

para-aramid and intends to invest around three billion yuan or US\$ 476 million for the same.

When the new line becomes functional in 2015, Bluestar Chengrand would become the world's third largest manufacturer of para-aramid, next to the US's DuPont and Japan's Teijin, Mr. Cao said.

The holding firm has undertaken to build up its strength by investing around seven billion yuan in para-aramid production each year from 2011 to 2015.

The firm would each year divert around 3.5 percent of its annual turnover to its R&D division, and would also look forward to establishing a number of research institutes and R&D bases across China.

ChemChina, which earned 140 billion yuan in sales revenue during last year, looks forward to earn 200 billion yuan from sales each year, for the next five years.

SSM TEXTILE MACHINERY TO BUY ITALIAN GIUDICI

SSM Textile Machinery will take over the activities of the Italian firm Giudici S.p.A. The purchase price is in the single-digit million range. The transaction should be concluded by the end of January 2012.

The Giudici company is the leader in false-twist texturizing technology, a system for processing ultra-fine nylon yarn and similar materials. Giudici's yarn texturizing technology will augment SSM Textile Machinery's existing air-texturizing know how, securing the company's already strong position in the chemical fiber processing industry.

Giudici achieved sales of roughly CHF 10 million in 2010 with a staff of around forty employees. The company's registered office is located in Sala al Barro, Galbiate (LC).

Schweiter Technologies is a traditional Swiss group focused on the machinery business and the recently acquired business unit focused on composites. The group currently consists of the three divisions „SSM Textile Machinery“, „Ismeca Semiconductor“ and „3A Composites“.

In the division Textile Machinery, SSM is the leader in yarn processing and precision winding, offering

advanced winding systems for a wide application. With the acquisitions of Stähle-Eltex (Air Texturing) and Hacoba Spultechnik (sewing thread) in 1999 our efforts for a continuous development of new fields of business fitted into this strategy. All companies have a clear dominance in the market niches they cover.

INDIAN APPAREL FIRMS EXPLORE VIETNAMESE MARKET

Looking forward to tap new trade and investment opportunities, representatives of the Indian apparel and textile trading firms, who are members of the Apparel Export Promotion Council of India (AEPC), have met top officials of the Vietnamese firms in HCM City.

AEPC Chairman Premal Udani said the delegation intended to gain knowledge regarding cost advantages in apparel production, productivity of the sector, production facilities, labour policy and the kind of incentives that the Vietnamese Government extends to garment industries.

He added that such an exercise may lead to dialogue on collaborations, including joint venture deals.

He said that AEPC is ready to host an exchange programme whereby Vietnamese students can attend the courses offered by the Institute of Apparel Management.

The Council is also ready to help the Vietnam Textile and Apparel Association (VITAS) with training of its employees through its training programmes in quality control techniques, production technology, merchandising management, computerised pattern making and such other varied fields, Mr. Udani added.

Director of VITAS's External Affairs Department Mr. Pham Gia Hung said Vietnam has 3,710 textile and apparel firms, 70 percent of which are into production of apparels. He added that the weaving, spinning and dyeing firms of the country are not strong enough.

He informed that with an aim to encourage the localization rate, the current five-year development plan which would run till 2015, aims at raising investment to boost production of raw materials.

ing cotton prices.

Dwindling textile demand and higher growing costs also weighed on cotton farmers' interests, dampening their willingness to grow the crop, analysts said.

EXPLORE LATEST GARMENT PRINTING TECHNOLOGY AT FESPA FABRIC

FESPA Fabric 2012 as part of a comprehensive FESPA Digital visitor experience, FESPA Fabric 2012 (21-24 February 2012), offers garment decorators and printers the opportunity to explore the latest trends and developments in apparel print.

This 'show within a show' specifically attracted over 2,500 visitors in Hamburg at FESPA Digital 2011, and with interest in the potential of digital direct-to-garment technologies growing so dynamically, FESPA Fabric is an important feature of the Digital show.

In 2012, with Kornit Digital confirmed as Fabric Corporate sponsor, visitors looking to update themselves on the latest production technologies and consumable advancements for garment printing, embroidery and decoration will now be able to take their inspiration as part of the main FESPA Digital show. Covering approximately 1000m², FESPA Fabric 2012 will occupy nearly 10% of the total FESPA Digital event.

Now running across all four days of the show, FESPA Fabric will offer a mix of exhibitors and educational content aimed at invigorating garment printers and decorators with new business ideas and revenue opportunities.

The Fabric Theatre within FESPA Fabric, leading industry specialists including direct-to-garment expert Scott Fresener will share their wealth of knowledge on print and pre-press techniques, technological developments and trends for direct-to-garment digital printing, screen printing and a range of apparel sectors, bringing to life the FESPA Fabric campaign strapline 'Explore the Wider Garment Opportunities'.

Charlie Taublieb, aka Dr. Print, will also be presenting his special mix of educational and fun demonstrations in Charlie's Corner, now a popular destination for FESPA visitors. His exciting tips on screen printing

and garment decoration techniques will enable any garment printing business to go the extra distance.

FESPA Managing Director Neil Felton comments: "Having listened to feedback from exhibitors and visitors to FESPA Fabric in Spring 2011, we have incorporated FESPA Fabric into the main Digital event for 2012, bringing these fascinating garment applications into the centre of the show.

"With such a concentration of garment producers in southern Europe, we expect FESPA Fabric in Barcelona to be a popular event for this specialist community. And for wide format printers looking for opportunities to diversify, this zone may provide some valuable insights into the world of printed fashion garments and promotional wear."

He continues: "Our aim is to create a learning environment to inspire garment decorators and printers, as well as apparel brands, to take hold of new ideas to help grow their bottom line. We have a packed programme of live demonstrations, hands-on workshops, side shows, seminars and of course the show floor exhibits which will all go a long way to help FESPA Fabric visitors map out their own route to success".

CHINA TO BECOME THIRD LARGEST PARA-ARAMID PRODUCER

Next to the United States and Japan, China is likely to become the world's third most leading manufacturer of para-aramid, a strong and heat resistant synthetic fibre, by 2015, President of China Bluestar Chengrand Chemical Co Ltd, Mr. Cao Xianjun has said.

Mr. Cao informed that Bluestar Chengrand, an arm of China's largest chemical firm – China National Chemical Corp (ChemChina), now has an annual capacity to produce 1,000 tons of para-aramid fibre, which finds great utility in aerospace industry and with military, and is also used in components for ships, automobiles and high-speed trains.

The firm proposes to set up a production line with a capacity to produce another 10,000 tons of para-aramid per annum and to install new machinery to support production of composite materials out of



World Textile News

CHINESE MILLS MAY SUFFER FROM HIGHER COTTON PRICES

Chinese cotton mills may suffer from higher cotton prices next year as the government continues to buy cotton from the market and planting acreage shrinks, industry participants said on Monday.

The adjustment of cotton import tariff for sliding-tariff quotas may also raise costs for mills which need the high-quality crop, they said.

"We have no choice but to (accept the higher prices)," said a deputy chief with a top 10 Chinese textile group, adding that his company was still consuming the cotton which was purchased when prices were high.

Cotton prices have tumbled since earlier this year, with rolling three month cotton futures traded on the Zhengzhou Commodity Exchange falling more than 40 percent since mid-February.

Chinese mills do not have much high-quality cotton available for use as the government has been actively buying the crop from farmers to support local prices.

The government bought 1.62 million tonnes of cotton from farmers as of Friday, while analysts expected it to purchase a total of 2.5 million to 3 million tonnes of the crop, 35 percent-42 percent of 2011's output estimated by the National Development and Reform Commission.

The cotton purchase price was 19,800 yuan (\$3,100) per tonne, and some analysts said the government was unlikely to sell them without profits of between 2,000-3,000 yuan per tonne.

"Local cotton prices may go higher if the government doesn't issue sliding-tariff import quota soon and mills may start to compete for the local crop (early next year)," said Guo Weile, an analyst with industry website www.tteb.com.

China issues cotton import quotas of 894,000 tonnes each year, subject to an import tariff of 1 percent.

Besides that, it also issues sliding-tariff quotas for an uncertain volume of the crop, which is subject to tariffs ranging from 5 percent to 40 percent.

Last week, the government adjusted the way of calculation for the sliding-tariff in 2012.

Under the new calculation, for New York cotton price quotes of below 50 cents per lb or above 100 cents per lb, the import costs are unchanged.

But if the quotes are between 50-100 cents per lb, the import costs could rise by as much as 512 yuan per tonne, according to calculations from industry websites.

With the new way of calculation, the government "wants to reduce the attack from low global cotton prices on local prices," said Liu Wei, an analyst with Guohai Liangshi Futures Co Ltd.

Beijing Cotton Outlook, a subsidiary of UK-based Cotlook Ltd, forecast China's cotton planting area to decline 9 percent in 2012 from this year due to fall-

guished manifestations of the Persian culture and art, and dates back to ancient Persia.

There is an estimated population of 1.2 million weavers in Iran producing carpets for domestic markets and international export.

The country produces about five million square meters of carpets annually of which 80 percent are sold in international markets.

