

***Total Automatic AI Based  
Bobbin Quality Control System***

**THEMA SYSTEM**  
www.themasystem.com

TAQC is a **total automatic quality control instrument**, able to resume in one single system all the below functionalities:

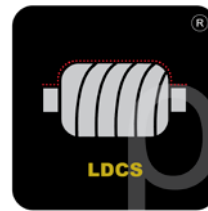
- **LDCS**, to check the weight, volume and density of the bobbin
- **ARA COLOR**, to check the surface color variations between bobbins
- **RA VISION**, to detect defects on the bobbins surface

The system can be customized with a taylor-made database to perform statistical analysis and share results with the Customer Management system.

TAQC is able to find morphological defects with extremely high sensibility and an high level of repeatability.

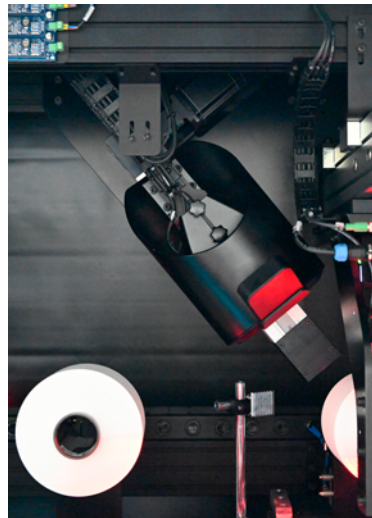
Thanks to the **artificial intelligence**, the system will also be able to classify the detected picture among several class of defects and to grade the set of bobbins by quality.

All the images and data history can be stored locally or in external customer storage system to have full hystorical data and a complete traceability.



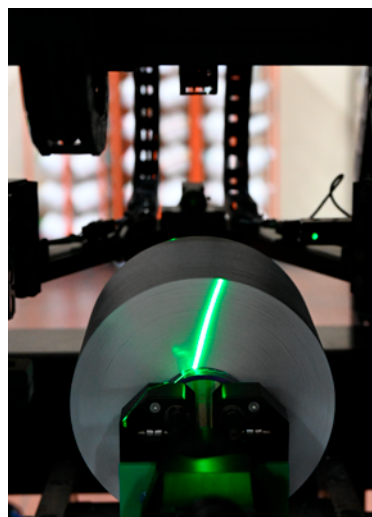
## LDCS

Laser control system for weight, density and diameter of the yarn bobbins.



## ARA COLOR

Relative color control system to identify possible difference of color tones between yarn bobbins of the same production lot.



## RA VISION

Quality inspection on the outer surface of the bobbin, able to detect defects such as broken filaments, traverse, stains and many more, based on the Customer needs.



TAQC-12 is designed to inspect bobbins stored on **BT 60 bobbins trolley** (designed also by Thema System).

By lifting qty 12 bobbins (6 bobbins per side, raw by raw), the TAQC-12 is able to **simultaneously analyse 12 bobbins in the same cycle time**.

This particular configuration can host up to 5 trolleys in the inspection area, considering the loading and unloading area, automatically moving through the line once trolley inspection will be completed.

## Specifications

Max theoretical production	600 bobbins / h
Max power	25 KW
Nominal tension *	380 VAC
Dimensions L x H x P	14750 x 2596 x 4650 mm
LDCS systems	6 + 6
ARA COLOR systems	3 + 3
RA VISION systems	3 + 3

\* adaptable to Customer needs



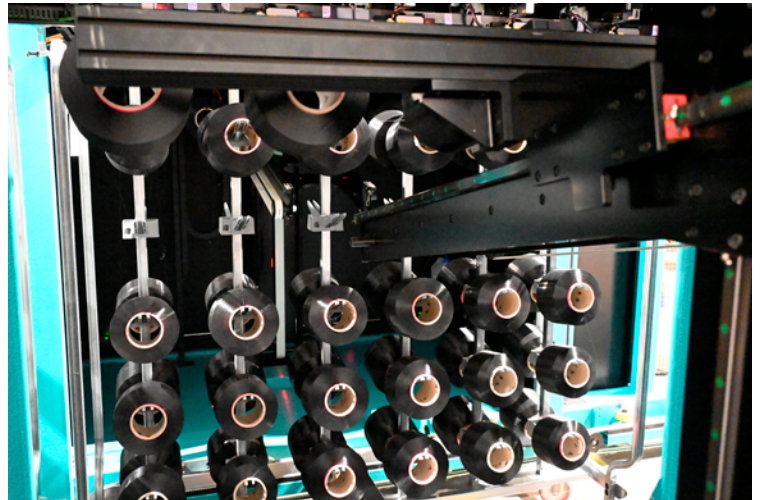
### PC

On the main PC the operator can monitor the current status of the analysis, inspect and export results, set-up parameters and more.

