AUTEFA solutions

Nonwoven LineONE

OUR TECHNOLOGY FOR YOUR SUCCESS

AUTEFA Solutions –

Experience, know-how and competence in nonwoven technology

AUTEFA Solutions is a global leader in the supply of turnkey nonwoven production lines and machinery. Our advanced solutions cover the entire process chain, including carded-crosslapped needle punching, spunlace, and thermobonding technologies. Our portfolio also includes state-of-the-art Airlay systems and high-performance dryers, designed to maximize efficiency and guarantee consistent quality across all applications.

Beyond supplying complete equipment, AUTEFA Solutions offers comprehensive engineering services, including start-up and production support as well as quality and capacity guarantees.

AUTEFA Solutions represents companies with a long tradition and a proven track record in the market. By combining the experience of AUTEFA, Fehrer, FOR and Strahm, the company stands for high quality, durability and performance. AUTEFA Solutions develops innovative technological concepts for nonwoven products by utilizing the skills and extensive practical experience of its employees. Customers benefit from AUTEFA Solutions' dynamic flexibility and strategic technology locations in Germany, Austria, Italy, Switzerland, North America and China.

» AUTEFA Solutions LineONE

Smart performance nonwovens solution

Machines from the LineONE series by AUTEFA Solutions represent an advanced, cost-efficient solution tailored to diverse industry requirements. Designed for maximum reliability and efficiency, the LineONE system ensures outstanding performance while optimizing both capital expenditures and operational costs.

Key components of LineONE

- Opening and Blending machines
- Double Doffer Card DD ONE
- Crosslapper UnilinerONE and UnilinerTWO
- Web Drafter WD ONE
- Needle Loom StylusONE
- Thermobonding Oven HiPerThermONE

LineONE is a smart investment – combining high quality, affordability, and innovative technology in a perfectly balanced system. It is the preferred choice for manufacturers looking for cost-effective, high-performance solutions that deliver long-term value.

ADVANTAGES

- Smart investment with high efficiency returns
- Durable components for reliable product quality
- Optimized for medium-scale production needs
- Simple controls for quick operation and easy maintenance
- Machines from the LineONE series offer a cost-effective solution for upgrading existing production lines or making strategic replacement investments

Scan me for news

» Applications and Products

Discover the versatility and quality of our machine products

NEEDLE PUNCHED PRODUCTS

- Geotextiles
- Roofing felts
- Automotive headliners
- Automotive velour
- Artificial leather/coating substrates
- Automotive substrates
- Carpets (structured & flat)
- Hometex
- Technical felts (filtration)
- Wipes

THERMOBONDED PRODUCTS

- Coverstock
- Interlinings
- Waddings
- Home furnishing
- Automotive substrates
- Insulation felts

SPUNLACED PRODUCTS

- Wipes (hygienic, medical, cleaning)
- Coating substrates
- Wide range of products like CP and WLS

FIBER APPLICATIONS

- All kinds of fibers (PP, PES, PA, PAN, PTF, CV, shoddy etc.)
- For fibers up to 120 mm fiber length for capacities up to 2000 kg/h






» Opening & Blending

Superior fiber treatment right from the start

AUTEFA Solutions offers complete lines from bale opening to the finished product. All process steps are based on proven and economical technologies integrated in turnkey solutions. A wide range of opening and blending equipment is available, from bale openers and fiber storage to fine opening and carding, according to the different fiber properties, final product specifications and customer requirements.

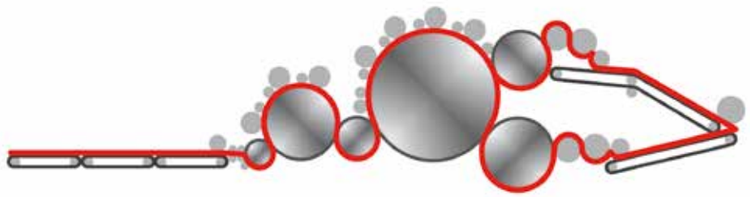
Scan me for news

Double Doffer Card DD ONE

High flexibility and long-term reliability

The Double Doffer DD ONE card is an advanced carding system featuring a first main cylinder, a transfer roller, and a second main cylinder. It can be fed by various feeding systems, including feeding rollers, overhead feed plates, or bottom plates, ensuring flexibility for different production setups. Designed for consistent performance and long-term durability, this highly reliable card delivers exceptional results. In addition, it can be equipped with multiple delivery configurations, such as two parallel webs, parallel and condensed webs, or two condensed webs, providing versatility to meet different production needs.