The United States, Europe (specially Germany and Italy), China, Brazil, South and Central Africa, along with neighboring countries are the most important markets for Iranian made Persian Carpets.

IRANIAN ARTWORKS ON DISPLAY AT KUWAITI EXPO

Iranian artists are displaying their artworks at the Fifth Islamic Arts Forum which is currently underway at the Grand Mosque of Kuwait.

Iranian artists from different fields are attending the event which features artworks created by over 50 participants from 22 different countries, with eleven of them focusing on the forum's theme -- Islamic textiles.

Calligraphers Javad Bakhtiari, Mohammad Javadzadeh, Mohammad Heydari and Nasser Javaherpur, illuminators Mohsen Aqamiri and Leili Abbbasi and micrographer Raeen Akbar Khanzadeh are the Iranian participants of the forum.

Located in a tent outside the mosque, the exhibition houses Islamic art from around the world. China, Malaysia, Palestine, Morocco, Bangladesh, Bahrain, India, Turkey, Oman, Iran, Syria and Kuwait among other countries are participating in this year's forum.

The event is sponsored by Mohammad Al-Nomas, Minister of Social Affairs and Labor, the Minister of Islamic Affairs, and the Minister of State for Housing Affairs. It is scheduled to continue through January 7

As part of the event, there is a workshop for visiting children, who will be given tips on special techniques and the opportunity to experiment with them in each of the art forms represented. They will also receive instruction on the arts of dialogue and interaction through work-groups, he divulged. Art supplies, books and compilations on Islamic arts are also being offered during the exhibit.

The Forum is ongoing until 7 January, 2012. Exhibition of Arabic calligraphy, Islamic decoration, Islamic tex-

tile exhibition, Kaba curtains gallery, specialized Arabic calligraphy workshops and the art of composition by clicking on the paper are the programs being held during the event.

The press and public media in Kuwait have conducted several interviews with Iranian artists. The workshop held by micrographer Akbar Khanzadeh was welcomed by visitors to the gala, the Persian service of MNA reported.

At the opening ceremony of the event on December 27, Iran's cultural attaché to Kuwait Abbas Khomeyari negotiated with Khlaif Al-Uthaina, Undersecretary for Cultural Affairs in Kuwait and Farid Al-Ali, Chairman of the Kuwait Center for Islamic Arts, for holding a solo exhibition by Iranian artists at the event.

IRAN OKS \$246MN IN FOREIGN INVESTMENT

Iran's deputy minister of economy says Iran's Council on Foreign Investments has approved USD 246 million worth of foreign investment in different industrial and economic projects.

Behrouz Alishiri, who also heads Iran's Organization for Investment and Economic and Technical Assistance, said the investments approved by the council will be used in establishing chain stores, production of tiles and ceramics, textile production as well as launching a new production line of tissue paper.

It is expected that the projects will help create more jobs in the country, improve the quality of domestic products, transfer technology and increase non-oil exports.

Official data show that Iran has attracted over USD 3.7 billion in foreign investment in the previous Iranian calendar year (ended March 20, 2011).

Earlier in October, Iranian Minister of Economic Affairs and Finance Shamseddin Hosseini assured foreign investors of the safety of their investment in the Islamic Republic.

"The country's political conditions are suitable for drawing foreign investments," Hosseini said.

In 2009, the Islamic Republic also saw the highest rate of foreign investment attraction, hitting the all-time record of USD 3 billion, which places Iran among the top six countries of the world with the highest rate of drawing foreign investments.

Iran Textile News

PERSIAN CARPETS ATTRACT VISITORS AT ATHENS EXPO

Hand-woven Persian carpets attracted visitors at the third traditional carpet exhibition of Iran held in Athens, the capital of Greece.

Inaugurating the expo, Mehdi Honardoost, Iranian Ambassador to Greece, hailed Persian carpets as a genuine work of art and stressed on the need for preserving their artistic nature. He sought expansion of Iran's carpet market.

The art of weaving carpets in Iran dates back to ancient Persia and is considered to be one of the most vivid examples of Persian art and culture.

Hand-woven rugs and carpets are one of the main non-oil export items of Iran and are exported to over 100 countries. It is estimated that around 1.2 million people in Iran are involved in making carpets meant for both domestic market and exports.

Persian carpets have good demand in international markets owing to their excellent quality, colour and design.

ISLAMIC AZAD UNIVERSITY TO HOLD NATIONAL CONFAB ON NANOMATERIALS, NANOTECHNOLOGY

The Research and Technology Department and the Nanomaterials Engineering Group of the Shahroud branch of the Islamic Azad University plan to hold a 'National Conference on Nanomaterials and Nanotechnology' from February 29 to March 1, 2012.

Among the issues to be touched in the conference, mention can be made of nanobiomaterials, nanochemistry, nanobiotechnology, metallic nano-oxides, nanostructures, nanocatalysts, metallic-ceramic-polymeric nano-

composites, and advanced nanoceramics. Parallel to the conference, an exhibition will be held to display the research and industrial achievements of the researchers in the field of nanomaterials.

Researchers and university students can submit their article abstracts to the secretariat of the conference by the end of the working hours of January 5, 2012.

According to the secretariat of the conference, the short-listed articles will be published in the scientific-research journal entitled "Nanocomposite Material Research" that has been indexed in Islamic World Science Citation Center (ISC) and in Scientific Information Database (SID).

IRAN EXPORTS OVER \$326MLN WORTH OF HAND-WOVEN CARPETS IN 8 MONTHS

Iran exported \$326.5mln worth of hand-woven carpets in the first 8 months of the current Iranian year (March 21 to November 22, 2011).

According to the latest statistical figures released by Iran's Customs Office, the country exported a volume of 4,058 tons of hand-woven carpets to 77 countries of the world during the said period.

The United Arab Emirates (UAE) with \$67mln worth of imports was the first market for Iranian carpets followed by Germany with \$60mln worth of imports.

Lebanon, Italy, Japan, Sweden, Canada, Qatar, Switzerland and Britain stood third to tenth in importing Iran's hand-woven carpets, respectively.

Iran is the leading exporter of hand-woven carpets. Persian rugs are highly sought out for their intricate design and skilled craftsmanship, and that's why Iran exports carpets to more than 100 countries in the world.

Carpet-weaving is undoubtedly one of the most distin-



By: T.Molana

Interview

Dr. Johann Peter Keraric
Managing Director

Opportunity to a revolutionary textile installation by UNISHED

1. Please give us an introduction of your company and the year of establishment

Grosse was established in 1878. It has a long and deep experience in jacquard machinery manufacturing.

In recent years restrictions, such as change of ownership and structure as well a company restyling have been necessary in order to be again more present on the textile market.

In Germany the company is still located in the south of the country between Muenchen and Stuttgart where the UNISHED is manufactured, While the production of standard machines has been moved to China.

Through the continuous support of German technical experts, our Chinese staff is well trained, so that the first quality European production is assured, in accordance with German quality standards, and with the advantages of a production at a lower cost.

2. What is your innovation here for the edition at ITMA?

We are showing the first harnessless jacquard machine (UNISHED): a Jacquard machine without harness fitted on a water jet loom Tsudakoma weaving OPW (one pic weaving) ,a very high quality technical article which is nowadays the trend fabric of all over the world weaving producers. We are proud to say that the machine we are showing in production is the only innovation in jacquard weaving philosophy and the first harnessless jacquard machine typology.

3. Which are your target markets?

Our target markets are the ones where the demand is for the 100% guaranteed quality control in producing process, saving costs, space, power consumption and for its simplicity human resources, too.

Most of all of the now increasing textile market as Iran, Indian, Turkey and not to forget European Countries.

UNISHED, due to the facility of its construction and maintenance, offers to the new borning textile factories the opportunity to start up a new and revolutionary textile installation.

4. Is your innovation received welcome by the attendances and are you satisfied regarding the number of visitors?

Yes, we are very much satisfied. Many visitors came to our booth, to whom we explained in details our jacquard electronic machines EJP-4 and UNISHED, to some important, potential customers we had the opportunity to mention our long history, our tradition and our will to come back on the market and their reaction has been very positive: this is for us the most important result.

Speaking with our old existing customers and with the new potential ones we had the chance to achieve fresh news coming from the textile market.

This important key will help us to improve more and more our technology.

5. Please let us know if your company has any delegation in Iran and what is your opinion regarding Iranian market for your product?

We have set up a new sales agent network and Itma 11 has been a very important meeting opportunity: we met our well known old agent as well as some new ones.

In Iran, as for other important growing up textile markets, we have of course a sales partner, who is going to introduce again all our textile production (EJP-4, UNISHED and original spare parts).

6. Finally, what is your prospect for the company?

After our restructuring GROSSE company will be one of the three European manufacturers for standard jacquard machines.

The new machine UNISHED, we believe, will replace the standard jacquard in the field of high quality textile product.

We, Grosse, with our high potentiality, with the support and cooperation of valid sales partners, will improve our position in competition with the other European textile manufacturers and we will recall again the famous Grosse brand on the world wide market of textile industry.



