



THERMOBONDING AND DRYING

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.



STRAHM

AUTEFA Solutions Nonwoven Technology

OPENING/BLENDING	FIBER OPENING AND BLENDING			
WEB FORMING	CARDING	CROSSLAPPING	AERODYNAMIC WEB FORMING	
WEB BONDING	NEEDLING	HYDROENTANGLEMENT	CHEMICAL BONDING	THERMOBONDING
WEB FINISHING	DRYING		IMPREGNATING	
WINDING/CUTTING	WINDING	CUTTING	STACKING	



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 in thermal bonding of staple fiber nonwovens

Used as single or double belt oven the AUTEFA HiPerTherm Thermobonding oven with its double nozzle system is still the machine of choice when it comes to thermally bond materials from airlay lines and card-crosslapping lines using almost any kind of fiber as well as lines for manufacturing hygiene products such as ADL or topsheets.

APPLICATIONS:

New markets through innovation

Apart from high capacities and a maintenance-friendly machine concept the HiPerTherm allows creation of products that until now were only possible via mechanical bonding methods such as needle punching.

High Loft Nonwovens

The one4two system can also be operated with very low air velocities. The perfect temperature profile and uniform airflow at slow airspeeds result in the creation of products with utmost loft.

High Density Nonwovens

The HiPerTherm's compression nozzle turns the machine into an aerodynamic belt press. Depending on the matrix and binder fiber, densities can be achieved that are by far higher than any thermobonding ovens could do until now.

Flexible and almost unlimited usage

The HiPerTherm can be used in almost any webforming process. This results in a multitude of products that can be made on the machine:

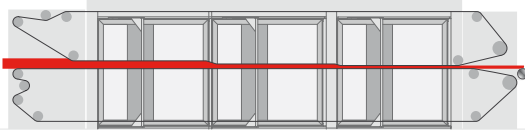
- Upholstery and furniture materials
- High loft nonwovens (quilts, insulation for anoraks)
- Bedding, mattresses
- Hygiene and medical nonwovens (acquisition layers, cosmetic pads)
- Household products (wipes, abrasive pads)
- Wipes (facial wipes, demakeup pads)
- Automotive (acoustical and thermal insulation)
- Insulation (house insulation from synthetic, natural and mineral fibers)
- Geotextiles (dam building, landfills, erosion control)
- Technical nonwovens (filter media)
- Building industry (roofing felts)

MATERIALS AND QUALITY:

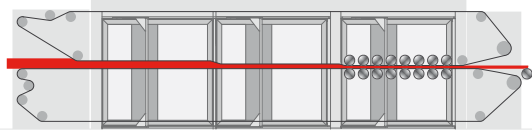
- All kind of man-made fibers
- Natural fibers (cotton, flax, hemp, sisal, jute etc.)
- Reclaimed textile waste and shoddy
- Carbon fibers
- Glass fibers
- Weight range 80 – 7000 g/m²
- Fiber properties: 1.7 – 200 dtex; up to 100 mm staple length



Double belt ovens for airlay, carded and crosslapped products



HiPerTherm



HiPerTherm Compress

HiPerTherm

PERFECT CALIBRATION AND BONDING UNIFORMITY AT HIGHEST THROUGHPUT RATES

The HiPerTherm double belt oven system comprises of a modular design, adaptable to all drying and thermobonding needs. In the standard version the machine is equipped with the Bernoulli nozzle, a drawer nozzle system made for hardest process environments with raw materials reaching from almost dust to longest fibers.

Through double frame construction, high density insulation, magnetic operator doors and an intelligent built in energy recovery system along with state of the art control systems the machine recommends itself for all processes with a need for one or all out of high throughput, perfect bonding with no gradient over the product thickness, perfect calibration achieved through a perfect mechanical structure combined with utmost airflow and temperature uniformity.

ADVANTAGES:

- Variable airflow direction
- Variable pressure drop adjustment allows production of high volume and high density products
- Deflection compensated process zone
- Optional automatic lint filter system
- Optional belt cleaning systems (brushes, high pressure water cleaning)
- Low energy consumption
- Magnetic belt holding system for top belt
- Gas, electrical, thermooil or steam heated
- Sturdy nozzle execution
- Module length: 2200 mm

BHPP ready!

HiPerTherm Compress

MANUFACTURING HIGH DENSITY PRODUCTS BY AIRTHROUGH TECHNOLOGY

The HiPerTherm Compress is a stronger version of the HiPerTherm with all afore mentioned attributes still valid.

The push pull nozzle principle integrated in a special compression roll nozzle system allows efficient penetration with air of both heavy weight and very high density fibrous materials.

In the HiPerTherm Compress the heating sections are standard type but the cooling section is equipped with the roll nozzle.

