

## Istanbul BTMA Information Booth

Twelve BTMA member companies exhibited at the ITM 2009 International Textile Machinery exhibition held at the Tuyap Exhibition complex in Istanbul. BTMA had an information booth and meeting room in the main foyer which was at the disposal of the UK exhibitors and their guests. Information was also available from member companies who are not exhibiting at the event and BTMA provided interpretation, secretarial and communication services for those members that are exhibiting.



### Avocet Dye and Chemical Company

Avocet Dye and Chemical Company is a manufacturer of flame retardants, dyes and textile speciality products with sales to Western Europe, the Middle East and the Asia Pacific region. The range covers application by padding, back-coating and dyebath to all fibres and their blends. The flame retardant range includes the unique Cetaflam DB9/DB168 dyebath applicable system for producing durable flame retardant properties on polyester. Fabrics treated with this system are being used in aircraft, automotive and hotels throughout the world.

Cetaflam flame retardants are applied to many other substrates, including leather for aircraft upholstery, wood and insulation materials. Carpet printing products have long been a part of Avocet's portfolio. Resist or displacement effects when printing polyamide or wool/polyamide carpets using acid-acid dye resist techniques can be achieved by use of the speciality resist agent AVORESIST PA and "metal free" AVONYL RP dyes.

### Macart Textiles (Machinery) Ltd. launches S300

Macart spinning systems S300 machine combines the roving, spinning, twisting, yarn bulking and take up winding operations into a single process to produce two fold yarns in the court range 2/16Nm to 2/42Nm High Bulk acrylic. Each 4 spindle S300 produces four fold yarns for delivery onto 4 spindles of winding.

Several machines can be placed side by side to give a production unit to suit the customer's requirements. Up to 15 machines can be connected to an automatic winder of 60 spindles. Manual winding can also be used to lower the capital investment costs

Depending on resultant yarn counts the production of each 4 spindle S300 will be between 2.5 kg and 7 kg per hour. One spindle of a typical 2/28NM HB acrylic yarn will produce 1 kg per hour of relaxed high bulk yarn wound on cone ready for knitting.

#### The S300 machine has the following benefits:

- ❖ **Energy** - The low energy consumption compared to a traditional spinning process gives energy saving of up to 60% per kilo of yarn manufactured.
- ❖ **Labour** - Using the S300 technology, up to six separate manufacturing processes are saved compared to conventional ring spinning. The savings for direct and indirect operatives are up to 60%, as fewer skilled engineers are required.
- ❖ **Capacity utilization** - Saving in floor space and material storage handling areas are considerable, thus utilising capacity to its absolute optimum.
- ❖ **Applications** - The S300 will process synthetic staple fibres, natural fibres and their blends with fibre lengths suitable for worsted spinning.
- ❖ **Count range** - 2/16Nm to 2/42Nm.
- ❖ **Production speeds** - Delivery speeds are from 200m/min to 240m/min. The delivery speed remains the same for all yarn counts.

The point to highlight is that the S300 reduces by up to six the number of processes used for the production of conventional 2 fold yarns, generating savings in areas such as labour, energy, floor space and air conditioning, maintenance and spare parts consumption as well as the waste produced.



15 x S300 linked to a Schlafhorst 338E automatic winder with 60 spindles.

Manual doffing to take place without the S300 spinning system stopping.

#### High quality wound packages for onwards processing in knitting or package dyeing

Customers who process coloured fibre can choose delivery on either manual doffing winder or a fully automatic winder with electronic clearers, air splicing and automatic doffing. Processors of undyed fibre can produce dye packages for their own or customers package dyeing operations. Customers using undyed fibre would normally use the manual doffing winder linked to the S300 system. An automatic winder would then be used after the package dyeing to include yarn clearing.

Customers using coloured fibres would normally use an automatic winder linked to the S300 system, enabling finished yarn to be made within the single process operation. The yarn spinning and twisting technology of the S300 has been proven, with the installation and commercial use for over 4000 earlier machines supplied to customers in Europe, Asia, Africa and the Americas.

This proven technology has now been developed further from the experience gained operating the earlier machinery and applied in a way which allows users of the S300 to take advantage of the large savings in labour and energy. The addition of the pre-draft, allowing the use of slivers up to 12g/m feeding from can, and the addition of online yarn bulking with direct feeding to manual or fully automatic winding, gives the modern spinner an advantage that is necessary in today's competitive market.