Purchasing Behaviour

Purchased/ordered machines during or after ITMA 2011 52%

Considered purchasing/ordering machines during or after ITMA 2011 38%

Top 5 Sectors Visited

Dyeing & Finishing	50%
Spinning & Winding	47%
Weaving	44%
Knitting/Hoisery/Embroidery/Braiding	40%
Fibre & Yarn	35%

" A lot of commercial negotiations have started and orders have been finalised for approximately 30 million euros with customers from Argentina, India, Turkey, Turkmenistan and Uzbekistan."

Attilio Camozzi

President, Marzoli

" ITMA 2011 demonstrated the finest of global excellence in textile manufacturing technology. India is emerging as the preferred base for textile manufacturing and Indian buyers were able to evaluate various machines for procurement during ITMA 2011. As a policy planner and in order to usher in India's next leap into finer processing, finishing and a strong textile hub, it was particularly gratifying to be shown the finest technology in the world and a range of options at ITMA 2011."

Rita Menon

Textiles Secretary, Government of India

Meeting of the best minds in the industry... Conferences @ ITMA

World Textile Summit

A unique one-day event for textile industry leaders and some of the world's most influential thinkers and policymakers. A first joint initiative between CEMATEX and the International Textile Manufac-

turers Federation (ITMF), and organised in partnership with MP International and World Textile Information Network.

Sustainable Textile Leaders Roundtable

Attended by over 200 industry professionals, it was organised in partnership with Textile Exchange. Focused on major issues impacting global textile sustainability; panellists included representatives from DyStar Singapore, Invista, Patagonia, Pratibha Syntex and Tonello.

Textile Dyestuff and Chemical Leaders Forum

Two power-packed half-day sessions with speakers from Clariant, DyStar Colours Distribution, Esquire Knit Composite, Huntsman, Oeko-Tex Association, Rhodia and more.

R&E Speakers Platform

Featured presentations on process technology, textiles and R&D from leading research institutes and universities from the R&E Pavilion. 29 international speakers from 10 countries shared their insights and research projects with participants over three half-day sessions.

Young Entrepreneurs of Textile International Meeting

A first collaborative effort with Institute Sallares I Pla (ISP), provided networking and learning opportunities for business owners of textile companies aged between 30 to 45 years old.

IFAI Advanced Textiles

IFAI Advanced Textiles Europe 2011 was organised by the Industrial Fabrics Association International (IFAI).





Timor • Ecuador • Egypt • El Salvador • Estonia • Ethiopia • Finland • France • Germany • Ghana • Greece • Greenland • Guatemala • Haiti • Honduras • Hong Kong • Hungary • Iceland • India • Indonesia • Iran • Iraq • Ireland • Israel • Italy • Japan • Jordan • Kazakhstan • Kenya • Korea • Kuwait • Kyrgyzstan • Laos • Latvia • Lebanon • Libya • Liechtenstein • Lithuania • Luxembourg • Macedonia • Madagascar • Malaysia • Malta • Mauritius • Mexico • Moldova • Monaco • Mongolia • Montenegro • Morocco • Nepal • Netherlands • New Zealand • Nicaragua • Nigeria • Norway • Oman • Pakistan • Panama • Paraguay • Peru • Philippines • Poland • Portugal • Puerto Rico • Qatar • Reunion • Romania • Russia • Samoa • San Marino • Saudi Arabia • Senegal • Serbia • Singapore • Slovakia • Slovenia • Solomon Islands • South Africa • South Korea • Spain • Sri Lanka • Sudan • Svalbard and Jan Mayen • Swaziland • Sweden • Switzerland • Syria • Taiwan • Tajikistan • Tanzania • Thailand • Tunisia • Turkey • Turkmenistan • Uganda • Ukraine • United Arab Emirates • United Kingdom • United States Virgin Islands • Uruguay • USA • Uzbekistan • Vanuatu • Venezuela • Vietnam • Wallis and Futuna Islands • Yemen • Zimbabwe

Positive feedback from visitors

Visitors to ITMA 2011 rated the exhibition very positively, with 94% of the respondents* rating at least “good” for the exhibition.

Top 10 Visiting Countries Objectives achieved

Italy	8.9%
Spain	8.8%
India	8.5%
Germany	7.7%
Turkey	7.1%
Brazil	5.3%
France	4.1%
Iran	2.7%
Portugal	2.4%
United Kingdom	2.4%

Overall experience

Excellent	16%
Very Good	45%
Good	33%
Fair	4%
Poor	1%
No Response	1%

“ ITMA 2011 has been a fruitful sourcing experience for us. We were able to witness first-hand the latest innovations from exhibitors during the ‘live’ demonstrations, and make comparisons on-the-spot with other similar machineries and technologies which were grouped by sectors for our convenience. We will definitely return and cannot wait to visit ITMA 2015 in Milan! ”

Top 10 Visiting Countries Objectives achieved

General market trends	94%
Information on products/systems / applicstions	92%
Establishing new business relations	91%
Maintaining existing business relations	91%
Information on innovations and trends	90%
Preparation for making purchases / investments	89%
Observing the competition	88%
Education / training, extending specialist knowledge	86%
Others	86%
Information on prices/conditions	85%
Making a concrete purchase / investment	83%

* 1,133 visitors were surveyed

Rohan Abayakoon

Chairman, Sri Lanka Apparel Exporters Association

Role in Purchasing

Decision-making	44.1%
Influence/recommend purchase	22.3%
Source information	24.4%
Specify equipment/product	9.2%
Not applicable	18.0%

* Visitors could select more than one option.

“ Besides being a sourcing platform, we have added education and networking elements to ITMA, which are important features in any trade show. The response has been very encouraging and we hope the sharing of knowledge generated helps to spur more companies forward in this globalised climate. ”

Sylvia Phua

Chief Executive Officer, MP International Pte Ltd



R&E pavilion on latest textile innovations

- 48 exhibitors from 20 countries took part
- Successful debut of European Textile Research & Education Pavilion (ETREP)

“The opening of a fibre and yarn sector was one of the greatest initiatives announced for ITMA’s 60th anniversary edition. In our first participation at ITMA, we could meet both current and new customers from around the globe. ITMA was a perfect platform to communicate our marketing innovations and sustainability plan.”

Denise Sakuma Global Director of Brand & Communications, INVISTA Apparel Business

Thumbs up from exhibitors

The majority of the exhibitors* who took part in the onsite survey were pleased with their participation.

Top 10 Exhibiting Countries (by sqm)

Italy	22.2%
Germany	20.5%
Switzerland	6.8%
Spain	5.9%
Turkey	5.4%
India	3.8%
Belgium	3.8%
Japan	3.3%
China	2.5%
United Kingdom	2.3%

Overall experience

Excellent	9%
Very Good	42%
Good	40%
Fair	6%
Poor	2%
No Response	1%

Objectives achieved

Maintaining existing business relations	91%
Company / product presenting	85%
Establishing new business relations	80%
Identifying of customer preferences and trends	74%
Observing the competition	70%
Opening up new markets	69%
Obtaining information about new innovations	67%
Concluding sales / transactions during the show	62%
Seeking agents for the local market	50%

“Sales at ITMA 2011 have been better than expected and we’re satisfied with the range of visitors, particularly from Asia, who come from countries such as India, Bangladesh, Pakistan, Indonesia and Vietnam.”

Hermann Selker

Head Marketing, Trützschler GmbH

Visitor Profile

Visitors By Sector

Dyeing/Printing	11.6%
Weaving	10.6%
Fibre/Yarn	10.3%
Technical Textiles	10.1%
Finishing	9.3%
Knitting/Hosiery	8.4%
Spinning	8.0%
Garment and Textile Processing	7.9%
Other	4.3%
Nonwovens	3.9%
Embroidery/Braiding	3.1%
Testing/Measuring Laboratory	2.5%
Association	2.4%
Recycling	1.9%
Research/Training	1.7%
Handling and Packing	1.6%
Software/Computer Products	1.3%
Institution	0.7%
Government Agency	0.4%

Visitors from 140 countries: Albania • Algeria • Andorra • Angola • Argentina • Australia • Austria • Azerbaijan • Bahrain • Bangladesh • Belarus • Belgium • Bolivia • Bosnia Herzegovina • Botswana • Brazil • Bulgaria • Burkina Faso • Cambodia • Cameroon • Canada • Chile • China • Colombia • Costa Rica • Cote d'Ivoire • Croatia • Cyprus • Czech Republic • Denmark • Dominican Republic • East





ITMA Post Show Report



ITMA 2011 : Mastering the Art of Innovation

The international textile and garment machinery industry converged for the 16th edition of ITMA, held in Barcelona, Spain from 22 to 29 September 2011. This was the first time that Spain had hosted an ITMA event. Held at Fira de Barcelona Gran Via fairgrounds, ITMA 2011 took up 200,000 sqm of exhibition space. Trade visitorship of over 100,000 was registered for the eight-day event. A results-oriented business platform, the quality of visitors was high with some 70% of visitors being

decision-makers, or key executives who influence the decision-making process.