All sections of the DD ONE card are supported by high-precision linear guides, ensuring smooth and effortless opening and closing, section by section. The newly reinforced overhead feeding plate optimizes fiber guidance and control. Improved access for inspection and cleaning is provided by easy-to-open floor covers or grids. Five worker/stripper pairs on the second main cylinder further improve product quality and enhance the carding effect. An advanced suction system minimizes dust and fiber accumulation, while integrated fans efficiently remove dust and edge trim.



Double Doffer Card DD ONE

ADVANTAGES

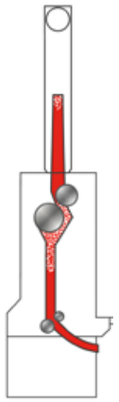
- Highest quality carded webs with improved web uniformity and quality
- Even weight distribution for high blending efficiency
- Optimized productivity with higher production rates
- Easy access to all machine parts for efficient operation and maintenance
- Minimized maintenance for long-term reliability and cost- efficiency
- For multi-purpose nonwoven production lines tailored to specific applications

Scan me for news

» Double Doffer Card DD ONE

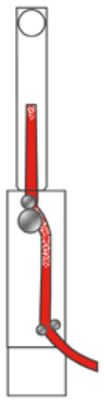
Card Feeding – excellent uniformity

For optimal opening of the fibers, AUTEFA Solutions offers various systems, all providing excellent uniformity in the feeding process at high production rates.



Volumetric Control Chute Feeder CF

The Chute Feeder (CF) is engineered for efficient, direct feeding to the carding unit. Its pressure-regulated operation ensures a smooth and proportional integration with the Filling Cage (FCU). The system includes adjustable-speed fans, which compact soft fibers effectively and maintain consistent density throughout the machine's full working width. Highly suitable for medium and long fibers, this machine is valued for its reliable performance and precision in fiber processing.



Volumetric Control Chute Feeder for short fibers CFS

The Chute Feeder (CFS) is an advanced machine designed for direct feeding to the carding system. Operating under precise pressure control, it ensures a seamless proportional connection with the Filling Cage (FCU). Equipped with variable-speed pressure fans, the CFS achieves optimal fiber compaction and ensures uniform density across the entire working width. Ideal for processing short fibers, it guarantees superior performance and consistency in fiber handling.

» Card Regulation and Fiber Orientation

Quality from the start

Feeding systems of the card can be combined with an inline control of the weight of the fiber matt or alternatively by controlling the fiber density with the "Servolap" system (x-ray). The settings of the feeding system are automatically optimised based on the information provided by the inline control system.

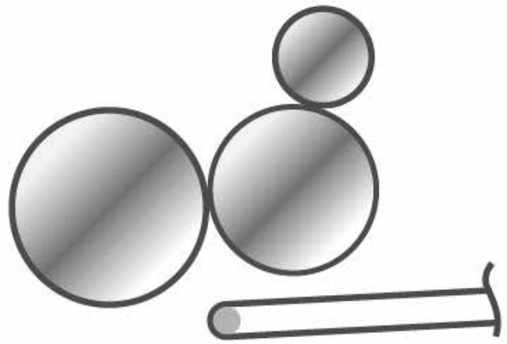
» Double Doffer Card DD ONE

Fiber orientation – optimized for the application

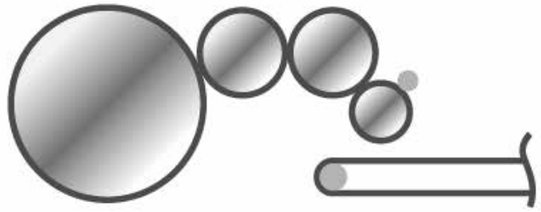
AUTEFA Solutions offers a wide variety of different delivery sections according to the requirements of the web and fibers to be used.

