

**DORNIER**

# INSIDER

Customer Magazine of Lindauer DORNIER GmbH

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## **Exclusive and economical**

The DORNIER system family for denim

## **ITMA 2007 in Munich**

New concept, new technology, new products

## **Technology Center DORNIER LAB**

Commitment to location and innovation



Dear readers,  
dear friends of Lindauer DORNIER,

As you can see, our "INSIDER" has a new modern appearance. This symbolises the new products, technology and concepts that we will present to you at this year's ITMA in Munich.

For the first time, the newly designed DORNIER booth is divided into three segments, home, technical and clothing textiles where 9 air-jet and rapier weaving machines from our system family will weave very sophisticated products from these three sectors, partly even in commission for our customers.

The exhibition hall as a factory hall - DORNIER has taken up this challenge with the aim to produce saleable fabrics in conditions as close as possible to practical work, with speeds tested in an industrial environment and approved for use in continuous operation, even in the difficult situation of an exhibition, as it were, in front of you.

We are proud to have compiled this varied choice of styles with weavers of international repute and to present these to you here in Munich.

I invite you to take a close look and inspect the quality of our machines, their sturdiness and precision just as critically as the feel, colors and structures of the attractive textiles, both in optic and haptic, produced on these machines.

Our fascination in textiles now has a name: "Fabrics in Mind" - our motto for the ITMA 2007.

This underlines our new concept to develop innovative textile end products together with our customers and help them to become, and remain, profitable in what is becoming an ever more competitive environment. The new DORNIER "DrebFabrics" and our patented DORNIER "Blue Mauritius Label" selvedge are examples of this creative spirit.

A special attraction is the DORNIER CLS "Concept Loom Study", a look into the future of high performance weaving machines for flexible production of qualitative, highly sophisticated fashion or technical textiles.

Furthermore our textile finishing machinery representing the DORNIER "Full-Line-Concept" with innovative ideas and products is certainly worth a close study.

For those exhibition visitors and other interested persons who would like to get to know our factory in Lindau - with our Kaizen (continuous improvement) production system and new Technology Center - we have also arranged a shuttle service with chauffeur and competent guides.

Come and see us - we look forward to your visit and your comments!

Yours faithfully,

Peter D. Dornier

Weaving mill Hohmann GmbH & Co KG,  
Helmbrechts, Germany

## Forever Young

The Hohmann weaving company has been using DORNIER machines for 30 years. A story of success, an excellent partnership.

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New concept, new technology, new products

## ITMA 2007 in Munich

Under the motto "Fabrics in Mind", DORNIER presents its system family in the home, clothing and technical textile sectors at the ITMA 2007 in Munich.

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Jenny Fabrics AG, Ziegelbrücke, Switzerland

## Swiss Precision

The Swiss Jenny Fabrics AG produces a wide style program at the highest quality level - since six years with DORNIER machines.

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The DORNIER System Family for Denim

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DORNIER provides the economic solution in every segment of the denim market. Completely new: The patented technique for tailorable label selvedges.

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Textile factory Nicolaus Weber GmbH & Co KG,  
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DORNIER and textile finishing: Efficient solutions for singeing, mercerizing, bleaching, heat setting and squeezing processes

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Indus Home Limited, Lahore, Pakistan

## Terry Cloths from Punjab

The Pakistani company Indus Home Limited produces around 3,600 tons of terry fabric annually on DORNIER machines. And is still growing.

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Commitment to location and innovation

## DORNIER LAB -

## The New Technology Center in Lindau

10 ultramodern weaving machines are available at the DORNIER LAB since May 2007 for joint research and development as well as for customer support.

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## FOREVER YOUNG

Weaving for exactly 100 years and 30 of them exclusively with machinery from the Lindauer DORNIER GmbH, - the Hohmann weaving mill is a production facility with special focus on quality. It achieves its great goals in seclusion, quietly but very effectively. Behind all is much alive family tradition combined with a bold spirit of enterprise.



Hohmann specialties: Curtain and decorative fabrics

Organza, leno and voile curtains, colorful in-betweens, printed curtains, batiste natural decos, piece-dye fabrics, printed decos, multi-color Jacquards and fancy upholstery fabrics – Hohmann's machines produce around 45,000 linear metres of fabric daily. Over the last 20 years, Hohmann evolved into one of the largest weavers in the German speaking territory. Always keeping up with the times, using the latest technology and taking calculated risks with courage and the firm resolve, the company defies common prophecies of doomsday relating to all sorts of production problems in the Western countries.

One of the reasons for success is the early focus on the growing globalization of the markets. The answer was the acquisition of the most flexible machinery on the market in an unusually large quantity. Lean management structures, fast decisions and consequent reinvestment of profits accentuate the farsighted entrepreneurial actions of the company.

Hohmann concentrates purposely on the home location Helmbrechts-Bärenbrunn in Upper Franconia – two and a half hours per car from Munich – fully utilizing the benefits of concentration and fast logistics. This is complemented by the concept of the company to maintain all sequential production processes in house. Manufacturing covers yarn making with a very extensive count range from 20 den fine monofilament to coarse fancy yarns with up to Nm 1.5 count. It extends to weaving, printing, chemical finishing and final making-up for shipment. The range of fabrics offered is broad in scope with focus on fast, reliable reaction to special demands. In 2004 Hohmann invested 14 million EUR in a brand new production building in Bärenbrunn – a clear commitment to the home location and to their employees, and a further

forward looking chapter in the history of a company so rich in tradition.

### **Hohmann and DORNIER – a longstanding partnership**

Hohmann produces solely on DORNIER weaving machines – currently 330 - more than installed by any other DORNIER customer in Germany. With a combination of dobby, Jacquard and leno weaving machines in nominal widths between 280 and 330 cm the production plant is equipped for practically any type of fabric and any size of order. DORNIER is proud to be able to support Hohmann's very positive development and wishes the company further continuance of creativity and courage for a fortunate and successful future.



From left to right: Mr. Buchta, Mr. Hohmann, Mr. Hering, Mr. Dornier, Mr. Schmidt. The 55,000th DORNIER weaving machine was also the 300th for the Hohmann company

New concept, new technology, new products

# ITMA 2007 IN MUNICH

Our motto "Fabrics in Mind" at the ITMA 2007 perfectly describes the direction DORNIER is taking to improve customer support in the future. Integrated system consultancy will further strengthen our focus on the final product. It serves as a starting point for the selection of a filling insertion system and the best weaving machine configuration for each application in close contact with our customers. This year we will also present new resource-saving developments for both air-jet and rapier weaving machines. And the highlight: The DORNIER CLS "Concept Loom Study", a technology-carrier based on an air-jet weaving machine with a trend-setting, patented main drive and control concept along with a new modular air supply.



CLS "Concept Loom Study" – with new main drive concept "SyncroDrive" as well as the new electronic control and communication technology

## **DORNIER, your reliable partner**

For more than half a century, Lindauer DORNIER GmbH has demonstrated the firm resolve to be, and remain, a leader in weaving technology, documented by a continuous row of important innovations and worldwide patents – not only at the machine level, but now also focused on final textile products and processes. The system family of air-jet and rapier weaving machines developed over many years provides everything weavers really want. Today, DORNIER becomes more and more a partner strongly searching for and finding – in close cooperation with its customers – very specific solutions for their most varied product ideas.

**Our credo is:** Technology has limits, creativity has none. With this flexibility we assist our customers to set up tailor-made production units and thus create lasting partnerships.

