



Long Staple Processing and Textile Testing

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ABSTRACT

Several vendors in the long staple processing area and the textile testing unveiled some improvements to their existing offerings. The long staple improvements came in the form of better design, more productivity, more electronic controls, less maintenance requirements, versatility, and cross compatibility with automation of all types. Improvements from some testing vendors mainly concentrated on yielding more information from the same tests; like the sticky cotton measurement from Lintronics and Weavability from Uster.

Keywords: Long staple processing, short staple textile testing,

Introduction

This ITMA 2003 review will concentrate on long staple cardroom processes, textile testing equipment, and a miscellaneous section. As a general rule, there were no “new” technologies exhibited in most areas; however, there were design trends in equipment and new players entering some technology fields. Machinery related trends included ease of maintenance, use of servomotors, increased productivity, and improved quality.

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Long Staple Cardroom Processes

Tatham

Tatham introduced the “Magnum” woolen cards, which are produced in 2.5, 3.0, and 4.0 meters in width. Other features included:

- Modular frame assemblies with no cross-rails.
- Statically and dynamically balanced cylinders, doffers, and top rollers for more precise setting.
- Quick release mechanisms for easier maintenance.
- Air control collars to reduce fly and improve fiber yield.
- Modular design of feedroller and taker-in arrangements allowing more versatility.
- Metal detection systems on board (some models).
- “Underspeed” sensors to prevent chokes at the taker-in.
- All drives with toothed belts for positive transmissions to carding components.
- Tatham introduced an auto doffing mechanism for tape condensers that has been successfully operating for over a year in some installations.

- Tatham upgraded the Microweigh 2000 to the Microweigh TS for more accurate control of fiber feeding to the card.

Pneumatic Conveyors

Pneumatic Conveyors introduced their line of fiber lubrication devices, which are designed for the end on the fiber line. The three models are the Atomist RSL1, RSL2, and the RSL3; each model offering technologies for different fiber flows, processes, and more precise controls.

Fleissner

Fleissner introduced their new drying system called the “Perforated Drum Dryer”, which can be used in a variety of long staple finishing lines. The system maintains uniform drying by even heating and suction across the width while preserving material bulk with a low specific heat requirement.

H. Hergeth GmbH

Hergeth introduced a new top-feeder, the miniFLOC-LS, for long staple processing system that can accommodate bales up to 2.5 meters in height and feed at 2500 kilograms per hour.

NSC

NSC showed several long staple processing machines with new features relative to older models. Some of the features are listed below:

- The CA6 and CA7 cards with improved electronic controls.
- The ERA combing machine featured link automation integration, easier maintenance, better electronic controls and set-up, and increased production rates.
- Gill chain GC30 boosted speeds of up to 600 meters per minute, easier set-up with use of servomotors, automatic cleaning, and capability with automation technologies.

- Other technologies displayed by NSC were electronic draft options, autolevelling, remote controls, machine versatility, and material handling (i.e. doffing, cans and balls).

Textile Testing

Lintronics

Lintronics displayed the newest versions of the Fiberlab. The system is an all-in-one short fiber characterization instrument. Fiberlab is available in four versions with different capabilities. Fiberlab Pro (the all inclusive model) can test for neps, seed coat fragments, trash, dust, Rd, +b, color, length, strength, elongation, micronaire, maturity, fineness, and stickiness using just one sample with a cycle time of 60 seconds.

Uster

- Uster Fibroglow 380 is a stand-alone measurement of fluorescence variations in cotton fibers, which can help producers avoid barre issues in yarns and fabrics.
- Uster Micronaire 775 is a stand-alone instrument for micronaire testing.
- The Uster Tester 4-SX can normal yarn quality parameters as well as diameter variation, shape, density, and trash contents for better prediction of final product quality.
- Uster has also registered the name Weavability, as a measurement of outliers found within Uster’s yarn strength and elongation tests. The enhanced software points out these “problem points”, which may predicts weaving stops as well as giving the clients a frequency of the weak places in the yarn.
- Uster also had examples of their fabric simulation software. Where yarn quality parameters are input into the program, a digital image of fabric appearance is shown according to Uster Statistics rankings with the possibility of many different woven styles and colors.

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