aXcess RANGE WITH PROVEN TECHNOLOGIES

FOR YEARS TO COME

ANDRITZ

Optimize your investment in nonwovens

Team up with ANDRITZ (China) Ltd. Wuxi Branch: ANDRITZ (China) Ltd. Wuxi Branch is located in Wuxi New District, Jiangsu, China. The 8,800 sqm site hosts manufacturing, service, and R&D for the nonwovens industry. ANDRITZ focuses on design, manufacture, installation, and start-up of neXline aXcess nonwoven production lines.

GLOBAL NETWORK, LOCAL PRESENCE

As part of an international technology group, ANDRITZ (China) Ltd. Wuxi Branch can fall back on a strong global network and is closely linked to the nonwoven entities ANDRITZ Asselin-Thibeau, ANDRITZ Küsters, and ANDRITZ Perfojet in Europe and ANDRITZ Küsters in the USA. A constant exchange in technology and expertise ensures that ANDRITZ's customers receive full and effective support.

FULL-LINE SUPPLY

ANDRITZ is well-known as a supplier of state-of-the-art machines, like opening and blending equipment, cards, crosslappers, drafters, and needlelooms as well as hydroentanglement units and through-air dryers. It is well prepared to meet the needs of the growing markets as a full-line supplier.

Its portfolio provides lines for both needlepunch and spunlace processes: neXline needlepunch aXcess and neXline spunlace aXcess. These complete lines and individual components are designed in Europe and then manufactured and preassembled locally before delivery. The full-line supply also offers life-cycle support, reliable service, and a state-of-the-art technical center.

EFFICIENCY AND RELIABILITY

Highest reliability of all production lines results in lower operating costs and increased annual productivity. Manufacturing in China enables ANDRITZ to provide competitive pricing and efficient services. As all lines are fully automated and perfectly synchronized, ANDRITZ (China) Ltd. Wuxi Branch can offer best product quality and safer operation. Excellent performance is assured with a minimum of manual intervention required.

CONTENTS

AUGMENTED REALITY CONTENT

To display videos, illustrations and picture galleries in a more direct and lively way, we have added augmented reality to our content areas! Download our **ANDRITZ AR APP** from our website or in the AppStore/PlayStore!

SCAN THE PAGES MARKED AND EXPERIENCE THE ENHANCED CONTENT.

neXline needlepunch aXcess

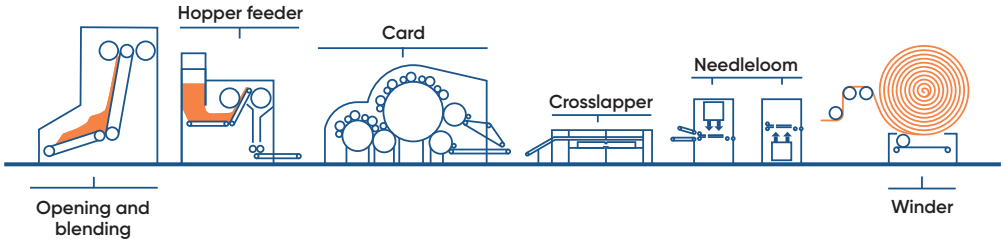
For durable nonwoven products: The neXline needlepunch aXcess lines are perfectly suited for entering the needlepunch nonwovens market in a capacity range of up to 4,500 t/a. The optimized line layout is excellent for medium production capacities according to selected processes and customers' objectives.

AUTOMOTIVE AND FILTRATION

This configuration secures a lower investment while maintaining excellent performance and high quality of the product. The result is a compact installation offering various possibilities perfectly suited to your needs.

FEATURES

- Low investment
- Compactness
- Flexibility

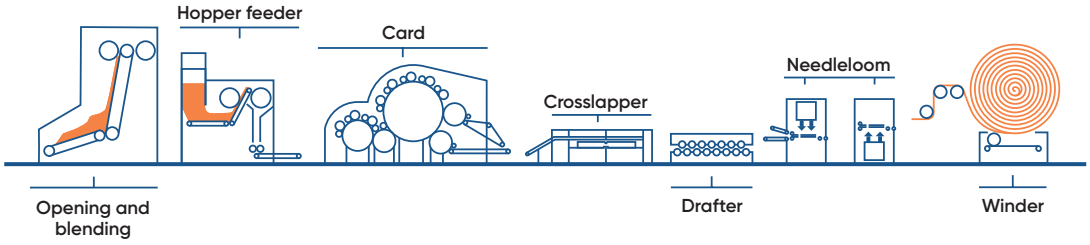


GEOTEXTILES

Geotextile fabrics are characterized by strong physical properties, like strength or durability. This can be achieved with the neXline needlepunch aXcess, which effectively combines drafters and needlelooms. The result is unique bonding, which provides the physical properties required. The excellent technologies and long-term experience available guarantee a wide range of opportunities.

FEATURES

- High production capacity
- Strong and controlled physical properties
- Large width

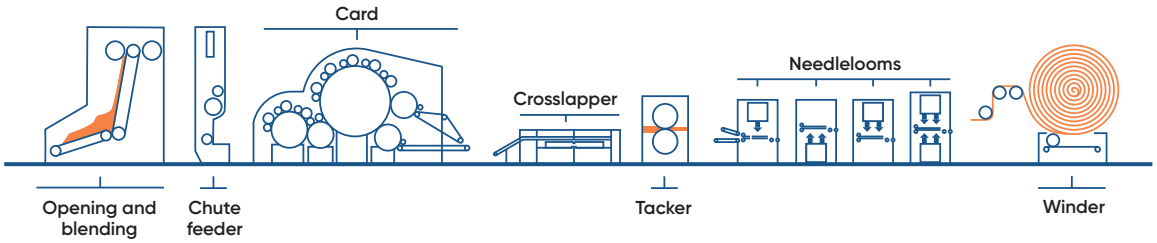


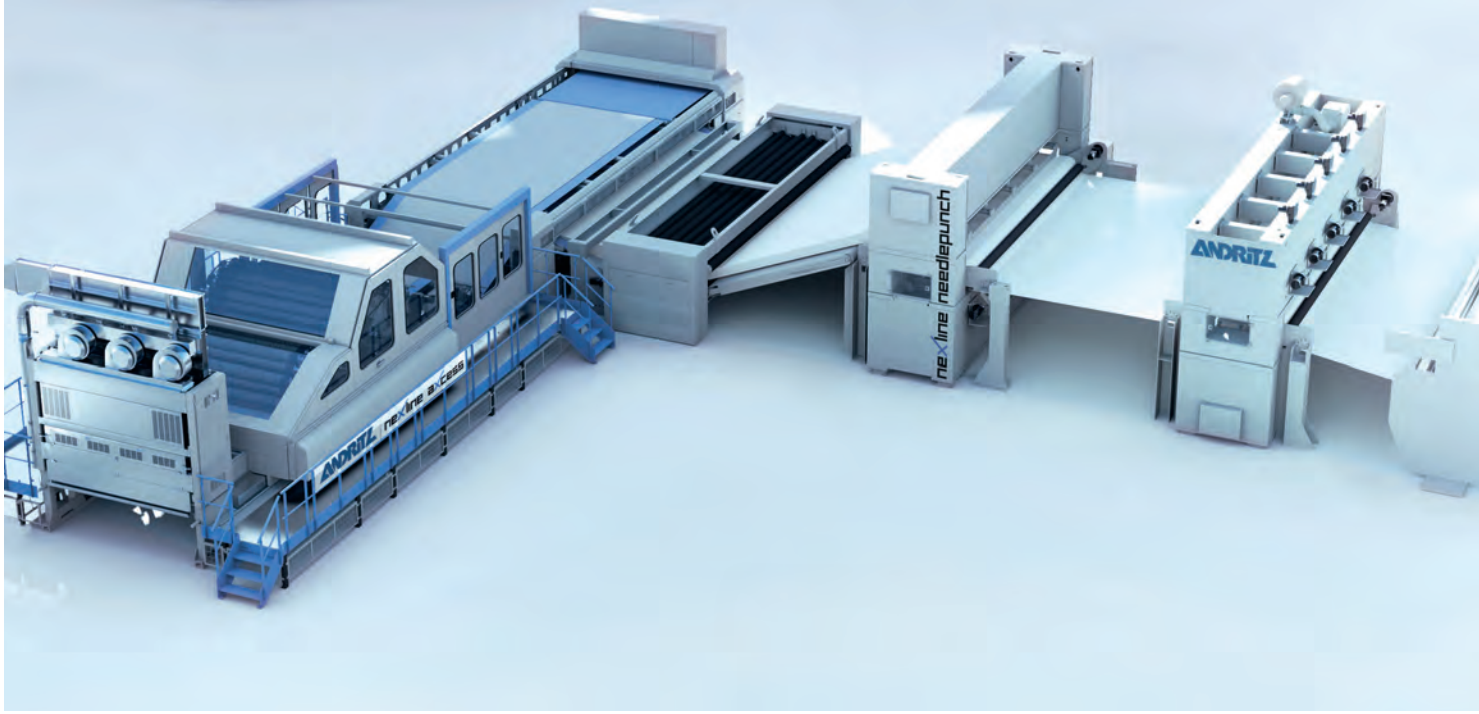
SYNTHETIC LEATHER AND COATING SUBSTRATES

Quality is a top priority in these products. ANDRITZ customizes solutions to suit the producers' needs perfectly. Needling density and multiple configurations of alternate needling allow a wide range of possibilities to ensure high quality, for example fabric density.

FEATURES

- High capacity of needling compactness
- Multiple configurations of needling
- High product quality





View video footage of this brochure in our augmented reality app!

