



USTER® CLASSIMAT 5

Instrument for classification and analysis
of yarn faults in staple yarns

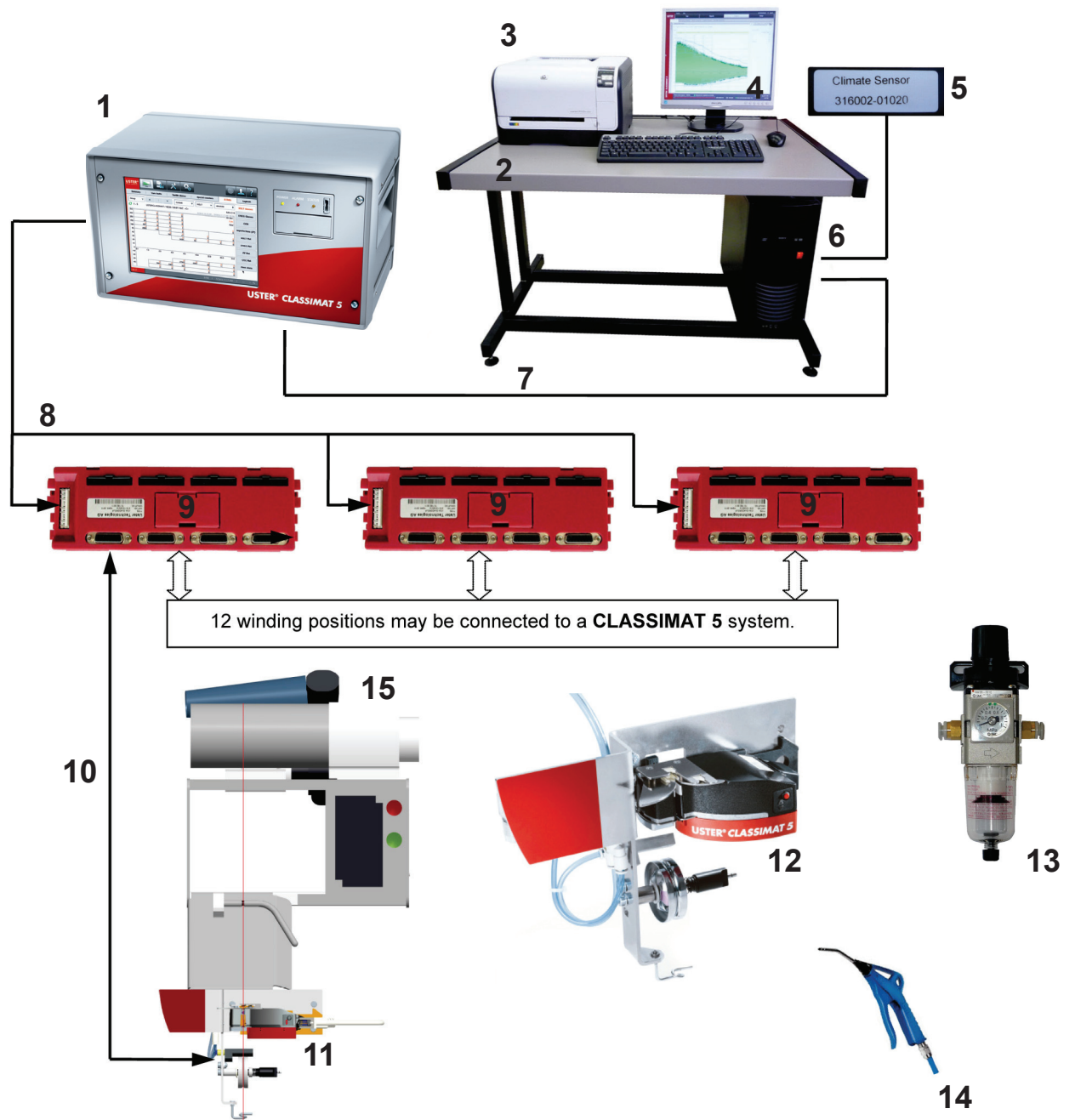
Technical Data

February 2014

Instrument for classification and analysis of yarn faults in staple yarns



THE YARN CLASSIFICATION SYSTEM



System layout

- | | | | |
|---|---------------------------------|----|---|
| 1 | CMT5-CCU | 9 | iCSA Quad group |
| 2 | Table | 10 | iMH cable, Valve cable |
| 3 | Printer | 11 | CLASSIMAT 5 Module complete |
| 4 | Flat screen, keyboard, PC-mouse | 12 | CMT5 iMH: C15F30, C20F30 |
| 5 | Climate Sensor incl. cable | 13 | Maintenance Unit |
| 6 | CMT5-CU | 14 | Air gun |
| 7 | Network cable | 15 | Winding machine - is not part of the delivery |
| 8 | Cable power/comm. CCU - iCSA | | |

THE YARN CLASSIFICATION SYSTEM

Basic Installation

- CLASSIMAT 5 Control Unit (CMT5-CCU) with installed software
- Table
- Printer
- Flat screen, Keyboard and PC-mouse
- USTER® Lab Control Unit (CMT5-CU) with Microsoft Windows Operating system and USTER® CLASSIMAT 5 specific hardware and software:
 - Backup Unit – 2nd Hard disk of identical capacity
 - Network card integrated
- Climate Sensor including cable
- Dongle
- CLASSIMAT 5 Module complete
- Network cable (CMT5-CCU to CMT5-CU)
- Cable power/comm. CMT5-CCU - iCSA
- iCSA Quad group
- iMH cable, Valve cable
- CMT5 iMH: C15F30, C20F30
- Maintenance Unit
- Air gun
- Pneumatic kit (Air Inlet, Air Hose)
- Fastening material
- Accessories set:
 - Operating documentation, incl. yarn cards and USTER® Calculator
 - Maintenance tools
- Spares: One spare iMH and one iCSA is included in every shipment

Functional scope

Part I

Three classification standards • CLASSIMAT 5
(for thick and thin places only): • CLASSIMAT QUANTUM
• CLASSIMAT 3

CLASSIMAT 5 classification: • YARN BODY™ and scatter plot of yarn faults in the USTER® CLASSIMAT 5 matrix.
• Classing of the yarn faults into 30 thick place classes and 15 thin place classes.

Foreign-Matter: • Dense area and scatter plot of the foreign fibers in the USTER® Foreign Class matrix.
• Classing of the foreign fibers into 32 classes.
• Classification of vegetable content into 32 classes (only for cotton and cotton blends).

THE YARN CLASSIFICATION SYSTEM