## **CLS – the new DORNIER technology study**

At ITMA 2007 DORNIER presents, with its CLS (Concept Loom Study) technology carrier, a new main drive and control concept for future weaving machine designs. The new drive system, called "SyncroDrive", is patented and intended for high performance weaving machines with dobby shedding motions. DORNIER SyncroDrive® focuses on the stability of rotational speed. The key point of the new drive system is the fact that large gyratory masses – or the inertia – have a levelling effect on disturbances of the rotating speed of the weaving machine. In this respect, the proven main drive of the DORNIER weaving machine, with its clutch-controlled centrifugal mass, has been the standard on the market for 20 years. It combines excellent speed synchronization with high start-up precision and therefore reliably eliminates the danger of start marks.

The drive system of the new CLS separates the starting moments of weaving machine and dobby motion. Their functional speeds merge at a given “rendezvous point”, which considerably reduces speed fluctuations of drive elements within one machine rotation, respectively one filling insertion cycle. This enhances the speed potential of the weaving machine and dobby motion, which allows a production increase of up to 25%, compared to current standards. The energy efficiency of this separated, synchronized starting cycle also saves resources. Its much more constant running behavior also reduces wear of shedding elements such as shafts, heddles, drop wires and protects the entire undermotion of the shaft drive, including the dobby. These innovations will be shown at the Exhibition based on a Stäubli dobby type 2881. The CLS also presents the new trendsetting electronic control and communication technology DORNIER ErgoWeave® with touch

screen display as well as a new modular, even more powerful, air supply for DORNIER air-jet weaving machines.

**Resource saving – more important than ever – today and in the future**

At the ITMA 2007 we are pleased to present to you innovations for air-jet and rapier weaving machines, providing new options for significant resource savings in both energy and yarn consumption.

All DORNIER air-jet weaving machines are equipped with the redesigned, patented ServoControl® pressure control system with semi-automatic filling threading in the pilot and main nozzles of the mobile tandem nozzle group. This allows faster and more flexible adaptation of DORNIER air-jet weaving machines to unknown future demands on the air insertion system. It also means that our customers can substitute negative rapier and

projectile weaving machines with air-jets and gain the benefits in productivity and quality of this technology. The new positive filling thread clamp PWC (patent applied) allows all air-jet weaving machines on the DORNIER booth at ITMA 2007 to run without any holding pressure. This further extends the spectrum of filling yarns suitable for insertion, to now also include elastane, fancy slubs, soft-twisted yarns, etc. For the first time, fabric patterns with large repeats, such as those used for clothing and home textiles, can now be processed on air-jet weaving machines with high productivity and reliable quality.

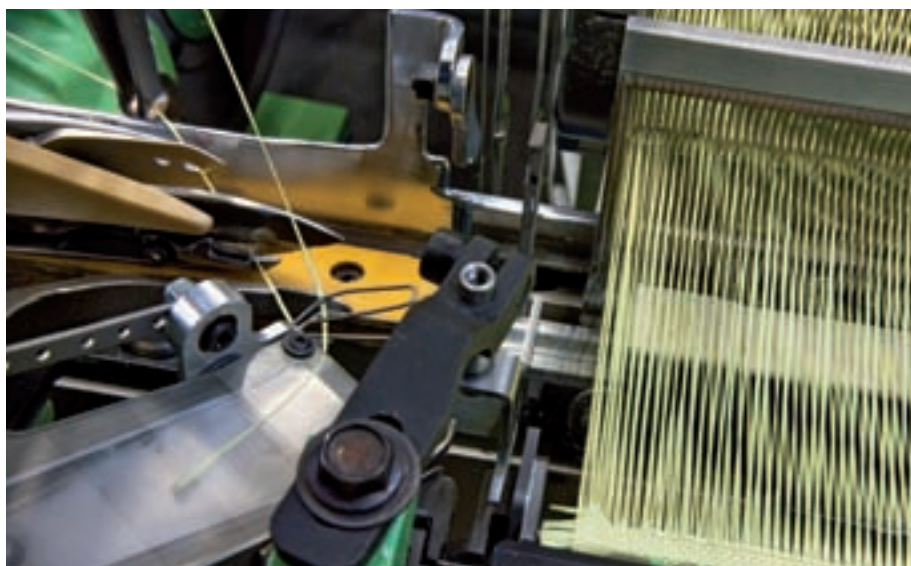
Air consumption can be reduced by up to 28% thanks to newly developed relay nozzles, special stretching nozzles and an optional “TandemPlus” main nozzle, depending on the style program. The new filling stop sensor DORNIER “Slim Throughlight Sensor” (STS) is based on the principle of light rays. It provides the highest functional and quality reliability, even on dark filling colors and finest threads down to 20 den. The device can be easily positioned anywhere on the reed with a clip. Its compact design prevents any damage of the reed dents

For the DORNIER rapier weaving machine, with its unparalleled flexibility for high-grade and expensive fabrics, a new filling yarn waste saver device – limited for two feeding positions – has been developed. The waste saver unit DORNIER “DuoColor” is available for two freely selectable filling yarns or colors to be inserted in any sequence. This way, resources can be saved, – especially when it comes to expensive filling yarns. Selvage waste can also be reduced by more than 50% depending on the filling yarn type used.

The new dynamic back-rest roll device DORNIER “DynamicWarpGuide” (DWG), installed on one of the rapier weaving machines follows the shed opening over the complete machine rotation and therefore effectively reduces tension fluctuations. This allows low warp tensions, especially for sensitive yarns, and reduces the number of warp end breaks. In the context of the DORNIER system family, this unit can also be used on air-jet weaving machines – in a speed range from inching speed up to  $n > 1,000$  rpm.

**DORNIER exclusive: DrebTechnik®**

The DORNIER weaving machines with the patented DORNIER EasyLeno® 2T system will certainly draw a lot of attention at ITMA 2007. The innovative DrebTechnik® comprises a completely new type of leno fabric

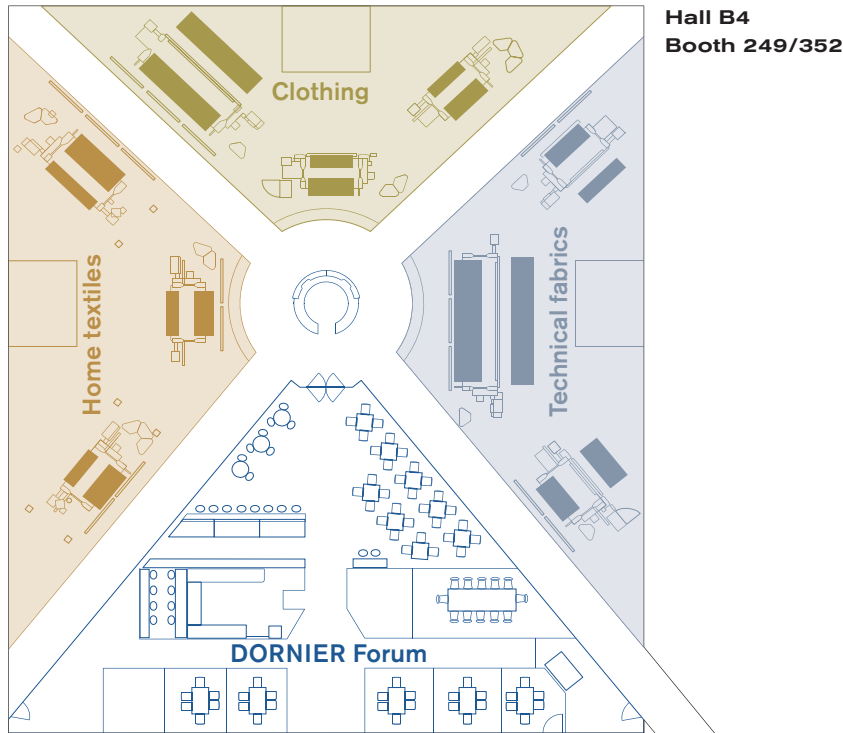


DORNIER “DuoColor” waste saving unit for two freely selectable filling threads to be inserted



The new DORNIER PWC positive controlled filling thread clamp (patent applied)

## FABRICS IN MIND: DORNIER AT THE ITMA 2007



The DORNIER booth for the weaving machine sector (with new, product-oriented concept) and for textile finishing machines

### Textile finishing



**Booth 259**

with denser filling structures. It is characterized by the option of high warp densities of up to 15 leno pairs / cm (30 warp ends/cm) and up to 16 filling colors. The distortion resistance of such “dreb fabrics (Gedrebe)” is significantly higher than that of comparative plain or conventional leno weaves – combined with better friction resistance, significantly lower material usage and higher productivity. Color brilliance and flexibility are also fascinating: Filling yarn colors dominate and the warp color can be kept as much in the background as required, so that standard warps can be used to produce very varied styles just through filling changes or filling effects. This reduces time-consuming style changes and increases efficiency in the production process when compared to warpknit goods. The next development step has already been started with a unit (patent pending), that supports combining a leno plain fabric and a single warp end control for further, unusual interlacing combinations. DORNIER EasyLeno® provides all these advantages with ultra-modern technology: gentle to yarns, easy to operate, with low wear, flexible in shedding motion elements, all combined with striking simplicity for a fast gain of experience by operators and designers.