FOR FURTHER INFORMATION SEE PAGE 3

Line types	Fabrics	Working width	Capacity
Automotive, filtration	150 – 800 gsm	up to 4.0 m	3,000 t/a
Geotextiles	90 – 800 gsm	up to 6.0 m	up to 4,500 t/a
Synthetic leather, coating substrates	120 – 250 gsm	up to 3.5 m	up to 950 t/a

neXline spunlace aXcess

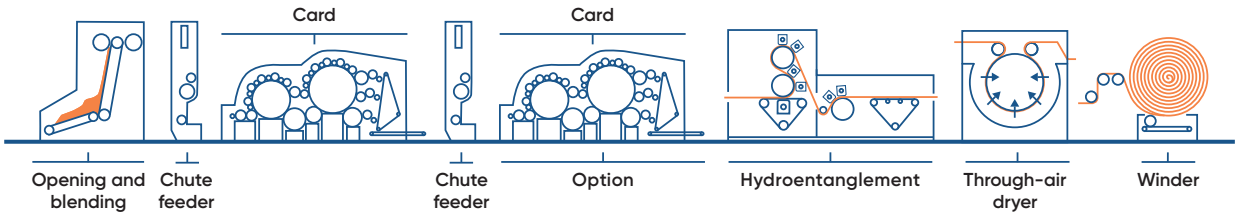
For commodity products: It is the right solution to enter the spunlace market in the capacity range up to 12,000 t/a. This proven concept encompasses opening and blending equipment, carding systems, hydroentanglement units, and through-air dryers specially designed to produce a wide range of spunlace fabrics at low operating costs.

DIRECT WEB FORMING FOR HYGIENE PRODUCTS

The neXline spunlace aXcess lines have been specially designed for growing markets. It is the combination of the opening and blending APC, one CA25 VarioWeb card (two or three doffers) the Jetlace Avantage hydroentanglement unit, and the compact dryer neXdry Avantage. They are the perfect solution for producing high quality spunlace fabrics.

FEATURES

- Compact configuration
- Low energy consumption
- High productivity
- User-friendly

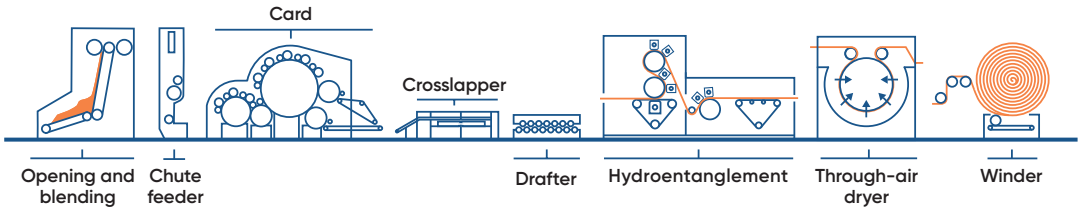


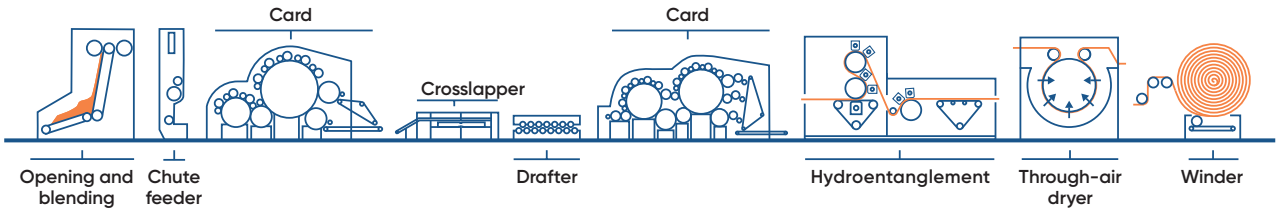
CROSSLAPPED WEB FORMING FOR DURABLE AND FACE MASK END USES

It is specially designed for the production of nonwovens with various mechanical properties, like a balanced MD:CD (machine direction, cross direction) ratio, required in automotive and filtration applications. It includes the opening and blending APC, a Profile crosslapper, and a Jetlace Avantage hydroentanglement unit with CA21/22/25 and CA25 VarioWeb cards.

FEATURES

- Customized design
- Fabric evenness
- Fiber saving
- Enhanced tensile strength





Configurations	Direct web forming		Crosslapped web forming		
	1 CA25 VarioWeb card (2 or 3 doffers), Jetlace Avantage, neXdry Avantage	2 CA25 / CA25 VarioWeb card (2 doffers), Jetlace Avantage, neXdry Avantage	1 CA22 / CA25 cards, crosslapper, drafter, Jetlace Avantage, neXdry Avantage	1 CA22 card, crosslapper, drafter, 1 in-line CA22 card, Jetlace Avantage, neXdry Avantage	1 CA25 card, crosslapper, drafter, 1 in-line CA25 VarioWeb card, Jetlace Avantage, neXdry Avantage
Fabrics [gsm]	30 – 80	30 – 100	40 – 150	28 – 180	28 – 180
Line speed [m/min]	150	180	25 – 80	20 – 80	20 – 100
Working width [m]	2.5 – 3.6	2.5 – 3.6	2.5 – 3.6	2.5 – 3.6	2.5 – 3.6
Capacity [t/a]	3,500 – 6,000	6,000 – 11,000	2,000 – 4,000	3,000 – 5,000	3,000 – 7,000
End uses	Wipes, medical		Filtration, artificial leather, wipes, industrial, face masks, pads …		

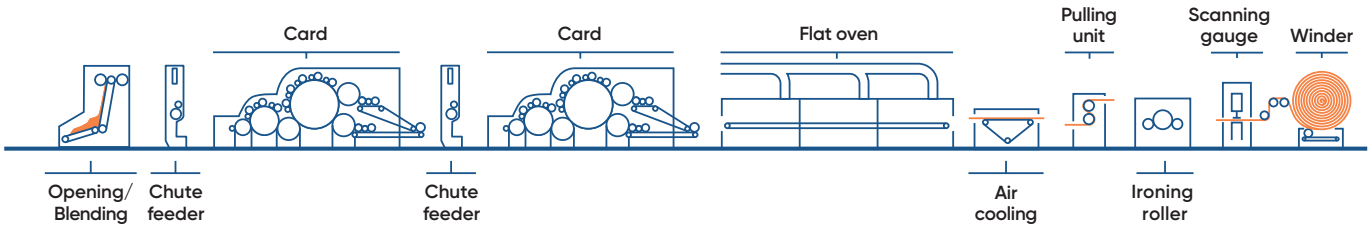
neXline air-through bonding aXcess

Hygiene products of tomorrow: To open niches in the hygiene market, you need innovative production lines with new capabilities. At ANDRITZ, we offer you cutting-edge technology that opens up new possibilities. As a complete system supplier, we always have the right customized solution to meet your requirements perfectly.

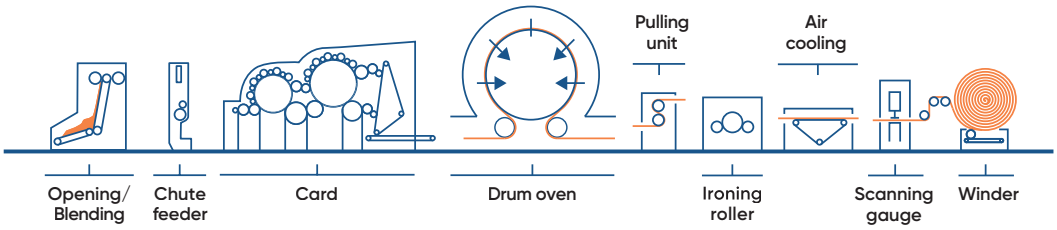
	Fabrics	Line speed	Working width	Capacity	End uses
aXcess range	16 – 80 gsm	up to 150 m/min	2.5 – 3.6 m	5,500 t/a	Top sheets, ADL, back sheets

MULTIPLE LAYOUT CONFIGURATIONS

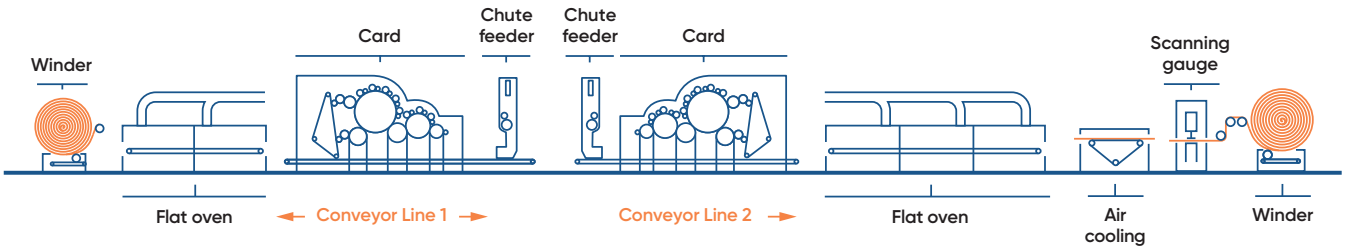
Layout configuration with 2 cards and a flat oven