ADVANTAGES

- Optimal fiber opening and uniform feeding for high quality and production rates
- Flexibility in fiber processing for synthetic and natural fibers
- Precise control of fiber mat
- Automatic adjustment of settings for consistent quality and reduced material variation
- Optimal fiber orientation for different web requirements and end products



Delivery section for parallel web



Condensing system for long fibers

Condensing system

Crosslapper Uniliner

Precision and performance from the market leader

Weight accuracy in the bonded lapped web is the most critical quality feature in a nonwoven production line. The key machine influencing this aspect is the crosslapper, as it plays a decisive role in determining product quality. Investing in a new crosslapper or replacing an existing one with the UnilinerONE or UnilinerTWO will consistently improve quality and production efficiency.

The primary function of the crosslapper in a nonwoven line is to precisely stack multiple layers of the carded web to achieve the required width and web weight. This results in excellent web uniformity. With the Uniliner series, AUTEFA Solutions offers a highly reliable, economical and efficient crosslapper, building on the success of the Topliner series.

The Uniliner's design focuses on optimized infeed speeds, lay-up precision, capacity and reliability. With production speeds up to 120 m/min, the Uniliner crosslapper sets new industry standards with an exceptional price/performance ratio.

ADVANTAGES

- 4-Carriage Crosslapper for superior layering accuracy
- State-of-the-art technology with standardized drive and control elements using advanced servo components
- Infinitely variable servo motors for precise and flexible operation
- Optimally designed transport aprons ensuring smooth material flow
- Pneumatically adjustable, high-efficiency tooth belts for enhanced performance and reliability

Scan me for news

Type	Max. Feeding Speed (m/min)	Max. Layering Speed (m/min)	Infeed Width (mm)	Layering Width (mm)	Compensation Belt
UnilinerONE	70	80	1000-2500	1000-5000	No
UnilinerTWO	90	120	1000-3500	1000-5000	Yes

» Innovative short web path design

Reducing false draft and enhancing web quality

The Crosslapper Uniliner is characterised by the following technical highlights, which all improve the quality of the laid web and lead to optimised production costs due to material saving. Only the Crosslapper Uniliner (picture 1) has the unique short web path design, with a deflection of 180°, and its precise web laying minimizes false draft.

Direct web transfer from upper carriage to layering carriage

The carded web is delivered from the card to the infeed belt of the crosslapper. Then the web is passed on to belt 1, which transports it to the upper carriage which moves with half of the average speed of the layering carriage. Belt 1 is tensioned by an auxiliary carriage, which is connected to the upper carriage via tooth belts. The upper carriage has the task of storing the arriving web during direction change of the layering carriage.

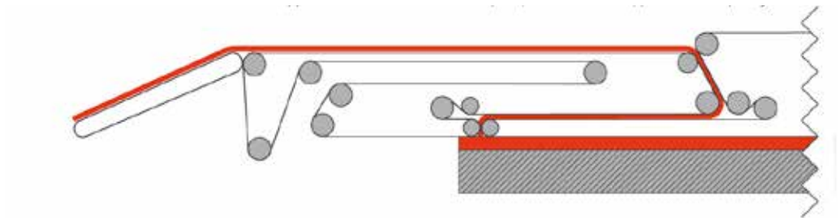
After having passed the upper carriage, the web is transported to the layering carriage in a sandwich and deposited on the delivery belt by both layering belts. Belt 2, which is the sandwich between the carriages, is also tensioned by an auxiliary carriage, that is also connected to the layering carriage via tooth belts. The auxiliary carriages are synchronised with the upper carriage and the layering carriage with an own pneumatically tensioned tooth belt each.

