

Textechno
textile testing technology

Cotton
control



COVATEST

Capacitive Evenness Tester for Slivers, Rovings,
and Spun Yarns with optional Hairiness Module

Evenness and Imperfection Testing

Testing of evenness and imperfections is essential for staple fibre spinning mills to control the quality of the slivers, rovings, and yarns during the complete spinning process. A spectrogram of the mass distribution over the sample length gives important information to optimize the carding-, drawing-, combing- and spinning process. Additionally, the measurement of yarn hairiness is a further important parameter. Textechno's **COVATEST** can measure all above-mentioned parameters; hence it is a perfect instrument for process control and quality assurance.

The **COVATEST** includes an easy-to-use diagnostic feature to identify mechanical problems along the spinning process, based on irregularities of the **spectrogram**. Here a compilation of production machines from several makers, including mechanical dimensions such as roller diameters or distances etc., is utilized to identify the wavelength of the spectrogram anomalies and thereby assists to eliminate errors in the carding-, drawing-, combing-, and spinning process. Besides the existing production machines, any other machine with known dimensions can easily be added to the compilation by the user.

An optional **Hairiness Module** utilizing a State-of-the-art optical sensor with LASER illumination is available for the measurement of the total hairiness.

The tester can be used for both short- and long-staple spun yarns as well as for worsted spun yarns. For evenness tests on tops an additional **external sensor** is available.

To improve the testing capacity the **COVATEST** can be equipped with an **automatic package changer** for 24 positions.

All tested data are stored in a database for repeated evaluation and printing.



COVATEST



Features

General

- Graphical and numerical results perfectly matching all accepted standards
- Easy-to-use software and machine for quick and simple operation
- Modular machine for cost-effective investment
- Fully automatic operation
- Multi-language windows-based software
- Easy data retrieve from open SQL Database (Access)
- Latest electronics and superior mechanical solutions
- Easy and quick self-testing systems for minimized service costs
- Optional Hairiness module, automatic cop changer on request

Measuring frame with

- Sensor unit with 4 measuring slots for the range 2Tex (yarn) – 4 ktex (sliver).
- Optional external sensor for tops : 4 ktex – 80 ktex,
- Drive unit with feeding device, slow-start, and automatic yarn path setting
- Pneumatic yarn suction
- Sensitivity: 4 ranges: $\pm 100\%$, $\pm 50\%$, $\pm 25\%$ and $\pm 12.5\%$ (additional ranges on request)
- Operating modes: Normal, 1/2 Inert and Inert
- Sample feeding speed: 8, 25, 50, 100, 200 or 400m/min.
- Measuring range: 0.20 - 99.99% (U% / CV%)

Spectrograph unit

- Number of channels: 180
- Analysing wavelength: 0,01 – 1528m

Imperfection indicator

- Number of channels: four levels of sensitivity at the same time
- Sensitivity for:
 - Thin places: -60%, -50%, -40%, -30%
 - Thick places : +100%, +70%, +50%, +35%
 - Neps : +400%, +280%, +200%, +140%

Deviation rate (DR%)

- Number of channels: 4 channels
- Reference length: OFF, 1,5m, 5m, 10.00m
- Level: $\pm 5\%$, 10%, 25%, 50%, 75%

Numerical data

- Mean deviation U% and coefficient of variation CV%
- Relative count per measured length
- Number of thin places, thick places, and neps in the yarn provided by four sensitivity levels
- DR% for four set lengths and levels, and DRT% for the total length
- Coefficient of variation CV(L) at set length for lengths 0,5m, 1m, 3m, 10m, 50m, 100m
- Total hairiness H per 1 cm of yarn, standard deviation sh, sh (0,5m, 1m, 3m etc.)

Statistical data

- Average value, max. & min. values
- Standard deviation
- Coefficient of variation of the mean value CVB%
- 95% confidence limits of the mean value (Q (95%))
- IPI values converted per 1,000m