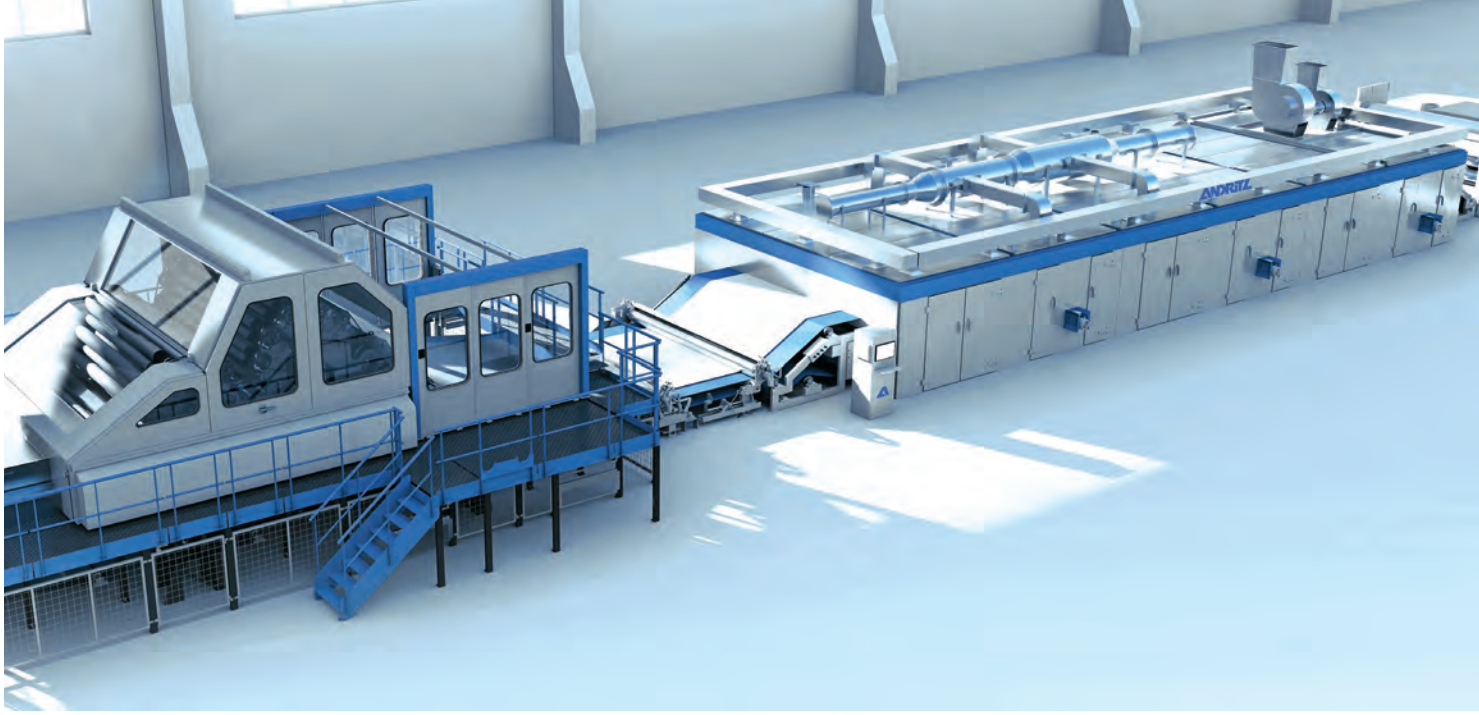


Layout configuration with a drum oven



Dual layout configuration





PRESENT IN OUR EVERYDAY LIVES

In daily life, we find products using air-through bonding technology everywhere we look. The hygiene market requires products with a high level of uniformity, softness, bulkiness, and tensile strength. Due to population growth and aging as well as the rise in the standard of living, these products respond perfectly to the quality level requested for baby diapers, feminine hygiene or adult incontinence.

Opening and blending

Perfect fiber treatment: ANDRITZ Nonwoven offers a complete range of equipment for opening and blending APC (LAROCHE design) to feed the web forming line. It includes weighing hopper feeder, pre-opener, blender, and fine opener.

WEIGHING HOPPER FEEDER

The feeders are available in working widths of 1.2 m and 1.5 m. The APC weighing system relies on blending accuracy with a high-performance control system that ensures less than 1 % deviation between the recipe and the real weight of fibers. Deviation is often higher on standard systems.

PRE-OPENER

The working width is 1.0 m, with a production capacity of up to 2,000 kg/h, depending on fiber type.

FIBER BLENDER

For a second blending step, the mixer SuperMix mixer is available in 1.2 m and 1.5 m working width.

FINE OPENER*

Working with a fully pinned cylinder and a working width of 1.0 m, the fine opener has a production capacity of 1,200 kg/h, depending on fiber type.

METAL DETECTOR/SEPARATOR

Highly sensitive metal detector for automatic removal of contaminants.

OPTIONS

As options, ANDRITZ can also provide a recycling tower as well as an oil and water lubricating device.

* Made in Europe

YOUR BENEFITS

- Cost saving
- Quick fiber batch change
- Accurate blending ratio
- Optimum fiber opening

FEATURES

- Designed in Europe
- Matches the ANDRITZ card requirements perfectly
- Strong and reliable

Opening-blending unit (APC)

Card feeders

Batt forming – perfect evenness in feeding: Multiple and comprehensive solutions are available for every kind of drylaid web forming process within the aXcess range. ANDRITZ Nonwoven offers different types of card feeders to match the required production capacity while feeding the card evenly.

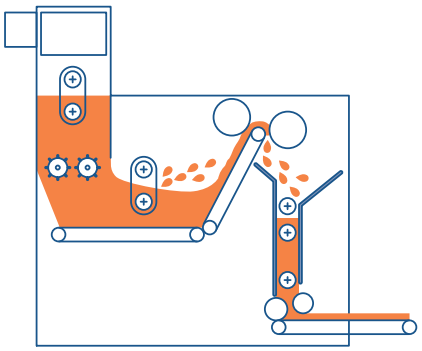
CARD FEEDERS

ANDRITZ has developed different types of card feeders that supply the appropriate quantity of fibers to the card. The TCF Thibeau Chute Feed is designed for fibers up to 90 mm, and the TCF-X Thibeau Chute Feed for fibers over 80 mm and up to 120 mm. Before arriving at the card, the fibers coming from opening and blending pass through the Thibeau Metering Silo (TMS), which guarantees a constant supply and final opening. Then they are transferred pneumatically to the TCF or TCF-X, which feeds the appropriate quantity of fibers to the card.

For a coarse density (> 6 dtex) and long fibers (> 60 mm), especially natural fibers, and for very high production capacities, the Thibeau Continuous Flux hopper feeder (CFX) is the right choice.

Continuous flux volumetric hopper (CFX)

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



CFX volumetric hopper

Thibeau Chute Feed (TCF-X)

- Throughput over 500 kg/h/m
- Cross-direction card evenness ≤ 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

CARD INFEED REGULATORS

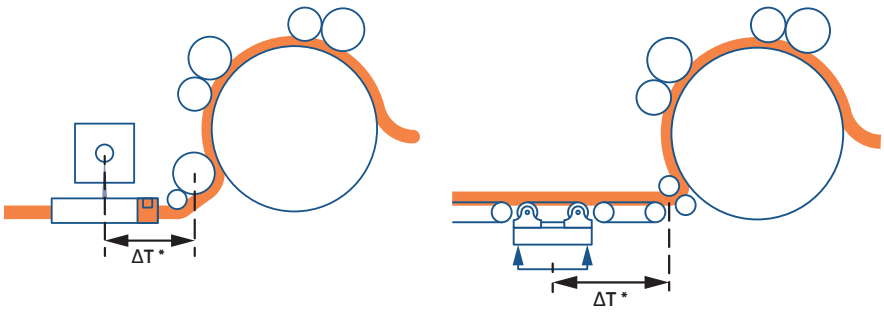
In order to achieve highest accuracy, ANDRITZ offers two types of card infeed auto-levelers, either with weight measurement (WCR) or with X-ray measurement (Servo-X / Made in Europe).

X-ray measurement (Servo-X*)

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

Weight measurement (WCR)

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



*Calculation time for adaptive speed

CARD AUTO-LEVELERS BENEFITS FOR USERS

- Long-term weight evenness ≤ ± 1 %
- Accurate and reliable

Cards

A wide range of cards to cover all needs: The aXcess card's range is designed for medium production levels and takes advantage of proven technologies based on long-term experience gathered over 120 years. Its high flexibility makes it the perfect machine for the needlepunch, spunlace, and air-through bonding processes.

RELIABLE TECHNOLOGY

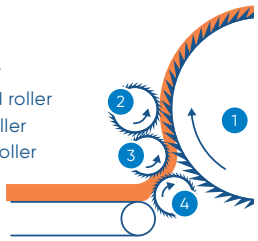
Based on proven technology, ANDRITZ aXcess cards are available in several different delivery configurations. Depending on the line configuration, the delivery speed may be up to 150 m/min.

CARD SOLUTIONS

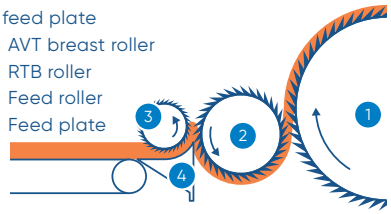
Range for needlepunch technology:
CA21C, CA21, CA22, CA25
Range for spunlace technology:
CA21, CA22, CA25, CA25 VarioWeb
Range for air-through bonding technology:
CA22, CA25, CA25 VarioWeb

Alternatives for card feeding sections

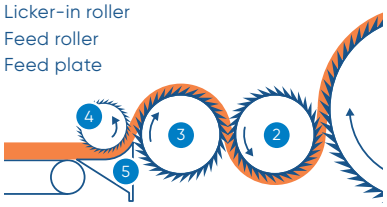
"A" feeding rollers
1 – Licker-in roller
2 – Cleaning feed roller
3 – Upper feed roller
4 – Bottom feed roller



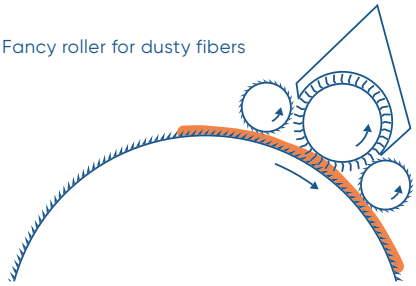
"R" feed plate
1 – AVT breast roller
2 – RTB roller
3 – Feed roller
4 – Feed plate



"S" feed plate
1 – AVT breast roller
2 – COM transfer roller
3 – Licker-in roller
4 – Feed roller
5 – Feed plate

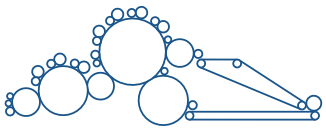


Fancy roller for dusty fibers

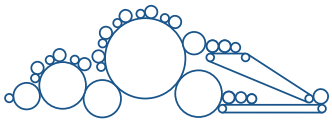


Alternatives for carding power

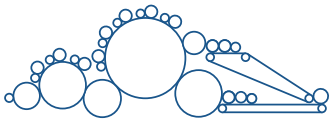
CA21 A35PP



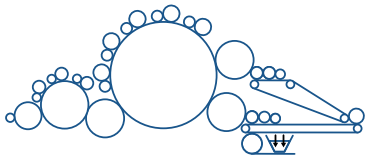
CA21 R35PPLL



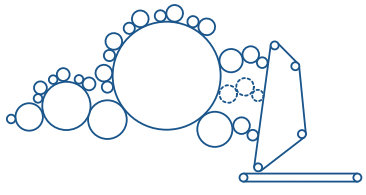
CA22 R35PPLL



CA25 R35 PPLLAA

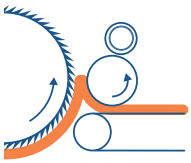


CA25 R35 VarioWeb 2 or 3 doffers



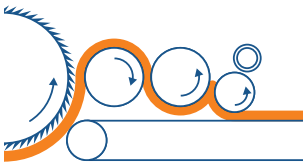
Alternatives for card web structure

Take-off roller

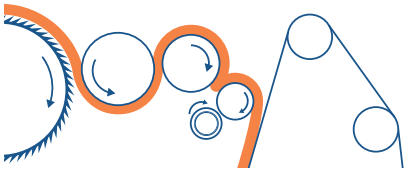


LDS take-off (A)

