

UnilinerONE



CROSSLAPPER UnilinerONE

AUTEFA Solutions leads the way



AUTEFA SOLUTIONS –

Experience, Know-How and Competence
in Nonwoven Technology

AUTEFA Solutions leads the way

As a system supplier, 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.



STRAHM

FIBER PREPARATION	fiber opening and blending			
WEB FORMING	carding	aerodynamic web forming airlay	airlaid	crosslapping
WEB BONDING	needling	chemical bonding	thermobonding	hydro- entanglement
WEB FINISHING	drying	impregnating/ coating	embossing/ perforating	scattering
WEB HANDLING	winding	cutting	stacking	festooning



AUTEFA Solutions is part of China Hi-Tech Group Corporation (CHTC).

AUTEFA Solutions leads the way to Crosslapping

Weight accuracy in the bonded lapped web is the most important quality feature for a nonwoven installation. The key machine is the crosslapper, as it has a decisive influence on product quality.

A new investment or replacement investment with the Crosslapper UnilinerONE always leads to a quality and production improvement.

TECHNICAL DATA:

- Working width: 2.0 - 2.5 m
- Layering speed: 80 m/min
- Layering width: 2.5 - 5.0 m
- Delivery speed: up to 20 m/min

TECHNICAL FEATURES:

- First 4-carriage crosslapper
- State-of-the-art technique with standard elements for drive and control with modern servo-components
- Infinitely variable servo motors
- New designed transport aprons
- Pneumatically adjustable and infinitely variable high efficiency tooth belts

The function of the crosslapper in a nonwoven line is to pile several layers of the carded fiber web precisely to the required width and web weight. The result is an excellent uniformity in the fabric. With the Crosslapper UnilinerONE AUTEFA Solutions supplies a reliable and economical high-performance machine, based on the successful Crosslapper Topliner Series. During the design of UnilinerONE special attention was given to optimised infeed speeds of the carded web, layering precision, capacity and reliability.

For the speed range up to 80 m/min new standards are set with the attractive cost-to-performance ratio of UnilinerONE.



Crosslapper UnilinerONE – infeed belt

Short web path – minimizes false draft

The Crosslapper UnilinerONE is characterised by the following technical highlights, which all improve the quality of the layered web and lead to optimised production costs due to material saving.

Only the Crosslapper UnilinerONE (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.

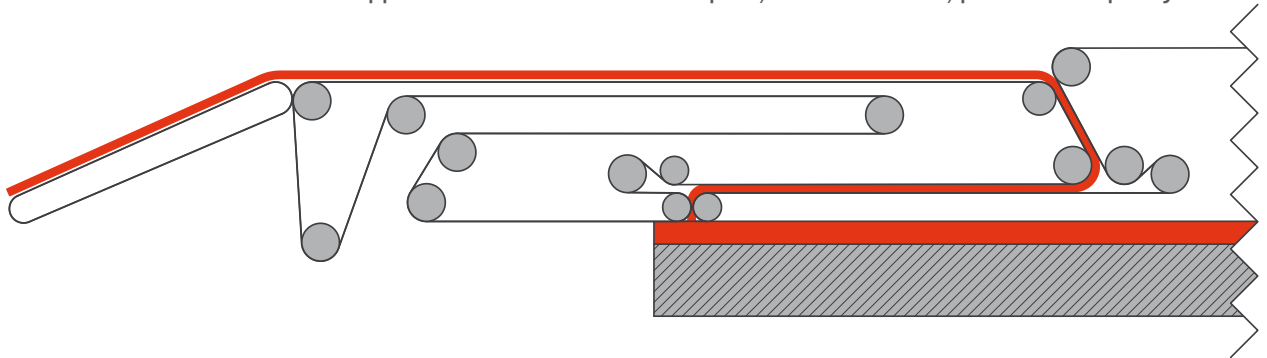
After having passed the upper carriage, the web is transported to the layering carriage in a sandwich and deposited on the delivery belt by both layering belts. Belt 2, which is the sandwich between the carriages, is also tensioned by an auxiliary carriage, that is also connected to the layering carriage 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.

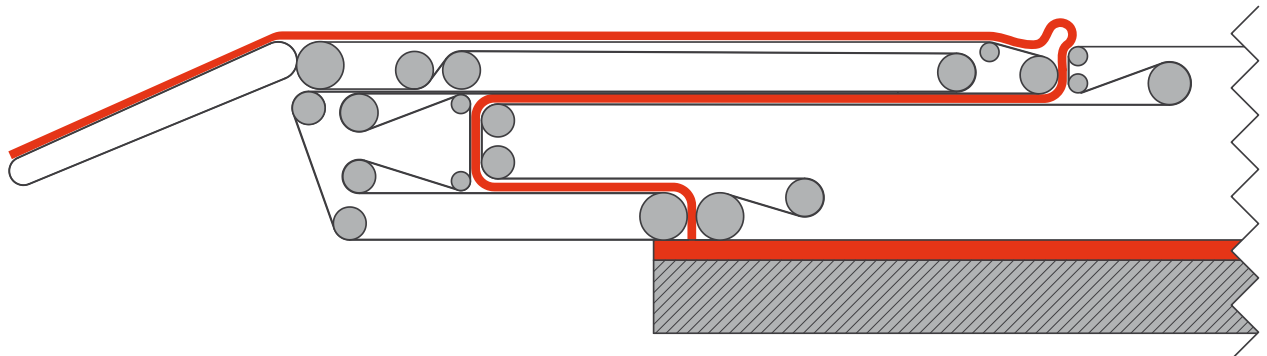
The “synchronisation”, the perfect coordination of the carriage movements, characterises the Crosslappers UnilinerONE.