### New product-oriented concept “Fabrics in Mind”

The DORNIER system family has been further developed and fine-tuned with great efforts over the past years. Application areas and performance diversity will now be re-defined at the ITMA 2007. In keeping with the concept of finding solutions for problems related to products as well as system consultancy, our Exhibition booth will be split into three style sectors, namely home, clothing and technical fabrics. Both air-jet and rapier weaving machines will demonstrate their unique strengths and, as a system family, create ideal conditions for the most economical production of the customers complete style spectrum.

### Clothing: Denim, high-dobby fancy shirting fabrics, fine worsted fabrics

For fashion denim with elastane and flammé yarns the installed double-width air-jet weaving machine provides a superior production performance of 2,100 m of filling inserted per minute meeting the Levi Strauss quality standard. The target group for this machine type is weavers with negative rapier and projectile weaving machines, who want to maintain the conventional production width of more than 2x 1.8 metres, but also benefit from improved

economic efficiency in the future.

DORNIER also presents a rapier weaving machine with 200 cm nominal width, weaving an extremely fine, high-shaft, shirting fabric – exclusively with 16 filling colors. Also to be seen on the machine: the new, (patented) DORNIER QuickSet Tuck-in® producing a double-sided colored, ready for tailoring, label selvedge of only 8 mm width.

The CLS prototype air-jet weaving machine produces a high quality, fine worsted style at a speed never reached before. Here, DORNIER underlines what world-wide leaders of worsted fabrics production in Biella, Italy have already realized: Replacing negative rapier weaving machines limited to 550 rpm with DORNIER air-jet weaving machines running up to 850 rpm. This ensures lasting advantages – the increase in performance together with greatly improved fabric quality provides significant economic benefit.

### Home textiles: Tapestry and upholstery fabrics, terry cloths, “dreb fabrics” for upholstery and sun shading

A 190 cm wide rapier weaving machine with 16 colors and a Jacquard machine with 10,576 lifting hooks, at a speed of 600 rpm, demonstrates the sturdiness of the proven DORNIER main drive concept based on a flywheel – especially with large Jacquard machines and heavy lifting strokes. A style change on the fly from an elegant upholstery fabric to a sophisticated tapestry fabric demonstrates the reliability of the positive controlled center transfer for all kinds of fillings.

The completely redesigned DORNIER Servo-Terry® air-jet terry weaving machine guarantees efficient production of high-pile terry fabrics in all interlacing variants. Its special features are a direct drive for the terry movement using servo motor control with, at the same time, soft reed beat-up and use of a new filling thread clamp DORNIER PWC for up to 8 colors. The latter allows for a 25% reduction in air consumption. At 260 cm nominal width, equipped with a Jacquard machine comprising 6,144 lifting hooks the machine weaves 2-width bath towels at very high speed.

Flat-upholstery and shading fabrics will be woven with changes on the fly at high productivity on a 12 color DORNIER rapier weaving machine with EasyLeno® 2T technology. The filling insertion system and the optional selection of up to 16 filling colors gives an unrivalled pattern diversity through the filling alone. Further special features of this system are the high warp density options up to

15 leno pairs / cm and variable filling densities through two warp systems with different tensions.

**Technical textiles : “Drebfabrics” for digital printing and textile reinforcements, conveyor belts, ballistic fabrics**

A 540 cm wide air-jet weaving machine weaves alternatively a fabric for digital printing and for textile reinforcement in DrebTechnik® – technology. Also here the machine is fitted with the EasyLeno® 2T unit developed by DORNIER. Warp yarn is 1,100 dtex PES and the filling is 1,180 dtex PES. This wide width combined with high speed results in an impressive increase in production performance of up to 2,000 meters of filling inserted per minute.

The sturdiness of the DORNIER air-jet weaving machine is proven by a high density cotton conveyor belt fabric produced in triple width. The full width bar temple integrated in this machine, suitable for any width, is patented in combination with the temple table, specially developed for DORNIER air-jet weaving machines. It can be switched quickly to conventional trough cylinder temples. Two center and two outside Pneuma-Tucker® devices are fitted. The tucker units do not restrict the speed and provide uniform selvages without build-up in thickness – even with heavy, dense fabrics.

An aramid fabric for ballistics is produced on a 190 cm wide rapier weaving machine with dobby. The new DORNIER “DuoColor” waste saving unit is presented here as a special feature: It can reduce the filling waste by 50% compared to existing technology. The new, dynamic back-rest DORNIER “DynamicWarpGuide” on this machine demonstrates how warp tension fluctuations can be effectively avoided.

**Tubular knit goods: DORNIER “Full-Line-Concept” for textile finishing**

DORNIER has established itself as one of the market leaders in textile finishing machines for tubular knit goods. At this ITMA we present for the first time our “Full-Line-Concept” for finishing tubular knit goods, providing a universal technology base for bleaching, mercerizing, singeing, heat-setting and squeezing processes. Innovative designs anticipate future development demands in the finishing of textiles. They cater for the high requirements on production machines arising from the very sensitive, and therefore difficult to process, materials for tubular knit goods made of MicroModal, elastane, etc. which are gaining in popularity. To represent the system family of finishing machines, DORNIER will show an EcoSinge® circular singeing machine at the Exhibition. The advantages of the individual machines are described in detail in a special article on Page 14/15.

**DORNIER on other ITMA booths**

Further DORNIER weaving machines can be seen on the Exhibition booths of Bonas with terry fabrics, Grosse with upholstery fabrics, Groz-Beckert with curtains, Stäubli with high quality silk fabrics and at the booths of Vaupel and MEI International with labels.

**Worldwide service concept**

DORNIER customers can rely on a very high service standard. Together with the color display integrated in all weaving machines, the CAN bus implemented by DORNIER since 1989 ensures all internal and external regulation and control processes. The company is a pioneer in Teleservice because the Ethernet connection required for such technology has been standard on the complete weaving machine system family since 1997. The Teleservice rounds off DORNIER’s service concept providing customers with competent technical advice through local and German travel technicians as well as comprehensive local spare part service. This reduces downtimes, increases production reliability and creates a significant added benefit for DORNIER weaving machines used by our customers.



DORNIER air-jet weaving machine in 540 cm nominal width with the EasyLeno® 2T system

## SWISS PRECISION

Weaving defects are the Achilles heel for all weavers of high quality bulk fabrics. These fine fabrics in grey state are extremely sensitive to any kind of irregularity - and even more precarious: Some faults are first visible only after piece dyeing. Today, these weavers not only earn their money through creativity but primarily through absolutely fault-free weaving and top insertion performance. Therefore, special attention must be paid to both criteria when planning investments in weaving machines. The Swiss textile company Jenny Fabrics AG chose the DORNIER system family. It has been producing an assortment of sophisticated grey cloths successfully for six years.



