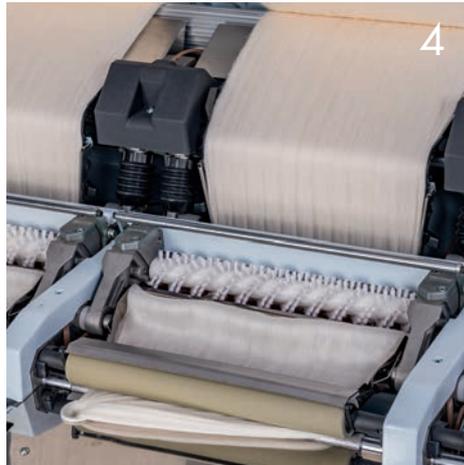


it's true



TRÜTZSCHLER

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Trützschler Group SE
Textilmaschinenfabrik

D-41241 Mönchengladbach
Postfach 41 01 64
Internet: www.truetzschler.de
e-mail: info@truetzschler.de

Editorial staff:
Dr. Bettina Temath
Kleo Knippertz
Michael van den Dolder

Cover picture:
The new Trützschler combing
TCO 21



Printed on 100 % recycled paper



Dear customers,
dear business partners,

After the corona pandemic has subsided in many markets, we at Trützschler have been experiencing a record order situation since the last quarter of 2020. We are pleased that so many manufacturers have chosen us as a partner for their investments and thank them for their trust. We are working at full speed every day to meet the exceptionally high demand despite global bottlenecks in raw materials and components, and to make our products and services available to all customers as quickly as possible.

In the process, we want to further expand our position as a full-range supplier in spinning preparation with a significant innovation: Our TCO 21 is a state-of-the-art comber that impresses with maximum productivity, simple handling and excellent yarn qualities.

In addition, we are constantly promoting the topic of sustainability in all areas of the company: The intelligent card TC 19i, for example, enables drastic energy savings thanks to quality and productivity leaps and modern drive and air technology. As a result, it contributes to the protection of our resources and at the same time increases the profitability of yarn production. This also applies to the successfully launched Pre-Cleaner CL-X, which showed great potential for energy savings while at the same time increasing cleaning performance.

Our experts at Trützschler Nonwovens are also continuously working on the advancement of sustainable solutions ("no plastic") such as the carded/pulp and wet-laid/spunlace lines for the cost-effective production of environmentally friendly disposable nonwovens, for example baby wipes.

Since the topic of sustainability has a social dimension for us in addition to the economic and ecological ones, the Trützschler Group is stepping up its global corporate citizenship activities. This year's establishment of the Trützschler Foundation in Germany is a milestone for us in this area – the charitable foundation supports children and young people in the fields of education, sports and research.

On a technological level, the introduction of the first 4-end tricolor system for carpet yarns was another highlight this year, as the TO40 from Man-Made Fibers allows the production of tricolor yarns with unprecedented productivity.

Now as before, we not only stand for innovative machine and installation solutions, but also for excellent service. Trützschler Card Clothing, for example, has established an excellent reputation in this field as the leading clothing supplier on the Indian market. We would like to build on all these success stories in the coming year and look forward to continuing on this path hand in hand with our customers and partners to provide them with the best products and services in the future. My sincere thanks go to all our employees, whose hard work and commitment have contributed to making this year a success.

I remain with warm regards and wish you all the best for the New Year, above all good health.

A handwritten signature in blue ink, appearing to read 'Dirk Burger'. The signature is fluid and cursive, written in a professional style.

Dr. Dirk Burger

The next generation comber machine

Author: Kleo Knippertz

Comber machines from Trützschler are already trusted by customers across the textiles industry and around the globe. Now, a state-of-the-art new design is building on this track record to boost productivity, ensure quality and support increased automation: Meet the TCO 21!



The state-of-the-art TCO 21 comber machine from Trützschler offers a range of easy-to-use features that boost productivity and quality

Higher productivity. Better quality. Less waste. The search for continuous improvement in the textile industry never ends. That's why innovators at Trützschler never stop exploring fresh ways of optimizing combing performance. The TCO 21 is the latest milestone in our long history of driving progress for spinners around the globe. It leverages market-proven designs and technologies from Trützschler to offer next-level performance and an expanded range of features that give our customers a decisive advantage over their competitors.

