

Fully Automated Combing System: Reduce Labor and Improve Production Efficiency



Anhui Fuchun Textile Co., Ltd., located in the pilot free trade zone of Wuhu city, specializes in the production of Ne 32 combed cotton yarn. These high-quality yarns are primarily supplied to its parent company, Wuhu Fuchun Dye and Weave Co., Ltd., for in-house usage in sock production. Fuchun Textile has invested in a completely new spinning mill including 40 combers E 86, six combing preparation systems E 36 and two fully automated lap transport systems SERVOLap E 26. These investments have not only reduced labor requirements but have also notably enhanced the overall efficiency of the combing process.

The Challenge

Fuchun strategically expanded its operations by investing in an own advanced automated spinning mill. This strategic move delivers a dual advantage. Firstly, it empowers Fuchun to replace purchased yarn with self-produced yarn, enhancing control over yarn quality and cost-effectiveness. Secondly, it enables Fuchun to diversify its yarn offerings, seizing new market opportunities due to the limitations of the existing sock market in accommodating the company's growing capacity needs.

In recent years, labor-related challenges have gained prominence in mill management. Notably, labor-intensive tasks such as lap transportation and lap changing during the combing process have emerged as significant operational hurdles. Fuchun Textile is firmly committed to reducing labor intensity and ensuring the mill operates at peak efficiency.

The Solution

The Rieter SERVOLap E 26, a fully automated lap transport system, efficiently moves eight laps from the combing preparation machine to the comber. Simultaneously, it automates the return of empty tubes to the combing preparation machine E 36, establishing a seamless material flow. The combers equipped with ROBOLap, enable autonomous operation of the combing plant, substantially reducing the need for skilled operators. This not only saves labor costs but also enhances combing process productivity.

Moreover, the ROBOLap's piecing operation consistently delivers superior piecing quality compared to manual piecing, resulting in a more uniform combed sliver.



The Customer's Benefits

Thanks to the high output of the Rieter combler E 86, Fuchun Textile achieves a daily production capacity exceeding 60 tons of combed sliver. This impressive capability allows for strategic production scheduling during off-peak electricity tariff periods. With downstream processing in place, Fuchun can precisely manage yarn and sliver quality based on the real-time demands of the subsequent processes. Notably, the Rieter combler boasts exceptional fiber utilization, maintaining the required quality even at a 13.5% noil rate, resulting in a 2% reduction in noil. This translates to reduced conversion costs and improved spinning profitability.

In terms of labor optimization, prior to implementing the fully automated combing system, Fuchun Textile required three operators for the combing preparation process per shift, and four operators for the combing process. Each operator manually handled 12 tons of laps and conducted 320 lap changes and piecings. The introduction of the Rieter fully automated combing system has successfully replaced manual lap transportation, changing, and



The Customer's Statement

"The Rieter combers deliver exceptional output and consistently high-quality sliver. When integrated into automated transportation and the lap changing and piecing system, they not only streamline operations but also significantly reduce labor requirements. This improves the overall efficiency of the combing process."

Mr. Lu Hong

Head of Production of Anhui Fuchun Textile Co., Ltd.

piecing, significantly reducing labor intensity and the need for highly skilled operators. Presently, the system has reduced the combing preparation team by one person per shift and the combing process team by two persons per shift. Operators now focus primarily on monitoring and cleaning, with the added convenience of can transportation, leading to a substantial reduction in their workload.

Anhui Fuchun Textile Co Ltd

FTZ North Weisi Rd&South Weiliu Rd
138 Jiuhua North Road
Pilot Free Trade Zone Wuhu District
Wuhu City 241000
Anhui Prov.
China

Rieter Machine Works Ltd.
Klosterstrasse 20
CH-8406 Winterthur
T +41 52 208 7171
F +41 52 208 8320
machines@rieter.com
aftersales@rieter.com

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