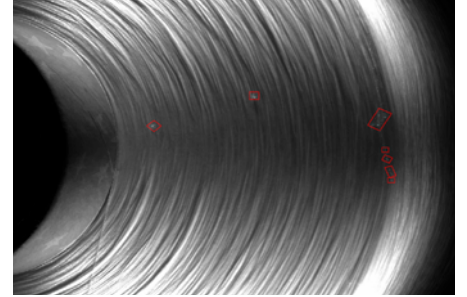
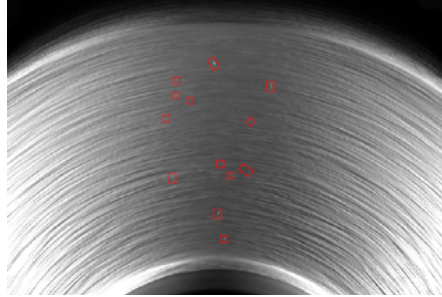
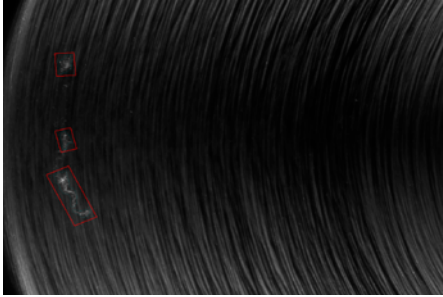


### HMI

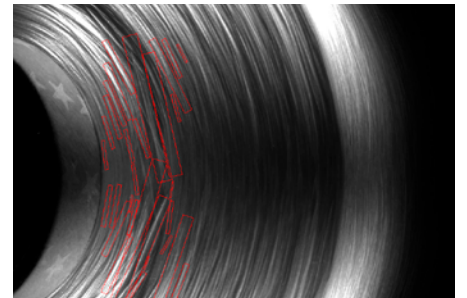
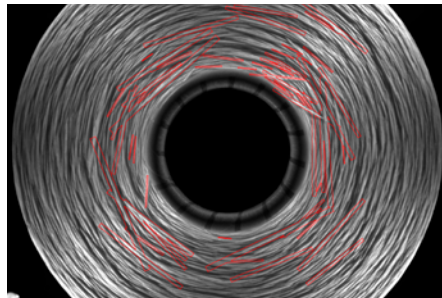
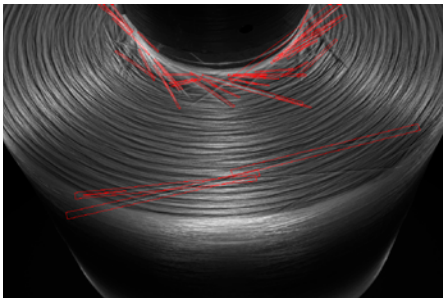
Both entry and exit of the machine are equipped with an HMI to check the data before inserting a new trolley in the TAQC line, and check the results of the analysed batch ready to be pull out.



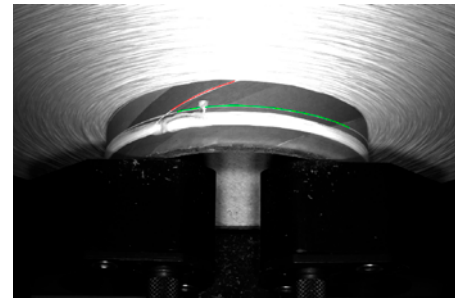
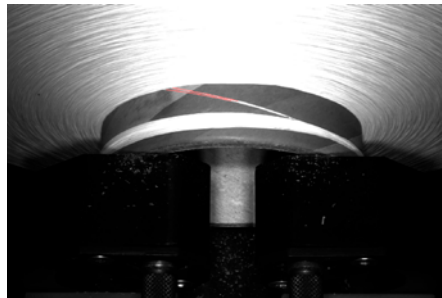
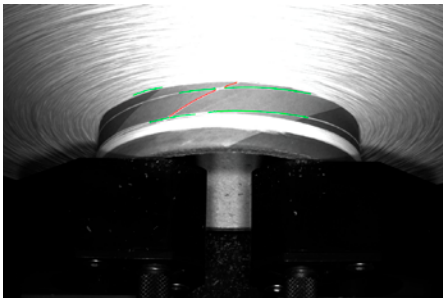
## BROKEN FILAMENTS, LOOPS AND DAMAGED BOBBIN