Conventional crosslappers (picture 2), with a common longer web path, lay the web with a deflection of 360°.
This kind of layering often caused false draft and the “bubble effect”, the compression of the web.

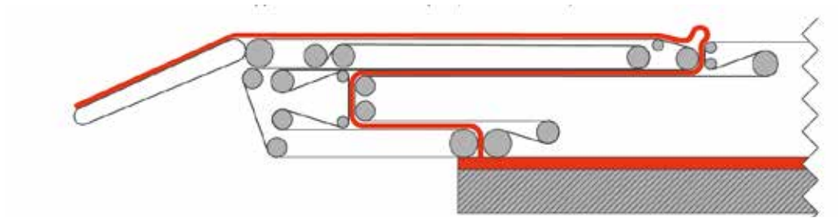
The “synchronisation”, the perfect coordination of the carriage movements, characterises the Crosslappers Uniliner.

- Common carriage movement
- Direct web transfer from upper to layering carriage
- One web reversal on upper carriage

Picture 1: AUTEFA Solutions Crosslapper Uniliner – short web path, deflection 180°, perfect web quality



Picture 2: Conventional crosslapper with a common web path, deflection 360°, often caused “bubble effect”



» Innovative WEBPLUS Technology

Optimized cv-values thanks to integrated web storage webplus

The patented integrated web storage WEBPLUS increases product regularity and enables an improved Coefficient of Variation (CV). Contrary to carriage layers, working in opposite direction, the Uniliner is equipped with an integrated web storage, which stores the arriving web during reverse movement of the carriages and delivers it during their constant movement. The capacity of the storage depends on speed and is continuously adjustable at the operating panel.

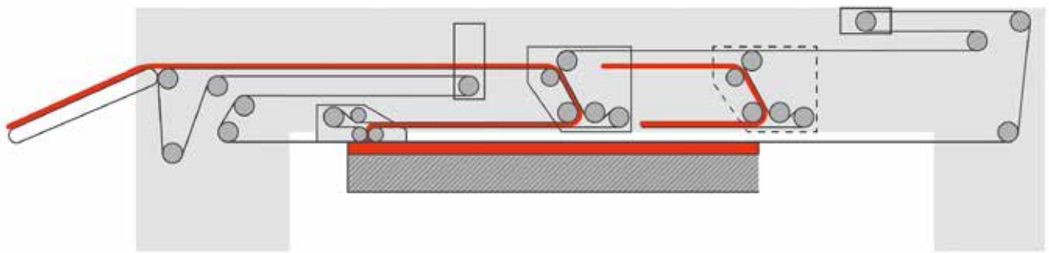
The use of web storage WEBPLUS avoids material accumulations at the turning points of the crosslapper. Thus a uniform web thickness over the entire working width is achieved.

This advantage is particularly important for the further processing, e.g. when a nonwoven fabric is laminated.

ADVANTAGES

- Controlled web laydown on edges
- No edge overfeeding
- Straight edge forming
- No edge wrinkles

Graphic menu “profiling” setup

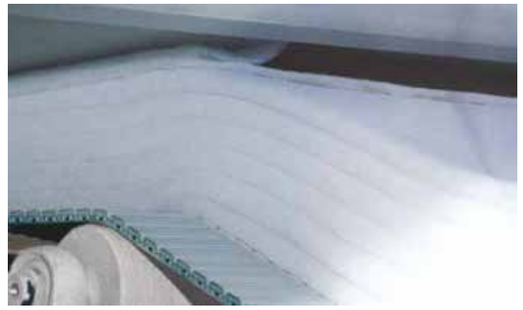


Crosslapper Uniliner – Integrated web storage WEBPLUS

» Uniliner Profiling System

Profiling reduces the smile effect

The Uniliner is equipped with the proven and patented profiling system. Through the change of the carriage speeds with the profiling system, the weight distribution of the laid web in transverse direction is improved. This results in an improvement of the regularity and a reduction of material accumulation on the web edge, the so-called smile effect.



