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Business // Finance // Market // Technology

Yarn // Fiber *Spinning *Weaving * Knitting *Dyeing // Finishing // Washing // Drying * Nonwovens // Technical Textiles *Textiles // Apparel // Garment

TOP STORY:

INDIA ITME offers a bright future

- Fibre & Yarns Award on the walkway at the Mercedes Benz Fashion Days in Zurich
- From fashion design to the creation of cutting patterns. Digital all the way?
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TOP STORY:

India ITME offers a bright future

Innovations & Improvements

Part 6: Nonwovens / Technical Textiles

Dear Reader,

At the conclusion of the year the Indian textile industry along with India ITME is awaiting their great technical highlight of the year. Not the least of those experts such as Prof. Barry Eichengreen see India overtaking China long-term as the number 1 in global textile production. The textile industry in India also wants to grow strongly in the next few years up to 2020. The chances of this happening are good according to the opinion of experts and the foundations for this can be optimally laid down right now with India ITME as it is only held every 4 years. High demand for the most modern technology meets up here with an excellent product range. Everything would be rosy - if it weren't for the glaring energy problems of the country. What would be more appropriate to put 'saving energy' on the agenda in addition to the expansion of the energy network and its modernization. Numerous exhibitors will be showcasing energy efficient machinery. More on this subject in our reports on the Indian textile industry and India ITME.

This issue in our series on innovations and improvements is devoted to an area possessing enormous growth potential which probably every producer would very much like as a new star product in their portfolio: Technical textiles and non-wovens. We present some new machinery that will certainly allow objectives to be more easily achieved.

Finally a last word concerning our affairs or rather a few announcements. Next year we will once again expand or alter some of our services. Our app, providing you not only with static information in a different form but also always bringing you all the latest news and infos on your mobile phones and tablets, will also be available for Android from 2012. This conforms with numerous requests sent to our editorial office. There will also be further enhancements to our web portal. We are going to make all the news from our archives since 1999 available and also to provide a search function. This applies in the same way for the Buyer's guide where more than 2 million product pages have been retrieved in 2012 to date. Now is the time to make sure that the right solution providers are found quicker and more efficiently. We will streamline our magazine down to four issues next year to allow more time for research and editing as well as to continue improving quality.

We hope that you were successful and happy in the past year and we wish for us all that our industry continues to grow strongly and that technical innovations provide our business with real momentum for the next year.

Take care!

Best wishes
Oliver Schmidt

India ITME offers a bright future

by Oliver Schmidt

It is December at last and India is looking forward to one of the most important trade fairs of the country. The most important international show of textile machinery in south asia, the 9th ITME, takes place from the 2–7 in Mumbai in the Bombay Convention & Exhibition Centre. It enables many of those involved in the textile industry in India as well as adjoining countries to examine the technical innovations of the global machinery industry at close quarters in their own country and to conclude appropriate business for the promising outlook for their company.

India ITME is expected to be a spectacular event showcasing hi-tech textile machinery, innovative technologies and services for textile industry and is specially designed to be the "gateway event" to the huge market opportunity presented in India as well as the nearby countries like Sri Lanka, Bangladesh, Pakistan, Vietnam, Indonesia, etc.

The focus of the organisators, the India ITME society, is to provide a complete platform and making it a win-win situation for every person associated and interested in the ITME event in terms of acquiring new clients, new markets, new technology, cost competitiveness, sourcing opportunities including academic and research programs. Apart from the business, the organizers also hope to bring to the table new products and innovative ideas for world class textile products and services through seminars during the event.

"With such need and opportunity based demand, it is only imperative that textile machinery manufactures all across the globe eye Indian market.

India ITME 2012 is now a 'must participate, must visit' for Textile Engineering industry all across globe."

R.S. Bachkaniwala, Chairman, India ITME Society

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In a press conference at the ITMA in Barcelona, event organizers had powerfully beaten the drum for the India ITME where Mr. Andreas Weber, CText FTI World President of the Textile Institute, UK and Il. Lustrissim Senyor Jordi Marti-Galbi, Councillor of Presidence, Barcelona City Council and H.E. Mr. Luis Valeriano Gonzalez, Hon. Consul General of India as guests of honour were in attendance. They probably did not need so much advertising as India is today the second largest textile producer in the world after China and the growth potential is still enormous. As a result, the entire 50,000 sqm of available space had already been completely booked out nearly 15 months ago. The summary of the organizers: "This event will be the largest India has so far ever hosted". More than 800 exhibitors from approx. 30 countries will put their innovations on show. The number of international exhibitors has at the same time risen slightly from 274 in 2008 to just over the current 300. Most of the non-Indian exhibitors come from Germany, followed by Switzerland, then Italy and China.

The Bombay Convention & Exhibition Centre (BCEC) is the largest and permanent exhibition centre, in the private sector, in India and was set up in 1991. The centre is ideally situated along the Western Express Highway in Goregaon, within 10 minutes from airports, walking distance to train stations and a 20 minute drive from the heart of the city . There are numerous hotels, entertainment activities, retail shopping & sightseeing spots in close proximity. Halls 1, 2, 5-6 and 7 have been made available.

The spinners are in halls 1 and 5, weavers and knitters in hall 5, finishing in hall 6 and chemicals in halls 6 and 2. Software has been placed in hall 2 and other providers including media in hall 7. A plan of locations and a list of exhibitors are shown on the website under www.india-itme.com.

Dr. Christian Schindler (*Director General, ITMF, Zurich, Switzerland*), Dr. Peter Dinsdale (*World President, The Textile Institute, Manchester, UK*), Prof. Dr. Roshan Shishoo (*Director, Shishoo Consulting AB, Sweden*), Prof. Subash Anand (*University of Bolton, UK*), Dr. Malcolm Kirkup (*UK*), Mr. R.K. Jha (*Director-in-Charge, GIFT City, Ahmedabad, India*), Dr. Chandan Chatterjee (*Director, CED & GM, iNDEXTb, Gujarat, India*) and Mr. TCA Ranganathan (*Chairman & Managing Director, Export-Import Bank of India, Mumbai, India*) have confirmed their attendance during the ITME technology seminar as distinguished speakers.

Let us return once again to the Indian economy. The organizers have also placed the market for technical textiles and non-wovens in India in the foreground and state the following:" It is expected that in the long term driven by the demand for non woven textile products specially from Chinese and Indian economies the global market for textile machinery will reach US $ 20.15 billion by the year 2015"

The Indian textile industry has still quite a lot more planned as it is one of the most important areas of the economy on the subcontinent and the Indian textile market is the second biggest in the world. After a sharp decline as a consequence of the global financial crisis in 2008 better times have returned since 2011 after some mediocre years. Estimates by the Ministry of Textiles show companies in the 2010/2011 financial year again recording a positive turnover of 23%. Also the forecasts for exports are consistently positive. According to information from the Apparel Export Promotion Council (AEPC) exports of clothing should have increased by around three percent to eleven billion US dollars in the year 2010. According to the forecasts by the Ministry, turnover should triple to 220 billion US dollars by 2020 and India's share of the world market should double to 8%.

In order to maintain their position in the global market and in keeping with their targets Indian companies need however to quickly modernize their stock of machinery and expand capacity. The local market for textiles and clothing should grow strongly using the forecasted population growth of 24.4% to 1.52 billion people by the year 2030 as a base. India now has a number of opportunities as wages in China are increasing, but nevertheless needs to prevail against competition from for example Vietnam, Cambodia, Bangladesh and North Africa. Recently growth has benefited from the crises and democratization processes of the North African countries.

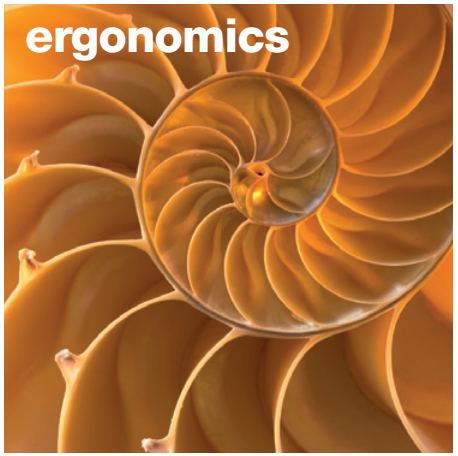
Experts from the management consulting company Technopak have calculated that the industry needs to make investments in a dimension of 68 billion US dollars in the next ten years in order to be able to counter competition. According to an assessment by the Confederation of Indian Textile Industry (CITI), companies in the textile and clothing sector need to modernize their machinery and make new investment in order to become more competitive internationally. Packaging materials, clothing, household textiles, sports equipment and products for the automobile industry are especially in demand in India. India still needs to cover its current domestic demand through imports especially for the technically demanding segments. This is probably an important reason why the India ITME organizers have addressed this segment in particular.

The Indian government plans to set up additional industrial parks for the textile and clothing industry to strengthen the competitiveness of the companies. Recently 40 such projects have been approved within the framework of the government program "Scheme for Integrated Textile Parks" (SITP) and the majority has already begun with production. Furthermore an expansion of the program making an additional 312 million US dollars available was announced. Another government initiative is the Technology Upgradation Fund Scheme (TUFS) which was extended in July 2012 for a 12th Five Year Plan starting this year. „There will be more allocation under the 12th plan than under the 11th plan, so those in textiles sector must feel assured that the government is conscious about their needs," said Union Minister for Commerce,Industry and Textiles, Anand Sharma when announcing the extension.

e-save

comprehensive efficiency

Oerlikon Textile started to establish e-save – a green label, originally created to brand components and machinery with a significantly reduced energy consumption – successfully back in 2004. In the last few years e-save has become a hallmark for comprehensive efficiency. It underlines Oerlikon Textile's technological excellence for economic welfare as well as for a sustainable management of limited resources. Oerlikon Textile innovations are developed with the following four e-save aspects in mind:



To learn more about highly efficient textile machinery visit us at INDIA ITME 2012, booth G11/J10, hall H1 or visit www.e-save.oerlikontextile.com

innovation has a name

oerlikon

Importantly additional funds for the training of skilled employees have been made available. A total of three million people are to be trained and qualified by 2015.

This all shows that India has the potential to become a manufacturing hub in textile machinery, having an abundance of skilled labour, low cost and natural resources available.
There are however a number of large problems to be solved. The problem of energy supply and the problem of insufficient sustainability are two that should be mentioned in particular.

The supply of energy is a mega challenge in India and actually enough has been written already on the problems. The fact is that an industry with high targets for growth cannot afford breaks in production through power failures. Power failures cost India 1-2 percentage points of its economic growth every year and the country is expected to have continually increasing demand for energy up to 2050 simply based on the growth of population. In addition per capita consumption of primary energy in India rose by 55.2 % between 2000 and 2010. Should this observation be supplemented by the dynamic growth perspectives and further industrialization then the availability of energy – also in the global context – becomes a key factor in the further development of the country and subsequently the textile industry.

In contrast the problem of insufficient sustainability appears almost miniscule but should in no way to be underestimated as sustainability is a mega trend that is becoming ever more important in the global competitiveness of companies, industries and countries. Sustainability involves many factors and besides those of environmental objectives there are also the social aspects, specifically wages that sufficiently support a family. India seems to have a lot of catching up to do in this area. It simply does not look good for export purposes when the Indian textile industry is named in association with starvation wages and slavery in the media of their export destination countries. Retailers and brands place great value today on sustainable production in order to protect the good reputation of their own brand names and to bind ever more critical and better informed consumers to them.

More energy efficient machinery and an increase in productivity through modernization and automation are not able to solve these problems alone but are however able to form a valuable basis. This leads us to the exhibitors, who have invested a great deal of effort in the last few years to ensure that their machinery has become more energy efficient through technological advances. German machinery manufacturers for example have founded the blue competence® Initiative through their association, the VDMA, that plans to exploit the full potential of energy efficiency and offers comprehensive advice on how and which mechanical applications can already save up to 50% of energy today at the same level of productivity.

Like the Germans the Italian and French textile machinery producers are offering solutions which place special emphasis on energy savings.

The French machinery manufacturers know quite well the market thanks to local representations, seminars organized regularly, the latest being in 2007 and 2010 in Delhi, Ludhiana, several times in Mumbai and the next seminar to be held in 2013.

French machinery manufacturers are less and less offering standard machines but, more and more, tailor made solutions designed with their customers and partners to enable these customers to introduce new products with high added value and compete successfully in their own national market and in the open world.

“Our goal is always to create new opportunities for direct personal contacts with our customers, try to analyze and understand their needs and design technical solutions for enhancing their competitiveness. We are not working with a short term strategy, our commitment is a long term one” says Evelyne Cholet, the Association Secretary General.

And Bruno Ameline, the Chairman of the French Textile Machinery Manufacturers’ Association (UCMTF), adds: “We have already very good customers whom we consider our partners, but the Indian textile industry needs an urgent modernization which will be implemented, may be with some delays, with the support of the Technology Upgradation Fund Scheme (TUFS) put in place by the Indian government.”

The members of the UCMTF will present a broad range of innovations. For the long fibre spinning industry: new techniques to improve dramatically the quality standards, the operating and maintenance costs, and on line quality controls. The innovating range includes the design of complete lines. For the twisting and texturing of yarns: the opportunity to develop high-tech yarns for traditional and technical applications
Jacquard machines and dobbies developments make feasible spectacular increases in the speed of the production processes together with higher quality and more reliability. Dyeing: consistency improvements together with energy and water savings.

In new sectors of the textile industry like the nonwoven processes the French machinery is also at the pinpoint of innovation. Recycling the textile materials at the end of their life cycle and transform them into new products, being environmentally friendly, is also an issue on which the French machinery manufacturers are among world leaders.

Spinning

Bräcker (Hall 1, Booth G-15) from Szitzerland will exhibit their well known, high quality key components for ring spinning machines. Visitors can inform about TRITON Spinning-Rings for wet flax spinning which are specially designed for the wet spinning of flax fibres over the full yarn count range, their TITAN Spinning Rings of which so far more than 30 Mio pieces have been sold and new traveller systems.