Powerful productivity and raw material savings

One of the key benefits of the TCO 21 is its advanced processing speed. This next-generation combing machine is able to produce at a rate of up to 600 nips per minute. This puts it at the very top of the market, offering best-in-class productivity. To increase this even further, the TCO 21 can perfectly be coordinated with Trützschler's highly economical JUMBO CANS (Ø 1.200 mm). They not only reduce yarn defects due to fewer piecings which leads to quality improvements, but also offer a significantly higher efficiency because of their larger dimensions. This, for example, has positive effects on the number of necessary cans and can transports – and results in lower personnel costs.

Excellent yarn quality

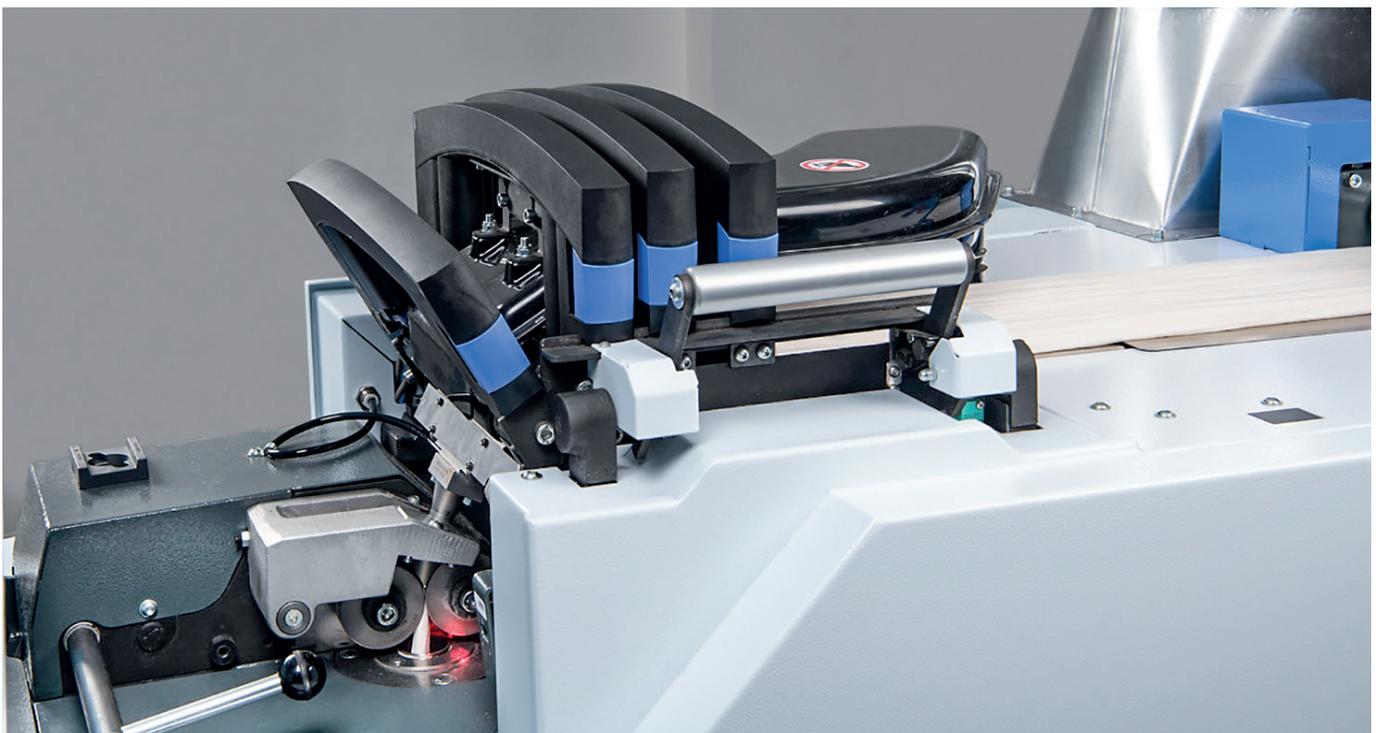
The TCO 21 comes with COUNT MONITORING as standard. This feature makes it possible for the machine operator to define limits for count variations via an easy-to-use display. Trützschler's DISC MONITOR system of sensors measures the count continuously, and the machine alerts the operator and switches off if the limit is exceeded. In addition, the COUNT MONITORING function also includes spectrogram analysis.