The principle is simple, cool while compressing. The result is stunning: Up to 400 kg/m³ with certain fiber blends can be achieved.

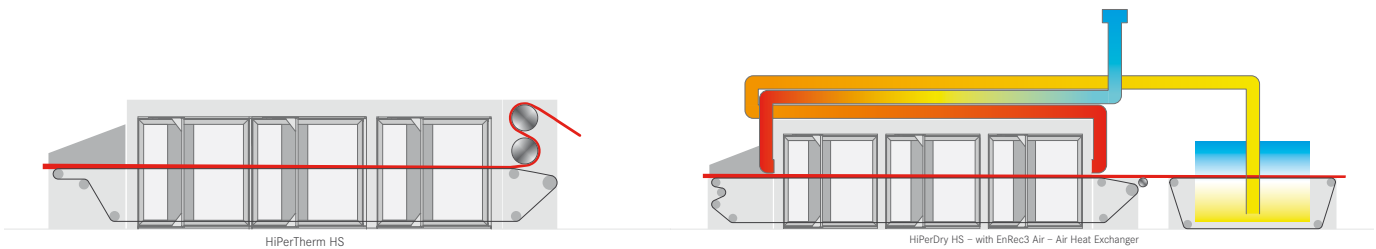
The compression nozzle can also be retrofitted to existing HiPerTherm ovens.

ADVANTAGES:

- High compression with airthrough technology results in better energy transfer compared with contact heating presses
- Roll nozzles increase life time of transport belts
- Compression either mechanical, electrical or pneumatic
- Module length: 2200 mm

BHPP ready!

Single belt ovens for thermobonding and drying



HiPerTherm HS

LOFT AND UNIFORMITY COMBINED WITH HIGH PROCESS SPEEDS

The HiPerTherm HS is also based on the HiPerTherm Standard's modular design with all the same base features.

The HS version however is equipped with special features to allow the creation of extremely high airflow and temperature uniformity.

The machine has been especially designed for the manufacturing of top sheets and ADL where dwell times of less than 3 seconds are usual and demand utmost accuracy.

ADVANTAGES:

- Highest temperature and airflow uniformity at lowest air volumes
- Optionally including temperature homogenizer system
- Efficient airlock technology
- Combined with either cooling rolls or cooling tables
- Module length: 2200 mm

BHPP ready!

EnRec 3 compatible!

HiPerDry HS

WHEN JUST DRYING IS NOT ENOUGH – OUR SOLUTION FOR THE SPUNLACE INDUSTRY

The HiPerDry HS is the evolution of the HiPerTherm into a high efficiency dryer with the base machine being executed identically to the HiPerTherm Standard.

The machine is equipped with a nozzle –circulation fan combination allowing the revolving of high air volumes without sacrificing airflow and temperature uniformity.

This guarantees uniform drying results to a predefined moisture content.

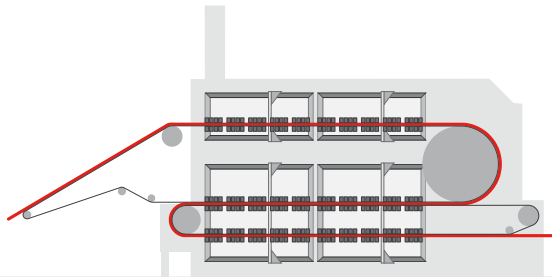
ADVANTAGES:

- Highest temperature and airflow uniformity
- Highest air volumes
- Optionally including temperature homogenizer system
- Efficient airlock technology
- Combined with either cooling rolls or cooling tables
- Module length: 2200 mm

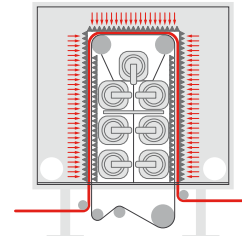
BHPP ready!

EnRec 3 compatible!

The AUTEFA square drum solutions for highest drying rates and small installed length



Square Drum Dryer SQ-H



Square Drum Dryer SQ-V

Square Drum Dryer SQ-H

PROCESS ON 3 LEVELS WITH ONLY 2 BELTS AND A DRUM: EXTREMELY HIGH DRYING RATE ON VERY SMALL FOOTPRINT

With line speeds becoming ever faster the dryer tends to get longer and longer. The solution to this is the Square Drum Dryer SQ-H which combines drying on a belt on three levels and on one or two drums additionally.

The dryer is equipped with the push-pull nozzle system and guarantees utmost drying uniformity.

ADVANTAGES:

- Push-pull nozzles for uniform airflow and high drying rates
- Drying from both product sides
- Lowest install footprint
- Including built in energy management and recovery system
- Drying on 3 levels with only 2 belts
- Suitable for high production speeds
- Module length: 2200 mm

BHPP ready!

EnRec 3 compatible!