At a Glance

- 1,355 exhibitors from 45 countries
- 100,067 visitorship from 140 countries
- Some 700 participants attended 5 power-packed conferences
- 159 supporting associations from 63 countries
- 53 supporting media from 19 countries
- 50 delegations from 27 countries

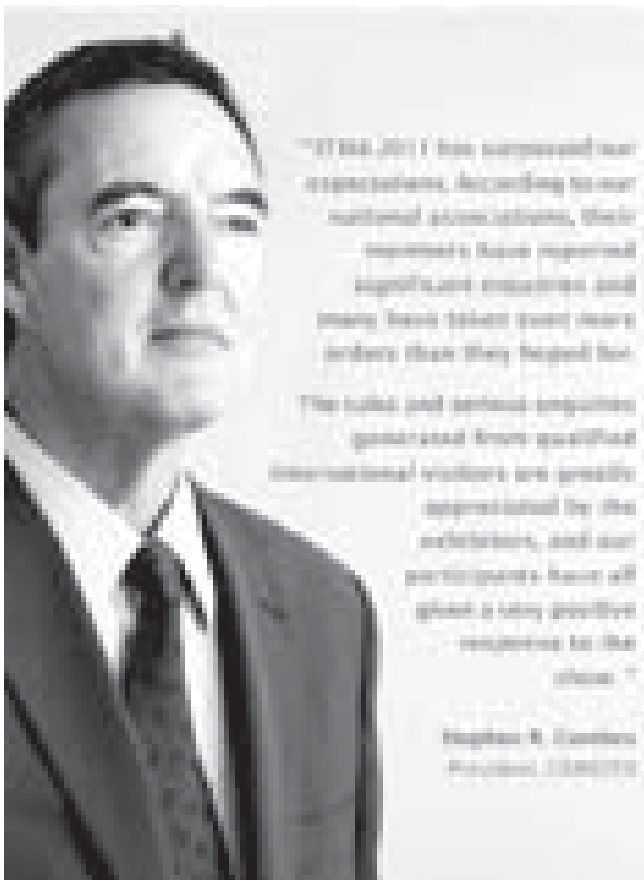
Enhanced exhibit profile

Dedicated chapter on garment making

- 45 exhibitors from 11 countries
 - 92% of exhibitors were happy with their overall experience and indicated they would exhibit again at the next ITMA
 - 95% of exhibitors felt ITMA 2011 helped them to gain more exposure compared to similar trade shows Exhibitors polled* achieved the following objectives :
 - 93% established new business relations
 - 85% profiled their company and products
 - 71% concluded sales during the show
 - 70% opened up new markets
- * 40 exhibitors were surveyed

New chapter on fibre and yarn

- 37 exhibitors from 14 countries
 - 91% of exhibitors were happy with their overall experience,
 - 94% saying they would exhibit again at the next ITMA
 - 85% of exhibitors felt they gained a competitive advantage through their participation at ITMA 2011 Exhibitors polled* achieved the following objectives:
 - 94% profiled their company and products
 - 90% maintained existing business relations
 - 83% established new business relations
 - 65% concluded sales/transactions during the show
- * 34 exhibitors were surveyed



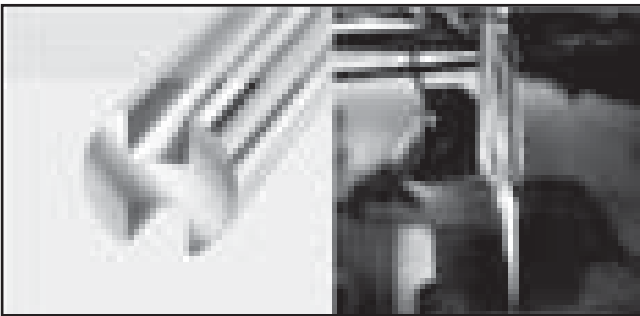
throat plate the thread is partially untwisted. This twist displacement can have negative effects on loop formation.

LPC geometry

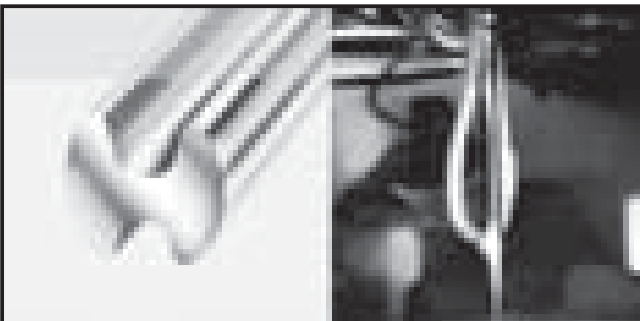
Through improved geometry of the shank and the longitudinal groove on the LPC lockstitch needle, Groz-Beckert has achieved far better thread protection and less load on the thread as it runs over the edges of the longitudinal groove.

The result is gentler treatment of the thread. Furthermore, benefits are achieved even with critical applications. On the one hand, stable loop formation is made possible, while on the other, skipped stitches and thread breakage caused by poor loop formation can be reduced.

Chain stitch



Minimal loop formation when using textured sewing thread



On the same application, the LPC geometry achieves perfect loop formation

Conventional geometry

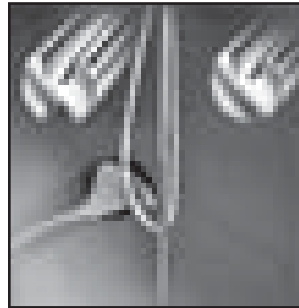
On 2- to 4-needle machines the needle which is closest to the gripper forms the smallest needle thread loop. The reason for this is the short loop stroke. Machines adjusted to have a highly tensioned thread, or which process textured sewing threads, have a

tendency to make skipped stitches. In high-speed photos it can be clearly seen that the needle thread loop is too small or badly formed.

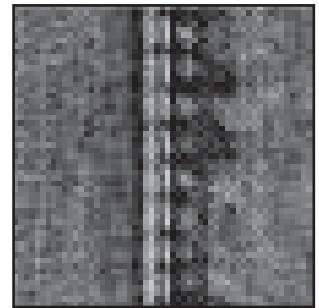
LPC geometry

The LPC chain stitch needle also has the new shank and groove geometry - as well as a large eye in relation to the needle thickness. The processing of textured sewing threads is therefore improved. In combination with correct machine adjustment, LPC chain stitch needles make a well-formed, strong loop, even when a high stitch tension is required and with the use of textured yarns.

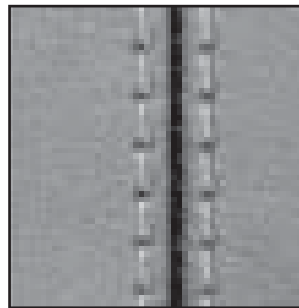
LPC – An overview of the benefits



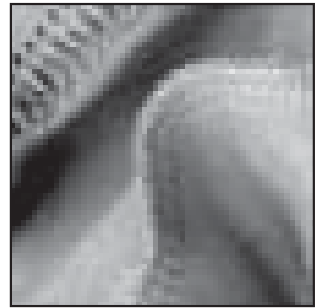
LPC geometry



ideal for jeans production,



for automotive applications



Or underwear.

Whether it's lock stitch or chain stitch, Groz-Beckert sewing-machine needles with LPC geometry are impressive in every respect. They all stand for:

- Perfect loop formation
- Avoidance of skipped stitches
- Optimally gentle treatment of sewing thread
- Gentle on fabric
- High needle stability

being steadily updated, so it always represents the current state of the portfolio at all times.

The compare function also enables you to compare up to three articles with regard to their parameters - for decisions on a transparent basis. Differences in product parameters during comparisons are marked in bold.

A notepad function is already integrated into the existing version. It enables you to place selected products individually and then call them up comfortably on later visits to the Online Catalogue. Furthermore, the notepad function can also be used as a query tool. In other words: you send the note, with the articles you have selected and the respective quantities, to Groz-Beckert via the "Send" function, and immediately receive an offer.

Simple and free-of-charge

You can enter rapid, up-to-date product queries, and profit from maximum query quality. You're led comfortably, step by step, to the product you want. Take advantage of comprehensive basic tufting know-how!

The Online Catalogue Tufting can be used free of charge after successful registration. All you need for this is an up-to-date Internet browser. The basic functions are open to all users. After registration further options can be used, all the way to placement of your own, customer-specific descriptions for particular products.