Condenser (L)



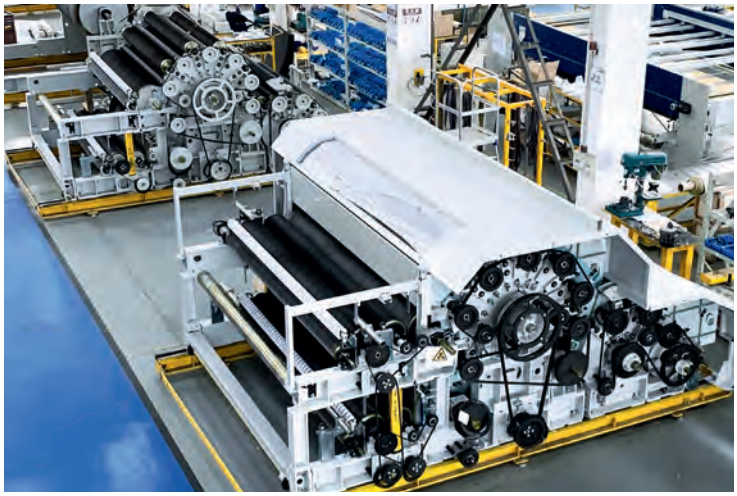
VarioWeb delivery



Configurations	Direct web forming	Crosslapped web forming
Working width	2.5 to 3.75 m	2.5 to 3.75 m
1 or 2 doffers	aXcess CA, aXcess VarioWeb	aXcess CA
3 doffers	aXcess VarioWeb	–

YOUR BENEFITS

- A full range of solutions
- Perfect web uniformity
- Available for very high speed lines
- Quick and easy accessibility
- Customized to meet user's requirements



Card assembling in the ANDRITZ facilities (Wuxi)

aXcess card with supervision system

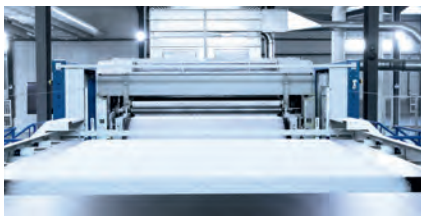
VarioWeb card with 3 doffers

Crosslappers

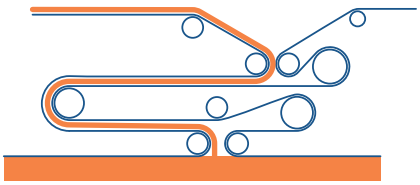
Long-term expertise in crosslapper technology: The ANDRITZ crosslapping technology is based on 60 years of experience and continuous innovations. Today, ANDRITZ offers three crosslapper models for the aXcess range: Active, Elite, and Profile.

ACTIVE CROSSLAPPERS FOR MEDIUM PRODUCTIVITY

The Active crosslapper ranges are designed for customers who do not need high production capacities. The speed of the maximum Elite range is 70 m/min, while the Active I, Active II, and Active III speeds range from 45 m/min to 60 m/min. The speed is customized to meet different needs.



aXcess crosslapper



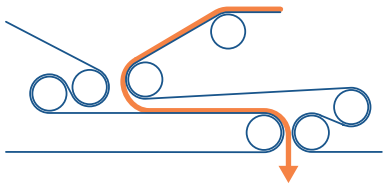
Long textile path

YOUR BENEFITS

- Lower capacity option
- Lower costs
- Higher input-output efficiency

PROFILE CROSSLAPPER FOR HIGH PRODUCTIVITY

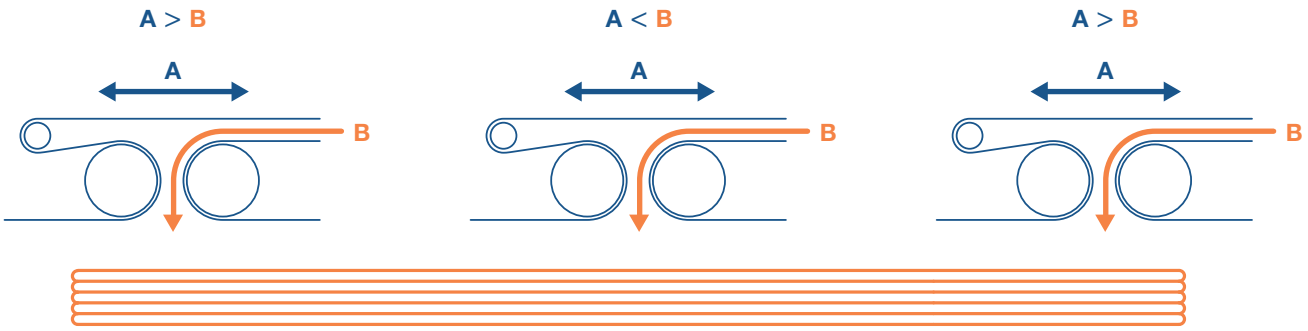
ANDRITZ offers the Profile crosslapper with a short textile path, profiling capability, and an input speed of up to 80 m/min. High-speed crosslappers operating at up to 140 m/min are also available if imported from France. This crosslapper fits all types of cards and production lines requiring higher productivity and web profiling.



Short textile path

YOUR BENEFITS

- Continuous speed during the lapping process
- High productivity
- High web quality, profiling capability
- Reduced fiber accumulation
- Low maintenance requirement



Profiling batt shaping – speed principle

Crosslappers	Long textile path			Short textile path			
	Active I	Active II	Active III	PRO25-80	PRO30-80	PRO35-110*	PRO35-140*
Card web width [m]	2.5	2.5 – 5.5	2.5	2.5	3.0	3.5	3.5
Laying path				short	short	short	short
Max. input speed [m/min with 2.5 infeed width]	45	45	60	80	80	110	140
Max. laying speed [m/min with 2.5 infeed width]	45	45	60	90 – 107	90 – 107	143	169
Delivery width [m]				1.5 – 6.5	1.5 – 6.5	2.5 – 8.0	2.5 – 8.0
Avoid excessive fiber feeding at the edge when carriage turns back	no	no	no	yes	yes	yes	yes
Profiling capabilities	no	no	no	yes	yes	yes	yes
Options	air conditioned cabinets			double-sided delivery, air conditioned cabinets			

* Made in Europe

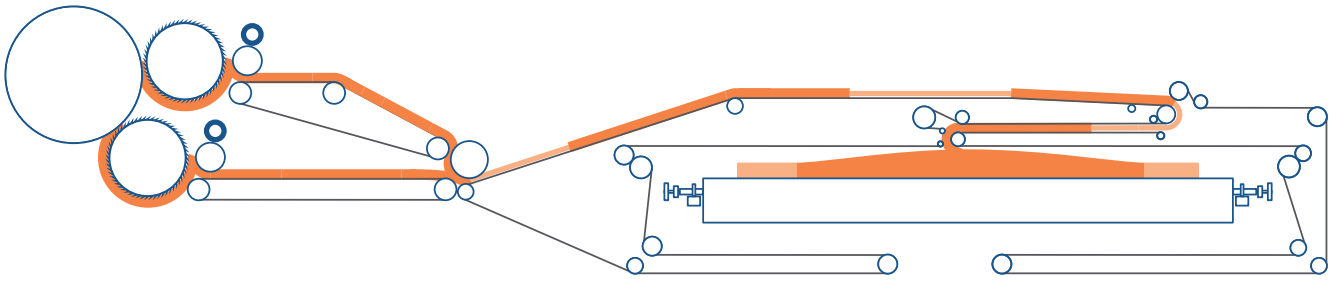
ProWid

The ProWid control system is a tool that regulates the card web weight before the web enters the crosslapper in order to lay a fiber mat with lighter edges. It thus anticipates subsequent fabric deformation caused by the bonding process. The CV percentage is generally improved by a factor of two, in particular when the CV percentage is in excess of 3 % without the ProWid system.

ProWid can be delivered with an individual ANDRITZ crosslapper to enhance performance in existing carding lines or with new needle-punch aXcess lines.

YOUR BENEFITS

- High production speed
- Fabric evenness
- Fiber savings
- Low cleaning requirement



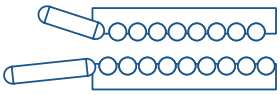
Impact of the ProWid system on fiber distribution

Drafters

State-of-the-art technology: ANDRITZ drafters ensure perfect control of the product throughout the process. ANDRITZ offers two ranges of batt and felt drafters that can be combined in a production line. Batt drafters are located after the crosslapper. ANDRITZ provides models with 9 to 27 rolls. Felt drafters are located between or after needlelooms.

ANDRITZ provides you with ET or ETO drafters. ETO models are designed with lifting of the top rollers.