BRÄCKER - Supergrinder

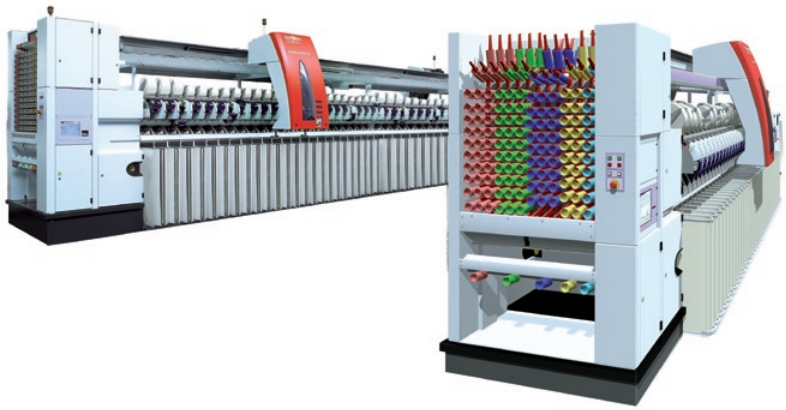
Bräcker will also exhibit the proven accessories such as the ORBIT spinning rings and the relevant travellers, the PYRIT and ZIRKON travellers for especially demanding applications, cost saving tools such as the Bräcker RAPID for easy and time saving insertion of travellers and the well-known and appreciated range of BERKOL Cots and Aprons. Also introduced will be the new BERKOL® supergrinder grinding machine - a totally re-engineered concept, based on the latest electronics technology, as well as adapted to the latest requirements of today's spinning technology.

Oerlikon Schlafhorst (Hall 1, Booth J10) will show One-stop innovations in spinning and winding at India ITME. On their booth they will present the new ring spinning machine ZinserImpact 71 linked to the Autoconer X5 V. They will thus demonstrate the reliability of the doffer and the system advantages of a linked system in operation.

The Autoconer X5 is the flexible winding technology for profitable winding and downstream processing. Thanks to its flexible package winding technology, the Autoconer FX has the right answer to every demand, be it for convincing standard package quality, additional benefits provided by FX technology modules or complete freedom of package design with PreciFX. Different automation stages for bobbin processing or cone-to-cone rewinding enable every customer to integrate the right machine configuration for their process sequence. This versatility extends right up to the fully automatic spinning mill, thanks to a direct link with the spinning machine.

Process sequences that save energy and conserve resources come as standard, while flexibility and future-readiness are always guaranteed due to the latest sensors, drive technology and electronics.

OERLIKON - The new Zinser Impact 71 ring spinning machine



OERLIKON SCHLAFHORST - Rotor spinning machine Autocoro 8

In addition Oerlikon Schlafhorst sets the focus on two other products from their wide product range which will probably adress the Indian market: the Autocoro 8 and BD 448 which set the benchmark in rotor spinning.

The Autocoro 8 with it's rotor speed of 200,000 rpm and it's significantly higher economic efficiency sets it apart from machines with conventional central drive technology. Indian spinning mills are experiencing productivity increases of up to 25%, machine start-up takes minutes instead of hours, the multi-lot capability is excellent and spinning costs have shrunk considerably.

More than 150 machines are already in operation worldwide, opening up new markets and prospects for spinning mills. The semi-automatic BD 448 rotor spinning machine is also the unchallenged market leader in India. With its highly efficient material usage, the machine offers greater economy, requires fewer operatives and energy and boasts a high efficiency rating. This is in addition to producing its proven high yarn and package quality.

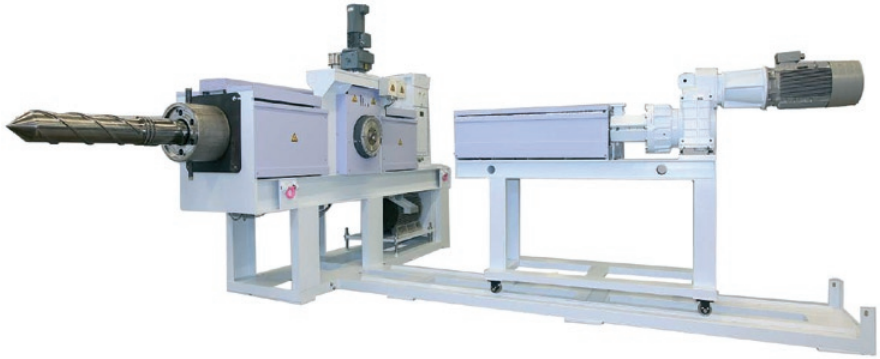
Automatic doffing is increasingly becoming a standard feature of the ring spinning mill and Oerlikon Schlafhorst will explain the advantages of the Zinser CoWeMat System for example reducing the staff requirement in spinning mills and saving up to 50% of staff costs. Another topic will the linking of the ring spinning machine directly to the winding machine to reduce the logistical effort and the investment costs of the overall mill.

Oerlikon Barmag and **Oerlikon Neumag (Hall 1, Booth J10)** are focusing on virtual reality at the India ITME. With its Virtual Reality Showroom the market leader in all matters relating to manmade fiber production is offering a completely revolutionary perspective on processes, machines and systems. The benefits of this innovative presentation method are clear to see: customers can explore the entire system, whereas individual components, at most, could be shown to date. Furthermore, users can control the view in accordance with their specific requirements, explore key components in greater detail and examine the insides of the systems.

In addition to the 300 ton/day staple fiber system, the melt-blown system and the BCF system S+ from Oerlikon Neumag, the program now also includes Oerlikon Barmag's technology for the entire process chain – from the melt to the yarn and from the poly-condensation system all the way through to the finished FDY package.

The textile machine builder will be placing the information spotlight on industrial textiles both with the Oerlikon Barmag filament yarn systems and the spunbond system from Oerlikon Neumag's non-woven portfolio. Potential applications include geo-textiles, roofing, carpet backing, filtration systems and automotive applications such as seatbelts, airbags and tire cord, for instance.

Sustainability is also a hugely important trade fair topip: energy efficiency and CO2 emissions during the filament yarn spin-dyeing process using the Oerlikon Barmag 3DD mixer are also important factors here. One important competitive advantage of the Oerlikon Neumag 300 ton/day staple fiber system is the considerably higher per-ton fiber profitability vis-à-vis smaller systems, an achievement that is predominantly down to the superb energy efficiency of the new large-scale system. Experience acquired by a Chinese customer reveals production costs that are at least 25% lower and a three-fold increase in the output.
In the carpet yarn sectors, the focus is on the BCF system S+.



OERLIKON BARMAG - 3DD Mixer

Oerlikon Saurer (Hall 1, Booth J10) will be presenting the latest innovative solutions in embroidery and twisting and will welcome visitors at its booth with the product lines Allma and Volkmann, the leading suppliers of twisting and cabling systems for staple fibre, carpet yarn, industrial yarn and tire cord, and with the product line Saurer – the market leader in the area of shuttle embroidering.

The new Volkmann FT eco continues the tradition of the Volkmann Product Line, always achieving new performance and quality targets. Built on a future proof platform, it offers customers the entire production spectrum. Volkmann's new FusionTwister is equipped with proven components and completes the e-save spindle family with the new eco spindle technology, resulting in significantly reduced power requirements of the twisting machine and the realisation of cost-savings.

The newly developed eco spindles form a different balloon geometry and can thus save up to 40% in energy costs compared to traditional spindles. The eco spindles are available in the models VTS-08 eco and VTS-09 eco.

BCF carpet yarns are successfully processed on Volkmann twisting and cabling machines throughout the world. Thanks to the new expanded e-save spindle family, energy costs can be reduced by up to 40%. And with the new thread brake systems (spherical thread and roller thread brake) the handling of the machine has been considerably simplified. These are substantial contributions for increasing efficiency and quality while simultaneously reducing process costs.

Today's market for industrial twisted yarns is characterised by strong growth and an ever-increasing variety of applications. The new Allma TC2 two-for-one twisting machine fully meets the requirements of the market and has perfected the production of industrial twisted yarns with unparalleled flexibility and productivity. Any material imaginable can be processed with production speeds of up to 450 m/min, and innovative process technologies help to further perfect the bobbin quality.

Allma has established a new milestone in cabling technology with the tire cord cabling system. Depending on the yarn count and spindle type, the Allma CC4 can provide energy savings of up to 50%.

OERLIKON SAURER - Volkmann FT

The Saurer Epoca 6 pro represents perfection and maximum productivity. The average production speed of the Epoca 6 pro is up to 30% higher, and this with complete reliability and the highest quality of embroidery.

Oerlikon Textile Components (Hall1, Booth G11) will present latest innovations at India ITME. Special highlights on the Staple side at ITME 2012 is the product launch of the Texparts® PK 2630 SEH weighting arm adapted for Rieter and LMW machines. Years of experience and innovation culminated into the new PK SE series with 6 new patents. The PK 2600 SE series has excellent paralleled top rollers and individually adjustable single elements.

The arms are manufactured in Germany on a fully automated line, with 100% quality control. The PK 2600 SE is available as a 3-top-toller of a 4-top-roller version, for spinning applications from standard to compact yarn.
The new star in the portfolio of the PK 2600 SE series – the world's most versatile weighting arm series - is the PK 2630 SEH adapted for a hexagonal support rod, as found in Rieter and LMW ring frames. Oerlikon Textile Components has chosen the ITME 2012 in Mumbai as the platform to launch the PK 2630 SHE.

Further attractions are spindles with Texparts® Zero Underwinding system, Accotex cots and aprons for finest quality yarns and the Daytex® Shrinkage Belt with the novel curved edge.

Rieter (Hall 1, Booth J14) from Switzerland will be demonstrating its competence across the entire spinning process and presenting all 4 end spinning systems. Numerous highlights and innovations can be admired live on the Rieter exhibition stand. The new E 80 comber will be in operation. The E 80 comber stands for unrivaled quality, productivity and yield.
The effective production performance of the E 80 comber in combination with the fully automated ROBOlap lap piecing system is 2 tonnes/day. The lead in combing technology has been extended further through C•A•P•DQ (Computer Aided Process Development). With outstanding fiber selection and optimal machine running behavior, the comber achieves superior quality values with maximum economy.

The new double-sided J 20 air-jet spinning machine (operational) will be introduced for the first time to the Indian market. The J 20 air-jet spinning machine features up to 120 high-production spinning units. The J 20 can be equipped for separate production on both machine sides, i.e. two different yarn qualities can be spun simultaneously on one machine. In conjunction with the newly developed spinning unit, the J 20 offers maximum yarn quality, productivity and flexibility. The unique quality characteristics of the air-jet spun yarn are reflected in benefits for spinning mills, downstream processors and end users.

The new SB-D 22 double-head non-autoleveler draw frame guarantees maximum machine efficiency with a unique space saving can changer up to 1 000 mm can and delivery speeds up to 1 100 m/min.

RIETER - Air-jet spinning machine J20

The large 1 000 mm cans can now be utilized in the Rieter fiber and spinning preparation from the card to the comber, ensuring higher efficiency and convenience in the spinning plant. The SPIDERweb - the innovative mill monitoring from blowroom to spinning machines - will be presented on a screen.
What the benefits and characteristics of the 4 spinning systems mean for downstream processing can be experienced by visitors in the technology showcase. Here end products and fabric samples of the 4 Rieter yarns are available. The know-how relating to financing, spinning mill planning, use of the right technological elements, selection of the correct spinning process as well as many other factors is necessary to achieve success in the operation of a spinning plant.
Rieter is presenting all this expertise at the show. And Rieter's spare parts experts will present the latest retrofits and high-quality original spare parts.

NSC Fibre To Yarn (HALL 1 - STAND H7) will present latest innovations for long staple fibre processing technology. NSC Fibre To Yarn includes such well-known brands as N. Schlumberger, Sant' Andrea Novara, Cognetex and Seydel. NSC Fibre To Yarn will inform their Indian customers and the booth visitors about tthe companie' wide product range including complete spinning lines of the long fibres process, combing, tow to top, recombing worsted spinning preparation, semi-worsted units and hard fibre combing and spinning.

Savio (Hall 1, Booth G24) from Italy is represanted by SAVIO INDIA LTD. The company is placed in the Indian market as a textile machinery manufacturer as well as distributor of SAVIO products. Savio India is the manufacturing unit located in Coimbatore, Tamil Nadu. It was set up with an intention of providing the world class SAVIO products, specific to India's textile market. In 2008, the unit started manufacturing Two-for-one twisters with Italian technology, for local and export market. With a team of 80 experienced and competent service engineers, Savio India is well equipped to address all the service needs for customers at shortest possible time frame.

At the show Savio will display its most important products both in the winding and the twisting segment: automatic winder model POLAR/I DLS "Link type" and the SIRIUS Two-for-One twister. Savio is presenting high-performance, energy saving ad less labor intensive products. Savio's most high-end product is now represented by POLAR/ I DirectLinkSystem winding solution, for linking the ring spinning frames to winders. Many important developing markets are investing on this kind of high-automatic systems, because of the growing difficulty of hiring operators, for the end product quality and production advantages that such solution offers. In fact Polar I DLS has been designed in a "modular type" granting the possibility of reaching the highest number of winding heads to match the trend of the spinning frame manufacturers with longer and longer machines up to 2.000 spindles .

SAVIO - Two-for-one twister Sirius

This modular solution gives the Polar/I DLS the highest potentiality, being the same equipped, upon request, with N° 3 end finder stations, where the ring frames bobbins are prepared and get ready to the winding heads for the subsequent process.

The new generation of Two-for-One twisters, SIRIUS, debuted as world preview at the ITMA ASIA 2010 fair. This twister responds to the demands of Far East customers looking for a significant reduction in labor and energy. Besides the demand to sustain low investment costs and lower energy consumption, the customers also take on great importance time and cost of maintenance. This new model foresees: a high structural standardization, a wide range both for feeding and spindle dimensions for every yarn type and count, electronic solutions to simplify the operator intervention and reduce the maintenance workforce.