Crosslapper UnilinerONE – controlled web laydown on edges

» Crosslapper Uniliner

Top features- high performance

Aprons

The Uniliner is equipped with new designed transport aprons. These aprons are antistatic treated, have a low surface weight and a high lateral stability. The apron tension can be adjusted pneumatically and is infinitely variable. The automatic belt alignment is done by guiding rollers which ensure an exact belt guidance by means of light sensors. For web delivery a lattice conveyor is used, which provides the necessary grip due to its surface properties.

Drive Technology

The Uniliner is driven from five infinitely variable servo motors. One motor each drives the upper carriage, the laying carriage, apron 1, apron 2 and the delivery belt. In this way the best laying results are achieved with an optimal coordination of speeds. The Crosslapper Uniliner is equipped with Siemens “Sinamics” converters. Only force-ventilated Servo motors are used. The control is done from a Siemens D-controller. For data communication a modern data bus technique is applied.

Tooth belts

The Uniliner is equipped with robust high-efficiency tooth belts, which are pneumatically tensioned and controlled.

Control & Safety technology

The machine is controlled via a Siemens Simotion D-Controller, which is equipped with a high performance processor, in order to control the position-regulated movement sequences. By means of a touch panel the machine parameters can easily be adjusted. The individual machine components are connected via Ethernet. The Uniliner is monitored via safety limit switches and thus fulfils the required safety standards.

» Web Drafter WD ONE

High infeed speeds and precise weight distribution

A web drafter is a crucial component in nonwovens production lines, ensuring high quality and uniformity of the web. Positioned typically between the crosslapper and the first needle loom, the web drafter plays a vital role in optimizing the characteristics of the nonwoven material.

The Web Drafter WD ONE is designed for maximum efficiency. Equipped with up to eight drafting trios, it drafts the crosslapped web in the machine direction (MD), enabling high infeed speeds and precise weight distribution. As a result, the nonwoven web experiences improved tensile strength, elongation, and overall uniformity.

Especially when processing lightweight products, the Web Drafter WD ONE ensures consistent quality across the entire web – making it an essential element for the production of high-performance nonwovens.

ADVANTAGES

- Higher production for lower gsm fabrics
- Draft and re-orientation
- Adjustment of MD/CD ratio
- Infinitely variable adjustment of drafts
- Clamping distances variable and adjustable

» Needle Loom StylusONE

Smart performance and smart investment

The StylusONE is a reliable and cost-effective machine designed for a wide range of needling applications up to 1,800 g/m^2. With a speed of up to 1500 rpm strokes per minute, the StylusONE series excels in productivity and durability, featuring maintenance-free gearboxes for enhanced efficiency.

The Needle Looms of the StylusONE series are available in pre- and finish-needling execution with various working widths, designed to meet broad requirements in nonwoven production. While the Pre-Needle Loom features a separate feeding system, the Finish-Needle Loom is available in both down-punch as well as up-punch configurations.

ADVANTAGES

- Maintenance-free reliability - gears and needle plates are supplied directly by AUTEFA Solutions, ensuring proven quality and durability
- Maximum productivity - minimized downtime results in increased output and efficiency
- Cost-effective operation - low operating costs increase long-term profitability
- Exceptional longevity - designed for durability, ensuring high value retention over time
- Consistent product quality - ensures precision and reliability in every application
- Rapid installation - modular design enables rapid installation in as little as three days

Scan me for news

» Needle Loom StylusONE

Top features and top performance

Integrated inlet and outlet rollers

With its compact design and infeed and outfeed rollers integrated into the machine frame in most configurations, the StylusONE is an ideal replacement for outdated needle looms in existing production lines.

AUTEFA Solutions (Fehrer) needle boards

Made of a special Mg / Al alloy and equipped with a special board centering system, Fehrer needle boards offer improved elongation properties and weight savings, resulting in lower mechanical stress.

AUTEFA Solutions (Fehrer) gearboxes

StylusONE gearboxes are based on decades of market leadership and expertise. They operate continuously at a maximum stroke frequency of up to 1500 rpm.