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

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



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



OPTIMIZED CV-VALUES THANKS TO INTEGRATED WEB STORAGE WEBPLUS

The patented integrated web storage WEBPLUS increases product regularity and enables an improved CV-value. Contrary to carriage layers, working in opposite direction, the UnilinerONE 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.

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

PROFILING REDUCES THE SMILE EFFECT

The UnilinerONE 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.

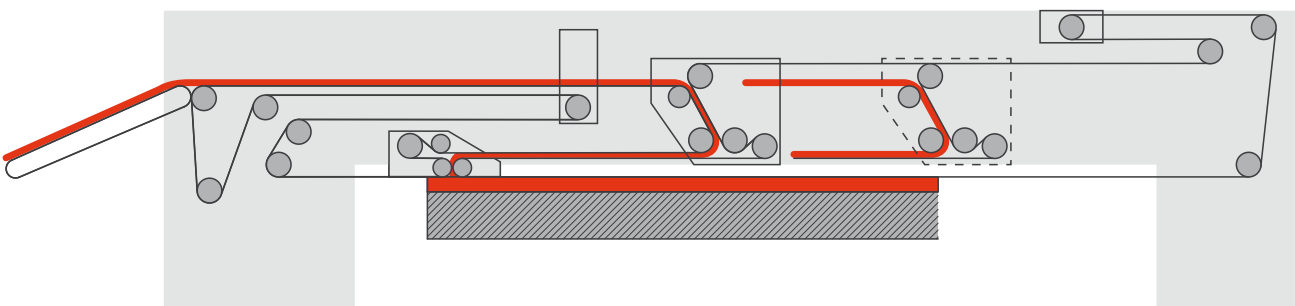


Crosslapper UnilinerONE – controlled web laydown on edges



Graphic menu “profilung” setup

Crosslapper UnilinerONE – Integrated web storage WEBPLUS





Aprons

The UnilinerONE 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 UnilinerONE 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 UnilinerONE 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.