Grey cloth in wide diversity; highest quality and meeting Oeko-Tex Standard 1000

Jenny Fabrics AG offers an extremely varied style program that can be adapted to accommodate any customer wish. The company started to convert to the DORNIER system family gradually six years ago after extensive tests: Today, Jenny produces on DORNIER PTS rapier weaving machines all fitted with up to 24 shafts, top warp beam support and the latest QuickSet Tuck-in® selvedge device (for label selvedges as well). The DORNIER AWS air-jet weaving machines installed are used for economic production of the finest batistes, poplin and voiles. The weaving machine system family supports a style diversity ranging from standards to burnt-out styles up to warp and filling Schärli (“Swiss-dot”) fabrics. Perfect for Jenny Fabrics, whose successful textile tradition is based on a wide and varied product range and quality awareness.

### Deeply rooted in tradition

Cotton processing constituted the leading industry in the Swiss canton of “Glarus” during its early industrialization. Jenny Fabrics AG has deep roots here: Fridolin Jenny started up a spinning mill with 15,000 spindles in Ziegelbrücke in 1834. By the middle of the 19th century, the company was the largest spinning mill in the canton with 54,000 spindles and 520 employees. A weaving mill in Niederurnen was bought in 1851, the present location of Jenny Fabrics AG. Expansion continued with the building of several weaving and spinning mills in Germany and Italy, among other locations. The company was renamed Caspar Jenny in 1880 and then Fritz & Caspar Jenny 14 years later. After further growth during the 20th century, Fritz & Caspar Jenny AG was founded in 1986. All the operating companies were then transferred to the Ziegelbrücke AG spinning mill and Jenny Fabrics AG. The first company was

closed for economic reasons in 2001, but the weaving mill continues to flourish: Large investments were then made in machinery and shortly afterwards the production and style sectors of the Wängi weaving mill were taken over - including, among others, the leno fabric production.

Three years ago, Jenny Fabrics took a share in their longstanding Czech partner and formed further connections in Eastern Europe. Other cooperations have also existed in Asia since 2005 and further investments are planned over the next years.

### Integral aspiration

Jenny Fabrics produces around 12 million square metres of grey cloth annually in the Niederurnen factory (140 employees) and the Czech partner operation. This controlled foreign production enables them to offer basic fabrics at competitive prices. The larg-

est share of the finished goods is exported to neighbouring European countries - but also to Asia and the USA.

Creative design and development departments as well as the quality assurance supervision, so very important for Jenny, remain located in Switzerland. Jenny Fabrics' aim is to become a universal weaver with the fastest and most reliable deliveries, to offer the best possible competence in problem solving and to be their customer's most valuable fabric resource. The company acts as an all-inclusive acquisition partner – from complex leno fabrics to price-sensitive standard fabrics all from one company. Longstanding, world-wide partnerships - and extensive know-how – allow the sourcing of fabrics with a Swiss quality guarantee.

### Unusually wide fabric range

Grey cloth is produced from 100% cotton and mixtures of viscose, hemp, linen, PA, PES, cashmere, angora, Tencel and Trevira CS (for dense fabrics as well).

The annual yarn usage is 1,800 tonnes, 85% of which are cotton yarns. 50% of the fabrics are used for shirting fabrics, 25% for women's outer clothing and a further 25% for home textiles. The product range for shirting fabrics includes simple gabardine/Oxfords up to finest thread poplins as grey cloths. Shirting fabrics woven with dobbies in fashionable design and high-shaft Gala styles are included as well as plain fabrics for printing. Blouses, batiste, pure satin and structured fabrics also belong to the program, mainly in cotton, but also in mixtures with Tencel/Lyocell, Modal, silk and cashmere.

Very dense fabrics, such as "Pelle d'ovo", which are produced using the very finest yarn counts, are specialties from Jenny Fabrics. Jenny Fabrics also produces a wide assortment of home textiles ranging from simple print base up to complex fabrics woven with dobbies. Also worth mentioning here are, among others, transparent muslin and down-proof fabrics for finest bedding. Flame resistant fabrics are becoming more important in the object and private sectors.

### International Oeko-Tex Standard 1000

Jenny Fabrics' involvement in long-term climate protection is one of conviction. The company has held the "Zertifikat der Ener-



The DORNIER system family in use at Jenny Fabrics: In the foreground, high-shaft rapier weaving machines, in the background, high performance air-jet weaving machines

gieagentur der Wirtschaft" (Swiss Federal Office of Energy Certificate) since September 2004. Jenny Fabrics are therefore one of the first companies, world-wide, to receive the label "Oeko-Tex Standard 1000 – environmentally-friendly production sites", from the Certification Authority Oeko-Tex International, after successful audits and checks. This certification is based on inspections made locally that ensure the ecological demands are met in production. This means that Jenny Fabrics, together with three other textile companies from the East of Switzerland, are world leaders in this field.

### DORNIER air-jet weaving machines with optimized energy efficiency

The air-jet weaving machines in cam version – designed for basic weaves – process the finest warp and filling yarns up to Ne 80/1 with speeds between 700 and 800 rpm on 190 cm nominal widths.

They provide the highest productivity for this very fine fabric with the high filling densities. Lighter, less demanding style designs are produced with speeds up to 950 rpm. The integrated Automatic Start-mark Prevention ASP ensures a constant high quality standard essential for this fine styling. As confirmed by Ralf Itzek, C.O.O. of the company, it is very important for Jenny that, given the high production performance, effective quality control already takes place on the weaving machine, for example, to detect drawing-in faults by using background light. An enormous improvement in the energy balance of the air-jet weaving machines

is achieved using air conditioning from the Kaeser company. Ideally dimensioned, and using an intelligent control system, it operates with a low pressure level of 6.7 bar at the compressor output and the exhaust is reused, via a heat exchanger, for heating.

### DORNIER rapier weaving machines for highest demands

Speciality fabrics with a high number of shafts are produced using rapier weaving machines equipped with dobbies. The yarns range from Ne 2.5/1 to Ne 130/1 and Ne 160/2, whilst the fabric weight ranges between 40 and 440 g/m<sup>2</sup>. With around 1,000 different designs per year, tuned to special customer demands even during make-up, it is not surprising that the Quick Style Change system QSC is used during weaving mill preparation even for styles with top warp beam. Despite this, an extraordinarily high plant efficiency is achieved for such products with a very low overall thread break level on both the air-jet and rapier weaving machines.

### Quantity in best quality

Alongside the exceptional customer orientation of the style program, quality is the primary objective in Jenny's company philosophy. Every meter of fabric leaving the factory is inspected. This also applies to the standard fabrics produced by their partner in the Czech Republic and marketed via Switzerland. This means Jenny can offer its customers a complete package that, apart from specials, also includes plain goods in best quality, for example for printing or piece-dyeing. The company is therefore very well equipped to face the future and the challenges it may bring.

# EXCLUSIVE AND ECONOMICAL

DORNIER has set out to actively participate in the fashion business as a textile machinery manufacturer with state-of-the-art technology, and to give the industry fresh impetus. At the fashion front, for example – and in keeping with “Zeitgeist” of the jeans revival – with the new patented, designer name selvedge, “Blue Mauritius Label”.



Fashion Show during the CPM in Moscow: The exclusive DORNIER label selvedge

The denim market in 2007 has not yet fully recovered but manufacturers and retailers are showing high expectations once again. Skinny jeans, stretch denim, high-grade jeans and organic jeans are clear trends to revive the turnover success of past years. On the one hand, fashion designers are concentrating on traditional jeans in dark colors. These are jazzed up with stretch and/or effect yarns - and skinny and wide leg baggy silhouettes are the trend. On the other hand, high-grade designer jeans are in demand. In order to differentiate in the premium market, which is regarded as a stable turnover provider, designers and specialist retailers are concentrating more and more on denims with real woven selvages or, in keeping with the ecological zeitgeist, on organic blue jeans made of 100% natural cotton.