Functional scope Part II

<i>Polypropylene:</i>	<ul style="list-style-type: none">• Short Polypropylene and long Polypropylene.
<i>Tailored classes:</i>	<ul style="list-style-type: none">• Customer-specific thick place and thin place class can be defined.• Customer-specific Foreign-Matter class can be defined.
<i>Periodic faults (PF):</i>	Classification of periodic faults and affected share.
<i>Evaluation:</i>	<ul style="list-style-type: none">• For individual and all winding positions.• Cumulative or per class.• Absolute or per 100 km.
<i>Disturbing faults:</i>	Outliers – neps, thick, thin, Foreign-Matter, Polypropylene, evenness (Cvm), imperfections and hairiness.
<i>Clearing limit analysis:</i>	Analysis of applied clearing limits and indication of clearing index to optimize clearing limits to reduce outliers.
<i>Quality comparison:</i>	Comparison of up to five articles according irregularity, outliers & Foreign-Matter to classify yarns for optimal use and thereby optimal price.
<i>Long-term analysis:</i>	Analysis of long term trends of all CLASSIMAT 5 parameters and compare them to internal or international benchmarks. Graphical and tabular reports.
<i>Benchmarks:</i>	<ul style="list-style-type: none">• International benchmarks – USTER® STAT/STICS• Compare to internal benchmarks of the mill – Mill STATISTICS.• Compare test results to the best results achieved over the last one year- “52 week best”.
<i>Climate measurement:</i>	Integrated sensor for measurement of humidity and temperature in the environment of the laboratory.
<i>Reports:</i>	Preconfigured standard reports.
<i>Data storage:</i>	Data storage and Backup.
<i>Diagnosis:</i>	Technical alarms, Log-files, Remote support possibilities.
<i>Languages (Application software):</i>	EN, CN, DE, TR (Later VN, DE, FR, IT, ES)
<i>Unit system:</i>	Nec, New, Nm, Tex, Denier

Sensor principle

<i>Classification of thick and thin places:</i>	Capacitive measurement
<i>Determination of quality data:</i>	Capacitive measurement
<i>Detection of Foreign-Matter:</i>	Optical measurement
<i>Detection of Polypropylene:</i>	Capacitive and Optical measurement

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No. of positions

CLASSIMAT 5 is available for 6 or 12 positions.