The Electronic Drive System (EDS) version differs from the mechanical version for the full flexibility of setting adjustments. The Sirius EDS model is equipped with independent inverters and motors, which allow to set all processing parameters by the machine PC. This innovation derives from the electronic know how that Savio has experienced on other sophisticated products. The simple touch screen PC allows to change settings continuously, the operator can obtain every possible combination of parameters in order to reach the best output working condition.

Weaving

CREALET (Hall 5, booth M-5/N-6) from France will extend its ITME motto “We drive you and your warp to success” and focus on its innovation approach in the field of warp feeding to weaving machines. CREALET will emphasize how this corporate philosophy provides new solutions for greater productivity and new opportunities.

CREALET, which provides technological systems to reduce the production costs of the weavers and enable them to make quality products, develops systems which cause minimum standstills in the production process. High warp running times, constant warp tension and efficiency - these are just a few of the advantages CREALET brought to the production processes.

CREALET offers an impressive range of products which can be broken down into the following groups: warp beam drives and cloth take-up systems on narrow and wide weaving machines, warp beam supports in high position for full width and twin warp beams, warp beam frames for one or several warp beams behind the weaving machine, warp delivery systems for weaving from bobbin creels, electronic controlled selvedge let-off and tire cord fabric windig units. The products of CREALET are used successfully for weaving of sophisticated fabrics like textiles for medical or hygienic use, protective textiles, smart textiles, sports and wellness textiles, mobile textiles, textiles for industrial applications or for building and architectural purposes as well as home and apparel textiles.

DORNIER (Hall 5, Booth Q-2) comes with the motto "DORNIER weave-by-wire" to the ITME and will present the new weaving machine P1 for the first time on the Indian market. The P is the latest innovation in DORNIER's rapier weaving machinery and can fulfill highest requirements of current and future developments for complex technical textiles. Of course, the DORNIER system family consisting of rapier and air-jet weaving machines offers all solutions necessary to produce technical textiles as well as clothing and home textiles. All machine types convince through their durability and flexibility in the practical use. Avoiding second quality and waste as well as reducing the consumption have priority in all developments and contribute to the conservation of resources.

DORNIER - Rapier weaving machine

For rapier weaving machines, the low tension weft curve in connection with the open shed weft insertion allows a gentle insertion also for very delicate types of yarns. The weft transfer in the center of the fabric thanks to the positively controlled rapier offers an optimal reliability of the weft transfer also for multifilament yarns. A DuoColor device reduces the weft waste with technical textiles by more than 50%. Thanks to completely new future-oriented electronics which process big data volumes in real-time, it was possible to optimize the weft insertion elements of the new air-jet weaving machine generation and their control in a way that a considerable reduction of air and energy was achieved.

These new electronics also contributed to introduce the patented separate drives called DORNIER SyncroDrive® which allow a higher performance and, at the same time, reduce visibly the wear of mechanical components of the weaving and shedding machine. By implementing the latest technology, DORNIER establishes a standard which enables the customers to work in an even more profitable way.

This also offers a high resale value to the customers.

Picanol (Booth in Open Bay Area, K1) from Belgium will present all its latest high-tech weaving machines and to underline its prominent position in the Indian market by showing four high-tech weaving machines on its booth. Besides the recently introduced airjet, the OMNIplus Summum also state of the art rapier machines like the OptiMax and the GTXplus will be on display.

In addition to these four machines, one Picanol Jacquard TERRYplus 800 weaving machine will be on display on the Stäubli booth, and an OptiMax jacquard weaving machine will be on display at the Bonas/Van De Wiele booth.

PICANOL - OMNIplus Summum

India is a market of crucial importance for Picanol. As part of its further commitment to the Indian Market and marking a new milestone in India, Picanol inaugurated new headquarters in downtown New Delhi in August 2012. Next to the main office in Delhi, regional offices in Mumbai and Coimbatore are proof of a strong Picanol presence in the Indian market with a professional team of 35 people committed to serve Picanol customers.

Picanol will show the Airjet weaving machine OMNIplus Summum 4P 190cm weaving a bottomweigt article, the Airjet weaving machine OMNIplus Summum 4P 340cm weaving a sheeting fabric, the Rapier weaving machine OptiMax 6R 190cm weaving outdoor furnishing, the Rapier weaving machine GTXplus 6R 190cm weaving a silk fabric, the Rapier weaving machine with jacquard OptiMax 8J 190cm weaving ladies wear and the Airjet weaving machine with jacquard TERRYplus 800 weaving terry towel (Stäubli booth).

Stäubli (Hall 5, Booth P1) from Sitzerland/France will exhibit a cross-section of its most modern textile machinery range including electronic dobbies and Jacquard machines, harnesses, and weaving preparation systems.

On the booth visitors will see two fully operational weaving machines with Stäubli Jacquard machines, an air jet weaving machine producing terry towel with the new Stäubli Jacquard machine type SX, and a rapier machine with Jacquard machine LX1602 producing upholstery fabric.

The newly developed generation rotary dobby type S3060/S3260 with its evolutionary new locking system allows higher running speeds and superior reliability. It will be shown on a combined demonstration unit with a pair of name selvedge Jacquard machines type CX172 on each side of the fabric. Two types of warp tying machines are on show: new MAGMA T12 - ideally suitable for medium to coarse yarn types, and for tying technical fabrics - and proven TOPMATIC for a wide yarn range down to the finest filaments, both machines equipped with double-end detection systems.

Group member Schönherr carpet systems will show its exclusive carpet samples – produced on ALPHA 400 series carpet-weaving machines, and Group member DEIMO will present state-of-the-art electronic control solutions mainly for textile machinery.

STÄUBLI - Rotary dobby

VAN DE WIELE - Velvet Tronic VTR33

Van de Wiele and Bonas (Hall 5, Booth Q12) from the Netherlands will show a wide range of products which adress especially the Indian market. Highlights will be the high-end Italian velvet and carpet weaving machines of Van de Wiele and the Bonas jacquards for producing high quality fashion and furnishing fabrics.

The Velvet Tronic VTR is manufactured in a plain/dobby execution - VTR23 – and a Jacquard execution – VTR33 (Pic. 2). The applications of velvet are numerous: upholstery, automotive, bus and train, curtain, chiffon dress, artificial fur, etc.

For the interior fabrics, there is a fashion towards the Italian Velvet with pile design combined with Jacquard ground effects. Van de Wiele is giving a new life to this Italian velvet by creating a new quality with 3 pile colours in center draw and 2x4 backing yarns per reed dent. The design possibilities become unlimited, especially when combined with a filling selector. The LJVi3 jacquard is equiped with 11520 solenoïds. The Velvet Tronic VTR42 is a special execution for technical fabrics such as distance fabrics and paintbrushes.
Van de Wiele has succesfully introduced it's new Innovator-range of carpet weaving machines on last ITMA. Now the range has been extended with the Handlook Carpet Innovator HCi X2, using 3 rapier technology, producing 50% more than double rapier machines, very nice carpets with a hand-knotted look backside. The maximum reed density has even been extended to 1000 d/m with 8 colour frames, being the most dense machine-made handlook carpets available on the market, with more than 2.000.000 points/m². Samples of this innovation are displayed at the Van de Wiele booth. The HCi X2 is the reference for handlook carpets in Iran, Turkey, Belgium, China, in reed densities from 240 up to 1000 d/m.

The Rug & Carpet Innovator range is now available in a 5 m weaving width execution, for optimized combinations of area rug dimensions. Studies have proven that the 5 m wide carpet weaving machine of the Innovator range compared to the traditional 4 m wide has a payback of less than 2,5 years. This is valid for traditional design carpets and modern rugs with loop and cut pile, up to 10 colours, sisal look carpets, outdoor carpets and shaggy carpets.

Super Shaggy long pile area rugs, up to 2 x 70 mm pile height, woven on the Shaggy Rug Innovator SRi02, are introduced to the carpet weavers and artificial grass, woven on SRi02 with patented weave structures in W, for good pile fixation without backsizing, is displayed.

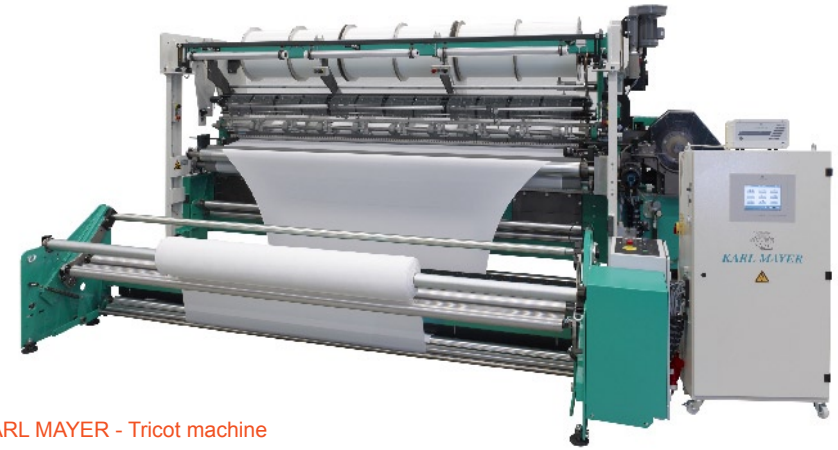
Many Van de Wiele MAX91 Axminster carpet machines are already equipped with a Smart Creel, replacing the labour intensive and unflexible traditional bobbin creel. This robotized creel is now also available for the AWi01 wire weaving machine.

Bonas will present and demonstrate low power consumption, low maintenance, Adjustable Split heck, Terry Warp Separator and Flat fabric Warp Separator. Bonas is going to satisfy all Jacquard weaving needs with only two models: ZJ and LJ. Following Jacquards can be seen during the exhibition: the 8200 hooks shedding system on Picanol Optimax-190, weaving High Fashion Apparel and the ZJ2-28-2484 on Itema Rapier, double width, weaving Furnishing Fabrics.

Knitting

KARL MAYER (Hall 5, Booth P9/Q8) from Germany invites the visitors to have a look at its innovative products in the sectors of warp knitting machines and warp preparation units.

The world market leader will be presenting its most comprehensive machinery range ever displayed at ITME. The new HKS 3-M of the 3rd generation is the most flexible 3-bar tricot machine and will be producing an embroidery ground for saris in Mumbai.



KARL MAYER - Tricot machine

The Fascination® Lace will be exhibited in a working width of 132" and a gauge of E 28, producing a completely new and innovative article that is set to revolutionize the production of sari fabrics. The trendsetting fabric has a unique appearance and can be produced extremely efficiently. The new fabrics are as beautiful as conventional saris and can be produced in a single piece, so that they can be manufactured extremely economically. The pattern, together with the sections that are patterned with specific designs, such as the elaborately decorated shoulder piece at the end, which is known as the pallu, are worked directly into the fabric by the FL 20/16.

For simpler patterns, the embroidery process can now be dispensed with. All that has to be done is to hem the edges or use hemming tape as another option to create a fabric with a perfect drape. At a working width of 132", this results in two matching saris being produced next to each other.

In terms of design, too, the FL 20/16 machine leaves nothing to be desired. No matter whether floral patterns, teardrop paisley motifs or ornamental compositions, the patterns of the Fascination® Lace offer everything needed to produce gorgeous saris, whose relief-like characteristics make them look as if they have been embroidered. In addition to the pattern motifs, the marquisette-like fabric ground also offers fascinating design possibilities. To produce the filigree designs with their delicate, arching lines, a regular lattice-like ground is used, into which additional lengthwise stripes are worked. As well as grounds with a marquisette look, tulle constructions can also be worked. Processing yarns with different coloured sequences is another way of creating patterns on sari fabrics. Space-dyed, multicoloured yarns are processed, and the mixture of colours highlights the dynamics of the design elements attractively. Additional coloured accents can be worked by combining the bright, iridescent yarns with single-colour yarns. No special know-how or additional equipment are needed to finish the warp-knitted sari fabrics. As is usual, the fabrics are washed, dyed, heat-set, stentered and treated by carrying out soft-touch finishing.

The new Wefttronic® RS for the field of technical textiles is an efficient Raschel machine with magazine weft insertion system and will be producing a light and stable advertising medium out of a rather thin material, with full yarn threading.

For the warp preparation field Karl Mayer will show the latest automatic sectional warper NOM. Furthermore, a parallel creel and the ISOTENSE yarn tensioner will be on display.

Mayer & Cie. (Hall 1, Booth B19/D24) from Germany wants to break the limits at India ITME. The market leader of circular knitting machines is focusing on highly productive machines both for the garment and also for the growing market of elastic mattress ticking fabrics sector. Mayer & Cie. will show the latest version of the ultra high speed series. The Relanit 4.0 UHS achieves incredible 70 revs. in a 30“ machine during the production of plain single jersey fabric with a speed factor of 2100 thus facilitating production quantities of more than 1500 kg per day. The belt drive is controlled over special servo motors which can be operated from the display of the machine. This guarantees an exact yarn supply and avoids fluctuations in the yarn quantity supplied which in general can appear because of lint and oil accumulation when working with belt drives with quality wheels. In order to further increase the efficiency of the machine the Relanit 4.0 has got a computer-controlled knit-on aid which increases the yarn tension for the knit-on process automatically for a short time and makes the knitting-on a piece of cake.

MAYER & CIE - Relanit 4.0

Production quantities so far unreached in the production of single jersey striper fabrics do become reality now.

The new S4-3.2 R II combines productivity and flexibility in a way so far not imaginable. It is the first striper machine in the world being in a position to produce single striper fabrics with 3 or - by combination of individual feeders also with more colors - at 3.2 knitting feeders per inch. Advantage for their customers: A productivity which is up to 70 % higher compared to the current production of 6 color striping fabrics as well as the possibility to use this machine as fully-fledged high-performance single jersey machine with a linear speed of 1.56 m/s (corresponds to 39 revolutions per minute at 30 inch).

