CARDING LINES

AUTEFA Solutions leads the way
AUTEFA SOLUTIONS –
Experience, Know-How and Competence in Nonwoven Technology

AUTEFA Solutions leads the way

AUTEFA Solutions represents companies with a long tradition and a history of years of successful participation in the market. Combining the experience of the companies AUTEFA, Fehrer, FOR and Strahm the company stands for high quality, durability and performance made in Europe.

AUTEFA Solutions creates innovative technological concepts for nonwoven products by utilizing the skills and practical experience of its employees. The customers benefit from the dynamic flexibility and specialist know-how of AUTEFA Solutions key technology sites in Germany, Austria, Italy and Switzerland.

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AUTEFA Solutions Nonwoven Technology

<table>
<thead>
<tr>
<th>OPENING/BLENDING</th>
<th>FIBER OPENING AND BLENDING</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEB FORMING</td>
<td>CARDING</td>
</tr>
<tr>
<td>WEB BONDING</td>
<td>NEEDLING</td>
</tr>
<tr>
<td>WEB FINISHING</td>
<td>DRYING</td>
</tr>
<tr>
<td>WINDING/CUTTING</td>
<td>WINDING</td>
</tr>
</tbody>
</table>

AUTEFA Solutions is part of China Hi-Tech Group Corporation (CHTC). China Hi-Tech Group Corporation is the world biggest successful textile machinery supplier.
AUTEFA Solutions –
leads the way to advanced carding lines

AUTEFA Solutions offers complete carding lines, starting from the bale opening up to finished products on a one-stop shopping basis. All process steps base on well known and worldwide approved technologies which are integrated in turnkey solutions. Opening, blending, carding and crosslapping are provided by AUTEFA Solutions. Autefa Solutions can provide several bonding solutions, such as needle punching from AUTEFA Solutions Austria and thermobonding as well as chemical bonding from AUTEFA Solutions Switzerland. Besides the complete equipment, AUTEFA Solutions scope of supply comprises comprehensive engineering services, including start-up and production support, as well as guarantees for quality and capacity.

The main characteristic of AUTEFA Solutions carding lines is the outstanding flexibility, which enables the nonwovens producers the manufacturing of a wide variety of products and truly unique fabrics. All systems are based on a modular design, which allows the selection of individual elements to suit customer requirements. Depending on the machine configuration, AUTEFA Solutions carding technology can be employed for the production of nonwovens from all kinds of manmade fibers like PES, PP, viscose, bicomponents or other specialities, as well as natural fibers such as cotton, wool, flax, hemp, sisal, jute, etc. with a fiber fineness of up to 200 dtex and staple lengths of up to 120 mm.

Extensive laboratories and pilot lines have been established for carded products. With the AUTEFA Solutions development centers, the company offers its customers unique possibilities for improving and refining new products, processes, components and machines.
Applications and 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

Opening & Blending –
Superior Fiber Treatment Right from the Start

A complete range of opening and blending equipment is available, optimized for a wide range of fibers from bale openers, storage of fibers, up to fine opening and card feeding, according to the different fiber properties, final product specifications and customers’ requirements. A new generation of reliable equipment focusses on an easy maintenance and high flexibility for modern fully automatic processes.
Carding –
at the Highest Speeds

The “WEB MASTER FUTURA” and the “Injection Card” which base on the AUTEFA Solutions Carding Technology are patented high-capacity carding machines providing significant advantages.

ADVANTAGES:
• top web evenness and quality
• gentle treatment of the fibers using an aerodynamic principle (Injection Card)
• easy access and maintenance
• several types of delivery sections for maximum performance with EVO2 & EVO3
• feeding systems for an optimum degree of fiber opening with FTO
Profile Control with WebMax –
the Key to Product Quality

The WebMax from AUTEFA Solutions is a system offering weight uniformity in bonded products. Data gathered by an area weight measurement device are processed in the closed loop of the WebMax system. This information is also fed back to the card feed to minimise long-wave weight fluctuations in the fabric passage direction. Weight accuracy in the bonded web is one of the most requested quality features for modern nonwoven installations.

AUTEFA SOLUTIONS WEBMAX OFFERS MANY IMPORTANT ADVANTAGES SUCH AS:

- compensation of the weight changes due to material shrinkage
- highest possible weight evenness in the final product
- a considerable reduction of raw material consumption
- WebMax can be delivered for card web working widths of 2 – 3.5 m

The WebMax from AUTEFA Solutions is a system offering weight uniformity in bonded products.

Profile without WebMax: The classic weight distribution in an needled lapped web shows the typical higher weights in the edge areas

Profile with WebMax: The concave weight profile on the delivery belt will be compensated again by the following bonding process
Crosslapping –
for Maximum Weight Accuracy

AUTEFA Solutions Crosslapping Technology ensures a weight neutral straight edged web even when running at high lapping speeds. With AUTEFA Topliner series and WebMax, nonwovens producers profit from several significant advantages.