#### The new S300 drafting system

The S300 is fitted with a new drafting system. The pre-draft section uses heavy duty pendulum arms with mechanical weightings. Fibre control is by balloon rollers with one row as standard and two rows as an option for processing blends with wool. The draft ratio is by fixed change gears. The main spinning section uses double apron drafting with pneumatic weighting. The draft ratio is adjustable between 10 and 50 in steps of 0.1 by key pad entry and the use of a servo motor. The ratch is both pre-draft, and the main spinning area is adjustable to suit the length of fibres being processed.

For the first time there is no need to take packages to the yarn bulking (steaming) machinery with obvious savings in labour. An intermediate traction roller controls perfectly the tension between the spinning / twisting section and the yarn coiling heads feeding the yarn bulking chamber. An air threading system is fitted to easily pass the yarn through the coiling heads. The yarn coils are delivered onto conveyor belts which transport the yarn through the yarn bulking chamber. Low pressure, dry saturated steam enters the chamber to achieve full and uniform yarn bulking. A temperature sensor is fitted in the steam chamber to monitor process conditions. The conveyor belts also act as a delivery system to the winding machine.

Yarn sensors placed above the conveyor belts prevent the yarn being delivered prematurely to the winder and maintain a cooling zone at the exit of the bulking chamber. A second set of yarn sensors is used to control the speed of the winder.

The conveyor also acts as a yarn reserve, which is sufficient to ensure the spinning process continues to operate during doffing of the winder. This yarn reserve is also used during yarn clearing and splicing when using an automatic winder.

#### The new MK1E model

The new MK1E model is the successor to the previously known 'Recco' model MK1. This machine feeds from rovings with a typical 1g/m weight to produce self twist yarns in the count range 2/16Nm to 2/42Nm. The MK1E has all the features of the S300 such as:

- ❖ Operating speed 240m/min, low energy, low space etc.
- ❖ The main spinning section uses double apron drafting with pneumatic weighting. The draft ratio is adjustable between 10 and 50 in steps of 0.1 by key pad entry and the use of a servo motor.

There is, however, no pre draft or yarn bulking on the MK1E. The take up is integral on the machine with 4 positions of 6 inch parallel cone. This cone would normally be processed further on high bulk steaming machines produced by companies such as Superba, Savio and Motocono. The MK1E is also useful for the spinning of worsted yarns used for socks or as components for fancy yarns.

### Crosrol UK Ltd carding retrofits

Retrofit conversion kits for a range of carding machines have been launched by Crosrol UK. The products are designed to increase the economic life and productivity of its existing older card management equipment. Among the products is the latest Siemens S7-300 series PLC controller which comes with full colour touch screen display, offering superior processing speeds. Regularly updated graphical status reports also provide complete machine operating data including production rates, operating speeds, quality information on sliver weight/CV (coefficient of variation) percentage and routine service requirements.

Suitable for **MK 4.5/MK5 and MK5A** carding machines, other features include a main operating screen showing current machine running status, and a pictorial fault indicator with suggested remedial actions. A sliver weight control screen also illustrates current and average running weights during the shift, and graphical CV running weights for multiple sliver lengths for 10, 20, 50 and 100 metres.

The controller system has further possible benefits, one of which is the mid-term auto-leveller. Incorporating dial-in speed control of the taker-in roller, it operates alongside existing long-term auto-levelling to enhance card CV percentage, especially when viewing the shorter length CVs, which is critical to carding performance and finished yarn quality. The mid-term leveller uses the latest digital inverters to measure the operating torque of the taker-in roller, which is directly influenced by the density of the material being fed to the card

by its feed roll system. Fluctuations in the material feed density are continually monitored with the card feed roll and constantly adjusted to ensure in-coming material is evenly fed onto the card cylinder, while a regular sliver weight is obtained at all times. The taker-in rollers rotational speed can also be adjusted via the card controller to optimize the opening of the incoming fibre tufts, which ultimately result in higher carding power being achieved from the cards cylinder.