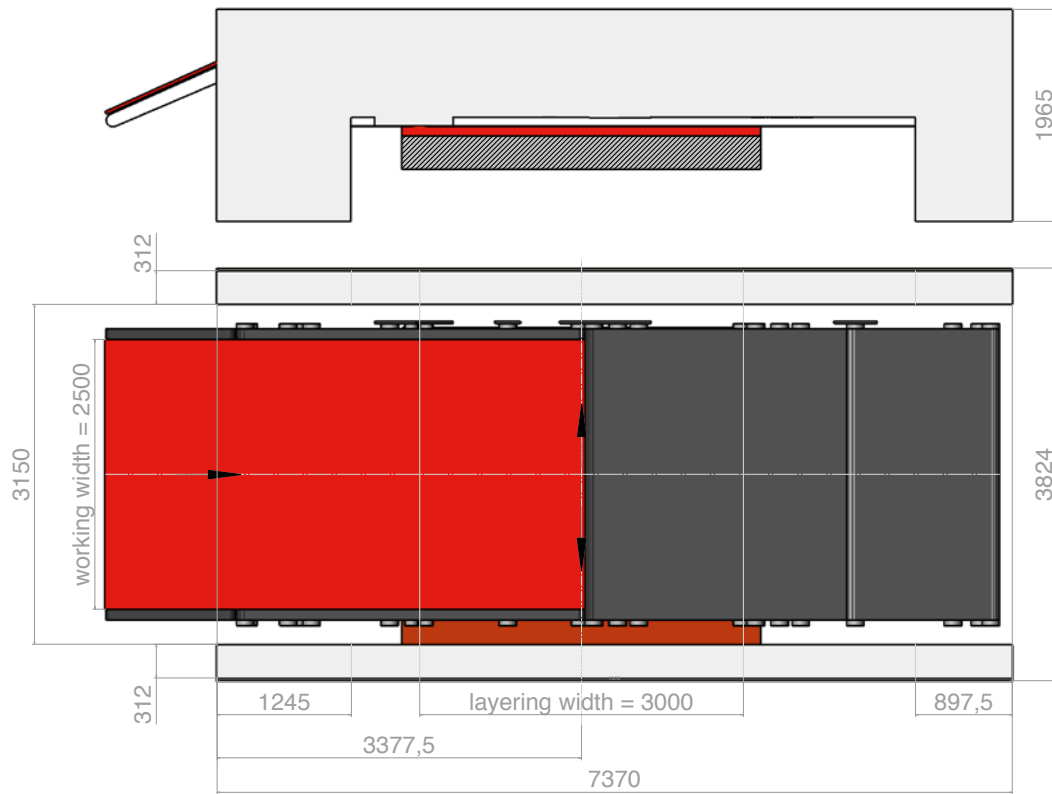
Tooth belts

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

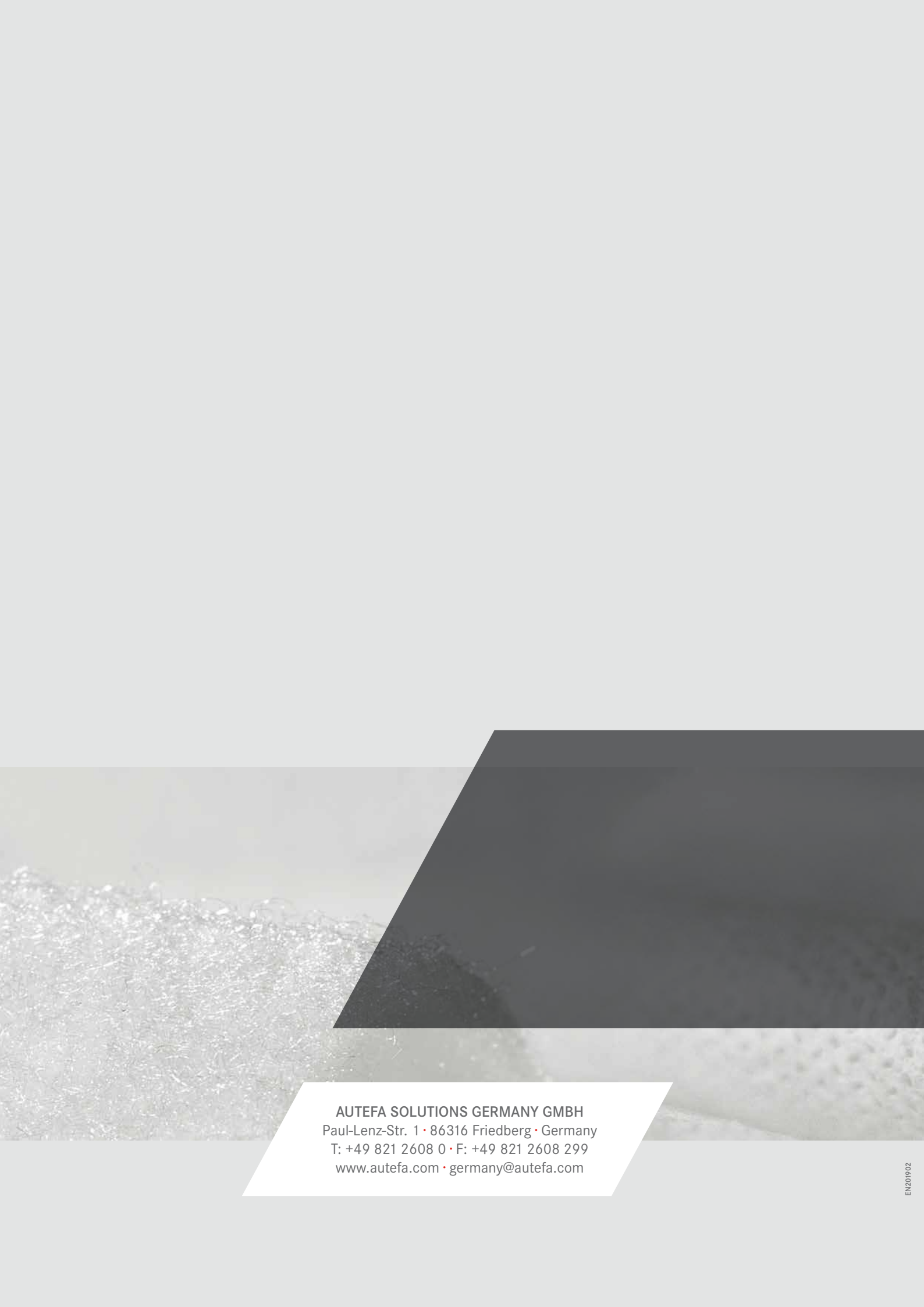


Control & Safety technology

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 UnilinerONE is monitored via safety limit switches and thus fulfils the required safety standards.



AUTEFA Solutions Crosslapper UnilinerONE



AUTEFA SOLUTIONS GERMANY GMBH
Paul-Lenz-Str. 1 · 86316 Friedberg · Germany
T: +49 821 2608 0 · F: +49 821 2608 299
www.autefa.com · germany@autefa.com