With the OVJA 1.6 EM Mayer & Cie. presents the bestseller of the mattress ticking fabrics industry. With 24 RPM maximum speed in 38" the OVJA 1.6 EM is the fastest mattress machine on the world market. At the same time the proven number of knitting feeders (1.6 feeders per inch) allows a maximum degree of flexibility for all fabric qualities presently in demand. Both features together make this machine the worldwide top-selling mattress machine of the past years.

Drying, Dying, Finishing

FONG'S (Hall 6, Booth S1/U2) from Hong Kong will showcase a series of world renowned equipment in the textile industry during the exhibition. The India ITME 2012 will continue to witness FONG'S latest technology in the field of "green innovation" and "one-stop" complete solution in the range of "Pre-treatment, dyeing and after-treatment" to fundamentally address their customers' quest for "Lower Cost, Higher Quality and Greener Environment".

FONGS - TEC series high temperature dyeing machine

The new generation of TEC series High Temperature Dyeing Machine is suitable for different dyeing process with various types of natural, synthetic and blended fibers, aiming to provide complete solutions: "Efficiency, Energy Saving, Environmental Friendly". TEC series is specially designed for fabric which is having tight and crease marks sensitive structure, such as 40S/2, 26S/1, 20S/1, tightly knitted fabric, and sensitive shade. With various new functions, cotton reactive dyeing process takes about approximately 248 minutes for light color. The water consumption for reactive dyeing cotton fabric is lower to 27.5, 37.8 & 47.6 L/Kg for light, medium & dark shade respectively.

The new TEC Series offers various capacities per chamber: 300kg (JUMBOTEC), 250kg (MIDITEC) and 200kg (MINITEC). Customer can choose in the range of 1-12 tube.

On display will be the JUMBOTEC High Temperature Dyeing Machine, ALLWIN High Temperature Package Dyeing Machine and FC30 Program Controller.

The ALLWIN High Temperature Package Dyeing Machine offers an unprecedented liquor ratio as low as 1: 4 with its integrated design of REV-pump, heat exchanger and the flow reversing system (patent granted).

The newly designed integrated circulating system results in space saving by approx. 30% as compared with conventional machine arrangements. The versatile machine is suitable for various types of fibres: natural and man-made fibres and their blends: 100% cotton, polyester, polyester/ cotton, acrylic, polyamide (nylon), wool, ramie/cotton etc. Different forms of yarns can be dyed such as packages, cheese, cones, hanks, loose fibre, etc.

The capacity range goes from 28 kg to 9129 kg. According to the test conducted by Fong's National Engineering Co., Ltd, ALLWIN dyeing machines shorten the total processing time for cotton yarn down to 276 minutes, saving electrical and water consumption respectively by over 40% and chemical cost by 19% compared with conventional machines.

The new generation of FC30 program controller has a 6.5-inch 640x480-pixel, TFT color LCD display together with novel control functions, provides the most cost-effective dye cycle control. FC30 can also integrate with FONG'S and THEN TDS central computer system, providing comprehensive control management.

The latest version of the legendary THEN-AIRFLOW®, the SYNERGY 500 G2, is suitable for all kind of fibres (except pure wool), making it the perfect high temperature choice for every dye house. The machine with the lowest liquor ratio in the market satisfies the highest demands in terms of efficiency and ecology due to the patented AIRFLOW- technology.

In the new Goller UNIVERSA, the conveyor belt is made of stainless steel in design which will bring a more stable condition in the transport of fabric. According to the process requirements, the dwelling time of fabric inside the UNIVERSA can be set in the process management system Goller Multidata. The UNIVERSA is connected to the filter device which can effectively filtrate the impurities and fluffs coming out from the fabrics. Most worth mentioning is that the UNIVERSA has a flexible high and low liquid level adjustment device.
So fabric spray washing can be used in low liquid level, but also in high liquid level for dipping washing. The combination of these two processes can make the washing more even, more flexible and of better product handling results. For fabrics of different weight, or different dwelling time, the need of fabric piling height are different, and you can adjust the height of fabric soaked in liquid for the best response to treatment.

Monforts (Hall 6, Booth S-1/U2) from Germany will highlight its MXL (moist cross linking) process to ensure non-iron and laundry fresh properties in association with the Thermex 8000 continuous dyeing unit in a joint presentation with its representative A.T.E. The process, developed by Ciba Speciality Chemicals together with Monforts, allows non-iron and laundry - fresh properties to be achieved on cotton materials with the shortest treatment times.
The new process, developed on the Monforts MXL® range, ensures processing times are reduced from more than 20 hours to just 3 minutes. It also offers greater flexibility and high process safety than conventional systems.

The Thermex Hotflue chamber, making its international debut in the MXL® mode of operation, is manufactured in stainless steel to withstand the process acidity.

Monforts technologists will also be on-hand to offer advice for textile processing techniques featuring the MXL process for crease-free fabrics, plus ranges and machine layouts for technical textiles applications such as Airbag ranges, coating ranges, prepreg ranges, etc.

Monforts will also demonstrate the latest software in process control technology to ensure economic and ecological solutions for sustainability in finishing processes with the lowest energy input.

MONFORTS - Thermex 8000

STORCK - Stormac RD VI Gold

Stork Prints' Indian subsidiary Stovec Industries (Hall 6, Booth S19A) will be demonstrating its unrivalled expertise in many different aspects of rotary screen and digital printing for the textile industry. Storck Prints will be demonstrating that they are the only global partner that can offer solutions for every phase of the production process as well as consumables. Including (digital) pre-press, printing and drying.

Storck Prints will introduce the Stormac RD VI Gold. Dedicated to the Indian market, the Stormac RD VI Gold is the new techno-enhanced incarnation of the Stormac RD IV rotary screen printing machine. Benefits such as the permanent magnet beams, the single AC servo drive motor ensuring optimal repeat accuracy, the proven closed bearing system - all guarantee superior printing sharpness. The RD VI Gold offers a choice between a blade and roller squeegee system, or a combination of both.

The new machine is very easy to operate and extremely versatile: suitable for all fabrics ranging from light synthetics to heavy cottons with a repeat range of 640 to 1018 mm. Moreover energy savings of up to 30% can be achieved. With corrosion resistant SS covers, fasteners and Chrome plated main drive roller, the life of the machine is improved further. In sum, the Stormac RD VI Gold offers the best price performance ratios for the Indian market.

Nowadays, the textile industry has increasing demands for high-quality pre-press and printing, but wants to decrease the complexity of the production processes at the same time. Stork Prints has the perfect solution. As an exclusive at ITME, Stovec will launch the brand new smartLEX machine to the Indian market. This new direct laser exposing system, containing Stork Prints' blue-ray technology, combines perfect imaging quality with an unmatched ease of use.

Besides the complete digital ink portfolio, there will also be plenty printing samples of Stork Prints' new NEBULA reactive, acid and disperse ink sets for Kyocera print heads. With the special Reactive Deep Black ink, you get a profoundly intense and dark black that really has to be seen to be believed. Stork Prints will also presents its complete range of FLARE inks that run on all printers using Epson print heads, including Robustelli Monna Lisa printers. Underlining the fact that the unrivalled Stork Prints inks are not just suited for the new printer Sphene, but can also run on the Reggiani Renoir, MS JP and MS JPK-series printers and the La Meccanica Qualijet K-series.

Visitors to the Stovec stand will be able to see much more in the way of printing innovation, including the unique NovaScreen® rotary screens. These screens have a patented design which combines a high mesh count with minimum spacing between wider and ingeniously conical holes, so the maximum amount of paste is transferred to the substrate. This leads to higher print quality and also increases productivity and efficiency.

The new RandomScreen® is characterised by a random distribution of conical holes. This significantly reduces the so called Moiré effect whilst printing. And last but not least the Stork Prints specialists will also be on hand to demonstrate and explain about numerous examples of superior textiles and coated products - all made using Stork Prints screens and equipment.

Nonwovens

Andritz (Hall 1, Booths G13/J12 and H1) from Austria with their group members ANDRITZ Küsters, ANDRITZ Asselin-Thibeau, and ANDRITZ Perfojet will be presenting their expertise in complete lines and advanced systems for high-end technical nonwovens.

In the spunlace sector, ANDRITZ is offering high-speed integrated production lines with an high energy efficiency ratio: neXline spunlace – which includes the Excelle carding system, the Jetlace hydroentanglement process, the neXaqua dewatering unit, the Perfodry through-air dryer, and the neXcal twin embossing calender

ANDRITZ offers a full range of patterning and aperturing solutions by using calenders or sleeves. ANDRITZ Perfojet recently introduced a new 3D patterning technology called neXimaging.

With the ACS system, ANDRITZ Asselin-Thibeau is introducing its latest innovation in crosslapping technology, capable of handling bulky card webs when feeding a cross-lapper. The focus will also be on the benefits of using the ProDyn technology, a feature guaranteeing uniformity of the web.

ANDRITZ Küsters has developed a new calender design especially for the production of delicate, technical textiles with very high density: The teXcal trike is a 3-roll calender with S-Roll, Xpro Roll and heated steel roll in a triangular roll arrangement. This configuration allows extremely flexible production by using one or two nips. Both nips are individually adjustable without influencing the other nip's deflection characteristics.

Autefa Solutions (Hall 2, Booth 47) will inform about latest innovations in the field of textile machinery for nonwovens which enables customers to share in the success of nonwovens in Asia. AUTEFA Solutions is a group of three machine manufacturers and represents European companies with a long tradition and a history of years of successful participation in the market. These are the AUTEFA company in Friedberg/Germany, the Austrian sister company Fehrer in Linz, and the Italian companies F.O.R./ OCTIR in Biella.

AUTEFA SOLUTIONS - Crosslapper

AUTEFA Solutions delivers complete lines as well as individual machines for nonwovens manufacturing. Different applications are the production of artificial leather, filter products and paper-machine felts to automotive felts, geotextiles, floor coverings, felts for insulation and nonwovens for the hygiene industry. AUTEFA Solutions scope of products includes preparation machinery, carding machines, as well as random carding machines (Airlay cards), needle looms and crosslappers. Visitors will find information about the newest developments and technical experts are ready for discussions.

One of the most interesting markets for nonwoven, that had a real fast and strong grow in the last years, is the Spunlace, that is the nonwovens bonded by water jet. The products are mainly used in the medical and hygienic field but also in the technical applications , and have the big advantage, in front of a traditional needle punched products, to reach the same specific characteristics with a lower quantity of fibres, with a better “hand”, but moreover, with a very high production speed. For this special market, but not only limited to this, Autefa Solutions has developed since 1995 a special card, the Injection card, that is the only real new concept in carding of the last century and proved successful from the very beginning. The Injection Card uses the aerodynamic principle to gently treat fibres when opening them and in parallel, the new carding concept avails itself of some of the advantages of the cotton card and of some of those of the traditional card, with workers and strippers.

AUTEFA SOLUTIONS - Needle loom Stylus

The carding effect is improved, the recycling of fibres is totally negligible, and the isotropy of the product is increased; all the above advantages make the Injection Card the most suitable card for high-production Spunlace lines.

The Stylus needle loom is equipped with the innovative Variliptic drive system. Purely vertical and elliptic motion sequences are implemented with just one drive by the corresponding offset settings in the two eccentric gears which make up the drive system. The Variliptic drive system enables high production speeds while also ensuring a gentle needling of the nonwoven fabric.

The Airlay Card K 12 DIRECT utilises an aerodynamic principle which results in three dimensional fibre orientation and total randomisation. Total fibre randomisation enables isotropic web strength. The aerodynamic principle results in maximum product quality, economical production and reliability from a single source. The Airlay card K 12 DIRECT is suitable for the production of top quality webs in a weight range of 80 to 6,000 g/m².

WebMax together with the Crosslapper Topliner produces a counterweight profile to the ‘Smile’ profile on the layering belt of the Crosslapper during carded web production.
With the WebMax, the carded web weight is altered at the Crosslapper infeed and, via the layering carriage control, the carded web is deposited on the layering belt in such a way that the lapped web weight is controllably lighter in the edge areas than in the centre areas.
This concave weight profile therefore compensates the weight changes resulting from material shrinkage and ensures the highest possible weight evenness in the final product.

DiloGroup (Hall 6, Booth S-13/U-18) from Germany will provide extensive information about production lines made in Germany and recent machine concepts from the DiloGroup companies DiloTemafa, DiloSpinnbau and DiloMachines. A major focus of the new equipment is to improve operation efficiency, web quality and uniformity with positive effects on all staple fibre bonding processes. All these elements belong to the “Dilo – Isomation” process and aim at an even web mass for reduced fibre consumption as raw material is the biggest cost factor in textile production.

One machine contributing to this process is the dosing opener DON manufactured by DiloTemafa which provides an intense opening of the fibre material. It delivers the fibrous material continuously and homogeneously to the card feeder.

Another effort to increase productivity is the card feeder MultiFeed designed by DiloSpinnbau which is available in working widths up to 5 m. This machine using a “twinflow” infeed to increase homogeneity offers a capacity of over 400 kg/hour/m of working width when processing 1.7 dtex fibres. The use of a “twinflow” infeed results in a more homogeneous flock mass flow.

DILO - MultiFeed

The MultiCard, also designed by DiloSpinnbau, enjoys a high production availability due to its easy and fast accessibility for cleaning and maintenance work. It handles the full range of fibre fineness and length with a web speed potential of up to 200 m/min and thus represents an economic solution for cross laid nonwoven production.

In addition, Dilo crosslappers providing infeed speeds up to 160 m/min (DL series) may be equipped with the redesigned Webguide from DiloMachines which also improves felt homogeneity and therefore results in significant fibre savings. DiloMachines offers a wide range of vertical and horizontal crosslappers which ensure high layering precision based on excellent web control.

The portfolio of DiloMachines includes the complete range of needlelooms, from a single board needling on one side up to two boards from each side, plus structuring and patterning options. Endless felt tubes can be needled and also wide working width belts for papermachine clothing applications. The development of needlelooms continues. Elliptical and circular needlebeam movements are used to control drafts in the needling zone and to provide high speed felt production especially in the low weight range.

