PRACTICAL CASE

High level of thin places cuts caused by defective roving machine front roller

Yarn quality control starts with an effective alerting system for potential defects such as thin places. USTER[®] *QUANTUM 3* clearers do a great job here, but how can you trace the root cause? USTER[®] *TESTER 6* provides the answer, allowing a rapid and effective remedy here for a roving frame issue.



This spinning mill produces Ne 28 combed cotton yarn, and always works with a standard for T cuts (thin places) of 2-3/100 km on average, mainly for safety reasons. Over few days, the mill noted that T cuts by the USTER[®] *QUANTUM 3* clearer were reaching a high level of around 20/100 km. At the same time, the number of T alarms increased from nearly zero to more than 60 per day.

USTER solution

The spinner collected the bobbins with the T alarms to examine them physically. This investigation showed that the thin places were visible and were periodic (Figs. 1 & 2).



Fig. 1: The thin places were visible to the naked eye.

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Summary Yarn faults		Textile al	arms	Special counter	rs 🔤 Q Dat	ta	Logbook		
Machine v]			current					
						Ler	ngth	10107.6km	
Yarn fault alaı	rms								
	abs	/100km		abs	/100km		abs	/100km	
YA	85	0.8	CA	0	0.0				
			CCA	16	0.2	PPA	0	0.0	
NSA	0	0.0	PFA	0	0.0				
LA	0	0.0							
TA	69	0.7							
Q Registrations			Q Cuts	Q Cuts		Q Blockings	Q Blockings		
	abs	/100km		abs	/100km		abs	/100km	
Tot.	852	8.4	Tot.	0	0.0	Tot.	0	0.0	
СVр	849	8.4	CVp	0	0.0	CVp	0	0.0	
CVm	3	0.0	CVm	0	0.0	CVm	0	0.0	
CMT	0	0.0	CMT	0	0.0	CMT	0	0.0	
IP	0	0.0	IP	0	0.0	IP	0	0.0	
Hp	0	0.0	Hp	0	0.0	Hp	0	0.0	
Hm	0	0.0	Hm	0	0.0	Hm	0	0.0	

Fig. 2: Textile alarm display of USTER® QUANTUM 3.

The bobbins were then examined in USTER[®] *TESTER 6* and this verified the periodicity. The characteristics of the harmonics indicated that the problem was originating from the roving machine (Fig. 3).



Fig. 3: Multiple spectrogram mass of USTER* TESTER 6 showing the periodicity of the thin places.

The spinner examined all the spindles of the roving machines supplying material for this yarn. This revealed a defective front top roller on the roving machine, which was exchanged immediately.

Comparison of yarns from before and after the change to the roving machine confirmed that this was the root cause of the thin places. (Figs. 4 & 5).



Fig. 4: USTER[®] QUANTUM 3 YARN BODY[™] before changing the defective front roller



Fig. 5: USTER[®] QUANTUM 3 YARN BODY[™] after changing the defective front roller

Conclusion and Summary

- USTER[®] QUANTUM 3 was alerting for excessive T alarms, immediately they were occurring.
- Using USTER[®] *TESTER 6*, all the T alarms bobbins confirmed the visually identified periodicity and led the spinner to the root cause of the problem.
- USTER[®] QUANTUM 3, with its numerous possibilities to set alarms, provides the service spinners require: to be alerted when quality deviates from the standard. At the same time, analysis with USTER[®] TESTER 6 closes the loop of the quality control procedure.

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