Operating Panel

StylusONE offers effortless operation with an intuitive interface featuring a 12” touch panel and advanced visualisation software.

» StylusONE Series of Needle Looms

Compact, powerful and reliable

The Needle Loom Stylus is designed to meet specific customer requirements while maintaining standard specifications for working width, maximum machine load and achievable machine speeds. It supports conventional needling zone arrangements, with the StylusONE featuring two boards from the top (downstroke) and the StylusONE-R featuring two boards from the bottom (upstroke). The entire StylusONE range is built from identical components, ensuring consistency and efficiency across all models. Each machine is precisely assembled and tested to ensure fast start-up and smooth integration into your production line.

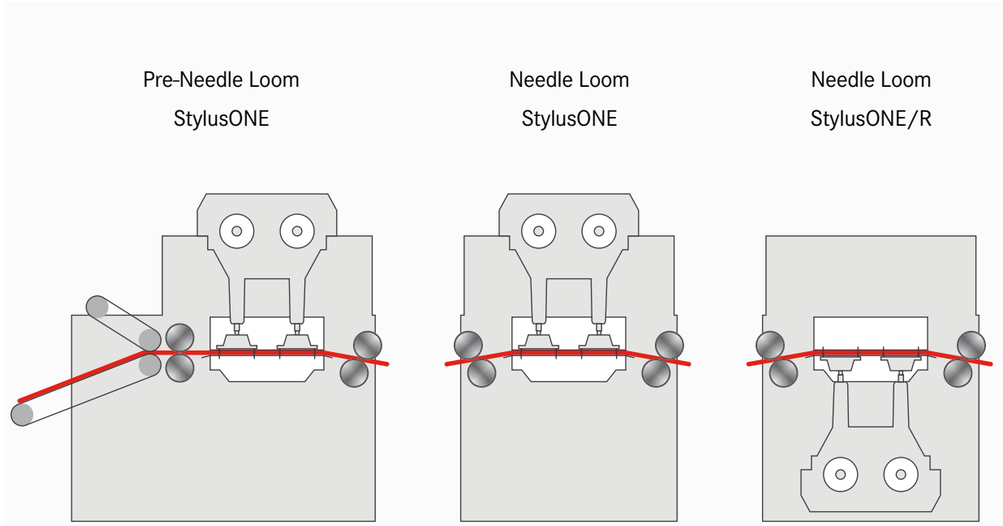
The StylusONE combines proven technology with cost-effective manufacturing. Spare parts are fully interchangeable across all Stylus needle loom configurations, reducing the need for extensive inventory and simplifying maintenance. The compact design of the StylusONE needle loom enables seamless integration into existing nonwoven production lines, making upgrades both efficient and cost-effective.

FEATURES

- Vibration-free performance - ensures smooth and stable operation
- Continuous high performance - proven Fehrer gear technology supports maximum stroke frequencies up to 1,500 rpm
- No resonance over the full speed range - optimized design eliminates vibration problems
- Efficient and durable - Fehrer's closed drive system with sensor-controlled oil lubrication maximizes efficiency and longevity
- Smart and compact design - allows easy access for cleaning and quick needle board replacement
- Control system - featuring a state-of-the-art 12" touch panel for intuitive operation

	Pre-Needle Loom				Needle Loom StylusONE				Needle Loom StylusONE/R			
Working width	2600 mm	4000 mm	5300 mm	6700 mm	2600 mm	4000 mm	5300 mm	6700 mm	2600 mm	4000 mm	5300 mm	6700 mm
Number of needling zones	2 down-stroke				2 down-stroke				2 up-stroke			
Vertical stroke	60 mm				40 mm				40 mm			
Needle pattern	2 x 5000 Needles/lin.m. 2 x 7500 Needles/lin.m.				2 x 5000 Needles/lin.m. 2 x 7500 Needles/lin.m.				2 x 5000 Needles/lin.m. 2 x 7500 Needles/lin.m.			
Max. Speed (up to)	1300 rpm	1300 rpm	1200 rpm	1100 rpm	1500 rpm	1350 rpm	1200 rpm	1100 rpm	1500 rpm	1350 rpm	1200 rpm	1100 rpm
Machine weight	~12 tons	~18 tons	~24 tons	~38 tons	~12 tons	~18 tons	~24 tons	~38 tons	~12 tons	~18 tons	~24 tons	~38 tons

