

67% More Output at Remarkable Speed with the E 86



Xiajin Ruixin Textile Co. (Ruixin), based in Xiajin, Shandong, China, serves the high-quality market segment for combed compact twin cotton yarns. The family-run company has optimized its spinning process over its nearly 20 years in the business, and now produces 8 000 tons of yarn per year. And Ruixin continues to strive for excellence every day. To ensure that the high-quality requirements are also met in the future, Ruixin invested in six combers E 86 with ROBOlap option, including one combing preparation system OMEGAlap E 36.

The Challenge

Ruixin was impressed by the quality of the Rieter comber. Our goal was to prove that the E 86 is able to run at 525 nips/minute while maintaining an excellent fleece appearance. However, when running at such high speeds, the tendency for yarn faults increases – and so does the one for clearer cuts. The challenge was to prove to the customer that he could speed up his production without any compromise in quality. We were determined to show that our comber E 86 can overcome the challenges and deliver the quality Rieter stands for.

The Solution

We conducted a trial to prove that the comber could produce a sliver of an excellent quality at a significantly higher output than the competitor's machines. For this reason, we made a comparison between six of our combers E 86 and six combers of the competitors producing high quality combed compact twin yarn. The competitor's comber ran at 380 npm, while our machine could run at 525 npm with the optimal settings. Furthermore, the precise settings of the distance between circular comb and nipper together with the stable running behaviour of the E 86 results in a high productivity without compromising in quality. This resulted in an excellent output of 70 kg per hour which is 67% more than the competitor's comber delivered.

The Customer's Benefits

The E 86 can achieve better quality at this high production volume with 2% lower noil extraction than the competitor. In addition, the customer's high quality standards could be exceeded: The Uster clearer results have shown that the E 86 produces 60% fewer A0 and A1 yarn faults in comparison. The low number of clearer cuts was particularly positive; the E 86 had 12% fewer cuts than the competition. Moreover, Ruixin was able to reduce the cost for energy consumption and those for manual labor drastically. All in all, the comber E 86 brings a financial benefit over USD 220 000 per set and year. The company is greatly pleased with the continuous support provided by Rieter experts throughout the project. With their support, Ruixin has managed to exceed the initial target and is now able to produce even more economically than expected. Due to the reliability of E 86 and the stable running behaviour further increase of production is feasible and will be topic for future trials.



The Customer's Statement

"The E 86 can produce high quality yarns at much higher production than other suppliers. The ROBOLap system reduced the workload of operators in lap preparation and piecing. Constant setting of the comber brought stable quality over the whole year."

Mr. Jinxing Jiang, Owner and GM of Ruixin textile

Ne 20, Cotton Combed Siro Yarn	Competitor (6 combers)	E 86 (6 combers)	Δ benefit impact (USD per set/year)	Remark
Nipper speed	380 npm	525 npm		
Actual production per comber	42 kg	70 kg		67% more production
Feed rate	4.7	4.95		
Running efficiency	85%	93%	6 301	Savings of manual labour
Energy consumption	64.28 kWh/T	57.03 kWh/T	2 221	Energy price of 0.59 RMB/kWh
Noil rate	18.78%	16.35%	212 244	2% less noil extraction
Yarn cuts (per 100 km)	139	122	2 383	12% less cuts with E 86
A0 yarn faults	60.5	38.7		
A1 yarn faults	36	21.6		
Total neps in finished sliver (1/g)	12	7		80% of nep removal rate with E 86
Total USD 223 149				

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