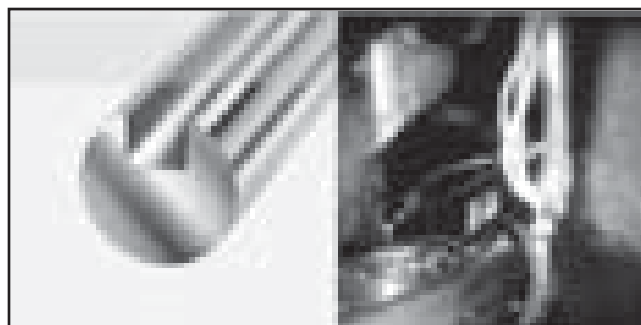
Please send your registration application by fax to the number +49 2865 909 5200. On receipt of your application for the Online Catalogue Tufting, Groz-Beckert will send you a username and personal password. Use this data to comfortably log in at tufting.groz-beckert.co

Innovative technology for the perfect loop – LPC needle geometry now in the chainstitch sector too

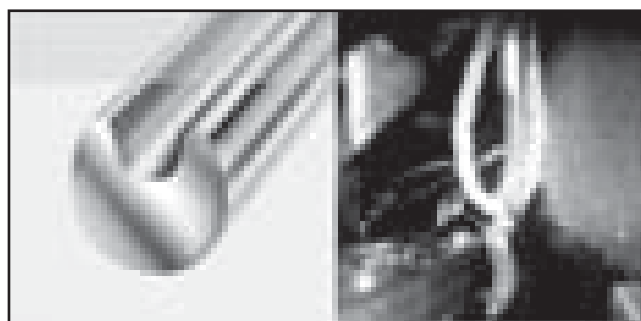
Comparable problem situations in the chain stitch

and lock stitch sectors have made similar suggested solutions possible. Ever since the introduction of LPC (loop position control) geometry in the 02/2010 edition of the Online Newsletter, the LPC range has been extended to include the chain stitch sector. At the ITMA in Barcelona, Groz-Beckert is presenting the solutions. LPC technology will also be demonstrated at the CISMA (Hall E4, Stand C29) in Shanghai, from September 27-30, 2011.

Lock stitch



Low loop formation with twist displacement in the sewing thread



Perfect loop formation thanks to LPC geometry on polyester core-spun thread

Conventional geometry

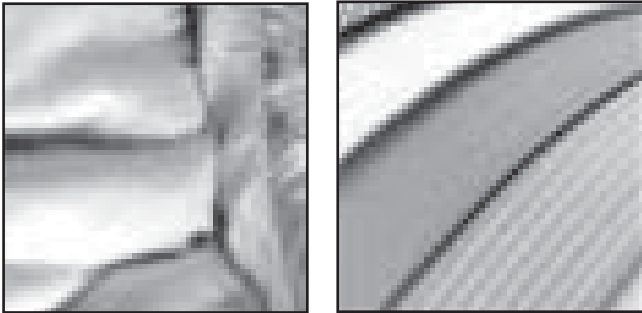
If very dense or hard materials are sewn together in several layers, the thread is crushed between the fabric and the edge of the longitudinal groove during the downward stroke of the needle. Especially when thick multifilament sewing threads are processed, the thread tends to be twisted tighter above the fabric and get caught in the longitudinal groove of the sewing needle. Above the fabric the thread is then usually twisted more tightly, and below the

sult in reduced needling force. This coating also offers corrosion protection, and its anti-adhesive character reduces contamination.

Geometrical changes in the working part

On another new type of needle, by means of geometrical changes in the region of the working part, Groz-Beckert is achieving improved physical characteristics with lower penetration forces and improved surface aspects.

Optimal materials



Similar properties that lengthen service life are achieved through the use of special materials. These contain extremely hard alloy components, so that the barbs of the needles are abraded far more slowly during use.

Special controlled heat treatment also contributes towards longer needling cycles and to even mechanical properties.

Needle geometry reduces needle breakage

With the aid of a changed needle geometry - aimed at higher stability - Groz-Beckert achieves a sharp reduction in needle breakage, while the surface quality of the product requiring processing remains almost preserved.

The finest barbs and working part cross-sections with the highest evenness enable the use of Groz-Beckert felting needles even in product areas where ultrafine fibers, microfibers and also splittable fibres are used.

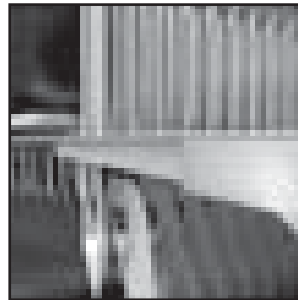
A high degree of gentleness on fibres and base material, especially in the paper-machine felt sector, is achieved using working-part cross sections such as the teardrop needle. As the first result of the Innovation Initiative Nonwovens, the EcoStar - a universal needle for extreme requirements - will be presented at the ITMA in Barcelona.

New functions, even more comfort – Expansion of the Online Catalogue Tufting

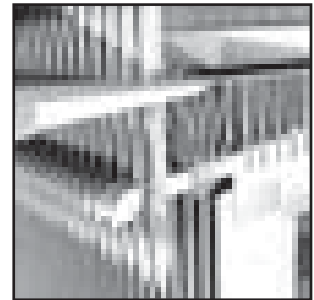
Videos on all tufting methods, an increased level of detail,

improved search functions: ever since the Online Catalogue Tufting was presented in the first edition of the Online Newsletter 2010, the medium has been expanded and optimised. Get a brief overview here of the new functions that will be presented to you in detail at the ITMA in Barcelona.

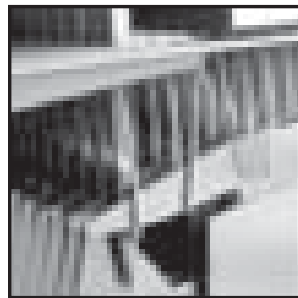
Animations move information



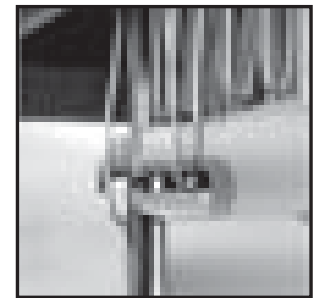
Loop Pile



Cut Pile



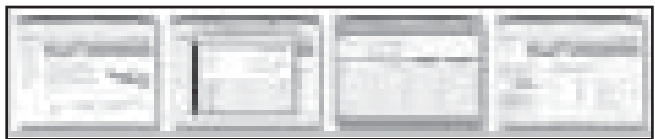
Cut Loop



Level Cut Loop

If Loop Pile, Cut Pile, Cut Loop or Level Cut Loop: vivid 3D animations make the most important tufting methods tangible.

Additional details



In the "basic knowledge" chapter of the Online Catalogue Tufting, the product information has been expanded. It now provides details on grinding options for the various gauge parts.

In the product catalogue, the search function has now been improved. Numerous additional sketches diagrams have also been added to clarify topics. Moreover, the product range is

Mastering the process of mounting card clothing is necessary for the function of the carding roller, and it plays a decisive role in nonwovens production. Errors during mounting are detrimental to nonwovens production and often lead to defects in the web and in the end-product.

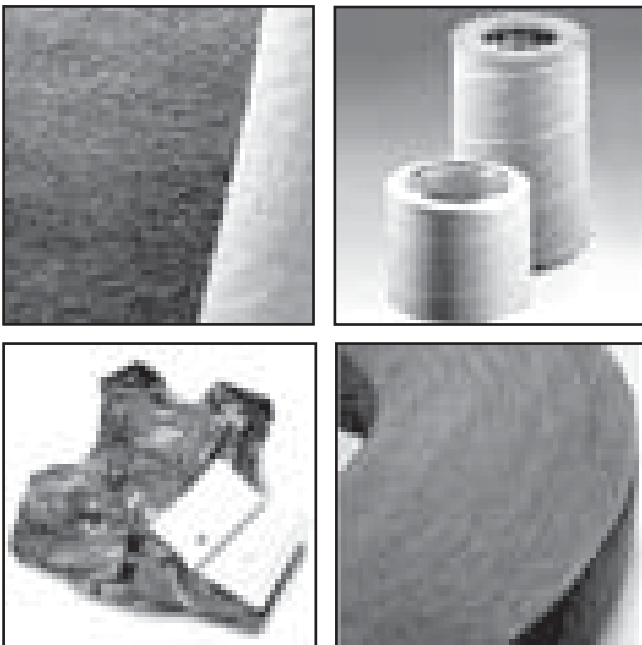
As a partner of the nonwovens industry and a systems supplier in the textile value chain, Groz-Beckert has investigated this topic thoroughly and will be presenting the result at the ITMA 2011 in Barcelona. The *Wind-ingMaster*, a study for further development of the card clothing mounting process, sets new standards in terms of quality, economic efficiency, repeatability and process reliability.

Discover more about the process reliability of mounting card clothing, and discuss process control in nonwovens production together with our experts.

The Innovations Initiative Nonwovens from Groz-Beckert

Under the title "Innovation Initiative Nonwovens" Groz-Beckert is mastering the challenges of a dynamic market, and consistently developing numerous conventional felting needles. The main focus here is on innovation - and the first solutions are due to be presented at the ITMA in Barcelona.

Requirements are increasing



Market requirements with regard to needled and hydroentangled nonwovens are moving increasingly in the direction of

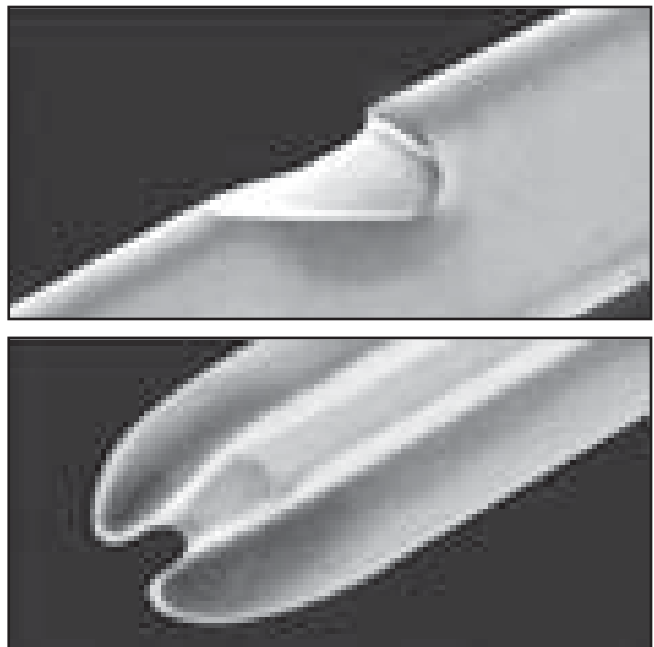
- Highest surface quality
- Minimal damage to fibres and base materials
- Processability of high-strength fibers and maximally abrasive fibers
- Best possible physical properties
- High abrasion values

Furthermore, felting needles are expected to provide ever longer service life, retaining constant needling performance and steadily reducing energy consumption and noise.

