# PRACTICAL CASE

## USTER® *QUANTUM EXPERT 3* provides data to identify root cause of thin places

Why would a mill witness, all of a sudden, one of its linked winder producing higher thin place cuts? What could be the root cause of such irregularities? How did USTER® *QUANTUM EXPERT 3* help find the source of it?


In a spinning mill producing 100% cotton yarn with a capacity of 35,000 spindles staff observed a sudden increase of the number of cuts in the yarn caused by thin places (Fig. 1). In the process of checking all relevant factors it showed that the settings of the ring spinning machine and the pre-spinning machine were the same. It also came to light that the material from other ring spinning machines did not show these defects. An exchange with cops from other ring spinning machines made it obvious that the problem only happened with one particular ring spinning machine.

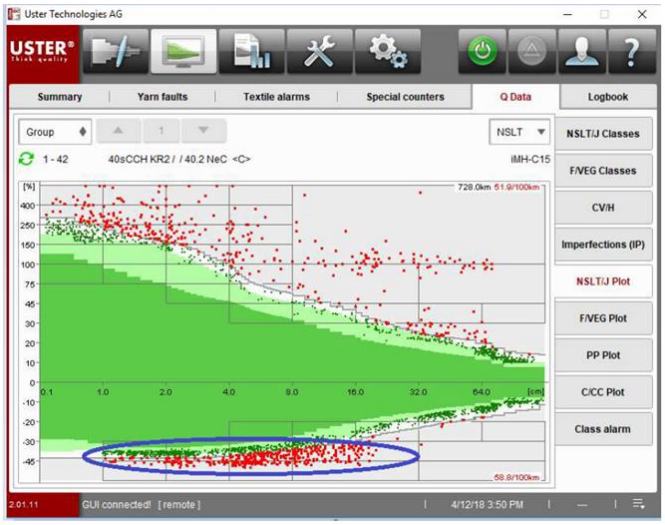


Fig. 1: Yarn Body™ showing a high number of thin places.

**USTER solution**

The analysis of the run-stop diagram, an integral part of USTER® *QUANTUM EXPERT 3* (Fig. 2), indicated that power failure had occurred before the yarn showed high number of thin places. The spinning machine had stopped functioning as a result of the power failure.

The advantage of the run-stop diagram is that it offers a true reflection of the running behavior of the machinery. Its reports are devised in such a way that the machines are not only shown schematically but are also demarcated clearly using different color codes. It has an in-built system that assigns color bar to specific faults automatically. The reports also include useful information about the frequency and the reason for a machine standstill at any given point in time.

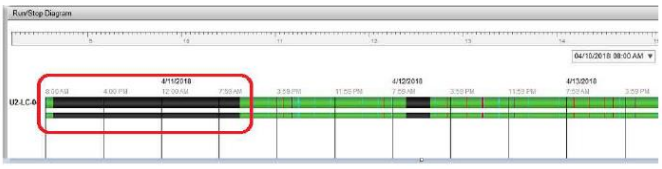


Fig. 2: Machine run-stop diagram of USTER® *QUANTUM EXPERT* 3

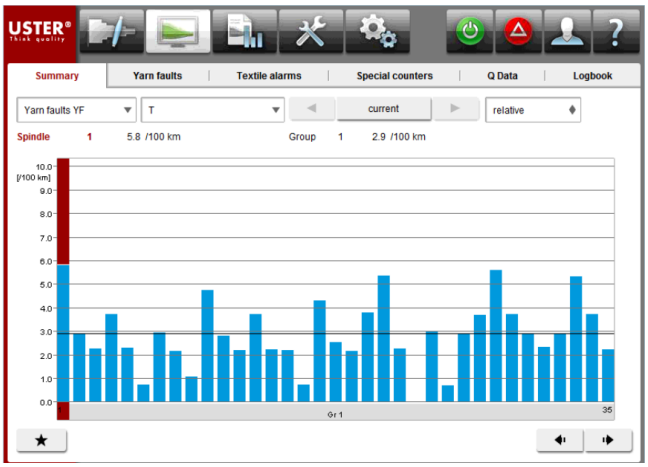


Fig. 3: 3 T-cuts/100 km before the problem started.


Fig. 4: 36 T-cuts/100 km after the problem started.

The evidence that the issue was caused by the power failure is proven by
- comparing the number of T-cuts/100 km before and after the problem occurred (Fig. 3 and 4)
- the fact that there was no difference or abnormality found in the settings in that particular ring spinning machine.

The analysis helped in finding a direct correlation between the ring spinning machine run-stop diagram and increased number of cuts. The ring spinning machine was restarted when the power was back and it was observed that the cuts caused by thin places had increased. The reason was the program had got corrupted and as a result, it had triggered a change in the roller speed in the ring spinning machine.

Further, it caused a mismatch between the delivery speed and the spindle speed in the start up phase of every doff. Due to this, thin places continued to occur on a few meters of yarn on all cops but on every doff. On a positive note, the whole cop remained unaffected by the draft change since the problem occurred at the beginning of the doff.

## Conclusion

USTER® *QUANTUM EXPERT 3* data must be focused upon and analyzed in detail. Yet, regular monitoring of cut data alone may not always be adequate in identifying and analyzing the root cause of the yarn defects.

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