DiloGroup is the premier builder and supplier of complete nonwovens lines made in Germany for staple fibre nonwoven production. Each line is specifically designed to customer needs.

LAROCHE (Hall 1, Booth H7) will display the JUMBO tearing lines with improved throughput and special devices for the recycling of post-consumer clothings and carpet waste and the new “FLEXILOFT plus” Airlay technology with improved web uniformity and weight range.

The LAROCHE Airlay can run all types of fibers (synthetics, natural, recycled…) and blends of fibers and solid particles (foam chips, plastics, wood chips) which allow to make smart products from renewable resources and from waste that are otherwise discarded. Another show highlight will be the new MINITRIM HSP 400 (high speed) edge trim opening machine.

LAROCHE will also present its latest innovations in high precision fiber dosing and blending lines, decortication lines for bast fibers (Flax, Hemp, Kenaf…) allowing gentle fibre opening and cleaning with a low processing cost and a new concept for flame retarding of cellulosic and recycled fibers.

Other suppliers

Dollfus & Muller (Hall 6, Booth U37) will introduce its new compacting felt for knit finishing with major evolutions compared to existing products in order to serve better the dyeing houses. The new compacting felt quality brings a special care to the fabrics thanks to its smoothest surface, an excellent guiding and the best compacting rate in relations with a new exclusive design.

Furthermore, Dollfus & Muller will display its durable printing dryer belts. In many Asian countries, many printers of fine fabrics, scarves, flags are using the Dollfus & Muller printing dryer belts for their non- marking surfaces which can avoid as well the particles on the back side. Dollfus & Muller offers also the widest range of printing dryer belts and the strongest dryer belts for pigment bed linen producers.

Finally, Dollfus & Muller will display its proven durable sanforizing palmer felts ideal for denim producers, heavy weight, shirting or bid linen fabric manufacturers. The well-known two hundred years old company is recognised to manufacture the more durable and the best water absorbent sanfor felts.

And Dollfus & Muller will present their spare parts such as compacting felts for knit finishing, printing dryer belts for printing, sanforizing felts for denim and woven fabrics finishing, decatizing felts for wool finishing, satin wrappers for wool finishing and tensionless dryer belts for knit finishing.

We want to close our short preview at this point and hope that we could give you a first small foretaste of all the innovations and show presentations of leading companies. Now it will be on you exploring the technical highlights, talking to technical specialists about problems and future plans and searching for the opportunities best matching your needs and your business goals.

We will be back with our India ITME review in the next issue.

Managing heat and humidity – a question of balance

New developments on show at the Techtextil trade fair in June

Constant body temperature has always been of essential importance for all our bodily functions. Since the 1980s it has been the motivation behind different functional systems, which, whilst wider in scope of performance, have been designed to be more and more comfortable to wear. Techtextil 2013, the international trade fair for technical textiles and non-wovens takes place from 11 to 13 June in Frankfurt and will feature the latest innovations and adaptations in this area.

Functional clothing extends in scope from everyday outdoor clothing, for which protection from the elements is an important issue, to highly specialised sports clothing with quite different demands and requirements. A water repellent surface is often all that is required for protection from a 'bit of weather', preferably with some protection against stains and perhaps a little insulation from the cold wind. This can easily be achieved with the corresponding material enhancements or coatings (water and dirt repellent) using nano technology or a suitable non-woven interlayer without compromising at all on the freedom to design fashionably in terms of colour, material and pattern. However through sport many consumers have come to understand and appreciate functions that they now also expect every day. As a result today's softshell constructions have found their way into city life, multi-layer, soft, laminate constructions made from stiff or elastic top surfaces with a wind and water repellent membrane in the middle next to linings that transfer moisture: colourful, light and functional.

In order to 'manage' humidity i.e. to transfer perspiration in liquid or vapour form away from the body to the air outside, the only solution is to manage heat. When the body is active (movement, sport) it heats up and initiates its own cooling mechanism of perspiration. When a body is warm and the surface of the skin is damp it is essential to protect it from 'windchill', undesired cooling caused by moving air.

This balancing function has been achieved traditionally by membranes, microscopically stretched, nonporous or bionically active such as in the ski collection from Kjus. Kjus supplies sports and outdoor clothing and is part of the Swiss LK International AG. In its clothing it uses the c-change membrane from Schoeller, the Swiss market leader for innovative textile technologies. The membrane imitates the way the fir cone system works. When the membrane becomes warmer or more moist (due to the ambient temperature or bodily heat) the polymer structures open and so increasingly permit perspiration – also in liquid form – to pass. However, when the environment becomes cooler, the pores close and provide additional heat insulation, just as required.

These are properties that have proven themselves also in complete clothing sys-tems from underwear to outerwear. A stunning example of the interplay of different technological functions is motorcyclists' clothing from **The Rokker Company**, also from Switzerland. It combines the 'bionic climate membrane materials with 'coldblack' technology, likewise supplied by Schoeller Textil, which ensures that the sun's rays and heat are reflected from dark colours whilst at the same time providing a high level of UV protection. This certainly makes sense and not just on Route 66. The look is casual, like very modern jeans, while their modus operandi is the ultimate in high-tech.

Phase-change materials take a different technological approach, making use of a physical phenomenon. In this case it is microscopic capsules incorporated in or on the textiles. **Outlast** from Boulder (CO), USA with a branch in Heidenheim (D) is the leading protago-nist of this technology. **Outlast** calls theses capsules 'Thermocules' and they are filled with a substance similar to paraffin to reduce temperature peaks both hot or cold. When heated the filling in the capsules begins to melt, causing energy to be absorbed. Cooling causes the material to stiffen again, releasing the stored heat. In this way phase-change-materials help to maintain a balance. Textiles with these properties are used for outerwear and underwear and additionally for bedding.

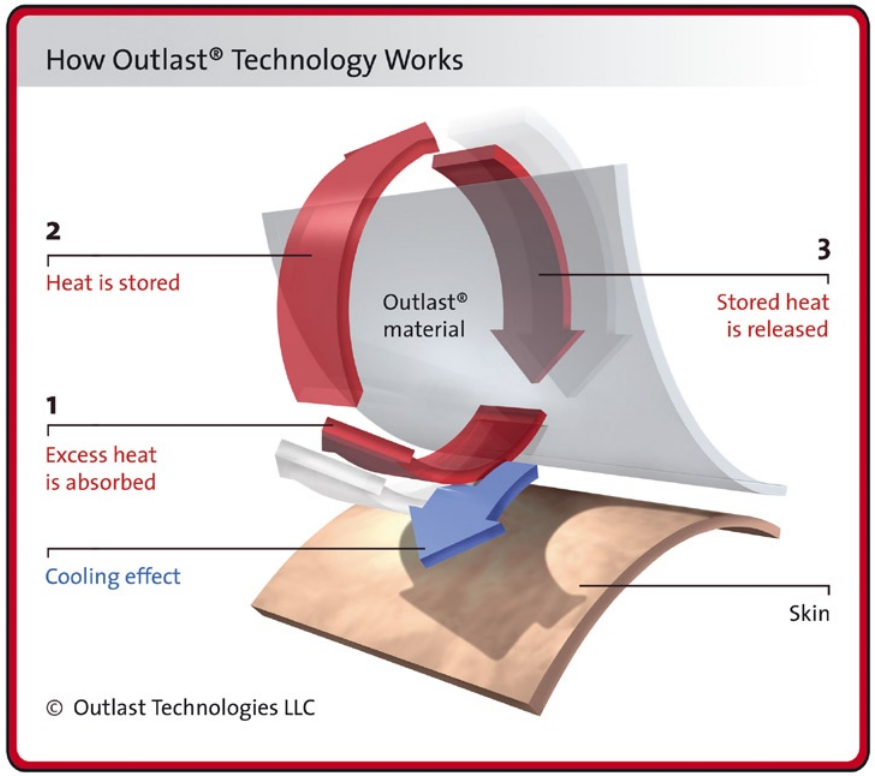
However new developments take this a stage further by already embedding the PCM in the fibres.

KJUS - Waterproofed QUIXDOWN™ Jackets

In the case of polyester fibres this is very much state of the art and can be found in the market in the clothing collections of **Vanity Fair** from Bowling Green (KY), USA or **Jockey** from De Pauli AG, Munich (D). Techtextil will feature the world premiere of developments based on polyamide fibres that are designed for 'next to skin' applications, i.e. underwear and sports clothing, with the balancing function of these fibres significantly increasing their comfort factor.

One of the global market leaders in functional fibres is **Advansa BV** which has its headquarters in the Netherlands. Its portfolio includes the 'Coolmax' range of products as well as non-woven products associated with the Thermolite brand. The fibres for Coolmax can almost be termed a bionic development in their imitation of the way natural fibres such as kapok or bamboo work with their multi-channel structure. All these fibres are particularly lightweight, absorb large quantities of moisture without feeling damp and very quickly release this moisture together with excess heat. At the same time the channels between the fibres store insulating air cushions and ensure that bodily temperature is kept at a comfortable level.

The Thermolite brand name is used to promote heat insulating non-woven interlinings made from hollow-core fibres. The step into the future is the active breathing Thermocool performance insulation that optimises the body's own natural thermal regulation through the combination of fibres with varying cross sections. Following the principle set out above this ensures not just heat retention, but also creates a micro-climate that compensates for the negative effects of moisture in clothing such as windchill, thus ensuring greater comfort. These properties are exploited by **Capranea**, a Swiss supplier of highly functional and stylish sportswear in its ski and snowboard collection. It uses Thermocool to functionally assist the performance of ambitious skiers and snowboarders at all levels from beginners to professionals.
In the case of highly functional fibres of this type in particular innovation will come not from the 'invention' of completely new types but in the development of adaptations for new application areas.



Outlast - How Outlast technology works

It is not a question of continually reinventing 'functional elements'. At Techtextil the suppliers of innovative solutions for functional clothing are looking for dialogue with their customers in order to sound out yet untapped potentials through an increasing number of new applications and possibilities. This and much more will be on show next June for the engaged professional audience at Techtextil 2013.

Texparts PK 2630 SEH – The innovation of the drafting system

FELLBACH, NOVEMBER 2012 – At the end of the eighties, the ring spinning process underwent a remarkable renaissance. The limitations of the already familiar Air Jet Spinning process had become obvious as far as the technical and technological application potential and efficiency were concerned.

Spinning machine manufacturers concentrated increasingly again on improving the ring spinning machine. The innovation process re-gained momentum with a speed, hard to imagine. The international exhibitions of the following years showed many new features and innovations that still today influence the market (i.e. compact spinning).

The importance of flexibility in the spinning mill

Yarns, as intermediate products in the textile production chain, are subject to ever more frequent fashion changes, particularly in the clothing and house-hold textiles sectors. The spinner's market has therefore become more diverse and short-term, and has clearly developed into a buyer's market. Today more than ever the customer determines yarn characteristics, yarn quality and, above all, the delivery he needs for his end-product.

Flexibility through modern drafting systems

What possibilities do modern drafting systems offer for positively affecting flexibility in ring spinning?

- Increased flexibility means the widest possible raw material spectrum, i.e. widest variety of fiber characteristics, such as length, count and origin, in order to be able to produce without costly machinery adaptation for an example
- Problem-free use of the largest possible fiber mass in drafting
- Rapid adaptation of all essential drafting parameters to all the technological requirements of the fiber material to be processed in order to obtain maximum product quality
- Reduction of setting-up time and the associated setting-up costs
- Shortening of material flow time throughout the entire spinning mill in order to reduce large capital tieup caused by excessive circulating capacity and to unnecessarily long delivery times.

In addition to all of this, comes the requirement for the simplest possible operation of all drafting system components.

The required profile for modern drafting systems deriving from this is shown in Fig. 1. The two most important features, which allow reacting most effectively to spinning requirements are, the problem-free use of high total drafts and the possible use of adequately load pressures. Above and beyond that, the fitting of the weighting arm to the ring spinning machine, the setting and the possibility of interchangeability of all drafting components must be quick and easy to ensure minimum downtime. Ergonomically designed operating elements are also important prerequisites for meeting spinning requirements.

Requirements in flexibility of drafting systems

Requirements of spinning mills	Possibilities of the drafting system
Broad range of raw material Employment of high fiber masses Quick adjustment to fiber material	Application of high drafts Application of high weighting pressures Easy adjustment of loading Suitable top apron cradle system
Reduction of setting time and processing times	Easy and quick mounting Easy and quick settings Fast exchange of components
Easy operation	Ergonomic design

Fig. 1: Requirement profile for modern drafting systems

With the new drafting systems for short-staple ring frames, the PK 2600 Series, Oerlikon Textile Components has taken all the above mentioned factors into consideration during development, and have brought more flexibility into the function and fitting of the weighting arms. With the PK 2630 SE for ring frames with round support rods and PK SEH for ring frames with hexagonal support rods Oerlikon Textile Components has truly created the world's most versatile weighting arm series.

The latest addition to the series, the PK 2630 SEH is for ring frames with hexagonal support rod (Fig. 2)

Fig. 2: PK 2630 SEH

PK 2600 SE series – no other weighting arm offers so many advantages:

The weighting arm system offers – both in assembly and during continuous spinning operation - a wealth of advantages unmatched by any other system on the market:

- Rapid assembly and setting
- Simple and easy operation
- Expanded range of applications for fiber length and fiber type
- Quick and very accurate height setting
- Independent working single elements
- Minimized load variation from spinning position to spinning position
- High flexibility in weighting arm settings

The PK SEH is the dawn of a new era in weighting arms for ring frames with hexagonal support rod, where the alternatives have been more limited than for ring frames with round support rod.

Fast and flexible assembly

Assembly is fast and easy thanks to the mounting from above. Each PK SEH arm can be separately mounted and replaced at every spinning position on the hexagonal support rod, as used with Rieter and LMW ring frames (Fig. 3). The previously necessary “threading” of the arms onto the support rod is not necessary anymore. Support rod is mounted on the machine empty, which makes the process much simpler and faster. The PK 2630 SEH can be fixed on the support rod easily from the front and without any complications.

