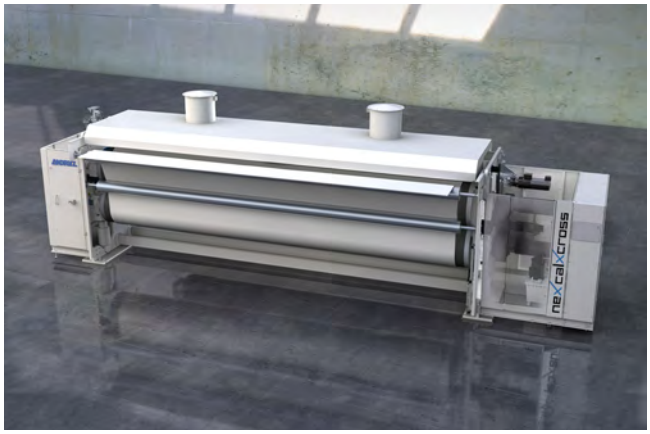
Leveraging decades of experience and product development within the nonwoven calender business, neXcal Xcross stands out as a reliable solution for achieving superior product quality. The developed production modes and web paths through the calender offer superior production flexibility for various applications. Furthermore, the machine concept is characterized by a modern safety concept, as well as excellent handling and easy maintenance.

YOUR BENEFITS

- High nip pressure due to optimized roll diameter
- In-house thermal oil heated calender rolls
- Patented x-crossing device, adjustable under line force
- Automatic gap setting, adjustable under line force
- Efficient exhaust hood mounted above top roll
- Directly mounted motors to minimize wear and increase efficiency
- Thermal expansion managed in PLC program
- Timer function for pre-heating

Specifications of the neXcal Xcross

Parameters	Value
Max. roll surface temperature	approx. 250 °C
Standard roll surface width	up to 7,600 mm
Line force	5 - 50 N / mm
Maximum mechanical speed	60 m / min



ANDRITZ neXcal Xcross calender

ANDRITZ neXcal Xcross calender in operation

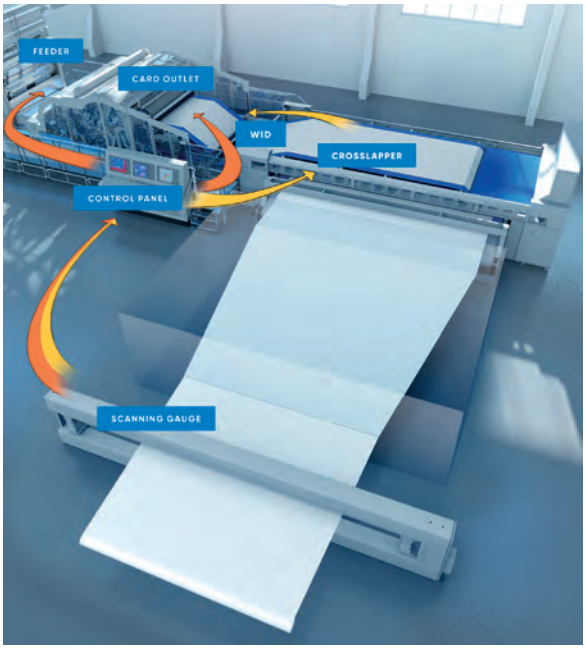
Scanning gauge

Benefit from enhanced control and improved web weight uniformity with the ANDRITZ Scan-X gauge.

The ANDRITZ Scan-X gauge allows accurate control of product uniformity and automatically analyzes data when coupled to the ANDRITZ closed loop system ProWid™ or ProWin™, resulting in improved CV% performance of the end product. TThe ANDRITZ Scan-X gauge is a key component in all modern ANDRITZ lines, ensuring consistent quality regardless of operator expertise. Get the best out of each production lot.

YOUR BENEFITS

- ANDRITZ development
- CV% measurement
- Thickness measurement (optional)
- Automatic closed loop regulation (ProWid ™/ProWin ™)



Closed loop

ANDRITZ Scan-X gauge zoom in

ANDRITZ Scan-X gauge entire view

GET THE MOST OUT OF YOUR INVESTMENT

At ANDRITZ Nonwoven and Textile we know that your business depends on satisfied customers and efficient processes. That's why we support you in every aspect of your nonwoven and textile production. Take advantage of technology that will let you produce consistent quality for decades to come. Benefit from the highly efficient use of energy and raw materials that our production provides. You can rely on our responsive service teams to protect your investment and optimize your processes. Experience how innovative approaches and digital services give you more control than ever before. With ANDRITZ, the leading supplier for the nonwoven and textile market, you get the most out of your investment.

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