ET-27 aXcess batt drafter with pressing roller

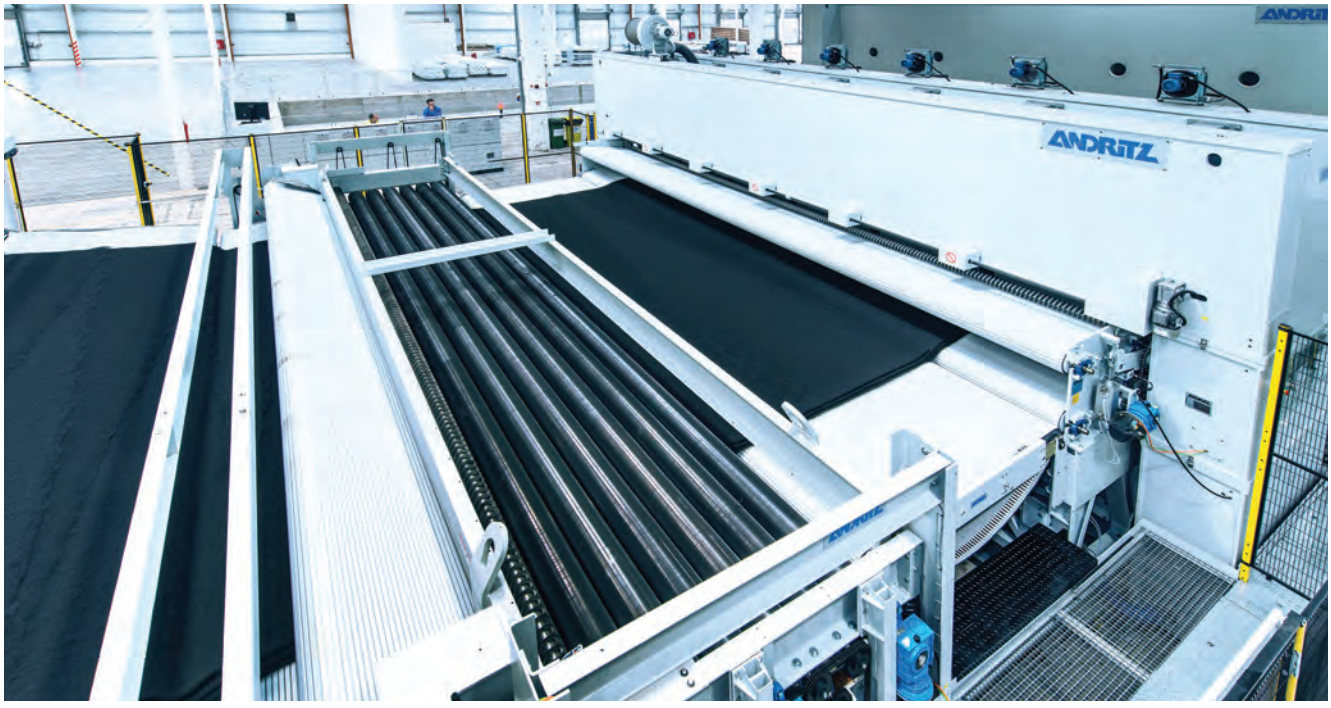


ETO-15 batt drafter with pressing conveyor

ETO-15 batt drafter infeed

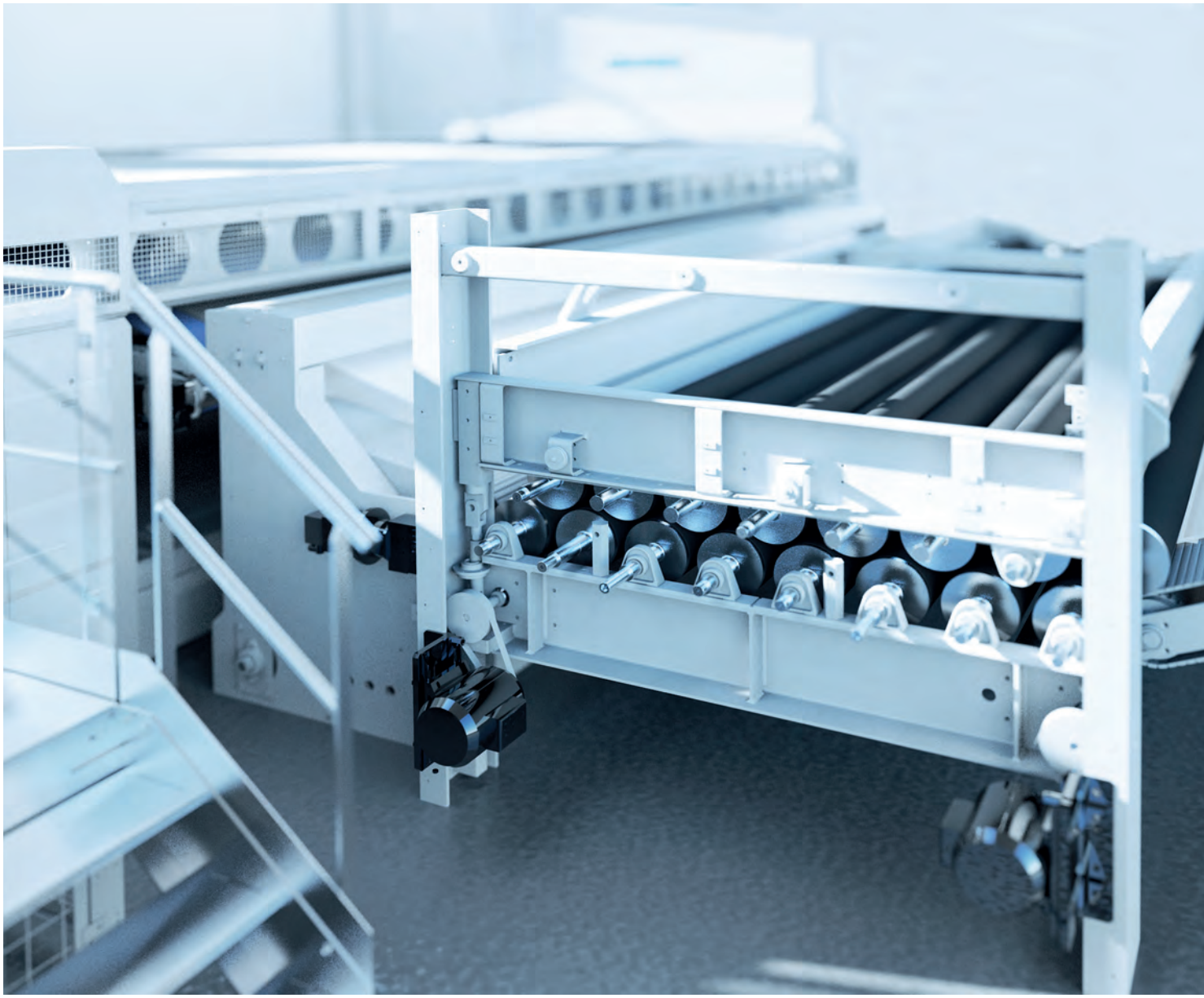
YOUR BENEFITS

- Optimum MD/CD strength ratio
- Higher production capacity for light fabrics
- Enhanced tensile strength
- Improved dimensional stability of fabric
- Minimum fabric shrinkage



Drafter in operation

Models without opening bypass Models with opening bypass	ET-9 ETO-9	ET-15 ETO-15	ET-21 ETO-21	ET-27 ETO-27
Application	Batt drafter after crosslapper			
Working width [m]	2.5 – 6.5	2.5 – 6.5	2.5 – 6.5	2.5 – 6.5
Max. textile drafting ratio	1.7	2.5	3.0	3.5



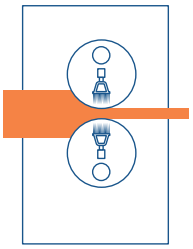
Batt drafter

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.



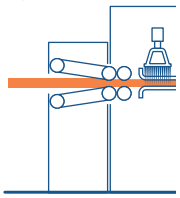
ANDRITZ neXloom pre-needler orbital type cylinder

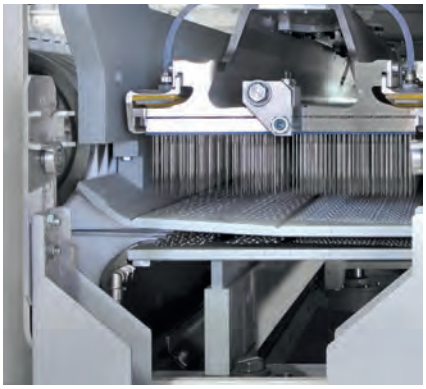
YOUR BENEFITS

- 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.





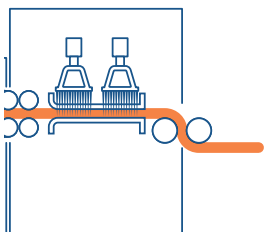
SFD feeding device

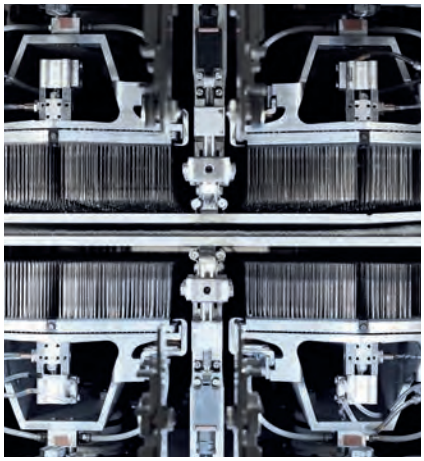
YOUR BENEFITS

- 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.

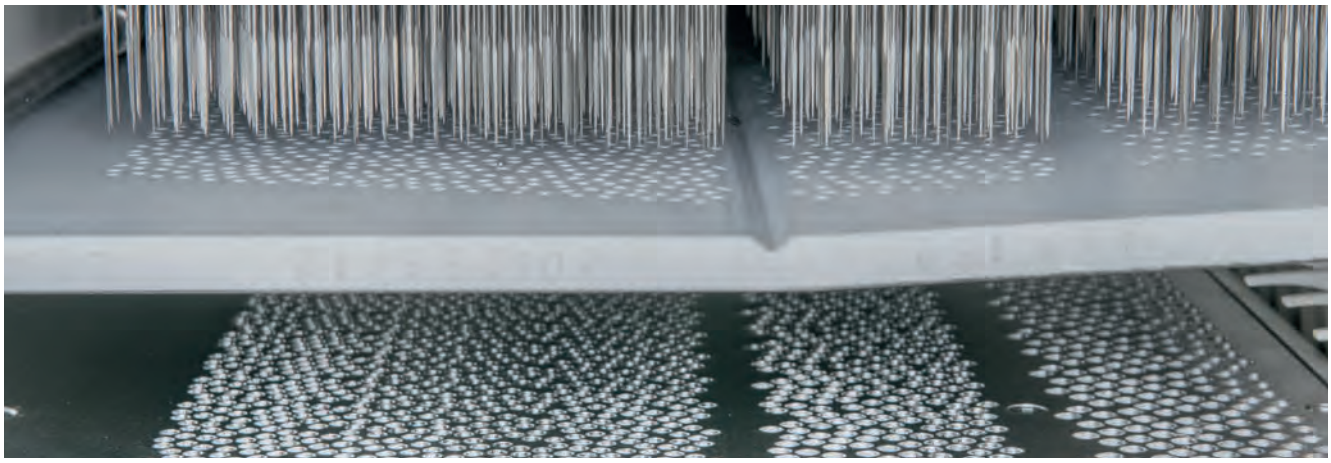




R-Type pre-needler

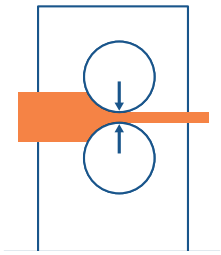
YOUR BENEFITS

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

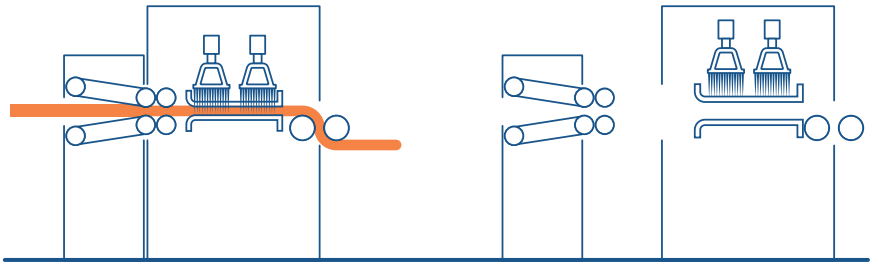


Progressive pattern needling

		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

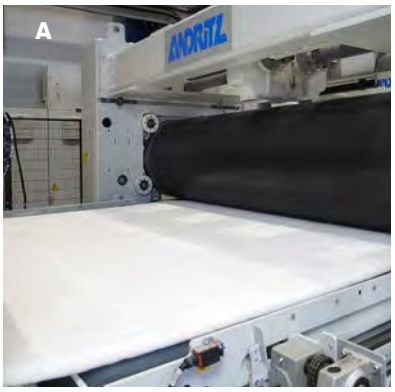
The design of the elliptical ANDRITZ neXloom orbital 3000 allows more needles needles per linear meter (1,280 n/m per board) by reducing the distance between needles. Needle impacts on the fabric surface are then increased by more than 70%. Thanks to the new design and distribution of holes on the cylinders, 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.