Square Drum Dryer SQ-V

THE DRUM DOES NOT DRY UNIFORM ENOUGH? THEN USE THE SQUARE DRUM

Increasing the drying length on a drum leads either to a larger diameter or – to a rectangular product path.

The Square Drum Dryer SQ-V (vertical) maximizes drying length per one process belt.

Going away from the classic drum geometry allows the introduction of the well known push-pull nozzle system inside the Square Drum Dryer.

Easy to access, simple to thread. The dryer can be combined with an automatic lint filtration system.

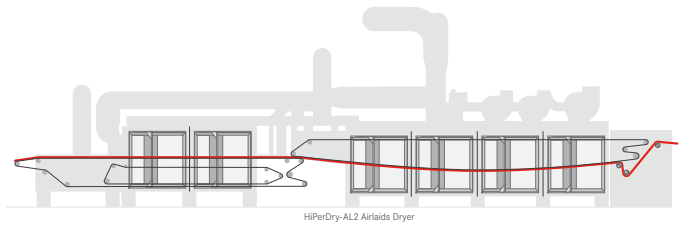
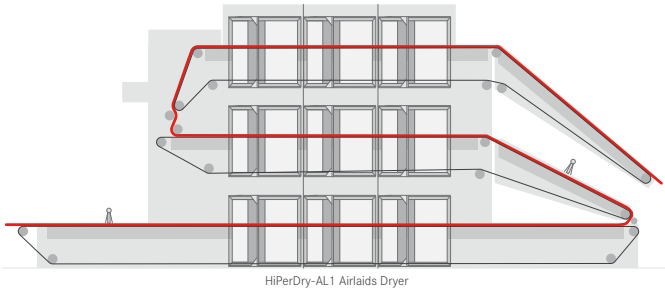
ADVANTAGES:

- Maximized drying length on one belt
- Minimized install footprint
- Perfect airflow and temperature distribution due to push-pull nozzle system
- Optional: automatic lint filtration system
- Including built in energy management and recovery system
- Suitable for high production speeds
- Module length: 2200 mm

BHPP ready!

EnRec 3 compatible!

Drying, thermobonding and curing ovens for airlaid lines



HiPerDry-AL1 Airlaid Dryer

3 LEVEL SPRAYBONDING – DRYING AND CURING LINE FOR AIRLAIDS

The HiPerDry is based on the design of the HiPerTherm Standard but equipped with special airflow nozzles designed to deal with fluff pulp airlaid.

An essential feature of this is the automatic lint filtration system that can be installed on one or more levels, depending on expected contamination level.

Complete with spray cabins, spray drizzle separators. Including built in energy management and recovery system.

ADVANTAGES:

- Turbulence free airflow
- Uniform airflow and temperature distribution
- Optional belt cleaning systems (brushes, high pressure water cleaning)
- Small installed footprint
- Module length: 2200 mm

BHPP ready!

EnRec 3 compatible!

HiPerDry-AL2 Airlaid Dryer

HORIZONTAL SPRAYBONDING – DRYING AND CURING LINE FOR AIRLAIDS

Drying Airlaid on three levels is not always possible nor always recommended. The alternative is a horizontal line with first spraybonding and drying from the top and then both spraybonding and drying from the bottom.

The HiPerDry-AL2 allows processing on one level, enlarging the footprint on the one hand but easing operation and service as well as avoiding product wrinkling.

ADVANTAGES:

- Turbulence free airflow
- Uniform airflow and temperature distribution
- Optional belt cleaning systems (brushes, high pressure water cleaning)
- Ease of operation and service
- No operator platforms required
- Module length: 2200 mm

BHPP ready!

EnRec 3 compatible!

Drying, thermobonding and curing ovens for wetlaid lines



HiPerTherm WL-HT

THE HIGH TEMPERATURE PANEL OVEN FOR THERMAL BONDING AND DRYING OF WETLAIDS

The HiPerTherm WL-HT, single belt oven, is suitable for drying and curing wetlaid materials at high temperatures. Being too large to be built modular, this machine is executed as a sturdy base frame with insulation panels.

The machine guarantees excellent temperature distribution. It can be equipped with synthetic or steel transport belts. Brushes or high pressure water cleaning systems guarantee high uptime. The machine is built extremely strong and service friendly.

ADVANTAGES:

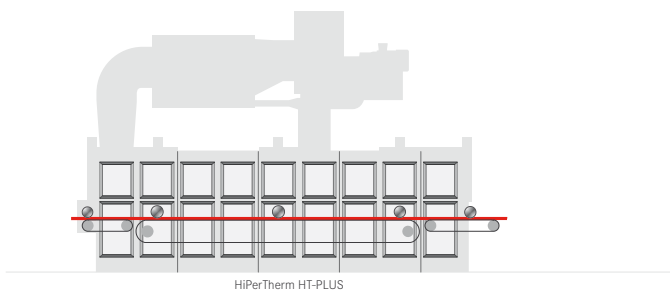
- Speeds up to 500 m/min
- Process length 45 m and more
- Module length: 9000 mm
- Process temperature up to 300°C
- Excellent temperature uniformity
- Service friendly
- Energy efficient

BHPP ready!