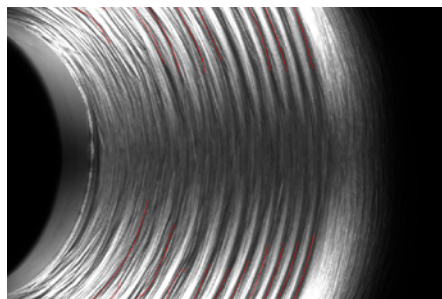
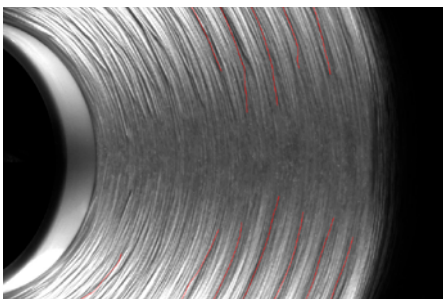
## TRAVERSES



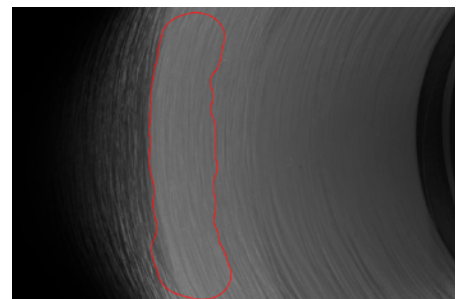
## TAIL STATUS: presence, double, crossed, narrow



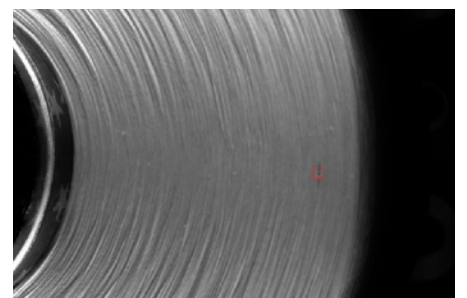
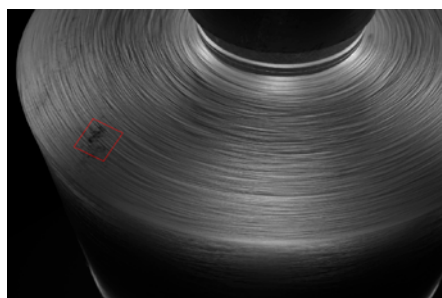
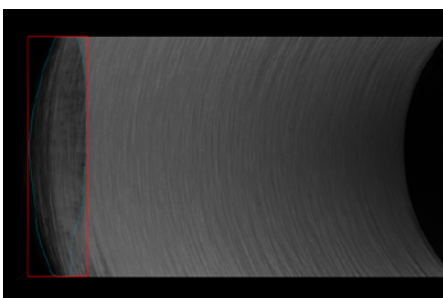
## WAVES AND PROFILE STATUS



## SHADE VARIATIONS



## STAINS AND DIRT



# TAQC-2

## Disks on Conveyor Belt

TAQC-2 is designed to inspect bobbins travelling on disks, with the possibility of an optional automatic loading and unloading system by IGH.

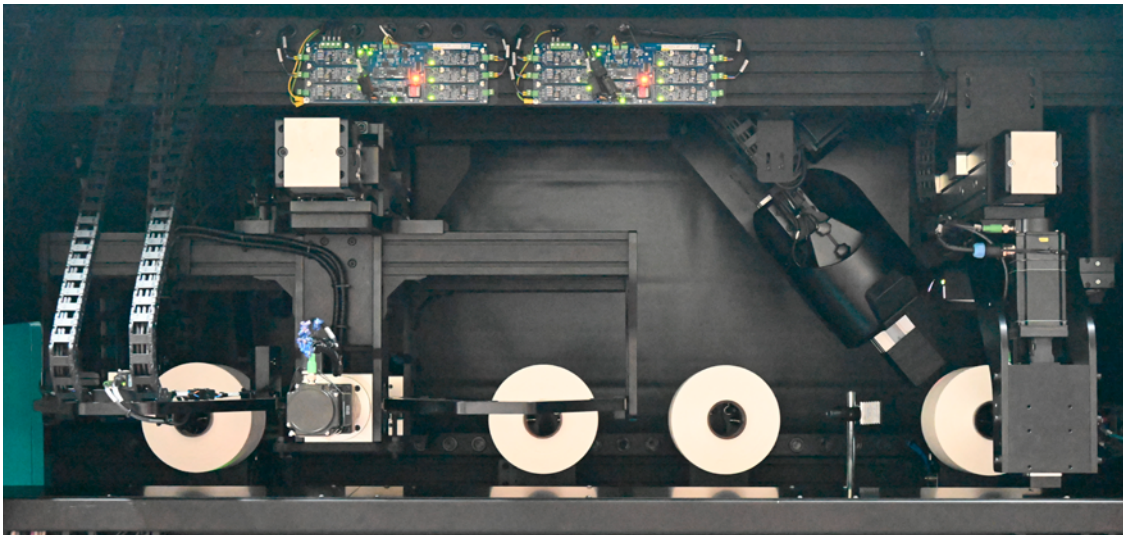
The TAQC-2 can host **4 bobbins on conveyor belt at a time**, 2 under simultaneous inspection and 2 in waiting position, performing the Ra Vison control at station #1 and the Ara Color and LDCS analysis at station #4.