StylusONE Series of Needle Looms

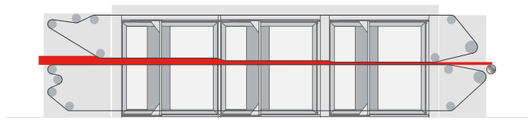


HiPerThermONE

Perfect calibration and bonding uniformity at highest throughput rates

The HiPerThermONE double belt oven system comprises of a modular design, adaptable to all drying and thermobonding needs. The oven has been designed to fulfill a wide range of nonwoven applications and is well known as process reliable and energy efficient oven system. The possibility to all kinds of different nozzle systems within the standard oven design leads to high flexibility to fulfill customer needs.

The Twinframe double shell insulation construction ensures lowest radiant heat losses and additionally in combination with the incorporated EnRec Systems, these ovens provide outstanding low energy consumptions. The key advantages are high throughput, flawless bonding with no thickness gradient, and precise calibration achieved through a robust mechanical structure combined with optimal airflow and uniform temperature distribution. The HiPerThermONE double belt oven is available with working widths from 1 m up to 7 m.



ADVANTAGES

- Flexible and modular system to install different heating systems
- Option of manual or also automatic filtration
- Special flap system to adjust air from top to bottom or bottom to top
- Single or double belt executions available
- No false air throughout the entire process length of the oven, ensuring a clean interior as no lint or dust can escape
- Nozzle systems with high performance and perfect air-flow distribution across the working width.
- Accurate cooling calibration by means of perfect airlock system between heating and cooling section
- High accuracy of gap calibration for product thickness calibration with heavy duty and accurate nozzles and special height adjustment mechanism.
- Accurate cooling calibration by means of perfect airlock system between heating and cooling section
- Modular design leads to short installation times.
- Low energy consumption by incorporated EnRec systems.

Lifecycle Service

Maintenance and enhancement for nonwoven lines

At AUTEFA Solutions, we understand the critical role that nonwoven lines and machines play in your operations. Our equipment is renowned for its sophisticated technologies, quality, and cost-effectiveness. To ensure your machines continue to perform at their best, it's imperative to prioritize regular servicing, maintenance, and prompt repairs. Our Lifecycle Service offers a comprehensive suite of solutions to keep your production lines running smoothly.

AUTEFA Solutions' service contracts are tailored to offer fast and effective support exactly when you need it. Our comprehensive range of service modules allows for individual customization, ensuring that your maintenance needs are met precisely.

SPARE PARTS FOR LIFETIME QUALITY – PRESERVE QUALITY AND EFFICIENCY WITH OEM SPARE PARTS

The quality of your manufactured products and the longevity of your machines are inextricably linked to the spare parts you use. AUTEFA Solutions offers OEM spare parts that are meticulously designed to match your specific machine and system.

SERVICE CONTRACTS – CUSTOMIZED SUPPORT FOR UNINTERRUPTED OPERATIONS

Our service contracts provide customized support tailored to ensure uninterrupted operations for your business. Benefit from proactive maintenance, rapid response times, and cost-effective solutions designed to minimize downtime and maximize productivity.

UPGRADES AND RETROFIT SOLUTIONS – ENHANCE AND ADAPT YOUR MACHINES FOR EVOLVING NEEDS

We offer valuable and cost-effective upgrade and retrofit solutions that enhance your existing systems, making them adaptable to ever-changing market conditions. Our modifications significantly improve occupational safety, reduce workload, enhance process reliability, and minimize complaints.

Scan me
for news

AUTEFA Solutions
germany@autefa.com
www.autefa.com

EN202604