

# Uster provides solutions for all market requirements

Whether you wear a light cotton dress shirt, a snug T-shirt or a soft lamb's wool pullover, its unique comfort and feel depends essentially on the quality of the yarns used in production. It is Uster Technologies that provides the global textile industry with the quality yardsticks for fiber, yarn and fabric. Uster Technologies supplies high-tech systems and services that enable the textile industry to manufacture optimum quality and economical products. Their testing and monitoring equipment make use of a sophisticated intelligent sensor technology. Their knowledge-based learning systems transform collected data into instructions for a more efficient production procedure. Uster Technologies products shift to active controlling appliances. Uster Technologies understands the demands for fault-free fabric. Their products are found in numerous phases of the production process helping to make it happen. From inspecting raw material, to the textile laboratory, to the production floor of a spinning or weaving mill, Uster Technologies is there monitoring, learning, controlling, and taking action.

## Problem facing spinning mills

Nowhere is quality control more essential than in the cotton spinning mill. This is where the raw material is converted to yarn, ready to be woven or knitted in fabrics and garments. Spinners have to face the fact that any quality problems here can often go undetected until the end-product stage. By then it's too late to correct defects, and the spinner has to carry the burden in the form of an expensive 'claim' for substandard yarn that caused a final product to be scrapped or downgraded. The result: the spinner's profits are turned into losses, and his reputation as a good supplier is negatively affected.

## USTER® solutions for the analysis of cotton

At the start of the process, the spinner has to take into account several important variables related to his raw material supply. These can include the country or region in which the cotton was grown, as well as the price, and a range of fiber characteristics such as strength, length and elongation, micronaire, color, trash content, etc. These factors can have a significant impact on the yarn that is ultimately produced. Uster Technologies supports the spinner with effective quality solutions at every step of the yarn production process.

At the spinning mill, the first key task in the production process is to get the bale laydown right. This means ensuring a homogeneous fiber blend along the entire manufacturing sequence – the more uniform and constant the better. This is where the spinner relies on accurate information about the quality of the cotton from the bales. And where excessive deviations in blend consistency can cause problems. For example, variations in micronaire or maturity index values can cause considerable color variations when the fabric is dyed.

All these factors require precise analysis of the quality characteristics of the fiber raw material – and the USTER® HVI 1000 System can provide exactly that: the system is able to determine the micron-

aire value, fiber length, short fiber index, fiber strength, fiber elongation, color, maturity index, trash level etc.

Having achieved a high quality fiber blend, the spinner will want to ensure nothing goes wrong during processing to damage the fiber – so it is vital to be able to check and monitor the spinning operation at each stage. Especially when we consider that raw material can account for as much as 70% of the entire manufacturing costs in spinning!

To allow the treatment of the fibers to be checked throughout the spinning process, the USTER® AFIS was developed. This is a single fiber testing system, able to measure both entangled fibers and parallel ones (such as slivers and rovings). USTER® AFIS can determine the number of neps per gram, the fiber length, the short fiber content, the number of dust and trash particles and the maturity of cotton fibers.

Users of both the USTER® HVI 1000 and the USTER® AFIS fiber testing systems can compare the quality values achieved with the standards detailed in the USTER® STATISTICS.

## USTER® solutions for the analysis of yarns

When it comes to comprehensive quality testing of yarns, the USTER® TESTER 5 is unbeatable offering unmatched throughput, automated sample testing and advanced data analysis. It uses sophisticated sensor technology to evaluate spun yarn quality in a way that no other system can.

As many as six different sensors can be applied. Important yarn parameters that have a direct impact on the value of the yarn, such as yarn evenness, imperfections, the hairiness, number of foreign fibers and the count can all be measured.

New quality characteristics such as the remaining dust and trash counts enable to check the efficiency of cards and combers, as well as the opening rollers in rotor spinning machines, while measurement of the yarn's roundness, the diameter and diame-



Uster® Tester 5.

ter variation and the hairiness are all indicators of the effectiveness of compact spinning machinery. The USTER® TESTER 5 can even provide an on-screen simulation of the measured yarn as a fabric.

With USTER®'s help, the spinner can be confident in the quality of the yarn he produces. But how will the yarn stand up to the rigors of subsequent processes such as spinning and knitting? Is it strong enough to perform at the level customers demand?

USTER® TENSORAPID can provide the answers, a multi-purpose tester for all kinds of strength and elongation tests, for both yarns and fabrics. Its results can be matched against the globally-accepted benchmarks in USTER® STATISTICS. Data from the USTER® TENSORAPID can include force-extension diagrams, stroke diagrams for force and elongation and the scatter plots – the basis for evaluating how it will perform in later processes. The instrument is designed for spun yarns as well as filament yarns, and its test capability – up to 1500 Newtons or 150 kilogram-force – means it can also be used for the measurement of technical yarns such as tire cords, aramids, etc.

To take the concept of strength testing to a new level – and offer accurate predictions on yarn performance in weaving and knitting – the USTER® TENSOJET has been developed. It works at phenomenal speeds – carrying out 30,000 tests per hour. This means it can detect isolated weak places in yarns – the sort of defects which cause end breaks in weaving or problems on knitting machines. The USTER® TENSOJET can also highlight potential problems in weaving and knitting yarns which evenness testing alone can't pick up, when faults are not related to mass variations.