ADVANTAGES:

- integrated web accumulation for weight-neutral web forming
- synchronous carriage movement for safe web transfer
- drive control for straight-edged web deposit
- counterweight profile on the floor apron with WebMax
- weight uniformity after the bonding process with WebMax
Needle Punching – at a High-Performance Level

AUTEFA Solutions STYLUS Needle Punching Technology is based on a modular design system which represents the idea of dividing the needle beam and the needle board across their entire length into smaller units. AUTEFA Solutions single, multi-board and structuring needle punching machines all contain the operational experience gathered from well over 3000 machines running worldwide.

ADVANTAGES:
- a modular design system with fully sealed eccentric drives
- vibration-free running
- working widths up to a maximum of 16 m
- in-house developed needle distributions for special patterns and mark-free penetration
- the only system allowing highest stroke frequencies in continuous operation and cost-saving service intervals of several thousand hours
- Possibility to choose elliptical needling (Varilliptic) or pure vertical needling
Aerodynamic Web Forming (Airlay) – with Total Randomization

Fehrer Aerodynamic Carding Technology uses an aerodynamic principle providing a total randomised fiber orientation.

THE MAIN FEATURES ARE:
- a total random 3D web structure and isotropic strength values
- increased resilience of the web
- production of top quality webs in the 80 – 6000 g/m² weight range
- processing of both natural and synthetic fibers
- random webs of up to 80 % greater volume, by increasing the vertical fiber orientation with the “High-Loft” device
- suitable for all kinds of bonding processes such as thermal-, chemical- or needle-bonding
Carding Competence Center

The AUTEFA Solutions Carding Competence Center (CCC) possesses an industrial scale carding line for the production of needle punched nonwovens with a working width of 3.5 m, combining F.O.R., Autefa, Fehrer and Strahm technology. A further 2.4 m width production line with the Aerodynamic Web Forming Machine Airlay K 12- direct is available. The web can be bonded mechanically with Stylus needle looms. For thermobonding, a HiPerTherm Oven is available. All machines are suitable to handle carbon fibers and the carding equipment can be adjusted to ensure a gentle treatment of brittle fibers.

All process steps are fully integrated, in order to obtain top quality and maximum efficiency from bale opening to winding. Each unit, together with its relevant operating data, is displayed in a process control system for central operational und process control.

This technological diversity will furnish customers with a unique opportunity for targeted nonwoven product development.
Carding Line Configuration

01 GEOTEXTILE LINE

02 AUTOMOTIVE VELOUR

03 ARTIFICIAL LEATHER / AUTOMOTIVE HEADLINIER

04 CARPET
Carding Line Configuration

05 TECHNICAL FELTS

06 NEEDLED WIPES

07 WADDINGS / HOME FURNISHING

08 AUTOMOTIVE “SUBSTRATES” AND NOISE ISULATION FELTS / AIR
Carding Line Configuration

09 WADDINGS / HOME FURNISHING AND THERMAL INSULATION / ARLAY

10 INTERLININGS

11 SPUNLACED WIPES

12 SPUNLACED COATING SUBSTRATES
Process Control System

The operation of the complete plant is monitored by a process control system, which meets the highest standards with regard to both engineering and design.

Workstations are located at key points, from fiber opening to winding, in order to allow the simple and clear supervision of the respective plant sections. Special displays and operating surfaces are employed, which show the most important data and operational elements, while the data exchange between the various plant sections takes place via bus links.

The control system uses images for every machine and their related functions, as well as symbols that illustrate the status of drives and sensors and a value variance comparison. The differing operational modes are also visualised. Service functions are available for utilisation during plant startup or maintenance. Drives can be operated separately, sensors tested and adjustments carried out. Production recipes for the complete plant can be stored and called up for the entire plant, access to critical functions and data being regulated on a hierarchical basis for each registered user.

Operational and production reports as well as fault messages are provided on a regular basis and context-sensitive assistance is available to minimise fault detection time. An on-line link to the service department can also be established, thus ensuring rapid, expert help.
Engineering –
reliable and efficient solutions

Our engineering competence is based on more than 50 years of experience in machine and plant design. The information gained during this time has been directly and consequently transferred into our engineering language. AUTEFA Solutions engineering covers all areas for the formation of the plant, the continuous operation as well as contractual guarantees for the product quality and the performance of the production.

The utilisation of the high functionality of the current data base, 3D-CAD software and the networking with SAP and CAD, secures a highly efficient state-of-the-art preparation of the documents.

THE TURNKEY PROJECT MANAGEMENT INCLUDES BASIC AS WELL AS DETAILED ENGINEERING:

- Mechanical engineering
- Process and civil engineering
- Piping and air conditioning
- Measurement and control engineering
- Electrical and instrumentation engineering
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