The new design now allows to utilize the proven benefits of the established PK 2630 SE on Rieter and LMW ring spinning machines as well. This makes conversions possible in a quick and easy way.

A special challenge was to keep the spinning geometry of Rieter and LMW ring frames. Now it is possible to use the full flexibility of setting possibilities for load and drafting zones with these machines, too.

Fig. 3: Safe mounting on hexagonal support rod

The height setting of the weighting arm can now be done very fast and accurate from the top of the weighting arm. Due to the exact and user-friendly setting the time consuming height adjustment now is a thing of the past.

EasySet helps to ensure consistent yarn quality from spinning position to spinning position. (Fig 4)

Fig. 4: Texparts EasySet height setting

Amazingly simple operation

The arm can be operated without exerting much force. Easy handling and operation is guaranteed by a new lever construction. Less strain while handling causes less stress on functional elements and ensures a longer service life as very little force is needed to open and close the weighting arm.

More flexibility

The use of high total drafts, the reliable control of large fiber masses in the drafting system as well as high-twist rovings and a reliable and slip-free apron drive require higher but also technologically reasonably adjustable load on the rear and apron top roller than in the past.
For a flexible adaptation of load to the technological requirements of the fiber material, the load can be set with 5 possible load steps with a maximum load of 200N per element. The fiber clamping and guidance is thus ensured in an optimal way.
Variable load adaptation for the different requirements of the fiber materials to be processed allows high technological flexibility, gentle treatment of cots and aprons, reduced wear of bottom roller bearings and reduced gear load.
With the possibility of higher load settings one is prepared for future technological demands.

Texparts EasyIndicate (Fig. 5) enables an easy reading of the load and prevents false settings.

Wrong settings of the load can be easily visually detected and immediately corrected to avoid variations in yarn quality from spinning position to spinning position.

Fig. 5: Texparts EasyIndicate

New top apron cradle concept

The million-fold proven concept with individual apron tensioning system was further improved and modified.
The new Texparts OH2122 cradle (Fig. 6) ensures low friction and therefore gentle apron running.
This is achieved by a special surface structure. A low drive torque ensures an extended service life of the aprons.

Fig. 6: Top apron cradle OH2122

The ideal parallel positioning of the top apron cradle on the bottom roller is guaranteed. Usage of the standard series of Texparts distance clips ensures optimal fiber guidance. The individual tensioning of aprons per spinning position results in a constant and reproducible high yarn quality from spindle to spindle.
Up to 40 % of time can be saved as the apron can be exchanged without removing the entire apron unit.

Numerous trials were conducted in various spinning mills to prove the performance of the PK2630 SEH weighting arm under normal mill conditions. Fig. 7 shows the possible improvements as an average against the existing weighting arms on the ring frame. The chart shows that even the more sensitive IPI values can be improved in a great way.
Another important value is the quality variation from spindle to spindle (CVb). Here we can see a big influence of the weighting arm, which can cut the value up to half. This means constant yarn quality from all spinning positions and from all ring frames at customer site.

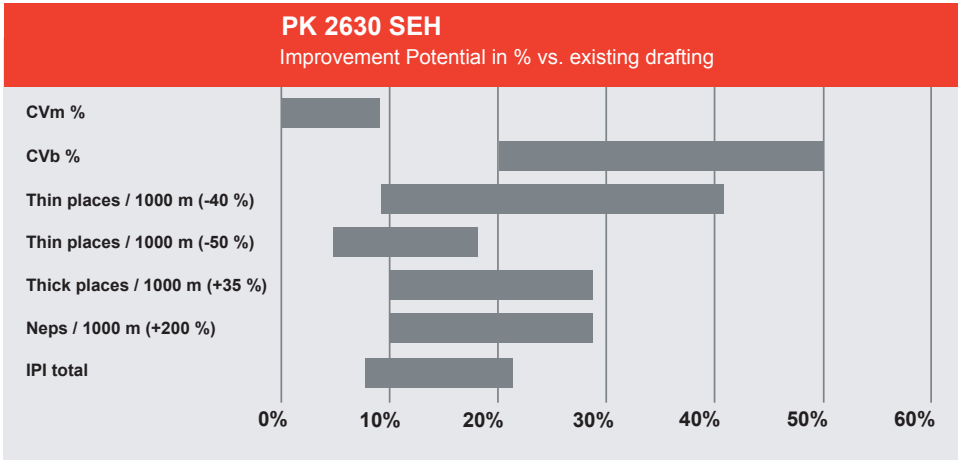


Fig. 7: Potential of improvement

The running field tests show that the new weighting arm is highly accepted by the operators as well as the mill management. Both appreciate the advantages of the PK2630 SEH and are very much interested in using this system in the future. The agile interest in the project has shown that this weighting arm is highly noticed as an innovation. The simple handling, clearly increased consistency in yarn quality and the flexibility in settings are considered as the most important improvements as a counterpart to the existing products.

Conclusion

During the development phase lots of positive results were achieved which have given clear advantages to our customers, i.e. higher productivity, simple handling, more consistent yarn quality as well as an increase in flexibility. The development process was highly influenced by market demand and supported by customer orientation. The members of the project consisting of textile technology, marketing and sales were aiming to consider all the customer requirements. With the new PK 2630 SEH an essential development objective, namely to bring an innovative drafting system into the market, has been reached. This has already been confirmed by the positive feedback from our customers as well as from the results of the various field tests.

From fashion design to the creation of cutting patterns. Digital all the way?

Texprocess 2013 offers comprehensive software for the apparel industry

The dream of being able to link the entire development phase in the fashion business digitally has been with us for a long time. IT specialists in the fashion world have been working on these kinds of system for a good ten years. Computers nowadays are fast enough, and the applications sufficiently compatible, to be able to realise the dream of completely digitising the design and cutting-pattern development processes in practice. The complete range of software available to the apparel industry will be on show at the upcoming Texprocess show from 10 to 13 June in Frankfurt am Main.

It is not only the virtual-reality freaks that are excited by these solutions; anyone who knows about the rapid pace and enormous pressure on costs in the clothing sector is too. People who get a kick out of numbers and processes, but who can never make head nor tail of any kind of scribble or florid description, are equally keen on 3D impressions of styles displayed on virtual models with or without animation. Whether the creatives, the fashion designers and the pattern developers are entirely happy with it, is a different matter.

Two opposing philosophies

There are two different approaches, both now established on the market. One concept permits the designer to dress a threedimensional figure – the avatar – in the clothes. A database provides the qualities of the material, such as fall, stretch properties, patterning and colour. When the design is perfect, the seams can be separated on screen and the two-dimensionality of the fabric restored. Corrections are possible both to the cutting pattern and to the garment on the avatar. Changes are automatically transferred to the alternative representation.

The other approach begins with the development of the cutting pattern. The initially two-dimensional surfaces are linked to qualities of the material in the database and subsequently sewn together in virtual space and put on the avatar. If the lines of the garment or the fit are changed, then this is done on the avatar. The software transfers the alterations to the patterns in real time.

The subsequent steps in the preparation of the patterns, such as sizing, seam allowances/cutting lines, notches, printed indications and optimal cutting layout can be regarded as standard solutions, as these have been successfully put into practice since as far back as the 1990s.

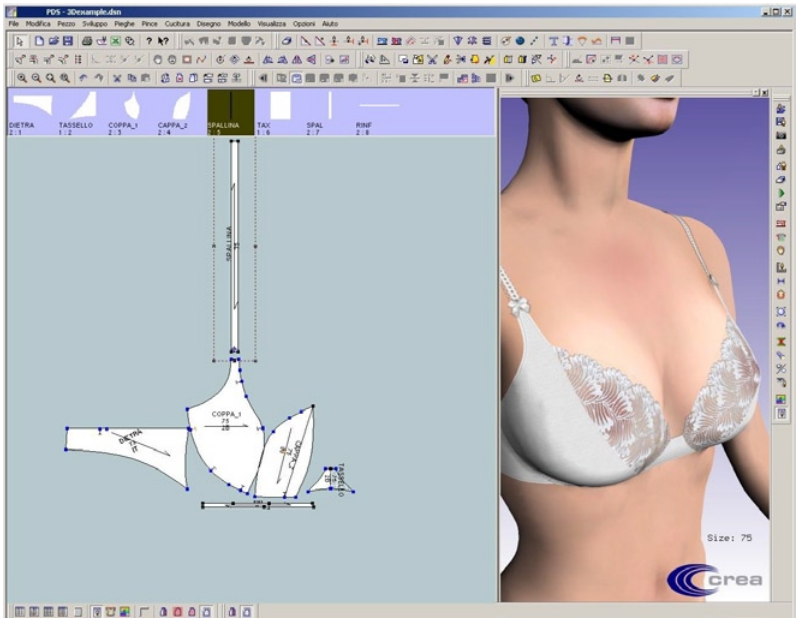
Time is money, or „Time to market“

This development has been driven by the necessity of speeding up the process of design and pattern creation: together with price, design and fit are the customers‘ major buying criteria. On the one hand, more and more varied designs are required, yet, on the other, the capacity for developing the patterns for them is limited. All the potential savings in production processes, apart from per-minute labour costs and logistics, have to a large extent been exhausted.
This is a screw that is constantly being turned and relates to the development process. Every rejected physical prototype rapidly racks up costs of € 1000. Experts estimate the time saving with the use of this technology at 25% and the reduction in costs at 30%.

In the beginning, a few solitary specialists pioneered this development; the result was insular solutions that were complex to use and were not really capable of being integrated into the existing systems in the sector. Today the situation looks entirely different: strategic alliances and take-overs demand seamless integration across the system, the software is (more) intuitive to use and is available in different language versions for the most important countries in the garment sector. The power of even the most ordinary, commercially available computers today is adequate and, above all, affordable for small businesses; internet connections are faster and have greater capacity.

On occasion, this technology is even said to merit a „green“ label, because it obviates the need to send environmentally burdensome samples as, indeed, it obviates the need for people to travel to see examples of fashion designs.

The complex software suites - mostly modular in structure - that can cover the entire process from the initial sketch to the control of end sales (buzzword: Product Lifecycle Management – PLM) represent real investment of capital. Of course, these suites can be bought, but leasing and pay-per-use concepts (buzzword: ‚on demand‘) do not tie up capital. The real cost factor is staff training. Although graduates of the relevant training centres have generally worked with one or other of these systems, specific training is necessary if these complex programmes are to be used efficiently.

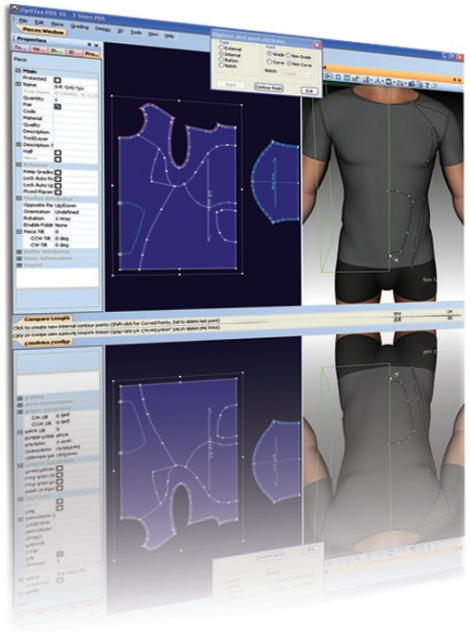


Alternatives and prospects

Communications technology is also catching on to an alternative concept. The basic ingredient here is a physical dummy, with a soft filling that provides a good imitation of the consistency of the human body. Staff in the design studio dress these dummies in the prototype garments and then launch a video-conference with the client, where they can discuss the design and the fit. As well as the standard figures - and this is where the current international serial measurements come into their own - dummies that are specific to a given company or brand can also be manufactured. The advantage here, compared to the virtual world, is the genuine three-dimensionality (as against traditional fitting with an in-house model) and the constant availability of a defined figure wherever product development takes place.

These solutions, which are both quick and keep down processing costs, are particularly helpful to suppliers who seek to present the broadest possible palette of different models at short intervals. That includes individually produced items in industrial situations and made-to-measure items. It will appeal to a clientele who value individuality, but is not inclined to pay exclusive prices.

Those who would like to find out more about new IT approaches in the apparel industry, should definitely visit Texprocess, international trade fair for the processing of textiles and other flexible materials from 10 to 13 June 2013 in Frankfurt am Main. IT manufacturers will be presenting themselves and their solutions for virtual fashion design in Hall 4.0. At Texprocess 2011, there were 326 exhibitors from 40 countries. Some 10,500 trade and professional visitors from 87 countries came to this leading international trade fair and a further 6,500 visitors attended Techtextil, which was held concurrently.



Total Solutions for the carpet production

Oerlikon Neumag is the market leader for the BCF carpet yarn systems so essential for modern carpet manufacturing. However, the fact that the backing of wall-to-wall carpeting and rugs is manufactured within the Oerlikon Manmade Fibers Business Unit will undoubtedly come as a surprise to most carpet producers: carpet backing is manufactured using Oerlikon Barmag extrusion systems.

Carpets for residential, contract and automotive applications mostly comprise a backing material, a tufted or woven pile material and a binder coating. The pile material is manufactured using BCF systems from Oerlikon Neumag; extrusion systems from the Chemnitz-based subsidiary of Oerlikon Barmag take care of the backing fabric along with the pile material for products used in various sports, such as monofilaments or tapes used to manufacture artificial turf.

Bulked Continuous filament (BCF)

Today, 88 percent of all carpet yarn is made from chemical raw materials, which are polypropylene, polyamide and polyester.
Manufacturing carpet yarn can be carried out either by using filament yarn or spun yarns, the latter of which is made from chemical staple fibers – possibly also produced on Neumag staple fiber machines – and is generally combined with natural fibers.

Spinning filament yarn has firmly established itself as the preferred method for manufacturing carpet yarn: it is less expensive to manufacture, the carpet is lower in maintenance, robust and more hypoallergenic. To produce filament yarn, the polymer is melted in an extruder and pressed through spinnerets. In the case of spun-dyed yarn, dye is added prior to extrusion using a metering unit.