### The DORNIER system family: Strong in the denim segment

The DORNIER weaving machine system family supports the manufacturing of denim, for all market segments, with reliable quality and economic success. Machine technology is selected based on the style program, materials to be used and the customer's existing machine type. Typical questions are: Which yarns will be used – not just cotton but also linen, fancy yarn, elastane? What are the average yardage lengths and order sizes?

How diverse is the style range? DORNIER is perfectly positioned to provide the suitable machine for each case – configured for extra needs as well as for switching the program.

**1. The volume market:** The new double-width DORNIER air-jet weaving machine is the economic alternative for this low-price market segment.

**2. The fashion market:** Thanks to efficient handling of effect, fancy and elastane yarns, the double-width DORNIER air-jet weaving machine opens up a large, economic potential in the fashion market. On the other hand, the single width DORNIER rapier weaving machine is also an important production alternative because of its flexibility and its capability of fast style changes with reliable fabric quality right from start-up. These are convincing advantages for the production of short yardages.

**3. The high-grade market:** DORNIER gives a new, important impetus for this premium market with the PTS rapier weaving machine producing denim with designer label selvages.

### DORNIER air-jet weaving machines for the volume and fashion markets

The double-width DORNIER air-jet weaving machine, with its high performance of over 2,100 metres per minute insertion and unique adjustable and reproducible cloth ap-

pearance, produces start mark free fabric. Satisfying the Levi Strauss quality standard, it is always the ideal solution for the volume denim market.

Its advantages:

- New “TandemPlus” main nozzles handlingfilling yarns gently during acceleration by spreading the point load along a larger thread length with less air pressure in the main nozzles. Hairy cloth appearance familiar on conventional single width air-jet weaving machines is thus reliably avoided.
- The patented, new DORNIER PWC (Positive Weft Clamp) holds the filling thread mechanically in the main nozzle tube. Thus it will not be damaged and color deviations i.e. side-to-side-shading in the fabric widths can be ruled out. Energy is also saved, because there is no holding pressure necessary at all. Positioned at the tip of the main nozzle, the PWC allows, for the first time, double-width weaving using elastic core and flammé filling yarns. An article change from elastane to flammé yarns takes only a few minutes and requires no mechanical adjustments.
- The patented 2-thread full leno device, DORNIER MotoEco®, is positioned between the 2 fabric widths. It prevents the so called “first-pick-insertion bumps”, because it is fully reversible. This is an impera-

tive criterion for using the AFR (automatic filling stop repair) and guarantees freedom from start marks whilst improving the weaver's efficiency significantly.

- A 2-thread leno creates the catch selvage on the filling exit side. This eliminates the expensive manufacture of selvage yarn spools and their time-consuming replacement. Furthermore, the reduced catch selvage waste can be recycled without problems.
- The fabric quality is also not influenced by the lamentably often deficient warp preparation, caused by the use of natural indigo dyes. The DORNIER air-jet weaving machine stops immediately and safely on every sticking warp end, therefore preventing weaving defects caused by a faulty warp.
- With its reliable automatic start mark prevention feature ASP and its stable machine frame, the DORNIER air-jet weaving machine produces better fabric quality than projectile and negative rapier weaving machines with up to 60% higher productivity.
- The maintenance requirements are much lower because of sturdy machine elements, less moving parts, and therefore lower energy consumption.
- The double-width DORNIER air-jet weaving machine handles warp yarns and the shedding motion elements extremely gently, with much less strain than that of single wide air-jet weaving machines. The latter, because of the very fast shed movements, place extreme loads on yarn materials and especially on shafts, heddles and shedding motion. Since filling waste is halved, the double-width machine is always more economical than any single width air-jet weaving machine.

**DORNIER rapier weaving machines for the fashion and high-grade markets**

The filling insertion system of the DORNIER rapier weaving machine with positive control of filling yarn transfer in the fabric centre, combined with the open shed filling insertion feature, provides highest flexibility and quality reliability. This means that even fashion trends with linen, ramie and especially soft-twisted flammé filling yarns, that usually would not survive air-jet filling insertion, can be successfully covered. The reliable filling insertion of Lycra core yarns prevents losing elasticity on the exit side. The open shed filling insertion keeps uniform tension from the left to the right side and ensures absolutely even surface appearance of color. Last



Stretch denim produced on DORNIER air-jet weaving machine with the usual width of 400 cm common today

but not least, the use of short warp lengths in fancy denim entail, that the DORNIER rapier weaving machine is the ideal production means, because of its capability for fast style changes.

**“Blue Mauritius Label” with DORNIER PTS rapier weaving machine**

Small numbers of narrow shuttle weaving looms are still used in Japan and Italy to produce high-priced denim fabrics with so-called “red selvages”, - meaning selvages utilising color threads, labels or pattern coding. The newly developed QuickSet Tuck-in® device, designed by DORNIER especially for such narrow selvages - of only 8 mm width - now allows, for the first time, the economic production of label selvages on a rapier weaving machine.

Unlike existing tucker units, all adjustments are made off the machine using setting gauges. The assembly unit is then fitted on the tucker already on the machine. This development ensures the high quality requirements of the narrow selvage for the first time. The narrow width – with the same thickness as the ground fabric – means this selvage can easily be tailored. It is ideal, for example to protect brands and write designer names on seams.

**DORNIER label selvage: Logo, text or info selvage**

The DORNIER “Blue Mauritius Label” selvage is a patented development with a wide spectrum of application. The selvage can also be used to carry information (sensors, barcode etc.). In this case, the PTS rapier weaving machine is combined with a dobby or cam machine and an electronic label selvage Jacquard machine. In order to make the DORNIER rapier weaving machine universal for both label denim and high-grade denim, it can be converted from tucked to leno selvage as well as from 85 to 180 cm reeded width during a regular style change.

The DORNIER “Blue Mauritius Label” enhances every woven product. Considering appropriate cut structures, the straight selvage opens up many design options for industrial production. With its “Blue Mauritius Label”, DORNIER launches a technology that will create new opportunities for innovative applications - not only in the highly competitive denim market. It will certainly be very interesting to see, what the designers of tomorrow will come up with.



“Blue Mauritius Label” high-grade denim woven on a DORNIER rapier weaving machine

# PHOENIX FROM THE ASHES

The fortunes of the Nicolaus Weber GmbH textile factory changed dramatically on August 1, 2003. What followed was an example how much farsighted management and the commitment of an exceptional work force can achieve, by fighting to keep a production location in Germany alive. This happened after a devastating fire in the factory demanded an almost complete reconstruction, along with an investment of millions of EURO's, at top speed. The formula for this successful accomplishment was a return to fundamental values, faith and the highest levels of specialization.



Polyester grid filter fabric on a DORNIER air-jet weaving machine at Nicolaus Weber GmbH

“We were in the fast lane at that time, we had made investments, were enjoying growth rates every year and felt safe – until the big bang. The carpet was pulled out under our feet.” This is how Claus-Michael Weber, the 48-year old textile businessman who manages the Nicolaus Weber GmbH already in the fifth generation, described the disastrous fire in his weaving mill in the early morning of a cool summer day four years ago. A wooden truss in the Rangstrasse building caught fire during welding repairs on the roof while the factory was on vacation. The entire building was ablaze within seconds and the fire spread to other parts of the large complex, - the roof finally caved in.

### At the end or a new start

Shock, despair and property damage of 10 million EURO. What next? Michael Weber asked himself: “Is it worth investing at all in

a production unit again given the prevailing economic circumstances? And if yes, where?” It was soon clear to him: “I’ll start again in Fulda – with full conviction.” He knew that he had always been very successful with his dedicated team of employees in manufacturing high quality technical textiles such as filter cloths, sails, backing textiles, substrates, special fabrics or coatings - and he relied on this strength. “Apart from all that,” he contemplated, “our aim was always to manufacture solutions for our customers. It must now be possible to find a solution for our own problem.”