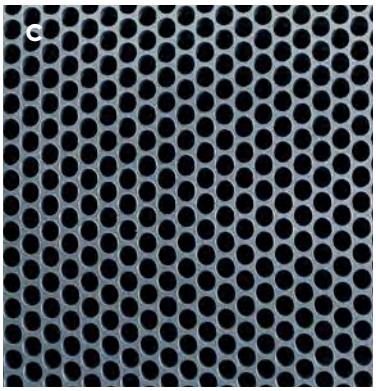
YOUR BENEFITS

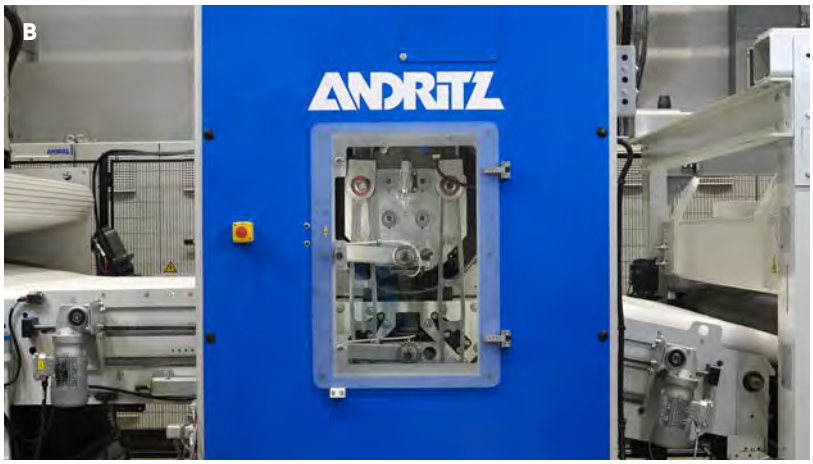
- Increased and improved needling density
- Working width up to 6.75 m
- Highest production speed
- Improved fabric visual aspect
- Operator-friendly (easy to operate)
- Minimal maintenance required

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)



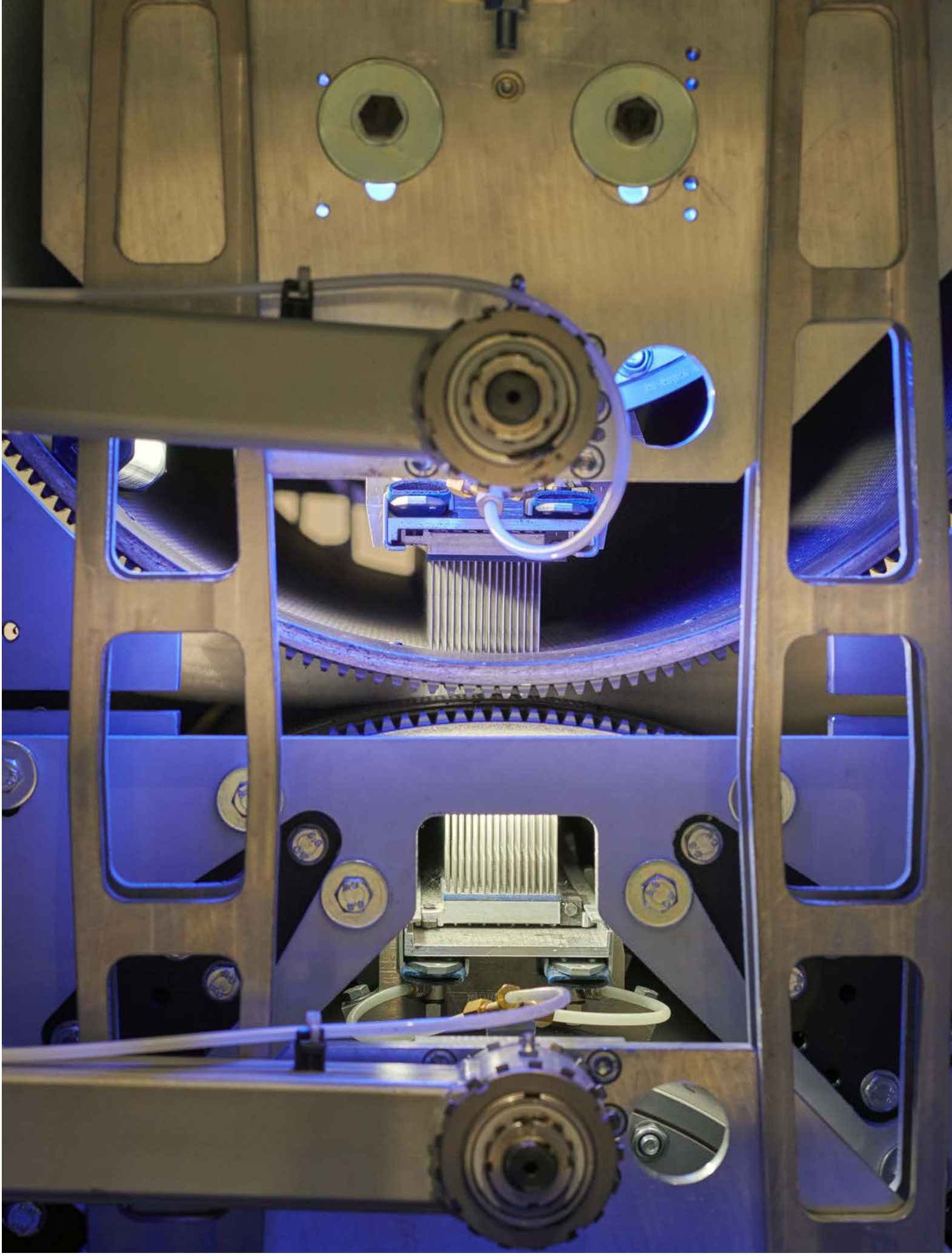




A ANDRITZ neXloom pre-needler orbital type 3000 exit view

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.

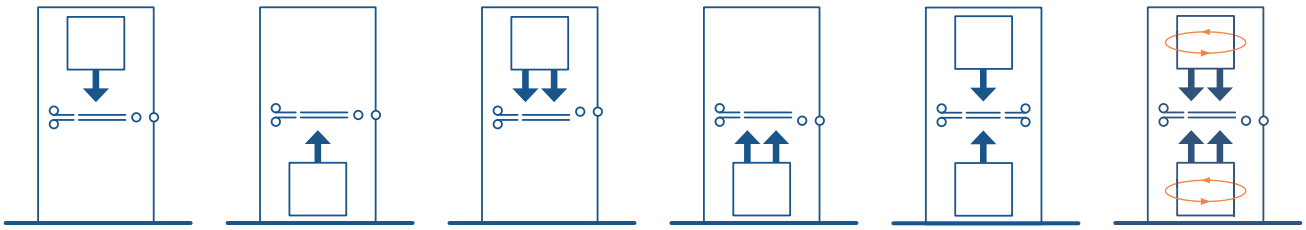
ANDRITZ needlelooms use a technology based on oil-lubricated modules with patented guiding piston design. Oil keeps the bearing at optimum working temperature, ensuring long-lasting use. Needleboard patterns have been adapted fto deliver superior visual quality and high versatility across a wide range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

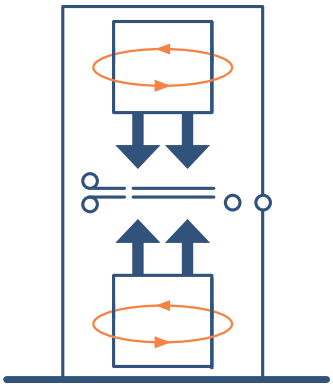
ANDRITZ neXloom elliptica DF-4

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.