Measuring head type

Choice between iMH type C15F30 and C20F30 depending on the count range.

Yarn count range and measuring head types

CMT5 iMH C15/F30:	Nm 20 to 340	Nec 12 to 200	3 to 50 Tex
CMT5 iMH C20/F30:	Nm 5 to 135	Nec 3 to 80	7 to 200 Tex

Application

- Classification of yarn faults and outliers of staple-spun yarns (natural, synthetic fibers and blends).
- Yarn speed winding: 200 to 1200 m/min.
- Recommended sample length per test: 200 km.

Sample conditioning

- Recommended humidity: (65 ±2)% relative humidity.
- Recommended temperature: (20 ±2) °C in moderate zones.
- (27 ±2) °C in tropical zones.

Electrical connection

- Mains: Single phase mains with protective conductor.
- Mains voltage range: 220VAC-240VAC.
- In case of 100VAC-120VAC a transformer is supplied.
- Mains frequency: 50Hz-60Hz.
- Power consumption - typical operation: 200VA
- Power consumption - peak operation: 650VA (when printing is active)
- Uninterrupted power supply (UPS) recommended.

Compressed air connection

- Air quality: According to ISO 8573.1, class 3.
- Min. pressure at inlet of air filter regulator: 5 bar
- Max. pressure at inlet of air filter regulator: 7 bar
- Air consumption per position per hour: 210 liters.

Operating climate

- Temperature: 15-30 °C.
- Humidity: 45-85% relative humidity, noncondensing.

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Packing dimensions and weight	<i>Dimensions:</i>	126 x 87 x 93 cm
	<i>Volume:</i>	1.019 m ³
	<i>Weight:</i>	152 kg (incl. Mounting modules, USTER® Lab Control Unit, CLASSIMAT 5 Control Unit, printer, peripherals, table, etc.).
	<i>Table dimensions:</i>	122 x 79 x 11 cm unmounted and packed.

Winder

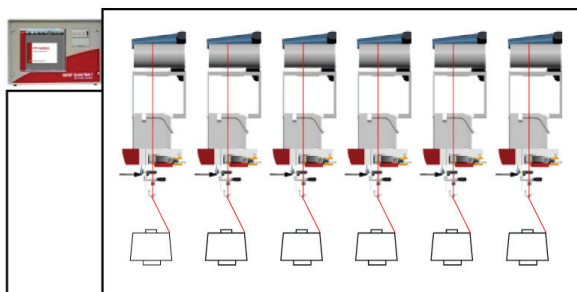
- Manual precision winders are recommended for accuracy and stability reasons e.g. SIMET, MOTOCONO, SSM (CN), PS VERSA, RESHMI (IN), MILHAN (TR).
- Further winder types – Please contact USTER® Service.

Note

- Specific machine adaptation materials have to be provided by user as necessary, at the time of installation.
- Stable and straight yarn-path
- Precise drive and assembly that provides winding with minimal vibration.