The CODEC function can be added to read the barcode/QR code inside the tube, while performing the LDCS analysis at station #4.

### Specifications

Max theoretical production	250 bobbins / h
Max power	7.5 KW
Nominal tension *	400 VAC
Dimensions L x H x P	4050 x 1780 x 2250 mm
LDCS systems	1
ARA COLOR systems	1
RA VISION systems	1

\* adaptable to Customer needs



Station #1  
RA VISION

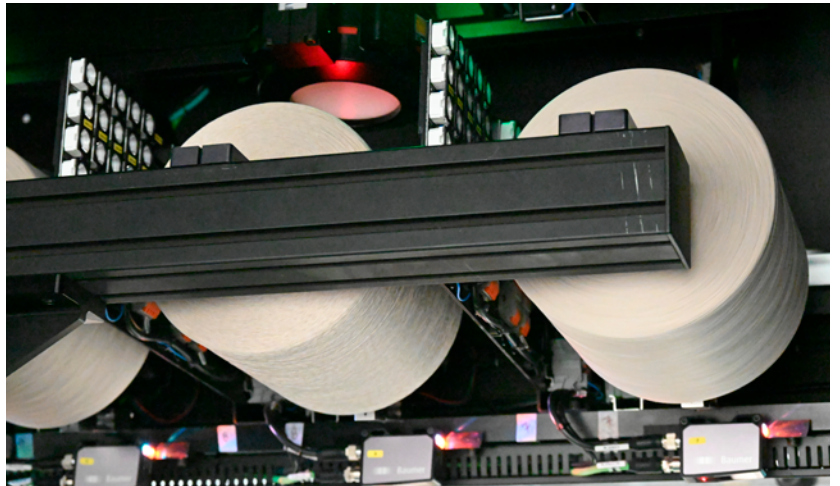
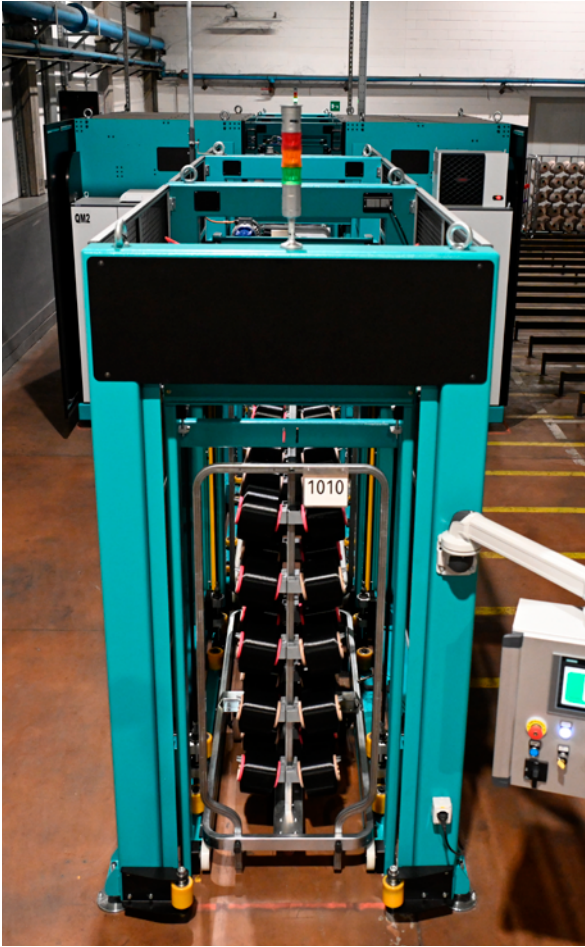
Station #2  
waiting

Station #3  
waiting

Station #4  
ARA COLOR + LDCS



# TAQC



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Made in Italy



**IGH**  
Irico Gualchieroni Handling