The same applies to jetstrips for hydroentanglement. Ideally the manufacturing speed for these products - i.e. the productivity - should not be adversely affected. Quite the reverse - it has to be increased still further!

Groz-Beckert is mastering this challenge. Development work is focusing on the efficiency of felting needles and jetstrips. On the basis of aspects such as coating, material, working part and needle geometry, the requirements mentioned are being fulfilled.

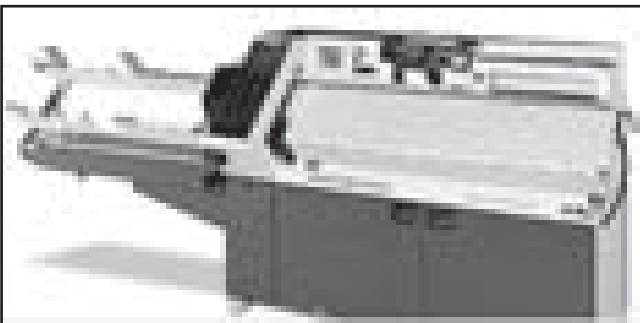
Special coating for longer service life



To achieve longer service life for needles, Groz-Beckert is working on needles with special coatings that may also re-

of 250 - ideal for removal. The new needle package is perfect for needling of the NeedleMaster. It can be placed on it ideally, enabling faster magazining. Needling time is reduced. Furthermore, the needles remain separated during storage of open boxes, and mixing is prevented.

The Board Master System – Efficient needling of needleboards



It was at the ITMA 2007 in Munich that the prototypes of the Groz-Beckert Board Master System were first presented. The innovative concept for effective and economically efficient needleboard needling met with highly positive feedback, and this encouraged Groz-Beckert to development it further. The tried-and-tested models are now available in time for the ITMA 2011 in Barcelona.

NeedleMaster - compact and gentle

The new NeedleMaster is smaller, more compact, faster and simpler to operate, and at the same time offers maximum performance at the highest level of safety and ergonomics.

Quality and process repeatability fulfil the requirements of high-precision needles and boards. Furthermore, needling with the NeedleMaster takes place extremely gently. The diversity of boards that can be processed is almost unlimited.

BoardScoot - Facilitates transport

The new BoardScoot is also smaller and more compact, making it more agile and easier to move. Here, too, safety and ergonomics take centre stage. In combination with the NeedleMaster, an effective system is provided for needleboard handling in the nonwoven industry.

Hourly demonstrations at the ITMA

Live demonstrations during the ITMA, every hour from 10.30 am to 6.30 pm, will be displaying the numerous benefits of the NeedleMaster. In around 15 minutes, interested visitors will gain an initial impression of this innovative, optimised machine.

The outstanding quality and the benefits of the NeedleMaster are currently being proven in endurance tests, carried out together with selected development partners. The market-test phase includes intensive support. To guarantee this special service, only customers from Germany, Austria and Switzerland are currently able to test the NeedleMaster. Groz-Beckert thanks you for your understanding!

WindingMaster – Reliable and safe mounting of metallic card clothing



enhanced by the ALtop® heald frame with a 140mm aluminium profile. Its sturdy, high-performance corner connection using steel supports requires no plastic components and thus reduces wear. The patented technology of the ALtop® 140 is also offered with a newly-designed intermediate strut. This is clamped from steel to steel, and no longer to the aluminium profile. The result is far longer service life for the heald frame.

From the universal felting needle to optimal processing safety –

Solutions for nonwovens at the ITMA in Barcelona

A felting needle for extreme requirements and a newly-developed needle package are just two examples of the new products that Groz-Beckert will be presenting at the ITMA Barcelona in the nonwovens sector. Find out all about the ideas and innovations - and how you can benefit from them!

EcoStar – The new, universal felting needle for extreme requirements



The new felting needle EcoStar is the result of a continuous, customer-focused further development - and is thus the first concrete result of the Innovation Initiative Nonwovens. Per-

manent changes in users' production processes are presenting standard felting needles with constantly new requirements. With the EcoStar, a needle has been developed that can be used universally for all applications. The fiber transport takes place at the same efficiency with lower penetration force. This is gentler on the machine during the needling process, and noise is reduced. Users benefit from a longer service life and lower energy consumption in comparison with conventional needles.

The EcoStar is planned for all the usual gauges as well as chrome and GEBEDUR I coating. Together with selected development partners, tests are currently being carried out to confirm the findings gained and also to obtain new ones.

For even more comfort – The new, patented needle package

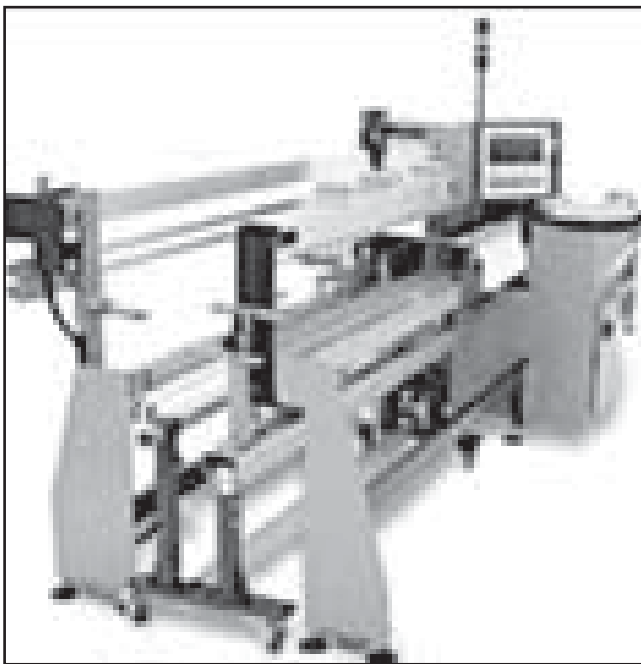


At the ITMA Barcelona, Groz-Beckert will also be presenting a new concept for its needle package for felting needles. The change is already visible on the outside. At first glance, the new design reveals its Groz-Beckert identity.

The new needle package has a profile in the lower part of the box. This prevents the points and cranks of the needles from colliding and getting damaged. Handling is also simpler and faster! The needles are separated from each other in groups

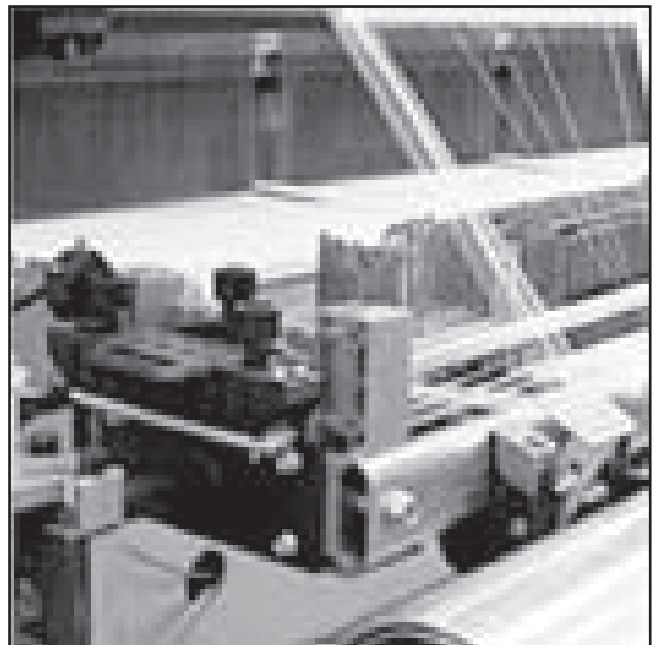
How can ultra-fine cotton chains be tied together efficiently? Groz-Beckert demonstrates this at the ITMA in Barcelona with the aid of a fast and universal KnotMaster tying machine, model AS/3. With its standard units for short knot-ends and for thread breakage control the machine also fulfils all requirements where other applications are concerned. The model XS/3 quattro, perfect for fashion weavers, will be demonstrated using the advanced computer control KC/3. The control not only facilitates operation but also reduces the risk of errors.

WarpMaster – Even more comfort during fully-automatic drawing-in



The fully automatic drawing-in machine WarpMaster features a new computer generation with a larger touchscreen, which enables simpler and faster operation. The new operating unit also has a remote support capability. Telemaintenance can thus be carried out via modem - for customer service in real time.