### Backed up by a strong crew

The final decision was: Clever investments, with focus on even higher specialization, on quality and complete faith in the employees. This step was a clear commitment to Germany as a business location and to the 28-

strong team in Fulda. After many emergency meetings and a lot of stressful improvisation to still deliver timely to customers, the new construction began in the Summer of 2004. Manufacturing in the weaving shop started again in December of the same year.

### Continuity across generations

Anyone walking down the Rangstrasse in Fulda these days can see: The textile factory Nicolaus Weber is a successful example of a revitalized industrial complex. The old building with red brickwork blends into a harmonic entity with the new glass annex. The architect Andreas Staubach states: “Businessman Claus-Michael Weber is very aware of the family tradition but the future also demands commitment. Continuity was an important aspect when making the decision to rebuild – that also means faith into fundamental values”. Production is individually

geared to the products tailored for the need of each customer. Special solutions, totally different to standard solutions, are sold – and one can't discuss this with a production location in a foreign country on the telephone. Longevity was also the keyword for the new building and the machine park: "This building will surely stand longer and the machines run longer than I will work here", Weber says, "therefore the thought behind our planning



Special fabrics for drogues



Application examples for bellows

was always to lay a good and stable foundation." This quest for sustainability practiced over several generations, materialized again in solid construction and technical finesse. All is now designed for the next decades. That culminates into the principles of a serious man: "We need innovation but we also need tradition as perhaps the most important characteristics of a family business. A conglomerate enterprise cares for the shareholders' meeting next year, we think about the next generation."

#### **New start with ultra-modern production**

The new production facilities are not only aesthetic but also ecological and functional. Interesting and intelligent details show, that much thought went into the concept: For example, a large glass front along the road allows a free view into the weaving mill without the noise penetrating to the outside, and at the same time 100% UV absorption protects the fabrics in the weaving shop. A huge pillar-less storage depot on the first floor is insulated so well, that heating is not necessary and com-

fortable working temperatures prevail, even in winter. All wall pillars of the building are coated with a special material that expands 15 cm when exposed to heat providing fire protection for 90 minutes. Further unrivalled fire protection measures are integrated everywhere. The weaveroom has an air-conditioning system that circulates 80,000 m<sup>3</sup> only once per hour, which creates extremely low air movement. This practically turns the weaving shop into a clean room. There is no fiber fly visible, even when coarse cotton yarns up to Nm 20/6, producing high lint, are processed. Extensive sound insulation provides the feeling of an extremely low noise level in the weaveroom. This comes close to Claus-Michael Weber's ideal: A quiet and clean environment, symbolizing defect-free fabrics.

#### **Flexibility and speed implemented – thanks go to DORNIER as well**

The focus on producing "specialties of specialties" in the segment of technical textiles was strengthened further by re-equipping the weaving facility with DORNIER rapier and air-jet weaving machines. In very close partnership with DORNIER, a machine park was created to meet specific demands, that covered every possible production requirement. Whilst rapier weaving machines are available as universal production means, the air-jet weaving machines implement the "Quality of Service" concept: Their higher speed potential allows, that many orders can be finished in shorter throughput times. To ensure this

high flexibility and speed in the production process – orders for 500 metres are also accepted which sometimes means a run-time of only 25 hours (at 10 picks / cm density) – investments were made in a special sectional warper for short warps, an automatic drawing-in machine and a QSC Quick Style Change system. All this became necessary, be-

**"A conglomerate enterprise cares for the shareholders' meeting at next year. We think about the next generation."**

cause the number of weaving machines was cut in half by the new investments, while still maintaining the same production output. The DORNIER system family is supplemented with the new EasyLeno® technology. One machine of this type is producing leno styles, halving the time to meet production targets as compared to the conventional machines in the past.

Today, Claus-Michael Weber is convinced, that substituting projectile machines by a combination of DORNIER rapier and air-jet weaving machines was the right choice. Moreover, he relies, - as before, on qualified employees, a pleasant working environment, efficient methods, an ecological production system and modern sales and marketing techniques.

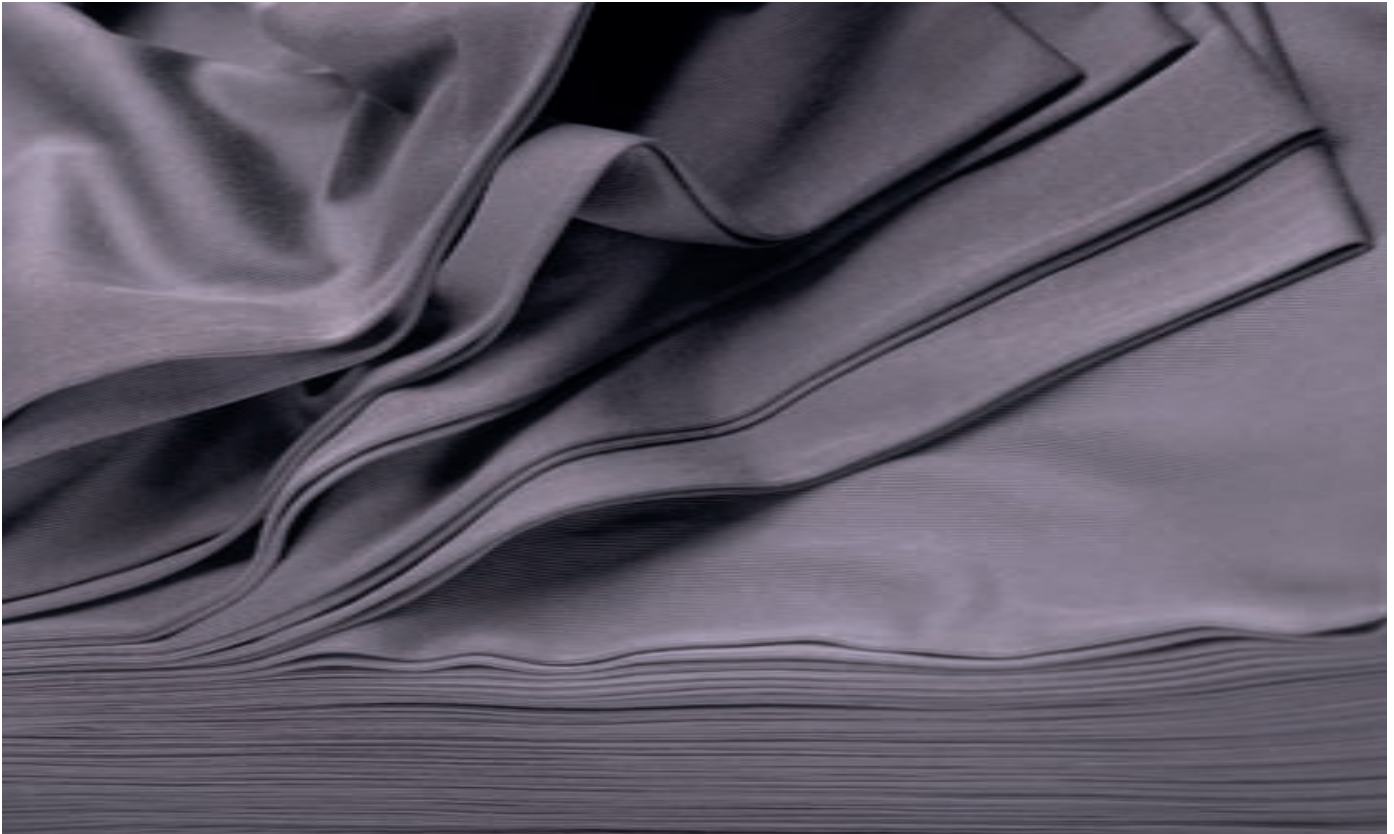


Tradition and innovation, united in the newly designed front view of the company building

## The new DORNIER "Full-Line-Concept" for finishing tubular knit goods

# FROM A TO Z

What the cut is for a diamond, finishing is for knitgoods. Making reality out of a mere potential - the more skilful, the more profitable. The perfection and economic efficiency of textile finishing plants determine the quality level, the price attainable for the goods and, last but not least, the profit. The Lindauer DORNIER system family combining continuously operating finishing machines, offers highly efficient solutions for the singeing, mercerizing, bleaching, heat-setting and squeezing processes of tubular knit goods. The "Full-Line-Concept" completed for the ITMA 2007 ensures a universal technological base – completely in line with DORNIER's comprehensive system concept.