Apart from the mid-term leveller, the Siemens S7-300 series PLC controller offers a new variable speed pressure control chute feed system, which uses a highly sensitive digital pressure monitoring transducer for constant monitoring of the material fill level of the batt formation chamber. Working with the card controller, it continually adjusts the feed roll speed via an inverter to ensure a constant feed of material from the upper chamber to the lower batt formation chamber. This new principle of constant feeding leads to significant benefits in the short term. Trials have shown that the card's short-term CV percentage, or a 5m CV, was reduced from typically 2.5% with the photo-eye system from previously supplied Crosrol chute feed systems, to less than 1.5% using the new control method.

Other retrofits now available include a taker-in roll drive system, which offers a cost-effective replacement to the servo-drive system, which was previously fitted to Crosrol cards manufactured in the UK. The latest digital invertors are capable of higher sensitivity and are therefore more able to detect the slight changes in material feed density that occur during operation, providing improved medium term card sliver CV percentage.

A new type of fillet covered high-speed roller enables continuous stripping of un-doffed material from the cards stripping roller to result in reduced web contamination. The flexible fillet mounted on the roller provides effective clearing of waste material/contaminates from the stripping roller, preventing them from re-entering the take-off area of the card. Revised self-aligning bearing arrangements eliminate pre-stresses that may exist when mounting the bearing housings. Height adjustment of the fillet covered roller allow close settings to be achieved between the cards stripping roll and that of the high-speed roll.

The company has also introduced a range of new belt-driven coilers that provide a complete replacement unit for older models of Crosrol cards. New style bearing arrangements result in lower maintenance of the planetary coiler head design. Photoelectric sliver break detectors are available to replace mechanical detectors. The belt drives enable higher sliver take-off speeds especially with the vertical web-take-off unit. These units provide a replacement for the various models of horizontal web units, allowing higher card production take-off speeds to be realized. The vertical web collection system reduces sliver end breaks, compared to the original horizontal system, and the simplified fibre path reduces piecing waste.



Crosrol MK5/4 Card.

## Cobble Blackburn Ltd.

Cobble Blackburn is active in the design and production of tufting machines and manufactures a range of tufters and associated pattern attachments to meet a variety of needs, be it for speed or design potential. Both the ST series and Pantera machines offer flexibility and accuracy. Advanced control panels give carpet manufacturers sophisticated monitoring and control systems which provide improved efficiency.



Cobble's multi-media panel.

Cobble's multi-media panel offers the operator a Windows-based user interface, with access based on a security control regime. At Cobble's Gauge Division, needles, hooks, loopers, knives and reed fingers are precision produced, each one individually inspected. Cobble endeavours to set up long term relationships with its customers by commitment to continuous innovation, quality and customer services support.

## New heat transfer labelling solution by Focus Label Machinery

Focus Label Machinery is a specialist printing, packaging machinery design and manufacture and have recently introduced the new technology aimed at the high performance sportswear market especially, lightweight fabrics applications. The new system is available for a full demonstration at Focus Label Machinery headquarter in Nottingham, England. At ITM, Focus provided an insight into the system and its LX series machines.



Model LX6 / LX4.

Focus has redesigned the entire Letterflex equipment range to meet the latest demands in the Apparel supply market. Improved productivity is the key, with time and waste saving features that can deliver both small and large volume label production cost effectively. The Patent protected LX range delivers unrivalled performance and ease of use at a price less than that of existing equipment. Combined with the Focus Ultrasonic Label Cutting system, they offer an efficient printed label production system.

## Richard Hough Limited: Putting the squeeze on drying costs

### New Resilio roll covering technology brings major performance benefits and energy savings

Dramatic improvements in water expression and major cost and energy savings in drying are achieved by a novel roll covering technology for fabric dewatering applications. Specialist squeeze roll manufacturer Richard Hough Ltd. (RHL) has collaborated with Just Rollers plc, world leader in elastomer roll coverings, to develop the new Resilio system (Figure 1). Trials have identified substantial performance benefits over the existing market-leading elastomer roll cover:

- ❖ Typically 40% better expression on knitted goods.
- ❖ Typically 18% better expression on wovens.

Cost savings are equally significant, potentially reaching as much as €50,000 per year depending on the applications. (Table 1).