Warp stop motion 5800 – The sturdy, lightweight successor model

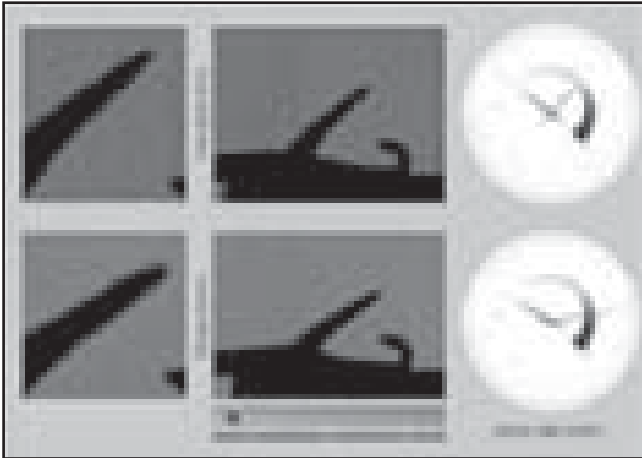


With the robust quality of the proven KFW 5600, the KFW 5800 is the successor of the eight-row KFW 1200 . With reinforced thread carriers and reduced weight, it caters to the steadily increasing requirements of modern weaving machines and guarantees interruption-free warp stop motion monitoring.

High-performance heald frame ALtop® – Now also with 140mm aluminium profile



revolution for large diameter circular knitting machines



Due to a needle modification, large diameter circular knitting machines can now produce at even higher speed. Specifically, Groz-Beckert has made changes to the cheek geometry. At the same time, the service life of the needles has been extended.

See for yourself during a live demonstration at the ITMA in Barcelona!

The needle modification has already been patented in the USA (Patent No. 7,469,562 B2), Japan (4 547 414 B2) and South Korea (10-937598). For Europe (1 921 189 A1) and China (101177838 A), patents have been applied for.

litespeed® oil consulting – Your path to the perfect lubricant



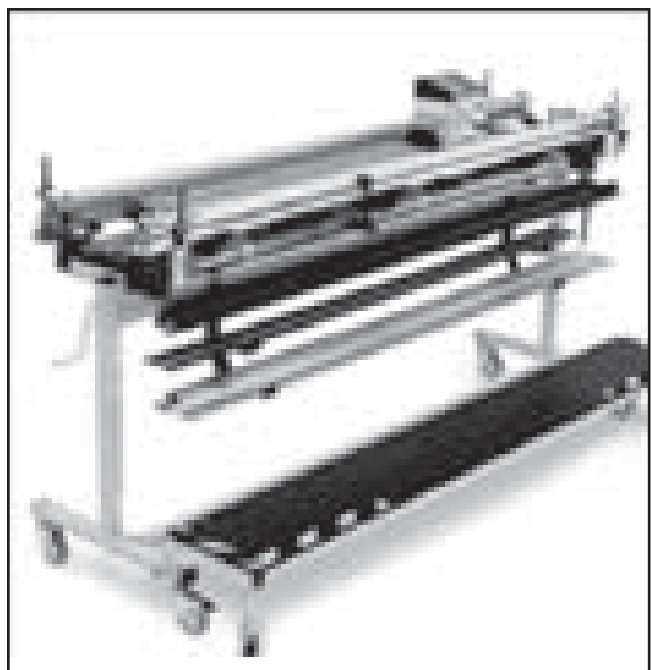
Experience creates the basis for new impulses: Groz-Beckert's unique, manufacturer-neutral oil database offers comprehensive information on everything to do with needle and sinker oils, from oil analysis to oil consulting and lubricant training. Precise oil analyses can be implemented very simply with the needle-oil test kit. On this basis you are given specific recommendations on further application or on needle-oil changes, thereby optimising your needle handling overall.

From tying machines to high-performance heald frames –

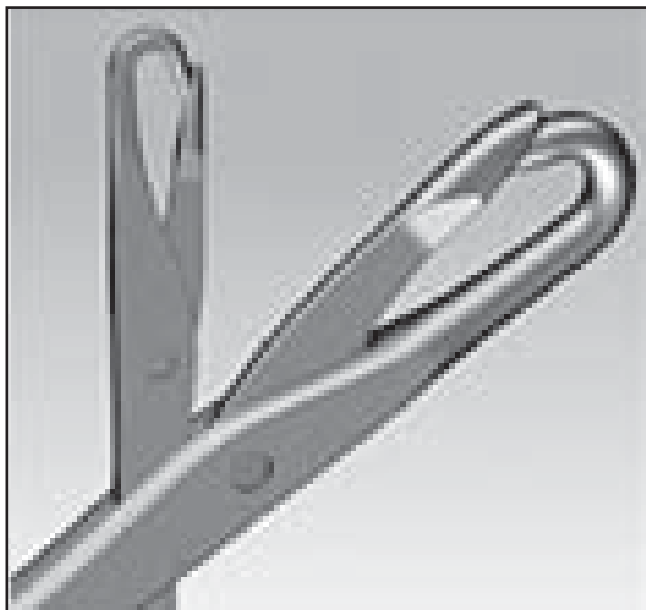
Groz-Beckert web technology at the ITMA in Barcelona

In the weaving preparation sector, Groz-Beckert produces tying machines and also a fully-automatic drawing-in machine. Trade fair visitors will also see several interesting new and further developed weaving accessories.

KnotMaster – Experience efficiency live

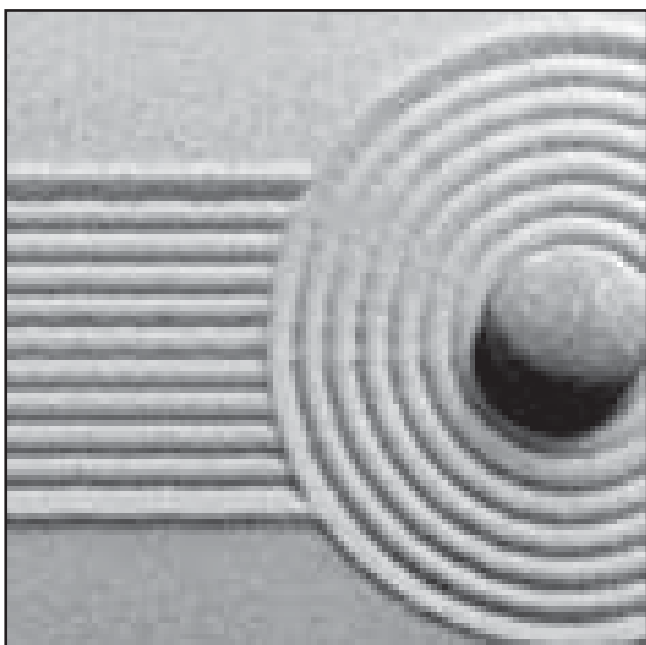


Ultrafine gauges, ultrafine fabrics – A new world record



At the ITMA in 2007 Munich, Groz-Beckert presented solutions for the production of fabrics with gauge E66. Now, at the ITMA in Barcelona, we have a world record - with even more extremely ultrafine gauges. A new knitting technology with the world's finest knitting cylinder and the finest of precision components guarantees the uniqueness of an ultrafine knitted fabric in gauge E90.

Perfection in precision – Vo-LC™, the new needle generation



In the large circular knitting sector, Groz-Beckert will be presenting a further highlight at the ITMA in Barcelona: the Vo-LCTM-needle. The new needle generation is available for body seamless machines and large circular knitting machines. The Vo-LCTM-needle combines long years of know-how with numerous patented details. There are good reasons for the label "Perfection in Precision".

CylinderMaster – Innovative cylinder changes on large diameter circular knitting machines



The Groz-Beckert CylinderMaster represents simple, reliable, rapid and safe cylinder changes on large diameter circular knitting machines with diameters from 26" up. The machine is an entirely new development. The CylinderMaster considerably simplifies manual removal and insertion of cylinders on large diameter circular knitting machines. The risk of employee injury or of improper handling resulting in damage to the cylinder is almost completely ruled out.

The European patent for the CylinderMaster has been applied for under number 10 192 591.5.

High performance in nonstop operation – The

Carbon composites, also known as Composites, are growing steadily on the world's markets. The technological leaders are still located in Europe and the US. The majority of composite materials consist of a textile reinforcement component. In other words, fabrics, materials, netting or non-wovens. They are embedded in materials such as plastics or ceramics to reinforce them. The German textile machine production industry has contributed greatly over the past decades to sharply improving the quality of reinforcement textiles for composites, as well as the productivity of the methods used.

The Carbon Composite e.V. (CCeV) is an association of over 100 renowned companies and research institutes, primarily from Southern Germany, which have joined forces to promote the use of fiber composite materials and relevant technologies. The goal is to research and further develop materials and processes for high-performance fiber composite structures by forming networks.

The Albstadt Research Association for Textile Technology (FTA), in which fundamental research activities on the subject of technical textiles are due to be carried out in the future, has been a member of the CCeV since autumn 2010. At the invitation of the FTA, the CCeV took advantage of the possibilities offered by the TEZ for two events in the spring of 2011.