### USTER® solutions for 100% monitoring of yarns

Under its 'Think Quality' concept, Uster Technologies offers a unique integration of both laboratory testing with online quality monitoring, to check and control key quality parameters while the yarn is actually being produced.

The online monitoring options start at the drawframe, where spinning mills have to cope with the unavoidable fact of a certain degree of mass unevenness in card sliver. But there is also a need to keep yarn count variation within close limits – and that is where the USTER® SLIVERGUARD comes in. This is an online system for autolevelling slivers on drawframes. As well as controlling sliver parameters, the system can display the mass unevenness

and the deviation from a predefined nominal value. Control of sliver weight through quality monitoring – efficient processing of raw material results in huge cost savings for the spinning mill.

At the winding stage, there is still a vital quality monitoring and control function which can make a dramatic difference to final yarn package quality and saleability. The USTER® QUANTUM is the world-leading yarn clearer system, operating as the yarn is being wound by the winding machine after ring spinning, or by the rotor spinning machine. It provides online monitoring of 100% of the yarn of a spinning mill and has two important duties:

- ❖ To detect disturbing thick and thin places and foreign fibers – including polypropylene – and replace these defects with a splice. In this way, the clearer actually improves the wound package quality.
- ❖ To identify and separate out bobbins with unacceptable quality characteristics. For example, those with evenness, imperfections or hairiness values that are beyond defined tolerances. Rejected bobbins are analyzed in the laboratory, and the findings are used to trace to the origin of the inferior quality.

Spinners will also recognize the value of the data which can be collected at the winding stage. Analysis of clearer cut rates for various defect types and the classifica-

tion of these faults over long time intervals can help assess the impact of changes in raw material or in machine settings. Here, they can turn to the USTER® QUANTUM EXPERT – a data system which monitors the entire winding department from the office of the winding department manager or quality manager.

The performance of the clearers and the levels of disturbing thick places, thin places and foreign fibers, as well as the evenness, imperfections, and hairiness can all be evaluated from one central point, focusing on the implications of these factors for yarn quality.

Uster Technologies produces benchmarks, the USTER® STATISTICS, for all fiber and yarn quality characteristics. Ever since the first edition in 1957, USTER® STATISTICS have been recognized as the authoritative and objective basis for yarn trading worldwide.

USTERIZED® stands for defined and certified quality within the textile chain, from the fiber to the yarn – but also from the finished fabric to the garment. The USTERIZED® program allows certified spinners to put the USTERIZED® label on their products and thus show that these products have been manufactured to professional quality standards.

Uster Technologies also help weavers, knitters, traders, garment and retailers to minimize the quality costs of fabric or garment manufacturing. ♦

## Rotorcraft – Swiss Spinning Solutions

Rotorcraft was founded in Switzerland in 1973 by the current Chairman and President, Mr. Hans Stahlecker. It has since become a world leader in designing and marketing innovative spinning solutions. Being aware of the fact that compact yarns are more and more becoming standard, and that pneumatic compacting systems are expensive as far as investment and running cost are concerned, Hans Stahlecker and his team have been doing extensive research in developing a compacting system which does not require air-suction, elaborate maintenance, costly spare parts and ever increasing cost of power.

Rotorcraft stands for Swiss Innovations in Spinning Technology. The latest innovation that Rotorcraft has successfully brought to the ring spinning market is the second generation of Compact Spinning Systems, RoCoS (Rotorcraft Compact Spinning).

This new generation of Compact Spinning Systems attains the yarn quality improvements introduced by the first generation of compacting systems, while performing considerably more economically and consistently than the

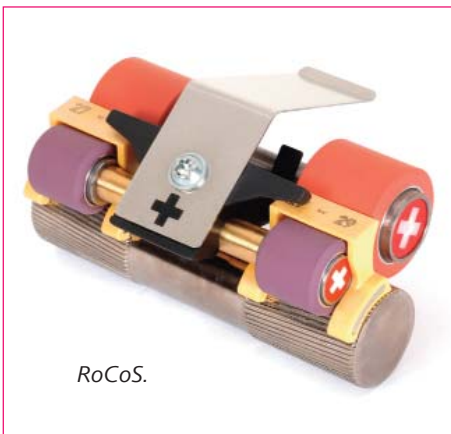
conventional pneumatic compacting systems. With annual power savings compared to pneumatic systems between 6 and 8 Euros per spindle, and in light of a considerably lower capital investment, Rotorcraft asks all ring spinning mills: Can you afford not to invest in RoCoS?

RoCoS line of compacting systems. Aside from standard RoCoS and CORE RoCoS. Demonstration of RoCoS for very coarse yarns (below Ne 8) and very fine yarns (above Ne 100).

As with all innovations, these additions result from listening closely to the wishes of their customers, who have been demanding RoCoS solutions for spinning these speciality yarns.

RoCoS produces COMPACT YARN without expensive pneumatic air suction; which means:

- ❖ Lower initial investment cost than for competitors' pneumatic systems while delivering identical spinning results;
- ❖ Lower cost;
- ❖ Lower cost for wear and tear parts;
- ❖ Better quality of regular yarn at the same cost or; lower cost for same quality as regular yarn. ♦



RoCoS.