The Resilio roll officially launched at the ITM 2009 textile machinery exhibition attracted the interest of visitors. RHL has applied for a patent for the new Resilio roll, which combines the company's own expertise in mechanical squeezing and dewatering equipment with specially-developed dual-layer technology for the covering. The secret is in the integration of the squeezing power of the sub-layer with a revolutionary profile-hugging top layer, devised by RHL.



The new Resilio coverings developed with Just Rollers.

Says RHL's Anthony Ashton: "This greatly increases the surface contact in the nip, thus expressing the liquid from every void and undulation in the fabric, with microscopic efficiency."

### Other key features of the new Resilio roll include:

- ❖ Greatly improved 'gentle' squeezing performance compared to hard rubber rolls.
- ❖ Superb bond strength.
- ❖ Resistance to the majority of processing chemicals.
- ❖ Very hard wearing – excellent abrasion resistance.
- ❖ Increased service life compared to standard hard rubber rolls.
- ❖ Uniquely-developed compound blends.

RHL based in Bolton, Lancashire also manufactures the world-famous Roberto roll, as well as extra-tough Resistor roll coverings for use in demanding environments where harsh or aggressive chemicals and resins are used.

New compounds for the latest Resilio and Resilio-Resistor products have been developed and perfected through an intensive testing programme in Europe and the USA and RHL now believes machinery manufacturers need to respond quickly to the increasing need for greater fuel economy and lower emissions, driven by the long-term prospect of high oil prices.

Says Anthony Ashton: "The new Resilio and Resilio-Resistor compounds will challenge textile finishing machinery designers to develop new energy-efficient and 'gentle' fabric-processing machines to suit the rigorous demands of the 21st century – and the machinery manufacturer that chooses the wrong technology options may risk being marginalized." Resilio squeezing effect can be seen as follows.

The Resilio roll (1) has a dual layer covering consisting of a hard rubber (97° Shore A) sub-layer (5) at normally 10-20mm thick, combined with a relatively softer rubber (70° Shore A) top layer (6) at 2mm thick. At the critical thickness of 1-2mm, the elasticity of the top layer combines with the high density of the sub-layer. The effective Shore A hardness of the combination of the two layers falls in the range of 80-85°.

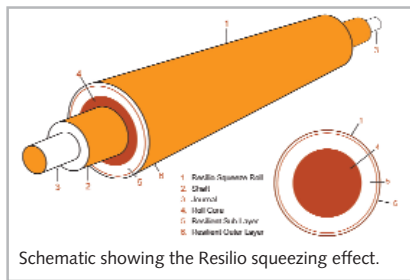
### The squeezing effect can be described as follows:

The softer outer cover is sufficiently resilient to conform closely to the textured surface of the fabric, thereby squeezing liquid out of the cavities between the warp and weft yarns or between the surface contours of the fabric.

**Table -1: Resilio roll cost savings  
Drying costs for 8-compartment stenter frame**

Process	Typical drying costs per year (€)	Savings using Resilio system (€)
Finishing of woven fabrics	100,000-125,000	18,000-22,000
Thermo-fixing of woven fabrics	150,000-190,000	27,000-34,000
Finishing of knitted fabrics	100,000-125,000	40,000-50,000-

Also, the relatively thin and softer outer cover (6) makes the surface top layer to more 'deformable' than previous types of rubber-covered squeeze rolls and thus increases the efficiency of the squeeze nip between two such



rollers by effectively increasing the area of contact between the rollers and the fabric with minimum loss of nip force. The relatively softer outer cover (6) also gives the added advantage of squeezing the textile fabric more gently than previous types of rubber-coated squeeze rolls, which have a significantly harder outer surface.

However, the relatively hard and thick underlying sub-layer (5) plays an important role in the improved performance of the Resilio roll (1) because it retains sufficient resilience to provide sufficient squeezing force. This squeezing force is concentrated into a very narrow nip line area due to the cushioning effect of the top layer. Effectively, therefore, the softer outer cover (6) is able to gently and closely conform to the textile fabric passing the roll, while the underlying relatively hard sub-layer (5) supports the thin outer cover (6) to provide sufficient squeezing force.