Mercerized tubular knit goods

With more than 450 units installed worldwide, DORNIER enjoys an excellent reputation in circular finishing of tubular knit goods. The computer-operated control and dispensing systems on all our continuous operation finishing machines cater for reproducible styles as well as very homogeneous finishing results.

### **The patented circular expander system: The heart of all DORNIER textile finishing machines**

The basis for all machine types is the patented DORNIER circular fabric expander that keeps the goods tensioned in circular form without creases. It allows results without selvage marks as well as reproducible settings. DORNIER's circular expanders, adjustable by motor, have been used in the industry very successfully for many years.

### **Tube mercerizing machine, EcoMerc®/3S: Brilliant fabric surface, high economic efficiency**

The DORNIER EcoMerc®/3S allows continuous mercerizing and neutralizing of tubular knit goods with diameters from 250 – 1,000 mm at a production speed of approx. 25 – 30 m/min depending on fabric weight and diameter.

The version with three washing towers ensures an effective reduction in the caustic soda content of the knitted fabrics. Combined with the upper alkaline solution container for neutralization, the EcoMerc®/3S ensures an excellent mercerizing effect with high economic efficiency.



The patented circular expander



EcoCombine® mercerizing-bleaching plant in Thailand

**Mercerizing plant, EcoMerc®/4S:  
Top quality with high performance**

Our latest development, the DORNIER mercerizing plant EcoMerc®/4S for continuous operation is the answer to the complex demands for a machine with even higher productivity and economic efficiency obtaining the best possible mercerizing results. 12 to 18 tons/day can be processed at a maximum speed of approx. 35 m/min.

**Mercerizing-bleaching plant,  
EcoCombine®/D: A clever  
combination of three processes**

The DORNIER EcoCombine® mercerizing-bleaching plant with continuous operation melts three manufacturing processes into one: Demineralizing, bleaching and mercerizing. Newly designed, it combines an extremely flexible and economic production line into one single machine. The impregnation and reaction sector is optimized, so that simultaneous bleaching and demineralizing processes are ensured. Furthermore, a heating and dwell chamber were added before the washing and neutralizing section for the bleaching process.

The EcoCombine®/D technology is modular: DORNIER EcoMerc® mercerizing machines already in use can be upgraded to EcoCombine®/D.

**Singeing machine, EcoSinge®: Mini-  
investment, maximum result**

A homogeneous, gentle process, free from selvedge marks, singeing off of spiky fibers on the complete circumference of tubular knit goods - this describes the continuous operation of the DORNIER EcoSinge® singeing machine. Cloth quality is improved by this process in many respects: Smooth surfaces ensure homogeneous dyeing results and brilliant print contours as well as the highest gloss in

the downstream mercerizing process.

EcoSinge® ensures a significant cost reduction in the manufacturing process as compared to enzymatic treatment - especially with regard to weight losses during the various process stages (singeing 2-3%, enzymatic treatment 5-6%). Production speeds range from 40 – 120 m/min depending on the diameter of the tubular knit goods. Practical experience has shown, that an average production speed of 70 - 80 m/min is achievable. These advantages can be gained with a relatively low investment and low operational costs due to economic gas consumption and one-man operation.

**Heat-setting plant, EcoFix®  
and EcoFix®/2:  
One technology, two versions**

The DORNIER EcoFix® is the only production system on the market, where knitted fabrics are heat-set in almost circular condition and under longitudinal tension. This brings great advantages with regard to smoothing of

distortions of the knitted surface as well as fixing and controlling certain cloth widths. The EcoFix® machine is available in two versions, as EcoFix® heat-setting plant with one tower and EcoFix®/2 with two towers. The most significant difference is the higher productivity of EcoFix®/2 through two heat-setting towers located one behind the other. It only costs about one third more, but runs at twice the production speed. The reason for the low price difference is the fact that the rotary table, detwister, steam generator, pre-heater chamber as well as exit stage are required for both machines. Only an additional heat-setting tower is required for EcoFix®/2. Practical experience has shown that production speeds of approx. 10 - 15 m/min can be reached on EcoFix® and approx. 20 - 25 m/min on EcoFix®/2. Both plants provide first class fabric quality combined with highest reliability.

**Circular squeezing machine,  
EcoSqueeze®: Innovative dewatering**

The patented DORNIER EcoSqueeze® circular squeezing machine with circular squeezing rollers is our latest machine innovation. The EcoSqueeze® was developed in consideration of the fact, that more and more elastane and microfiber goods are being produced where soft squeezing is required. The machine has 2 units each consisting of an outer pressure roll and two inner mating rolls driven by a common drive ring allowing simultaneous and repetitive squeezing of the knitwear from inside and outside. This supports squeezing tubular knit goods without distortion or undesirable creases in the diameter range 250 – 1,000 mm with only 50-60% residual moisture content.



EcoFix®/2 heat-setting plant at a German customer's location

Indus Home Limited, Lahore, Pakistan

## TERRY FABRICS FROM PUNJAB

The Pakistani Indus Group of Companies has launched a “Mega-Towel-Project” in a joint venture with the renowned American company WestPoint Home: Since 2006, under the name of “Indus Home Limited”, a wide assortment of terry fabrics has been woven, dyed and finished on an ultra-modern machine park. DORNIER is involved in this major project and has delivered 110 air-jet terry weaving machines, 48 of which are already in production. The complete plant will be commissioned by the end of 2007.



3,600 tons of terry towels leave the Indus Home Limited factory annually – and still growing

Indus Home is located in Punjab, the Pakistani part of the former province of British India. This area is called the Land of Five Rivers, referring to the five tributaries flowing into the Indus, which is the key water resource for Pakistan and the longest river on the Indian subcontinent. In 1885, the British started to transform the deserts of the Punjab province into wheat and cotton fields with water from the Indus. The previously underdeveloped province became the richest in the Indian Empire by 1915. Encouraged, the British extended the irrigated region further and further – it became the largest contiguous irrigated region on Earth. Today, Pakistan is the fourth biggest cotton fiber producer – after China, the USA and India.

### Indus Group of Companies Pakistan

The Indus Group of Companies has been active in the textile industry for over 50 years. Originally founded as a company specialized in the precleaning of hand-picked cotton, it

has developed into one of the best established textile groups in the country. Over the years spinning mills and terry cloth production were added as logical extensions, so that the company now exports over 200 million US\$ worth of materials, 80 million US\$ alone comprise terry towels.

The experience gained by the company over many years, is reflected in a deep understanding of all details of the cotton business as well as strong technical, financial and personnel resources. The Indus Group even produces its own electrical power to be independent. Gas generators delivered by leading European and American manufacturers supply all the production units with electricity around the clock, efficiently and without interruption – 173,000 megawatts are required annually - just to get an impression of the size.