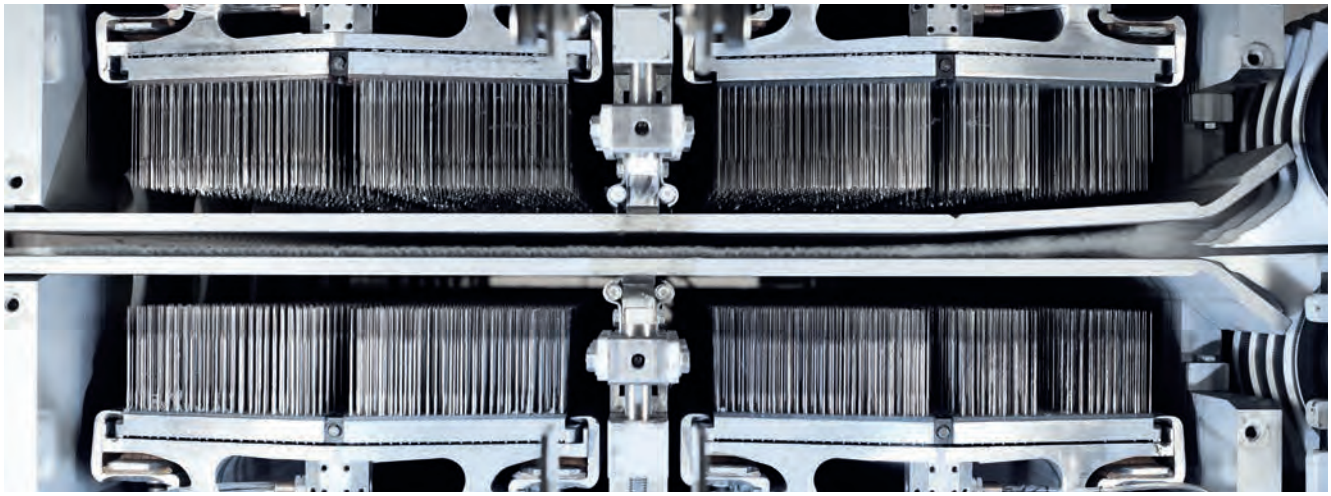
This needleloom is the right equipment when considering the quality aspects of high-grade fabrics. This is achieved thanks to the elliptical motion, which reduces draft and prevents marking. ANDRITZ oil-lubrication technology in combination with the renowned ANDRITZ needleloom frame allows less maintenance 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

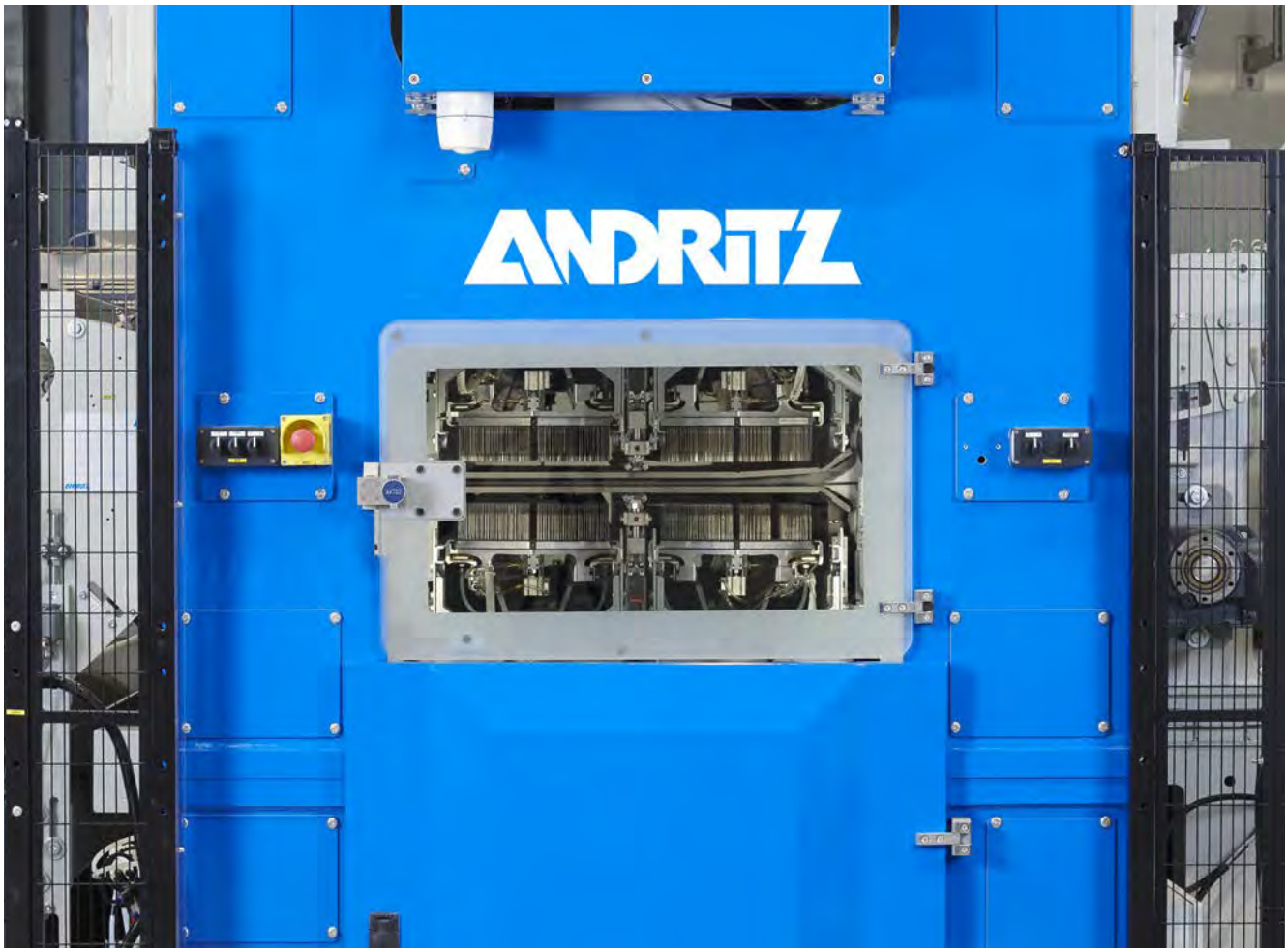


DF-4



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

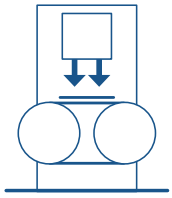
This needleloom was specifically engineered for bonding high-volume fiber mats, accommodating stroke heights of up to 160 mm, and offering a double-stroke process that alternates needling from both the top and bottom. Thus, this needleloom ensures longer lifetime & productivity, thanks in particular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

FOR SPECIAL PURPOSE MACHINES: ON DEMAND

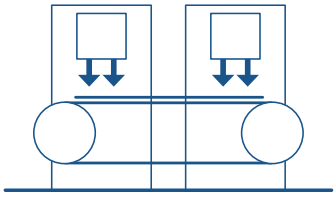
In order to respond to very specific needling specifications, particularly in the aerospace or automotive industries, specific needlelooms can be developed, that include 3D needling layer consolidation or other configurations as needed.

Spunbond needlelooms in operation

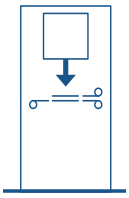
RIB structuring SDB-1 in 4.40 m working width



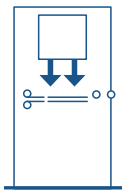
Velour type SDV-2 needleloom



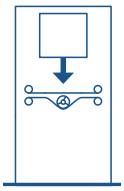
Velour type SDV-2+2 needleloom



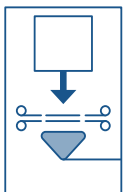
RIB SDB-1 needleoom



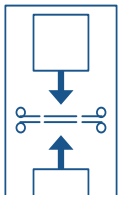
Spunbond SD-2 needleloom



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

Hydroentanglement

Jetlace Avantage as a compact solution: Jetlace Avantage is the core technology of the neXline spunlace aXcess line. Its proven technology makes it the perfect unit to combine high-quality products with reliable production.

JETLACE AVANTAGE

Jetlace Avantage is recognized as the new standard for growing markets and is perfectly optimized to produce spunlace fabrics from 28 to 180 gsm for various applications. Jetlace Avantage is available in 2.5 and 3.6 m widths.

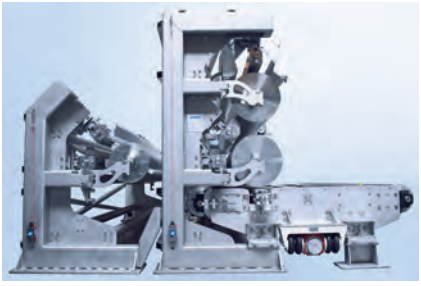
Designed with two or three cylinders, this standard machine can produce state-of-the-art spunlace fabrics at up to 200 m/min.

FEATURES

- **Fabric grammage: 28 – 180 gsm**
- **Line speed at the winder of up to 200 m/min**
- **End uses are wipes, medical, hygiene, face masks, coating substrates, automotive, etc.**

YOUR BENEFITS

- **Customized design**
- **Compact configuration**
- **Low energy consumption**
- **User-friendly**
- **Low maintenance**



Jetlace Avantage hydroentanglement unit

Jetlace Avantage: industrial line

neXjet injectors

Heart of the spunlace process: Injectors are considered a critical point in the spunlace process. Based on our know-how in fluid mechanics and robust manufacturing, we install state-of-the-art neXjet injectors in hydroentanglement units. ANDRITZ technology always provides optimum quality at very low energy consumption.

Top-quality needling water is ensured by the advanced design whereby the water is distributed through an innovative, continuous slot inside the neXjet injector. Process engineers use the latest computer-based fluid mechanics modeling tools to optimize the neXjet injector efficiency. In addition, the process water undergoes final filtration by the cartridge inside the neXjet injector body just before the water enters the needle strip.

EASY MAINTENANCE

ANDRITZ has developed a mechanical seal that not only prevents leaks, but is extremely easy to clean or replace. The conventional sealing method required a maintenance worker and specific tools. The ANDRITZ sealing system does not require any tools! A maintenance worker can easily remove and replace the seal. No special skills or extra training are required for regular maintenance jobs.

YOUR BENEFITS

- Perfectly homogeneous distribution of water
- Lower operating costs
- Final filtration of process water just before the strip (filter inside the injector)
- Quick access to the strip and the filtration cartridge
- Large filtration surface

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View photo gallery of this brochure in our augmented reality app!

FOR FURTHER INFORMATION SEE PAGE 3

Top-quality needling water

Ovens

State-of-the-art in bonding: The oven is a very important machine in the ATB process. It must bind the still fragile and sensitive carded web smoothly into a stable nonwoven product – without reducing its high-lofted character and superior softness.

Especially the transfer areas between the individual machinery units mean that there are neuralgic points. Just as critical as the well-adjusted heating-up stage is a gentle cooling-down phase followed by various finishing steps – because only then does the nonwoven web permanently conserve the desired resiliency and final characteristics. With its expertise and highly developed machinery components, ANDRITZ always offers you the right solution for this challenging process.

The new ANDRITZ SoftJet air guidance offers you an additional advantage in flat oven systems. Even the most sensitive fiber blends and matrix structures retain their high-lofted character and superior softness after the air-through bonding process.