Following the spinning system, the filament bundle – which generally comprises 144 individual filaments and has a total titer of between 1000 and 3000 dtex – is drawn with the help of godets. This creates a strong and extremely thin filament material. In the subsequent process step, the yarn is textured and cooled on a cooling drum. In this way, it retains the properties required to further process it into carpeting – volume and bulkiness – and it is transformed from smooth filament yarn into textured endless yarn (bulked continuous yarn – BCF). Subsequently, the yarns are knotted using a tangle unit to retain the textured multifilament for downstream processes and then wound. The winding speed, which is dependent on the polymer and the titer, is 3,000 meters per minute for a standard polypropylene yarn.

The BCF carpet yarn systems in Oerlikon Neumag's product portfolio are the S5, the S3, the Sytec One and the S+. Each of them is adapted to the specific requirements of various customers. The S5, S3 and S+ are three-end systems, while the single-end Sytec One is particularly flexible.

Carpet backing

In the case of the backing material, we distinguish between primary and secondary backing; an additional product group is woven carpet yarns. Tapes for primary and secondary backing are manufactured on extrusion systems such as the FB9 filament tape line from Oerlikon Barmag, the market leader within this product segment. The primary backing is the woven surface into which the carpet fibers are needled during tufting. It comprises the warp (approx. 0.9 mm wide) and weft (approx. 2.5 mm wide). The secondary backing is the textile surface, which is laminated on the reverse to provide the carpet with the necessary stability. For this, the warp tapes are combined with an air-textured multifilament weft to lend the final product its textile touch.

What is important for the backing material during tufting is a low degree of tape shrinkage and consistent elongation.
These properties are achieved through extending the contact time between the tapes and the heated godets.

The optimization of the contact time and the wrapping angle has a positive impact on the process speed and the energy consumption. Up to 700 (warp) tapes are simultaneously manufactured using one single system and their properties must lie within extremely narrow tolerance thresholds.

The tapes are first fibrillated by means of 30 to 40 needles per centimeter to ensure that the tufting needles find a path through the tapes and are then wound into packages.

The backing fabric is manufactured from the warp and weft during a further interim step for the warp tapes – where four- or five-meter-wide loom beams are created in the beam plant.

The traditional jute used to make the backing for woven carpets is reproducibly replicated using polypropylene tapes comprising a combination of the lowest rate of shrinkage and lower elongation.
Packages manufactured with flat, fibrillated tapes using the extrusion system are subsequently transformed into round, textile filaments with the help of a twisting machine such as the DD2000, for example. It is later introduced directly to the double carpet weaving machine, as this process does not use a backing fabric as in the case of tufting.

The carpet backing material of choice is generally polypropylene.
However, there is an increasing focus on substituting this with polyester. Polyester has outstanding properties in terms of thermal stability and dimensional stability under load. Furthermore, polyester excels both with its currently attractive price compared to polypropylene and with its potential recycling capacity. In this age of intensive sustainability discussion, this is a factor very much worthy of consideration.

Total solutions for the carpet manufacturer:
Oerlikon Neumag's BCF carpet yarn systems and Oerlikon Barmag's carpet baching machinery.

Fibre & Yarns Award *on the walkway at the* ***Mercedes Benz Fashion Days*** *in Zurich*

Oerlikon, the worldwide leader in textile machinery manufacturing did not have productivity of machinery and technical innovation on the agenda in November but textile business of another kind: that of the world of fashion and subsequently the world of glamour and glitter. The Swiss Group presented Swiss Designer Day with the catchphrase ‘a homage to diversity’ as a sponsor of the Mercedes Benz Fashion Days, that took place in Schiffbau in Zürich between the 7-10 November. Labels such as Portenier Roth, Marc Stone, LBD White, Javier Reyes and KAZU showed their collections, giving an insight into what will be worn in spring and summer next year.

The evening was opened though by three young designers who did not come from Switzerland but from China, more precisely from Shanghai. As winners of the Fibre&Yarns Award initiated by Oerlikon they were given the honour of presenting their collection on the walkway in front of a large audience from the world of fashion. The students of the Fashion Institute of the Donghua University being Chinese and business-like, straight away founded the fashion label Wensibo for their special evening and probably in order to also present their creations professionally just like their well - established Swiss colleagues.

The collection from China was not only worthy, it was also the perfect icing on the cake for the evening, as not only had the Swiss Oerlikon a special relationship to Shanghai in the form of its new headquarters, it was just not possible to create more diversity. It had been the purpose of the Fibre&Yarns Award to create a range of evening wear from around 1 ton of diverse textiles including industrial yarns, ropes and carpet yarn and to illustrate the Oerlikon spectrum of textile applications with the collection. The outlandish nature and variety of the materials was in turn reflected in the clothes.

The reaction of the audience was in accord as the young designers subsequently presented themselves to the audience, answered a few questions from the host Max Loong wearing a Marc Stone suit and thanked the audience, as they were still a little shy or perhaps simply overcome. Luckily the creator of the Fibre&Yarns Award, Oerlikons Vice President Marketing, André Wissenberg, was on hand as they accepted the prolonged applause of the audience. Wissenberg, who has built Oerlikon Textile into a genuine brand and who is always ready to explore new directions, would also have been taken for a fashion designer, as he himself cut a fine figure in his dark suit with dark shirt and pink glitter tie with matching handkerchief in his breast pocket.

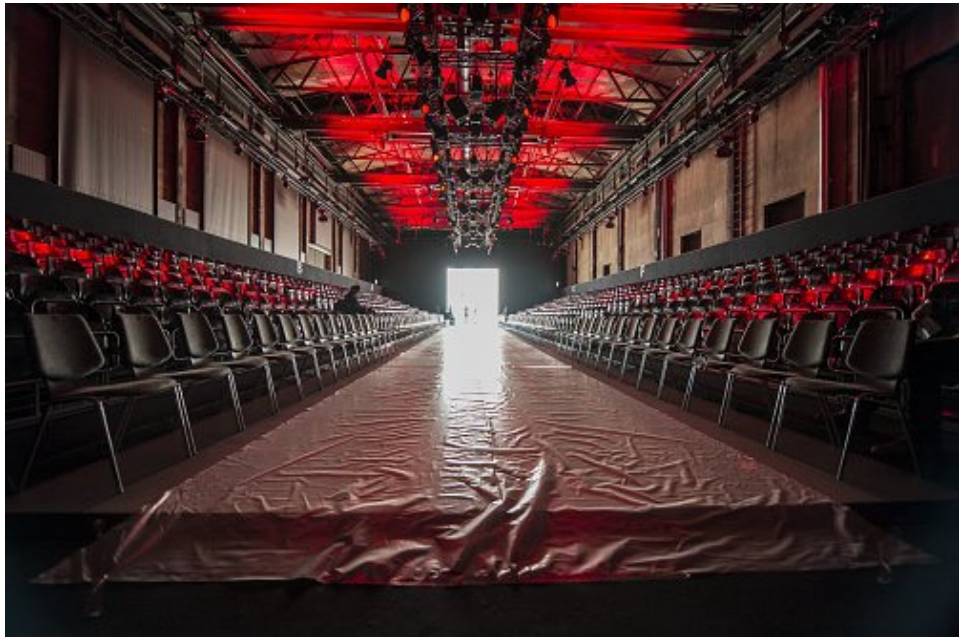
The appreciation of the idea, the young label and the collection was reflected in many reports and blogs from the fashion world who were reporting on the evening and on the show.

Oerlikon CEO Dr. Michael Buscher considers it to be a particular concern to support and promote up- and- coming talent and to get them involved at the company locations. By interlinking that with trying out something different and daring to move along the textile production chain into fashion fits perfectly to Oerlikon Textile and to their slogan ‘innovation has a name’.

Impressions MERCEDES-BENZ FASHION DAYS 2012

Source: Pictures from IMG (powered by usgang.ch), Oerlikon Textile, TexData


innovation
has a name
œrlikon
Innovation starts with creativity

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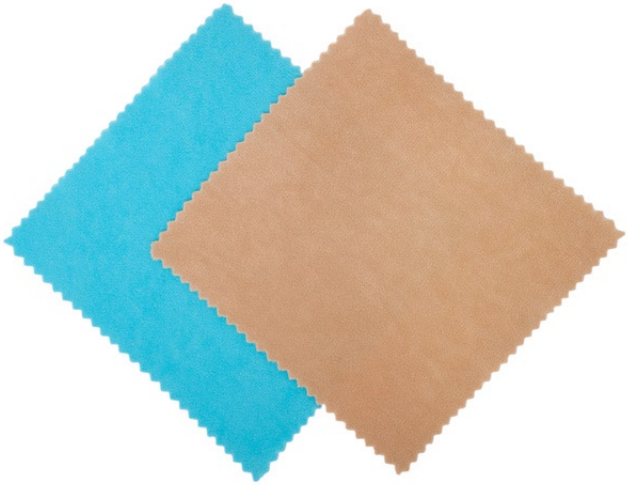
Innovations & Improvements

Part 6: Nonwovens / Technical Textiles

With our six-piece series Innovations & Improvements we mainly want to give you an overview of the respective status of technology.



The 6th part of our small series regarding technical innovations and improvements takes a critical look at the new developments and improvements of machines in the Nonwovens sector.
In addition, we look at some selected machines for the production of technical textiles. Both areas are experiencing strong growth because the worldwide demand is rising and new Nonwoven applications are constantly being developed in specialist industries, for example, the filter, automotive, geotextile, medicine & hygiene, and the wipes growth markets.

In the area of producers of Nonwoven machines, the last few years have seen numerous takeovers create a distinct concentration process, causing some suppliers to have an exposed position in the market today: Examples of this are the Mönchengladbach-based Trützschler company from Germany integrating the companies of Fleissner and Erko into Truetzschler Nonwovens and completing its product portfolio by taking over the product range of Bastian Winder Technologies, Andritz from Austria has decisively expanded its Nonwovens portfolio with the additional purchases of Küsters, Perfojet and Asselin-Thibaut, DILO from Germany has incorporated Dilo Temefa, the specialist for the opening, cleansing and mixing of synthetics and natural fibres, and CHTC has successfully merged the Germans at Autefa with the Austrians at Fehrer in Linz, together with the Italian companies F.O.R./OCTIR in Biella into Autefa Solutions.

All these companies offer a prominent portfolio and state-of-the-art solutions. If we look some new and improved machines more closely – as usual, with the idea in mind of introducing them into the textile value added chain. But before we tackle this subject, we would like to take a brief look at the product programme of market-leading companies and provide examples for which applications they intend these machines to be utilised.

International technology Group **ANDRITZ** offers a full range of complete nonwovens lines and advanced systems for the production of technical textiles and for high-end technical nonwovens. ANDRITZ systems integrate features of various technologies and provide, within a global network, reliable solutions for all nonwovens segments.

In the spunlace sector, ANDRITZ is offering high-speed integrated production: neXline spunlace – which includes the Excelle carding system, the Jetlace hydroentanglement process, the neXaqua dewatering unit, the Perfodry through-air dryer, and the neXcal twin embossing calender.

With the Jetlace machine design, ANDRITZ Perfojet meets the high requirements of technical nonwovens producers. The Jetlace Evolution is designed for the production of durables, such as automotive and filtration substrates. It is equipped with a pre-wetting conveyor in order to control web compacting, maintain the nonwovens quality, and save energy.
For unique spunlace fabrics ANDRITZ offers a full range of patterning and aperturing solutions by using calenders or sleeves and for geotextiles and filtration they are offering Needlepunching lines.

Fields of application include sailcloth, woven monofilament/multifilament fabrics, filters, and parachute silk.

www.andritz.com
www.nsc-nonwoven.com

AUTEFA Solutions delivers complete lines as well as individual machines for nonwovens manufacturing. Different applications are the production of artificial leather, filter products and paper-machine felts to automotive felts, geotextiles, floor coverings, felts for insulation and nonwovens for the hygiene industry. AUTEFA Solutions machinery could be used for the production of glass-fibre or carbon-fibre reinforced plastics. These nonwovens are used in automotive construction, shipbuilding, the aircraft industry or wind turbines.

AUTEFA Solutions scope of products includes preparation machinery, carding machines, as well as random carding machines (Airlay cards), needle looms and crosslappers.

www.autefa.com

Brückner's product portfolio for nonwovens comprises among other things flat and vertical dryers, Airlaid lines und high-temperature ovens for the finishing of geo-textiles, wipes, filter media, automotives and much more.

www.brueckner-tm.de

DiloGroup is a premier builder and supplier of complete nonwovens lines made in Germany for staple fibre nonwoven production. Each line is specifically designed to customer needs. For the following applications DiloGroup offers universal and special production lines which are adapted to the market and customer requirements: floor coverings, automotive interior linings, geotextiles and roofing material, filter media, synthetic leather, upholstery and mattress felts, thermal insulation, wipes for industry and household, special applications involving carbon fibre, glass and mineral fibres, technical and papermachine felts, medicine, hygiene and apparel.

DiloTemafa has a long tradition as an experienced specialist and worldwide leading supplier for fibre preparatory equipment including best quality opening and blending machines. Temafa considers customer demands as a whole and realizes them individually and innovatively. Project planning options include highly productive systems for opening and blending, suction, dust filtration and air conditioning.