Graphic output

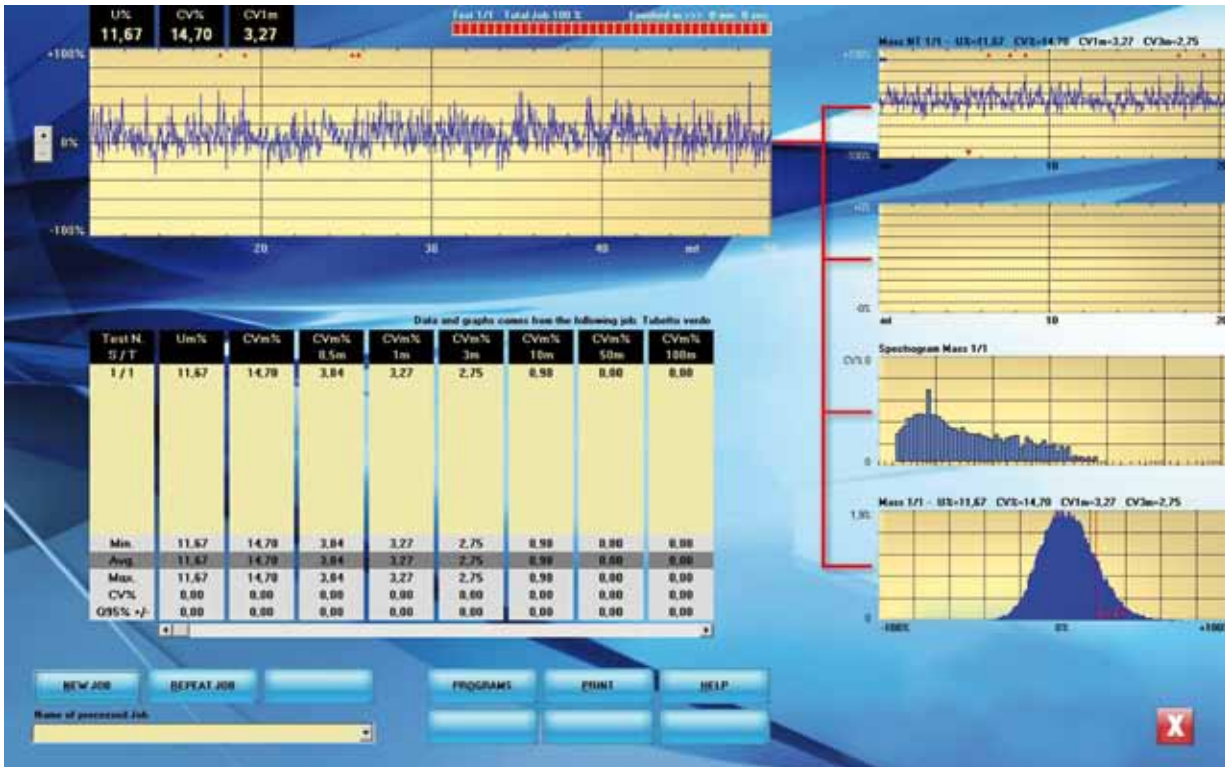
- Diagram of mass variation per unit length
- Spectrograms (also 3D), Histograms and CV(L) curves for mass variation
- Diagram of hairiness variation per unit length
- Spectrograms (also 3D), Histograms, and CV(L) curves for hairiness.

The screenshot displays the 'New Job: Green tube' software interface, which is used for defining test parameters for yarn. The interface is divided into several sections:

- General:** Includes fields for Article (Green tube), Customer, and Operator.
- Identification:** A text area for Comments.
- Characteristics:** Fields for Nominal count (40), Fibre 1, 2, and 3 values, Fibre length (Short staple), Lot (Material 3), and Material type (Nastro 2).
- Measuring Conditions:** Fields for Number of samples (1), Testing speed (50), Testing time (1.8), Measuring slot (4/Yarn), Length scale (2), Range (100), and Cut length (Normal).
- Miscellaneous:** Fields for Print in (English), copies (0), Job ID (163), and Deviation Rate (1.5, 5, 10, OFF).
- IPI on graph:** A list of checkboxes for IPI inspection stop criteria, such as Thin places (-20%), Thick places (+25%), and Neeps (+100%).
- IPI inspection stop:** A list of checkboxes for IPI inspection stop criteria, such as Thin places (-40%), Thick places (+50%), and Neeps (+140%).
- Measuring units:** Fields for Count (Nec), Fineness (ug/inch), and Length unit (m).
- Reports:** A list of checkboxes for Report results, such as U/m, CV/m, and Index.
- Print results:** A list of checkboxes for Print results, such as Numerical results, Diagram, and Histogram.

At the bottom of the interface, there are three buttons: 'RUN now', 'APPEND', and 'Cancel'.

Test / printing parameter definition screen



Main screen during measurement

Technical data

Power supply and consumption

Power supply: 230V, 50 (60) Hz

Consumption: 500VA

Compressed air supply

Air pressure: 6 bar

Capacity: Approx. 80 Litres/min

Dimension & weight

Height: 650 mm

Width: 314 mm

Depth: 365 mm

Weight: 97 kg

Lacquer finish: RAL 9006 / 5002

The above technical contents can be subject to changes by Textechno.



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