

Press release

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Trützschler's Integrated Draw Frame IDF 3: Unlocking the full potential of short fiber processing

Spinning mills worldwide are looking for solutions that combine higher productivity, stable quality and shorter processes, especially when processing short fibers. Trützschler's integrated draw frame IDF 3 has proven to be a powerful answer to these requirements. Evaluations from several customer trials in Türkiye under real production conditions highlight the strong performance of the IDF 3, particularly when combined with the next-generation card TC 30i.

Outstanding results with TC 30i and IDF 3

A leading Turkish spinning mill produces a 100% cotton rotor yarn (Ne 30/1). The mill compared its conventional set-up of one breaker and one finisher draw frame, running consistently at 90 kg/h, with a TC 30i card combined with the integrated draw frame IDF 3. While the conventional setup was limited to 90 kg/h, TC 30i and IDF 3 enabled a stepwise increase in production to 130 kg/h and later even 150 kg/h. Across all trials, the combination delivered higher and more consistent quality with lower IPI levels. These results confirm excellent process stability at significantly increased production output.

Further results from other Turkish spinning mills underline the competitive advantage of IDF 3 combined with the TC 30i. Another customer operates TC 30i cards equipped with IDF 3, in a rotor spinning line which processes cotton and cotton blends. The combination shortens the process and delivers a 33% increase in productivity compared to a conventional competitor setup, which included a breaker and a finisher draw frame. At the same time, consistently high quality is maintained. The customer reports that the decision to adopt the TC 30i and IDF 3 should have been made much earlier.

Proven performance beyond TC 30i

Another Turkish customer carried out trials using the IDF 3 combined with a TC 19i card, processing a blend of 50% cotton waste and 50% polyester. At a production rate of 130 kg/h, the IDF 3 process reduced IPI levels by around 50% compared to a conventional two-passage draw frame setup consisting of one breaker and one finisher draw frame. Even when the production rate was increased to 220 kg/h, the IPI values achieved with the IDF 3 remained below those achieved in the conventional process. Encouraged by these results, the mill management decided to remove competitor cards and competitor draw frames from the mill and to switch to the latest card generation, TC 30i, combined with IDF 3.

The proven solution for direct spinning

The success of IDF 3 lies in its ability to control short fibers reliably while enabling a shortened spinning preparation process. Results repeatedly show that the shorter the fiber and the higher the proportion of short fibers, the stronger the positive effect of the IDF 3 on sliver quality – resulting in improved yarn IPI values, better evenness and maintained yarn strength.

Conventional draw frames typically involve two drafting zones, which can lead to a higher amount of floating fibers, especially when processing short fibers. In contrast, the IDF 3 operates with only one drafting zone. With its special drafting zone geometry, the IDF 3 ensures reliable fiber guidance and effectively stabilizes floating fibers. Its unique design minimizes count variations and leads to more homogeneous sliver and improved yarn quality.

These effects become especially powerful when combined with the TC 30i. The card delivers material at high productivity levels and the IDF 3 keeps up this speed, even during can change. At the same time, this powerful combination reduces space requirements, compressed air consumption and operator effort. In this way, TC 30i and IDF 3 unlock the full benefits of direct spinning, particularly for applications with high short fiber content or recycled materials.

Visual Footage:



TC 30i and IDF 3 installation at a customer site in Türkiye.

TRÜTZSCHLER SPINNING



IDF 3 helps improve sliver quality, yarn evenness and strength – especially when processing higher short fiber content.

About the Trützschler Group:

The **Trützschler Group SE** is a German textile machinery manufacturer headquartered in Mönchengladbach, Germany. The company is divided into three business units: Spinning, Nonwovens and Card Clothing. **Trützschler Spinning** is the global technology and market leader in spinning preparation in the cotton and man-made fiber sector. With TRUECYCLED, Trützschler Spinning offers a complete solution in spinning preparation for state-of-the-art recycling of textile waste – from opening and cleaning to carding and drawing of secondary fibers, resulting in high-quality, sustainable yarns. **Trützschler Card Clothing** is the global market leader in the production of high-performance card clothing for cards and roller cards. **Trützschler Nonwovens** is a leading supplier of complete production lines and machinery for needle-punched, hydroentangled (spunlaced), through-air and chemical bonded nonwovens. Trützschler machines, installations and accessories are produced and developed in nine locations worldwide. This includes four factories in Germany (Dülmen, Egelsbach, Mönchengladbach, Neubulach), as well as sites in China (Jiaxing and Shanghai), India (Sanand), the USA (Charlotte) and Brazil (Curitiba). Local service companies in Türkiye, Mexico, Uzbekistan and Vietnam and local service teams in Pakistan, Bangladesh and Indonesia provide customer proximity in key regions for the textile processing industry. For more information visit: www.truetzschler.com