EnRec 3 compatible!



High temperature oven for treatment of fiberglass nonwovens



HiPerTherm HT-PLUS

OUR HIGH TEMPERATURE PANEL OVEN FOR THERMAL BONDING AND DRYING OF FIBERGLASS

The HiPerTherm HT-PLUS is a high temperature panel oven, equipped with a perforated plate belt.

This extremely sturdy machine is built to last in the abrasive environment of processing fiberglass nonwovens.

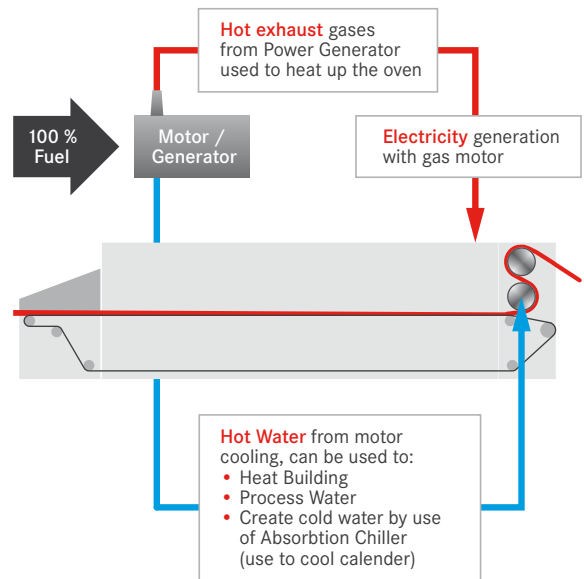
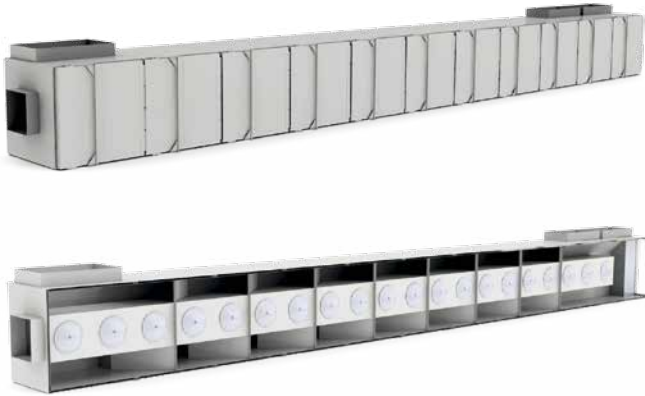
ADVANTAGES:

- Module length: 5000 mm
- Process temperature up to 450°C
- Excellent temperature uniformity
- Service friendly
- Energy efficient

BHPP ready!



Energy recovery and energy management



EnRec 3

ENREC 3 AIR TO AIR HEAT EXCHANGER

The ENREC 3 is an Air to Air heat Exchanger suitable for all AUTEFA Solutions drying ovens but can also be retrofitted to other dryer types.

Comprising of a large box with channels sized to guarantee high airspeeds and low risk of dust contamination. Successfully proven with airlaids and other dust intensive processes.

In the EnRec 3 fresh air is guided in a meandering form in an outer channel around the exhaust air which is moved in the inner duct. Thus long contact time between fresh air and exhaust air ductwork guarantee good energy transfer from exhaust air to fresh air.

ADVANTAGES:

- Simple and modular design, allows adaption to exhaust volume
- Easy to clean
- Long cleaning cycles (can be several months)



BHPP Ready!

ALLOWS THE OPERATION OF AN OVEN WITH HOT EXHAUST GASES FROM BHPP PLANTS

Block Heating and Power Plants are normally operating at efficiencies below 50 % which often does not guarantee a proper payback.

The possibility to utilize the hot exhaust gases in a drying or a thermobonding process increase the efficiency of the BHPP to more than 90 % which makes a BHPP in many countries (depending on gas price to electricity price ratio) feasible.


All AUTEFA Solutions ovens are suitable to be operated in conjunction with a BHPP plant.

Thus the energy consumption of an oven is reduced by the energy value of the BHPP hot gases.

ADVANTAGES:

- AUTEFA team with experience using BHPP hot gases
- Clean energy from BHPP
- Process can be operated without gas burners or heat exchangers in the oven chamber
- Very good payback ratios



A large, solid red geometric shape, resembling a parallelogram or a trapezoid, positioned on the right side of the page. It overlaps with a background image of a metallic mesh.

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