The members' meeting for the Ceramic Composites department of the CCeV was held on April 12, 2011 in the Technology and Development Centre. A joint meeting of all the working groups subsequently took place.

On May 12, the "Yarns and Textiles" working group of the CCeV used the TEZ as the venue for its spring session. As part of the event, various different mechanical engineering solutions were presented. Three-dimensional textile reinforcement structures can be produced on their basis, by means of weaving or sewing.

The speeches all provided a vivid insight into different technical approaches. They were delivered by the following expert speakers:

- Guido Jäger (KSL) "3D Preforming - Technologies, Develop-

ments, Applications"

- Prof. Dr. Alexander Büsgen (Shape 3) "Shape Weaving - Creation and Utilisation of Bowl-Shaped 3D Fabrics"
- Dr. Adnan Wahhoud (Lindauer Dornier) "Open Reed Weave Technology - New Qualifications in the Weaving Process"
- Adil Mountasir (ITM, TU Dresden) "Design-Technological Developments for 3D-Woven Preforms at the ITM"

In a brief introductory speech Dr. Andreas Tulke, head of the FTA, took advantage of the occasion to inform the employees of the CCeV about the concept and the possibilities offered by the FTA.

Discussions, goals, detailed information



After the members' meeting and the spring session, there were several tours around the Technology and Development Centre. Here, Groz-Beckert had an opportunity to spark off exciting exchanges of ideas and also to present its own approaches to solutions in the Composites sector. There were also discussions as to how the company can support users in the development of textile solutions. The numerous expert topics were enthusiastically discussed during the breaks as well as at the subsequent "get-together". Interesting contacts were made - and potential joint ventures between individual participants were discussed. It is clear that the Technology and Development Centre will be a suitable and attractive venue for the most diverse specialist events and conferences in the future, too.

From world gauge fineness record to innovative cylinder changes – Groz-Beckert knitting technology at the ITMA in Barcelona

terminated. For tufting, the extended app also provides an overview of possible gauges. In the sewing sector, users are given recommendations where suitable needle thicknesses are concerned.

Available from September 2011

The "myGrozBeckert" app and its add-on can be downloaded from the Apple Store after release by Apple. It will be available for the iPad in good time for the ITMA in Barcelona in September 2011. A version for the iPhone is also being planned.

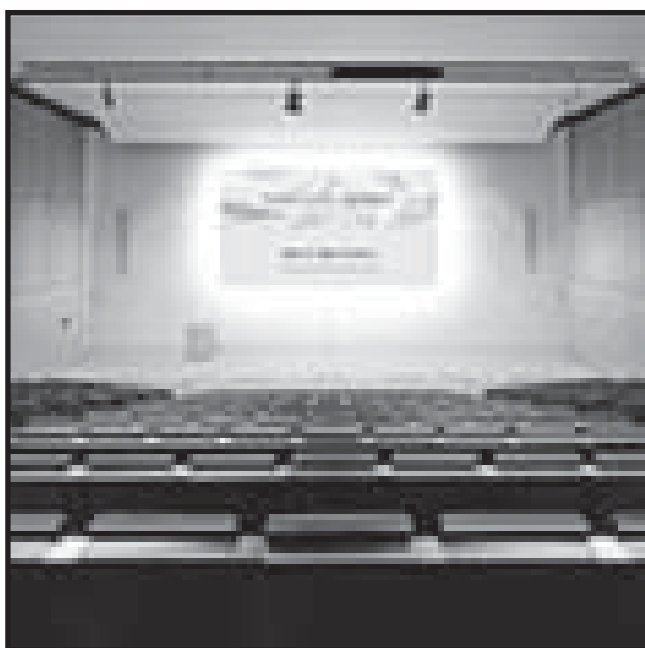
Do you have any ideas about improving or extending "myGrozBeckert"? Groz-Beckert looks forward to your suggestions!

Groz-Beckert Academy –

The big new training programme

At the ITMA 2011, under the title Academy, Groz-Beckert is offering a comprehensive training programme. This entirely new offer is distinctive for its hands-on practicality, experienced trainers, and the fact that it covers the complete spectrum offered by the Technology and Development Centre (TEZ). Make sure you don't miss this opportunity - and gain a few initial impressions right here.

Know-how along the entire textile value-added chain



So far Groz-Beckert has only been able to carry out training courses and seminars on request. With the Groz-Beckert

Academy a comprehensive offering has now been created that contains the most diverse, practice-oriented training along the textile value-added chain. Whether for knitting, nonwovens production, sewing or weaving, the training courses for the most important textile production methods range from the basics to advanced courses and also special, technically more complex themes. As an option Groz-Beckert also offers individual training courses right at the customer's premises.

The TEZ serves as a platform

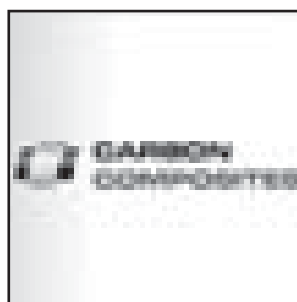


All the training courses forming part of the Groz-Beckert Academy can be carried out in the Technology and Development Centre (TEZ) that was officially opened by Groz-Beckert in July 2010 at its headquarters in Albstadt. The TEZ provides numerous machines and lines close to production to accompany the courses. A generously-sized auditorium also forms part of the TEZ. Equipped with state-of-the-art media technology, it has space for up to 275 guests, and thus for specialist conferences and events on everything to do with textiles.

Exciting ideas exchanged between experts – The TEZ as host for Carbon Composite e.V.

The Technology and Development Centre (TEZ) is also a platform for targeted know-how transfer and exchanges of ideas on the most diverse topics and aspects of the textile value-added chain. The firm of Carbon Composite e.V. made use of the TEZ in April and May for two prestigious events. Read more about it here!

Composites, Carbon Composite e.V. and FTA

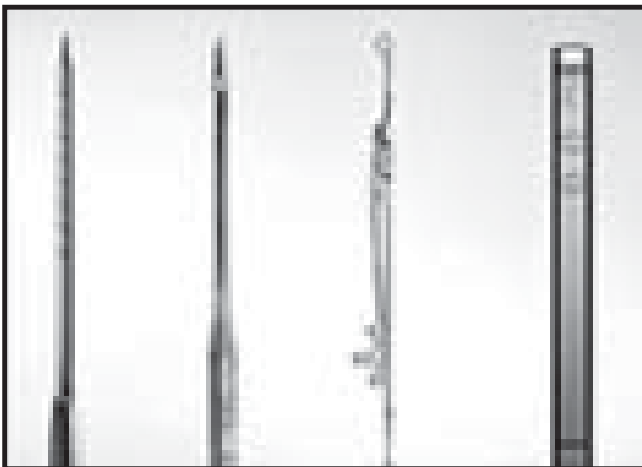




Textile precision is now digital Groz-Beckert presents an app for the ITMA Barcelona

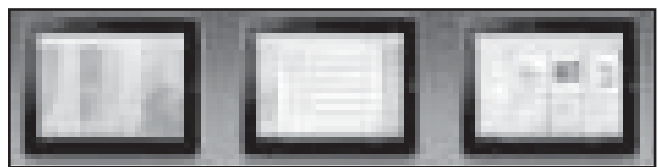
Thorough knowledge of everything to do with the textile value-added chain, accessible instantly at any time wherever you happen to be! To coincide with the ITMA in Barcelona, Groz-Beckert is making its special "myGrozBeckert" app for the iPad available. The basic app is free of charge, and a low-cost add-on provides numerous additional and practical tools. Find out all about the new possibilities!

All about apps



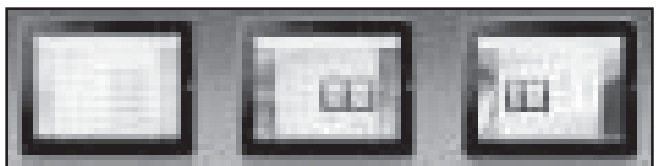
"App" is of course short for application, and it refers to any form of user program. These days, however, the word "app" is mainly used in connection with the applications specially designed for modern smartphones and tablet computers. These are purchased via an online shop which is an integral component of the operating system. Apps are installed directly onto the smartphone or tablet computer.

Access to know-how wherever you are – The free-of-charge basic app



Basic information about Groz-Beckert and its comprehensive range of products for everything to do with knitting, weaving, felting, tufting and sewing is already offered by the basic app. The user interface can be used in the languages German and English. The app contains all the brochures and technical information that are also offered for download on the Groz-Beckert website at www.groz-beckert.com. Data and facts about the Technology and Development Centre (TEZ) and a general image film about the company round off the application.

Tips and tricks for the textile industry – the extended app



The add-on "Toolbox" provides a large amount of extra value for just a small extra charge. Users receive various tools and calculation aids that make daily work far easier. For instance, you can work out how many needles are being used for needling a knitting machine. Yarn thicknesses can be converted, and yarn proportions can be calculated in percent. Cylinder diameters and gauges can also be determined just as required. In the weaving sector, for instance, the highest row densities of the drop wires can be queried, and in felting, penetration depth and density of needles can be de-