Although DiloGroup has a strong focus on complete production lines for web forming and needling, they also put special emphasis on the development of carding systems in large working widths exceeding 5 m and production speeds up to 400 m/min. In this sector **DiloSpinnbau** has a leading position realizing high web uniformity and an optimum strength ratio in longitudinal and cross directions at low drafts.

www.dilo.de

Highest requirements of current and future developments for complex technical textiles can be fulfilled by **DORNIER** with the highly-precise working air-jet and rapier weaving machines adapted to customer-specific demands. The well-proven robust machine construction of the rapier weaving machine with high reed beat-up forces allows weaving different diameters. For rapier weaving machines, the low tension weft curve in connection with the open shed weft insertion allows a gentle insertion also for very delicate types of yarns. The weft transfer in the center of the fabric thanks to the positively controlled rapier offers an optimal reliability of the weft transfer also for multifilament yarns. A DuoColor device reduces the weft waste with technical textiles by more than 50%.

www.lindauerdonier.com

Karl Mayer from Germany offers tailor-made solutions for the field of technical textiles warp knitting machines with parallel and multiaxial weft insertion. Warp knitting machines with parallel and multiaxial weft insertion respectively and machines producing in different manners warpknits out of webs or are applied for bonding fed surfaces. The products are extremely strong warp knits with high square measures as well as delicate, also stretchable textiles, grid structures and voluminous fabrics. Yarn materials of all kinds are made use of: besides yarns out of continuous filaments or staple fibres, the typical yarns such as glass, carbon, aramid and wire are applied.

www.karlmayer.com

Monforts from Germany offers a special range for the nonwoven finishing with equipment for finishing of technical nonwovens from 100 to 5500 g/m2 with a thickness of 0.5 to 22 mm, for fixing of 3-dimensional warp knits, for thermal bonding of nonwovens (hygiene articles) and an airbag range with drying, fixing and coating in a single operating process.

www.monforts.de

The product range of **Trützschler Nonwovens** covers the entire staple fibre preparation and web formation with roller cards or aerodynamic web-forming devices. Truetzschler creates and delivers both standard machines and special-purpose solutions, as well as complete systems tailor-made to customers requirements.

ERKO´s scope of supply includes opening and blending, carding, crosslapping and needling. Erko crosslappers and Erko web drafters enable production of the required web weights and working widths. **Fleissner** `s scope of supply consists of hydroentangling with Fleissner Aquajet and Fleissner dryer, chemical bonding, thermobonding, drying and finishing equipment. This combination of machines from a single source is unique in the nonwovens world and guarantees smooth and trouble-free operation after a short installation period.
Different web equipment options and systems for production of hygiene articles complete the product range.

In the product range Fleissner Man-Made Fiber, Trützschler Nonwovens deliver plants and equipment for production of staple fibres that are used in textile and nonwoven products. Furthermore, Trützschler Nonwovens delivers complete plants for production of carbon fibres in cooperation with partners.

www.truetzschler.de

WUMAG TEXROLL from Germany offers cylinder dryers for non-wovens and technical fabrics. The WUMAG TEXROLL cylinder dryers are used worldwide in non-woven production machines at production speeds of up to 280 m/min. The high quality standard of WUMAG TEXROLL drying cylinders and the use of drive systems with precise control accuracy ensure low-tension drying and controlled shrinkage or extension compensation. The cylinder dryer is heated up to 190°C with steam and up to 280°C with thermo-oil.

www.wumag.de

DILO - MultiFeed by DiloSpinnbau

Opening, cleaning, blending and dosing machines

The new **MultiFeed** card feeder from **DiloSpinnbau** which is available in working widths which can exceed 5 m is equipped with a twin fibre delivery system in the upper chamber which provides a more regular material flow. A two roll opening stage allows fibre into the lower chamber with further compaction by mechanical means and air movement derived from the permeable delivery apron. Such a unit can deliver over 400 kg/m/hr of 1.7 dtex fibre with a cross direction evenness CV of 2-3 % immediately prior to the card. Changeover times with this Multifeed system are fast thus reducing downtime and web reprocessing requirements. Machine direction evenness is controlled by a weighbelt scale linked to the card infeed. Multifeed can be used with all DiloSpinnbau card types in crosslapping applications or with high speed cards in series for web formation prior to hydroentanglement and thermal bonding.

Cards

One of the most interesting markets for non woven, that had a real fast and strong grow in the last years, is the Spunlace, that is the nonwovens bonded by water jet. The products are mainly used in the medical and hygienic field but also in the technical applications , and have the big advantage, in front of a traditional needle punched products, to reach the same specific characteristics with a lower quantity of fibres, with a better "hand", but moreover, with a very high production speed.

For this special market, but not only limited to this, **Autefa Solutions** has developed since 1995 a special card, the **Injection card**, that is a real new concept in carding and proved successful from the very beginning. The new generation of the Injection Card is called **Injection Card PLUS**. The machine has improved performance, enables more easy maintenance and optimised reliability.

The Injection Card uses the aerodynamic principle to gently treat fibres when opening them and in parallel, the new carding concept avails itself of some of the advantages of the cotton card and of some of those of the traditional card, with workers and strippers. The carding effect is improved, the recycling of fibres is totally negligible, and the isotropy of the product is increased; all the above advantages make the Injection Card the most suitable card for high-production Spunlace lines.

AUTEFA SOLUTIONS: Injection Card

The new **MultiCard** by **DiloSpinnbau** is an universal card which has been especially designed for operation in combination with a crosslapper. An optimum cost-performance ratio for this card has been realised by using computer-aided design and analytical research. The MultiCard is characterized by extraordinary ease of maintenance and superior accessibility for cleaning and service work. The MultiCard presented at the ITMA had a suction and filter system designed by the "AirSystems Engineering" department of DiloTemafa. The sound insulation of this suction and filter unit is secured by "Temafa SoundControl".

The MultiCard has roller infeed, a breast cylinder with three worker/ stripper pairs and a 1500mm main cylinder with a further five roller pairs. This is a double doffer system with the possible activation of condenser rolls for heavier webs. Such a card will handle the full range of fibre fineness and length with a web speed potential up to 200 m/min and offers an economic solution for cross laid nonwoven production. The MultiCard enjoys a high production availability due to its easy and fast accessibility for cleaning and maintenance work.
The MultiCard at the ITMA worked with a double doffer and a pair of condenser rolls delivers a homogeneous double web to the subsequent high speed crosslapper type DLSC. The cross profile regulation system type “Profiline CV1A” for the crosslaid web pre-compensates possible thicker edges in the needling installation.

MultiCard by DILOSPINNBAU

Crosslappers

The newly developed **crosslapper EKL 439** from **Trützschler Nonwovens** stands for reliable web guidance and low energy consumption at maximum production speeds.
Meanwhile, state-of-the-art roller cards reach very high production rates. To utilise this performance in the entire nonwovens line, new concepts for the downstream machines are required. The crosslapper plays the central role in this regard. The new Erko Crosslapper EKL 439 sets new standards in terms of product quality and production speed.

A new belt path in the crosslapper allows a reduction of moving machine masses. Particularly the oscillating masses are reduced; instead of the previous nine rollers now only four rollers are required. These rollers are made of carbon fibre reinforced plastic (CFRP). The lower weight leads to reduced power demand for acceleration and braking. This results in reduced machine load and higher energy efficiency. The drive technology is also new. Now AC servo motors with energy recovery are used.

Crosslapper EKL 439 from Tr□tzschler Nonwovens

In addition to the positive effects on carriage layout, the newly designed belt guidance also improves the guidance of the web material. Undesirable interfering factors such as air flows and centrifugal forces are eliminated. An air-permeable cover belt located at the web inlet removes the entrained air from the web via a continuously narrowing gap, without changing the fibre orientation MD:CD created in the roller card. Due to positive belt guidance at the web inlet (top carriage), negative effects of the centrifugal forces are avoided.

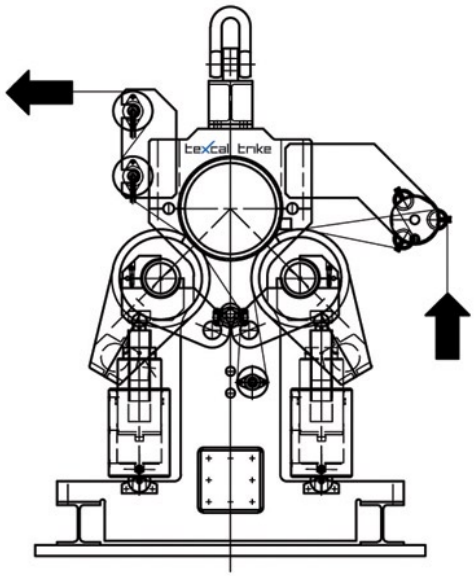
A defined draft zone at the outlet of the web from the laying belts prevents the previously common floating draft zones. The draft zone is formed by a nip line at the laying carriage in interaction with the fixation of the process material on the suctioned lay-down belt. This technology offers the advantage of profiling the laid down web precisely at the point where an adjustment of the cross section is required.

Drummers

During the ITMA 2011 exhibition in Barcelona **Trützschler Nonwovens** presented for the first time the "**Streamliner**", its latest development of a new drum dryer generation.

The new dryer generation achieves specific evaporation capacities going far beyond the commonly achieved values. For the Trützschler Nonwovens customers this means a significant increase in productivity.

The energy efficient machine design features an optimized airflow with low pressure loss, an optimal fresh air supply using the temperature-dependent density change, as well as a heating system with optimized flow technology. In addition, energy efficiency is increased by external air treatment and possibilities of heat recovery.



teXcal Trike graph

Calenders

ANDRITZ Küsters has developed a new calender design especially for the production of delicate, technical textiles with very high density: The **teXcal Trike** is a 3-roll calender with S-Roll, Xpro Roll and heated steel roll in a triangular roll arrangement. This configuration allows extremely flexible production by using one or two nips. Both nips are individually adjustable without influencing the other nip's deflection characteristics. In comparison to standard 3-roll calenders with vertical roll arrangement, the teXcal Trike reduces seam loss to a minimum.

With regard to the continuously increasing process requirements in the production of technical textiles, the proven deflection control of the S-Roll is combined with additional zone control in the Xpro Roll. Fields of application include sailcloth, woven monofilament/multifilament fabrics, filters, and parachute silk. In order to optimize material properties, the teXcal Trike achieves absolute flatness, air permeability, and defined thickness profiles. A state-of-the-art teXcal Trike production calender (2,000 mm surface width) will be installed at the ANDRITZ Küsters Technical Center at the end of 2012.

Coating

The new improved soft coating solution **Eco-applicator** by **Monforts** provides a significant energy savings with reduced drying times. Additionally it can also eliminate the need for a conventional wet-on-wet padder. The new process uses trough and roller techniques and applies just the required amount of liquid/coating to the fabric via contact with the roller.

It has been designed for three options – to apply a liquid/coating to one side of the fabric; to apply a liquid to both sides of the fabric; or to apply a liquid to one side of the fabric and a different liquid to the other side. The Eco-applicator range is suitable for felt finishes, coated materials and medical textiles. Applications include nano coating, water repellancy, softeners, flame retardency and insect repellent.

Brückner introduced a new application unit for their **TECHNO-LINE COATING** at the last ITMA. It is for the direct coating of bi-elastic knitted fabric which is integrated in the stenter entry. In addition a new application unit for the coating of the lower side of the textile web has been developed. Both units in combination allow a simultaneous coating of the upper and lower side of the textile web in one dryer passage. BRÜCKNER lines allow among other things direct coating on textile webs and foils, reverse coating on transfer paper, impregnation and submerged coating as well as dry and wet lamination of membranes and textile webs.

MONFORTS - ECO Applicator

Patterning

ANDRITZ Perfojet recently introduced a new 3D patterning technology called **neXimaging**. This innovative approach allows any kind of patterning and/or aperture at very high production speed. The sleeve has been designed to reproduce logos and artwork in 3D design with exceptional high quality of detail.

Stenter Frames & Dryers

A new generation of vertically guided stenter chains has been introduced by **Monforts** in August 2012. The **Hercules-V stenter chain** follows market requests and complements the range of Monforts chains. It is particularly suited for knitted fabrics and has been designed for heavier weight knitted, non-woven and technical textile applications.

The chain features extremely sturdy construction in grey cast iron with reinforced chain track. Operating with transverse forces up to 1500 N/m and running speeds up to 100 m/min, the Hercules-V stenter chain operates at temperatures up to 260°C.
Featuring a maintenance-free design, the new chain offers extremely long device life of the slide blocks. Depinning protection flaps are optionally available.

Wipe with 3D logo by neXimaging

The **Montex 8000** stenter by **Monforts** introduced an 'intelligent' heat recovery module at CINTEX. The module is able to adjust the exhaust air volume and exhaust air temperature to ensure that it is always working at its highest efficiency. The **Eco Booster HRC** helps to minimise energy costs and also includes a fully automatic cleaning system for the integrated heat recovery system. Two integrated, parallel exhaust ducts on each stenter chamber are also incorporated for technical textile applications.

The new dryer **SUPRA-FLOW BX** by **Brückner** is used for the bonding of high-loft nonwovens. Nonwovens with a weight of up to 6000 g/m² and an initial thickness of 300 mm can be finished. The flow in the dryer can take place from the bottom up or from the top down, depending on the process and the fabric type. Also in this case the advantages of the countered design are apparent. The homogeneous air and temperature distribution across the complete fabric length and width ensure a high-quality end product. An optimum air control system requires less electrical energy and saves thus costs. The system is very easily accessible for cleaning and maintenance. To convince their customers of the benefits of this system BRÜCKNER will have within a short time a pilot plant available for fabric tests.

Conclusion

This brief survey of selected machines has shown the high technical level at which the solutions, solely in the Nonwovens sector, are at present, and it points to the hunger for innovation which the suppliers require in their attempts to react to the constant advancements and increasing demands of new applications. It is a matter of marking out territory, and this competitive situation will probably cause the permanent advancement and improvement in the Nonwovens machine sector, exponentially driving the dynamism which marks the Nonwovens industry as a whole. We are all looking forward to the Techtextil and Texprocess 2013 which has genuinely achieved a prestige akin to the ITMA with regard to the area of the Nonwovens and technical textiles, even if production with machines constitutes only a cluster. Further innovations and developments are surely just around the corner.

Topics of the next issue 1 /2013

TOP STORY:

Sustainability

Sustainability – review 2012 and outlook

The Higg Index by SAC

Interview: *sustainability in textile chemistry*

Country focus: *Vietnam*

Nonwovens & Technical Textiles:

"Luminescent textiles"

Textile Machinery:

"Software & Auxiliary machines"

Domotex Review

Heimtextil Review

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