Installation layout

Example: CMT5-CCU and mounting modules mounted on the manual winder



Space requirements

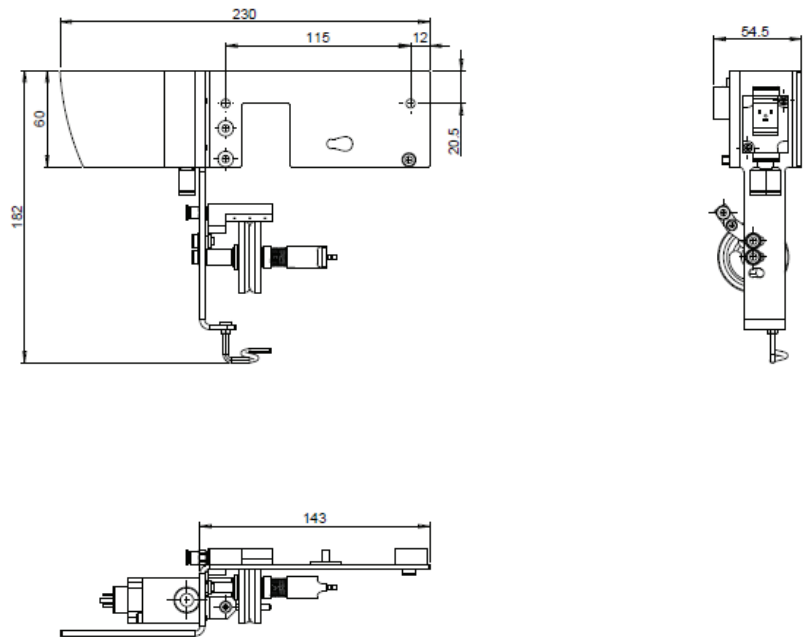
CCU mounting

- Space for mounting the CLASSIMAT 5 Control Unit (CMT5-CCU) on the winder should be provided.
- Dimensions of the CMT5-CCU: 300 x 515 x 300 mm (depth x width x height).



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Dimensions of the mounting module for each position

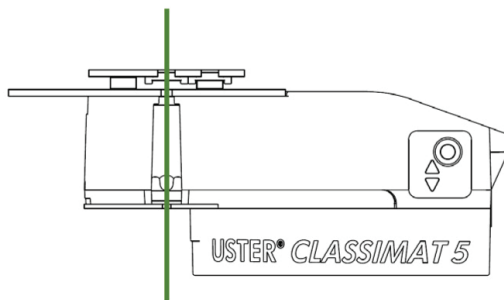


Yarn path

When optimizing the thread line, the following must be observed:

The thread line must be parallel to the measuring field

Correct



Incorrect

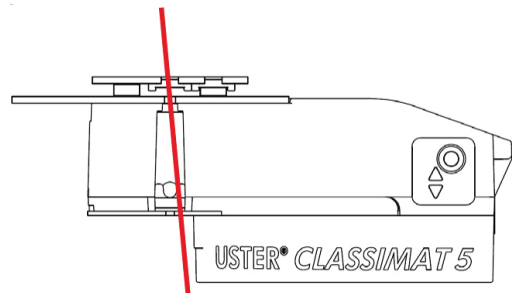
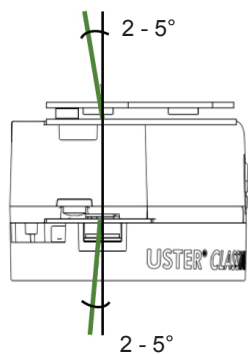
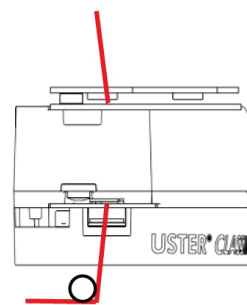


Fig. Thread line in the measuring field

Correct



Incorrect



No deflection of 90°

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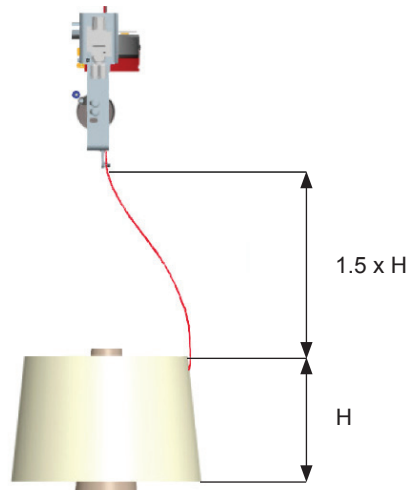
Positioning of yarn package

Distance:

Check the distance from the top of the package to the thread guide.

Recommendation:

- Positioning of yarn package: Recommended distance is one and a half times of the package height (H). See figure above



Fg. Positioning yarn package

Uster Technologies has made all reasonable efforts to ensure that all information is accurate at the time of publication. Hereby it is declared that alterations to the product may be possible at any time. In these cases the information contained in this technical datasheet is subject to change without notice.

February 2014

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