#### Two versions

The Resilio for final squeezing and padding is available in two versions, Resilio 100 and Resilio 150, the latter having increased temperature and abrasion resistance for arduous applications. Resilio-Resistor is offered in three types for harsher environments:

- ❖ Resilio-Resistor A – For running in a medium of hot caustic at 90° C or for hot hydrogen peroxide bleaching.
- ❖ Resilio-Resistor B – For running in acidic medium including pre-wash.
- ❖ Resilio-Resistor C – For running in medium or hot caustic at 90° C including pre-wash.

### Roaches International leader in sample dyeing, quality control and testing equipments for the dyehouse and laboratory

Roaches International Ltd is a manufacturer of laboratory and sample dyeing equipment as well as quality control testing equipment. The wide product range available in Pakistan through their representative Textilab International.

Roaches International has been a professional research, design and manufacturing company, providing cost effective laboratory solutions for the textile industry with a particular focus on the dyeing and textile testing areas. Roaches is now established as one of the leading manufacturers and exporters of high quality laboratory dyeing and textile testing equipments, having exported to more than 100 countries over the last 35 years.

Most of the Roaches machines are used as standards in the textile industry performing to BS, ISO, AATCC, ASTM, DIN and JIS standards. In addition to manufacturing its well established range of equipment. Recently Roaches International has developed a new range of PC-based, touch screen controllers for the Pyrotec, Colortec and Phoenix laboratory dyeing machines.

These are capable of recording all the programme parameters of every batch produced and storing them for future reference. This system also has internet capabilities as well as able to connect to a standard 10/100 ethernet network.

### James H. Heal specialist in the field of fabric and colour fastness testing

James H. Heal with its Turkish distributor Aygenteks showcased the **Dynawash Model 825** washing machine for rapidly assessing garment durability. Dynawash 825 was designed to simulate the conditions necessary to meet the requirements of many leading retail stores standard garment and fabric durability test specifications, including M&S Methods P5, P6, P7 and C15 (print durability). Its performance is comparable with the Hoovermatic Twin Tub and other similar devices. Unlike other durability testers, Dynawash 825 boasts a stainless steel impeller, which is guaranteed to offer long-term performance and reliability. After exhaustive assessment, this remarkable instrument has now received the ultimate accolade of official approval by Marks & Spencer.

#### Key features of Dynawash Model 825

- ❖ M&S and Next approved.
- ❖ Process Bath & Impeller constructed in stainless steel for long-term performance and reliability.
- ❖ Maximum operating temperature 60 °C (140 °F).
- ❖ Impeller rotational speed 560 rpm ± 2% (speed of impeller is not voltage dependent).
- ❖ Inverter driven motor gives accurate speed control.
- ❖ Conveniently placed and easy to use waterproof control panel that incorporates a digital temperature controller and a countdown timer. Visual and audible alarms signal the completion of each test.
- ❖ Push button tank drainage.
- ❖ Quality Assured Consumables.
- ❖ ISO 17025 Certificate of Calibration.

### Garnett Wire with global carding solutions

Garnett Wire offers quality carding solutions to the global textile industry. Garnett develops its range of metallic card clothing in line with the continuous process developments of the textile industry. As machines run faster in search of greater productivity, wires are adapted in advance of requirements. All Garnett Wire products are manufactured with a soft rib for easy, secure wrapping, and with cut-to-point precision teeth hardened for increased wear and durability. The company provided a comprehensive range of products and services for all types of carding solutions, starting with the manufacturing of metallic card clothing from round rods of carbon steel, with means Garnett can produce any specification of metallic wire required, whether in carbon steel, stainless steel or even high-tensile steels. All of these products can be produced in interlocking profiles, surface wound or in-groove type wires.

### SDC Enterprises manufacturers of premium quality colour fastness testing consumables

SDC Enterprises is a subsidiary of The Society of Dyers and Colourists, SDC products have become the industry-standard for those organisations wishing to invest in the quality and value of their brand or product. The use of standard master batches for the comparative testing of each batch, combined with conformity testing conducted by independent testing authorities (performed by UK Accreditation Service accredited laboratories), guarantees the closest possible continuity of products over time. End users can be confident that rogue results, or drift-over-time, cannot occur due to variable test materials when using SDC products - vital in reducing the risk of consequential loss due to misleading test grades. ♦