New Uster Quantum 4.0 yarn clearer offers spinners the best of both worlds

Clear choice: security, prevention and flexibility

Which yarn clearing technology should spinners choose? Now there's only one answer, as Uster launches the new Quantum 4.0 clearer generation. This world-beating innovation combines both capacitive and optical sensors in one – delivering comprehensive security, prevention and flexibility.

The Smart Duo system offers the best of both worlds for intelligent yarn quality control and optimized profitability. It means mills can now focus on meeting the fast-moving market challenges, instead of pondering technical options.



Uster Quantum 4.0 – The connected yarn quality assurance system

Security and reliability: the basis of yarn quality

Quantum 4.0 is like a dream come true for the industry. For years, spinners have wished for a way to bring the best of different technologies together, for secure quality and maximum flexibility.

Spinners can now access full security in quality control, ensuring the best clearing mode is applied. The Quantum 4.0 enables this through a simple Capacitive/Optical switch. This allows greater flexibility in the types of yarn which can be produced, while also dealing with factors such as humidity variations.

Intelligent sensors in tandem

The capacitive and optical sensors work intelligently in tandem through an innovation known as Cross Clearing. This locates and eliminates hidden defects by means of a double check, in which the main sensor's signal is supported by the assistance sensor. This deals with issues such as unnoticed fluff events, which might otherwise cause breaks downstream.

Today's market trends show strong demand for compact yarns. Here, spinners can trust Quantum 4.0 to tap this potential and deal with any quality issues. The density feature, for example, protects mills from substandard cops caused by ring spinning malfunctions such as blocked compacting zones, or twist problems. The Smart Duo has the advantage of monitoring yarn density continuously and after every splice. "No matter where density variations originate, be it compacting, different twist levels due to slip spindles or otherwise, Uster Quantum 4.0 takes care of it – and this is a real technical innovation," says Katrin Hofer, Product Manager at Uster Technologies.

No more material mix-ups

A further valuable innovation with Quantum 4.0 is the Blend Mix-up option, which now enables mills to identify mix-ups of different types of raw materials. This long-awaited market request detects any wrong raw material in greige and white yarns, combating the infamous, but serious, barré effect in fabrics. Cop mix-ups can happen in mills, since differences are hardly visible to the human eye. But Quantum 4.0 stops the problem before it becomes an issue, thanks to significantly improved hardware and software – all underpinned by the Smart Duo.

The higher processing power of the new sensors brings additional benefits such as the enhanced Continuous Core Yarn option, which detects both missing and off-center core continuously.

Innovations in Quantum 4.0 also focus on contamination, with deeper analysis of polypropylene and foreign matter. A new PP classification gives users the overview of polypropylene content, while the Advanced FD classification now shows extra classes below the 5% lines. Both these features add to the value of the contamination function, together with Total Contamination Control (TCC).

Quantum 4.0 gives spinners the ultimate confidence through the intelligent interaction of capacitive and optical sensor technology. It achieves ‘one of a kind’ security levels in basic clearing, while also cutting only what’s necessary.



New customer-centered user interface with a 16:9 touchscreen on control units

Prevention pays off

As well as identifying defects at winding, preventing defects at source is also in focus with the clearer’s new Expert System. The new Quantum Expert is now included in the product offering. Thanks to many

added intelligent analytical features, the Uster Quantum Expert enhances process control and prevention of defects, through Total Contamination Control, Ring Spinning Optimization and the RSO 3D Value Module.

Latest innovations in the new clearer protect spinners from claims and waste – but enabling business success is the real purpose of Quantum 4.0. Latest clearing technologies work with Uster's unique data analysis to enable flexible data-based decisions using Application Intelligence. "Failure prevention is the key to success and tackling issues at source is the way to do it. Uster Quantum 4.0 plays an important role in this, offering options to strengthen it," says Hofer.

Secure and user-friendly

The secret of true innovation is how well it is designed through to the point of user interaction. No matter how much data – in terms of quantity and different parameters – is collected for analysis, Uster Quantum Expert manages the complexity, while staying as intuitive as ever.

With Quantum 4.0, a new central Smart-Limit button enhances flexibility, since operators can adjust all available smart limits with a single tap, based on the unique Yarn Body concept. Each individual limit can be simply fine-tuned as preferred.

Users enjoy the established Quantum workflows and embrace the new customer-centered user interface with a 16:9 touchscreen on the 7th generation control units`.

Nothing gets in the way of success with this prevention strategy. Uster recognizes that today's challenges are tough, can be overcome with prevention, security and flexibility on your side – and Quantum 4.0 on your winding machine.