### Precleaning the cotton

The harvested cotton is precleaned in four factories located in four different cities in the best cotton areas of the Pun-

jab Region. The raw cotton bought from the farmers is meticulously cleaned here and then delivered to the spinning mills. This important groundwork is decisive for the final product quality; on the one hand, through selective purchasing from the farmers, and, on the other hand, through thorough and careful drying and selective blending. 19,000 metric tons of cotton are processed every year.

### Spinning mills

The spinning group comprises five factories: One in Karachi, two in Hyderabad and two in Muzaffargarh. A wide variety of ring-spun yarns are produced here, mainly cotton but some blends with synthetics and effect yarns are also part of the program. The spinning mills are the core business of the Indus Group with an annual production of 342,000 tons reflecting approx. 80% of the total turnover.

### Terry towel production

With the aim of manufacturing more products, with value-added potential for the export markets, after the lifting of the “WTO-Quota System”, the Indus Group installed a terry towel production facility, that has been running successfully since April 2005 – creating an output of around 3,600 tons annually.

### Pakistani-American joint venture - “Indus Home Limited”

“Indus Dyeing and Manufacturing” is the name of the terry towel project of the Indus Group. To move into this new direction, the company started a joint venture with WestPoint Home Inc. in Alabama, USA, trading under the name of “Indus Home Limited” since then. Both partners have a 50% share in the project, WestPoint Home looks after all export matters for Indus Home Limited and the Indus Group takes care of all local management operations. Currently Indus Home Limited has 800 employees, the plan is to expand to 1,600 in the near future. The weaving factory is located around 35 kilometers from Lahore.

### The strong partner: WestPoint Home

The Indus Group won a particularly strong partner in WestPoint Home for the Indus Home Limited project. Three of the most famous names in the textile industry of America are involved in the history of WestPoint: J. P. Stevens & Co., Pepperell Manufacturing Company and WestPoint Manufacturing Company are predecessors of WestPoint Home. Today, the company is

a leading manufacturer and marketing outlet for bedroom and bathroom textiles in the USA. Among others, the famous brand names of the company are: Martex, Grand Patrician and Lady Pepperell. Apart from their own brands, the company also produces for other world famous names such as Ralph Lauren and Harley Davidson. Every third American hotel room is fitted with WestPoint Home products, - a gigantic volume.

### Production program

Indus Home Limited produces bath towels,

**“We chose DORNIER air-jet weaving machines and are very satisfied with the performance”**

### DORNIER terry air-jet weaving machines for Indus Home Limited

Indus Home Limited ordered 110 DORNIER air-jet terry weaving machines, types EasyTerry® and ServoTerry®, 48 have already been in production since 2005 and the remaining 62 machines are in the installation phase. “We chose DORNIER air-jet weaving machines because of their reliability with regard to quality and flexibility and are very satisfied with the performance” said Mian Irfan Ahmed, trained in the USA, the CEO and joint owner of Indus Home Limited.



Mr. Aamir Hussain Toor, General Manager of Indus Home Limited next to a DORNIER air-jet weaving machine

hand towels and washcloths made of 100% cotton. The hand towel weight varies between 450 g/m<sup>2</sup> and 600 g/m<sup>2</sup>. The program will soon be extended to include bathmats with a fabric weight up to 1,000 g/m<sup>2</sup>. The yarns used in the weaving mill – mainly Pakistani and Egyptian Giza quality – come from the company’s own spinning mills. 65% are ring-spun yarns and 35% OE yarns. The yarn count ranges for the ring-spun yarns are Ne 13/1, Ne 13/1 mercerized, Ne 20/1 to Ne 20/2 mercerized. Ne 10/1 is used as OE yarn. The OE spinning mill will be extended shortly with further 2,800 rotor spindles, to cover the planned increase in production with own yarns.

Daily production currently runs at 27,800 kg which means each DORNIER machine produces 580 kg per day. This will increase to around 64,000 kg/day when all 110 machines are in operation. All the machines can run with up to 6 filling colors and are fitted with dobby machines with up to 20 shafts. The average speed for a nominal width of 300 cm is at 600 rpm, the ServoTerry® runs at 625 rpm which corresponds to a realistic filling insertion rate of 1,840 m/min. Mr. Aamir Hussain Toor, General Manager of Indus Home Limited and a textile engineer with many years of weaving mill experience, says that other arguments for DORNIER machines are the high speed and the modern, but reliable software:



View in the weaving room of Indus Home Ltd. with the 48 DORNIER air-jet terry weaving machines already in production

“No other weaving machine available on the market is fitted with a comparable software and similar mechanics.“ This statement is underlined by the fact that, for example, all settings on the ServoTerry® machine during style changes are completely digitalized and can be entered via the Dialog Panel which means efficient reproduction with low personnel effort. He continues to say, that the quality of the terry cloths produced is excellent. A special weaving shed geometry, a sta-

ble fabric guidance during pile creation and an electronically controlled pile warp length measurement ensure a constant pile height. This leads to a uniform fabric weight and low shearing waste when producing velour fabrics. Furthermore, the patented soft reed impact leads to minimized warp tension during reed beat-up. This avoids filling thread bursts during pile loop creation, which in turn reduces thread breaks and therefore fabric faults. The result is not only improved fabric quality,

but also reduced workload of the personnel, enabling weave-room efficiencies of more than 90% with high machine assignments. Through the investment in DORNIER terry air-jet weaving machines, the Indus Group has created all the basic essentials to become an attractive partner for globally sourcing purchasers of high quality cotton textiles at competitive prices.

## Result of the Lindauer DORNIER GmbH business year 2006

Our company attained an overall satisfactory result in financial year 2006. Positive operating results were achieved in both the Weaving Machine Division and the Specialties Machine Division. Overall performance increased by 8 percent to 228 million EUR as compared to the previous year. The cost savings package started in 2005 was effective in re-

ducing costs during the whole of 2006. All investments and the financing of a large number of projects were made with own funds.

The complete design and development costs, around 8 percent of the overall performance in 2006, show impressively that the company assigns high priority to the development targets be-

ing pursued. The company's expectations for the financial year 2007 are in the same positive range as for last year.

Commitment to location and innovation

# DORNIER LAB – THE NEW TECHNOLOGY CENTER IN LINDAU

The new DORNIER Technology Center in Lindau has been in operation since May 2007. Apart from its primary function in the areas of weaving technology, customer support, research and development, it is also a clear commitment to our Lindau location and to our employees, to the future of Lindauer DORNIER GmbH as well as an expression of the continual quest for technological leadership.



DORNIER LAB: Equipped with air-jet and rapier weaving machines of very different configurations

DORNIER has never remained satisfied with the present. It is, and will remain, our desire to develop, together with our customers, specific and exceptional solutions. This means the Technology Center will be a test center – on the one hand, for our customers and their products and, on the other hand, for our own research tasks. Here, new products will be developed, intensively sharing know-how with our customers' experts, fabric styles optimized in operational, as well as in quality behavior, technologies refined and innovations tested.

## 10 machines at your service

Five rapier and five air-jet weaving machines are available in an area of 450 square meters. They can be configured individually in any nominal width from 150-540 cm. The extremely efficient air-conditioning allows humidifying the weaving room and the rear shed of each weaving machine differently and independently. All installations – exhaust ventilation, air lines and power systems – are designed for flexible setup of diverse machine types.

## Efficiency through size and flexibility

The well thought-out and generously spacious weave room allows developments to take place under practical conditions, with accompanying tests being carried out directly on the machines. A Quick Style Change System (QSC), provides for short standstill times and ensures efficient working for our

customers. Technically competent employees provide on-site advice and instructions on technical topics within applications.

## Securing the future

DORNIER is pleased to give innovations more space with the new Technology Center. New impulses will be searched for and elaborated here, together with our customers, suppliers and technical specialists. Our ultimate goal: Always focused on being one step ahead in technology and therefore securing the future together.



DORNIER LAB: In operation since May 2007

Quality creates value

**DORNIER**



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