YOUR BENEFITS

- **Highest uniformity of temperature and air flow**
- **Superior softness with SoftJet technology**
- **Easy access to main machinery components**
- **Modular system**
- **Flexible due to the different heating systems**

TWO HIGHLY SOPHISTICATED OVEN SYSTEMS

The fragile structure of the un-bonded nonwoven web calls for a suitable transport medium: this can be either a flat oven system using an air-permeable conveyor belt or an Omega oven system with a perforated and / or sieve-fabric-covered drum surface.

ANDRITZ's portfolio can offer you the flat as well as the Omega design, both as best suitable for covering all your requirements as a hygiene nonwoven producer. Depending on your demands, the ovens can be equipped with either indirect heating (electrical power, thermal oil) or direct heating (natural or liquid gas). A common feature of the flat and Omega designs is the one-sided, air-through ventilation, which is typical of air-through bonding processes in the hygiene market.

Flat oven

Omega oven

Patterning solutions

Customize your spunlace fabrics: The market trend demands product diversification. ANDRITZ has developed a series of patterning and aperture sleeves or thermo-embossing calenders to create unique designs, surface haptics and functions on spunlace fabrics.

NEXIMAGING SLEEVE

The latest patterning sleeves use neXimaging technology, which allows full customization of spunlace fabrics with reproduction of virtually any logo or pattern in high-quality detail. Logo and pattern definition are enhanced, while optimum production speeds are maintained. Logos can be designed according to customers' requirements, and neXimaging also allows perfect creation of apertures on the web.

PL SLEEVES

This technology produces embossed fabrics with simple geometric patterns, mainly dots or squares. ANDRITZ offers a wide range of existing patterns. It is a must-have for the production of baby wipes.

TECHNICAL SUPPORT

The ANDRITZ Perfojet technical center assists by testing patterns for customer approval before the customer invests in the final, industrial-scale version of the machine.

YOUR BENEFITS

- Innovative solutions for patterning and aperture
- Unlimited number of possible patterns
- Any 3D shape and texture

Spunlace pilot line to develop and test your new patterns with ANDRITZ experts

Examples of possible patterning and apertures

Efficient water processing

High-quality sub-systems: Another critical point in the spunlace process is treatment of the water. Due to the large amount of water required, it is essential to recycle and recirculate it.

A high-quality filtration system is necessary. ANDRITZ has developed the sub-systems to treat and filter suspended solids and spin-finish water. One priority is to optimize the filtration process for synthetic and/or natural fibers.

THE MAIN FEATURES ARE:

- Suitable for any type of fibers
- Filtration capacity: more than 400 m^3/h
- Recycling ratio: up to 99.5 %
- Turbidity: < 2 NTU
- Full monitoring system
- Turnkey in-house solutions

The filtration process is optimized by removing all the particles, from the largest down to the finest, when the process water passes through the main filtration systems:

- Flotation cell (FL)
- Sand filters (FSS)
- Bag filters (FP)
- Press filter (PF)
- UV lamps (UV)
- etc.

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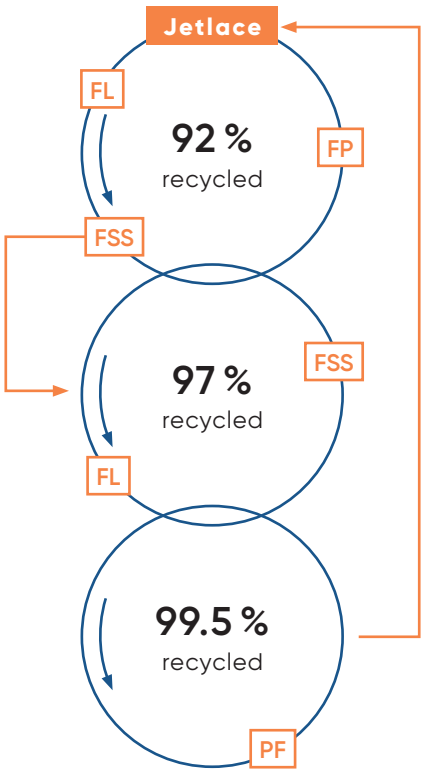
FOR FURTHER INFORMATION SEE PAGE 3

YOUR BENEFITS

- **Highest fabric quality**
- **Full process guarantee**
- **Reduced water consumption**
- **Minimal wastewater discharge**
- **Low chemicals consumption**
- **Increased line efficiency**
- **Reduced maintenance downtime**

High-efficiency water treatment



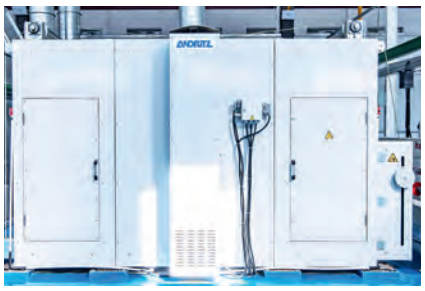
Optimization of the water filtration system

Drying: neXdry Avantage

Designed for neXline spunlace aXcess: ANDRITZ has launched its latest generation of through-air dryers to meet the demands of spunlace producers. These compact dryers, which can be perfectly integrated into the neXline spunlace aXcess, offers two types of heater: gas burner or oil heat exchangers.

NEXDRY AVANTAGE

neXdry Avantage drying technology is designed by ANDRITZ in Europe and made at the ANDRITZ facilities in China. These efficient dryers are the perfect solution to meet the demands of spunlace producers using aXcess lines. The proven rope introduction system allows easy web feeding into the neXdry Avantage through-air dryer.



neXdry Avantage in operation

YOUR BENEFITS

- Compact design
- Standard roll diameters: 1.6 / 2.4 m
- Capacity: 1,000 / 1,500 kg/h of water
- Drum made of stainless steel
- Fast assembly
- High energy efficiency
- Quick and easy maintenance
- Perfect drying uniformity thanks to the drum design

neXdry Avantage drying technology designed for neXline spunlace aXcess

Maintain your competitive edge

Professional roll service and spare parts: ANDRITZ is undoubtedly recognized for its core competence in calender roll technology and providing high-quality spare parts.

ROLL TECHNOLOGY – LONG-TERM EXPERIENCE

For decades, ANDRITZ has been helping you to select the right spare and replacement rolls. The ANDRITZ roll service in Wuxi can provides first-class service for all calender rolls operating in nonwoven, textile, and paper processes.

ROLL OVERHAUL AND SIMULATION TEST

We can service rolls up to a diameter of 1,100 mm and up to 32 tons in weight, including repair work, reconditioning, and upgrades, and operations simulation testing. Highly skilled technicians and modern grinding equipment as well as a test stand enable ANDRITZ to provide prompt and first-class service. They ensure the right option to suit your particular needs.

ORIGINAL AND GENUINE SPARE PARTS

Original ANDRITZ Nonwoven spare and wear parts guarantee a long service life and high productivity. Keep your nonwovens equipment at peak performance by using only genuine ANDRITZ parts.

SHORT DELIVERY TIME

We can provide spare parts to customers from stock and keep production shutdown time short after any accidental damage to parts.

OPTIMIZE YOUR SET-UP WITH ANDRITZ STOCK

Suitable spare parts for regular and preventive maintenance as well as your preventive maintenance.

We would be pleased to set-up a stock of consumables in line with utilization of your machines and according to the production quality and line efficiency you require.

ROLL SERVICE

- Local service center dedicated to roll repair
- Possible visit to your site for diagnosis purposes
- Fast response time for proposals and execution
- Shipment of your roll to our premises for diagnosis prior to any proposal

SPARE PARTS AND STOCK

- Local spare part center covering the needs of your installed base
- Evaluative stock composition according to your needs
- Consignment stock possible at our facilities
- Possible link with to your maintenance plan
- Prompt delivery and easy customs clearance process

Roll service at the Wuxi facilities

Spare parts center for fast delivery

Dedicated service at a glance

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 react within the shortest time possible.

TECHNICIAN TEAMS AT YOUR DISPOSAL

ANDRITZ has several service centers worldwide, where process experts and engineers work in one team. They provide top-class service, ranging from inspections and on-line diagnosis, to erection and installation of line upgrades and retrofits, as well as support in preventive maintenance.

PROFESSIONAL SERVICES TEAM AND FAST RESPONSE

ANDRITZ now has a strong team of engineers in Wuxi specialized in mechanical, electrical and process engineering. They assist our customers with any support they may need. A 24/7 hotline and technical support has been set up in Wuxi and for assistance globally. Remote service is provided for electrical control systems to so that production can be resumed within the shortest possible time.

UPGRADES AND RETROFITS

Upgrade and retrofit kits are available to extend machine lifetime and improve performance.

RELOCATION SERVICE

ANDRITZ teams are ready to answer your machine relocation request, from dismantling right through to new start-up.

INDUSTRY 4.0

The ANDRITZ digital SCADA system enables us to monitor your machines' overall situation, saving energy and also raw materials.

CUSTOMIZING STANDARD PRODUCTS

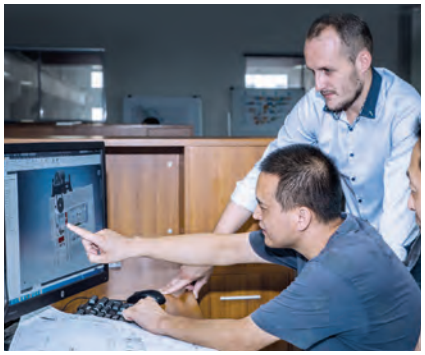
For the hydroentanglement process ANDRITZ has designed the neXimaging high-quality sleeves to provide a perfect and clearly visible pattern on your nonwoven web. We also offer equipment for strip cleaning.

PROFESSIONAL SERVICE TEAM

- Skilled local Chinese technician teams
- Technical support and troubleshooting in Chinese
- Local assistance for preventive maintenance
- Support from the local workshop and European sites if needed

CUSTOMIZING KITS

- Full range of solutions to extend the lifetime of your installed base
- R&D program to improve your ability to compete
- Line efficiency tools to enhance productivity
- Remote access possible for troubleshooting and diagnosis over long distances



ANDRITZ technicians provide top-class services

Expertise to improve your performance

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GET THE MOST OUT OF YOUR INVESTMENT

At ANDRITZ Nonwoven, we know that your business depends on satisfied customers and efficient processes. That's why we support you in every aspect of your nonwoven production. Take advantage of technology that lets you produce consistent quality for decades to come. Profit from the highly efficient use of energy and raw materials that our production provides. You can rely on our responsive service teams, who will 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 nonwovens market, you get the most out of your investment.

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