Customers can further strengthen their focus on quality by choosing to add the COUNT CONTROL function to the TCO 21. It is managed via the same easy-to-use display, and offers automatic sliver count measurement, as well as spectrogram analysis. On top of this, it automatically regulates the main draft during production to balance count variations and ensure the desired sliver count. This feature is particularly attractive for customers who manufacture blends of cotton and synthetics, as it can also be used to avoid variations in the overall yarn composition.

Automatic optimization

The TCO 21 joins the TCO 12 from Trützschler as the only combing machines on the market that offer an automatic PIECING OPTIMIZER technology. This technology does not require a single laboratory test due to two functions: First by adjusting the piecing time in the combing cycle (TIMING FUNCTION). Whereas the resetting of the detaching point (piecing time) is usually a very time-consuming task, it now takes only a few minutes and is performed automatically at a push on a button. Second the user is helped to select specific detaching curve types (CURVE FUNCTION) for their unique requirements.

The DISC MONITOR system measures the count continuously



The multi-colored T-LED display provides visual indications of the machine's status over a large distance



Easy operation

The TCO 21 is simple to operate and maintain. The SMART TOUCH display is fast and intuitive, and a Radio-Frequency Identification (RFID) sensor quickly identifies each user and adapts the information on the display to their individual needs. The multi-colored T-LED display provides visual indications of the machine's status or quality parameters over large distances which enables the operator recognizing them at a glance in the entire spinning mill. The TCO 21 is built with original Trützschler electronics that ensure top-class performance and durability: Our intelligent cooling system, that has already proven itself in the draw frame TD 10, contributes to a longer service life by reducing the operating temperature of electronic power components. Even if components have to be replaced at some point, the customer can keep his spare parts inventory small because he can switch also electronics spare parts flexibly between different machine types, e.g. cards and draw frames. The option to add an automatic greasing function perfectly completes the easy operation of the TCO 21.

The TCO 21 marks an exciting step forward in the constant journey toward more effective spinning processes. With its impressive range of modern and easy-to-use automated features, the machine is able to boost productivity and quality, while empowering operators to customize and optimize performance quickly and easily. It's the latest innovation that builds on Trützschler's tradition of providing state-of-the-art spinning preparation machines that give our customers a competitive advantage. And it's now available for sales around the world.

The TCO 21 marks a milestone in the journey toward more effective spinning processes



Benefits of TCO 21 at a glance



High productivity

up to 600 nips/minute

Top yarn quality

through COUNT MONITORING or COUNT CONTROL



Easy, intuitive operation

with SMART TOUCH, RFID and T-LED

PIECING OPTIMIZER

for automatic setting and optimization of piecing moment and detaching curve



Sustainable and intelligent

More than 2000 TC 19i sold worldwide
advance energy efficiency in carding

Author: Dr. Bettina Temath

Global energy consumption reached a record high in 2019, following a 40-year trend for rapidly increasing energy demand that was only halted by the Coronavirus pandemic.¹ It's estimated that more than 80 % of this energy is still generated from fossil fuels that produce CO₂ emissions and contribute to climate change.² Renewable energy offers a solution to this problem, but saving energy whenever possible is an even more effective approach. That's why Trützschler has developed the intelligent card TC 19i, which sets a new benchmark for energy-efficient carding.

Only the intelligent Trützschler card TC 19i features the unique T-GO gap optimizer, which continuously and automatically monitors and adjusts the carding gap to an ideal position during production. By now, more than 2000 intelligent cards sold worldwide prove quality and production leaps in the double-digit percentage range daily, thereby reducing energy demand per kilogram produced.³ Innovative drive and air technology further reduce energy consumption of the TC 19i. In this way, the TC 19i saves energy to help protect the planet – and also boosts profitability for yarn production.

The most energy-intensive elements in a carding machine are the drive, the dust suction process and the compressed air system. Permanent suction is needed to remove dust and cotton waste in key places. In contrast to Trützschler cards, many cards on the market also use compressed air for suction hoods in the pre-carding and post-carding areas, for example.

Smart optimization of these areas has made the intelligent card TC 19i a benchmark for energy efficiency in carding because it uses less electricity, lower suction pressure and less compressed air than other machines, while providing the highest production rates currently available on the market.

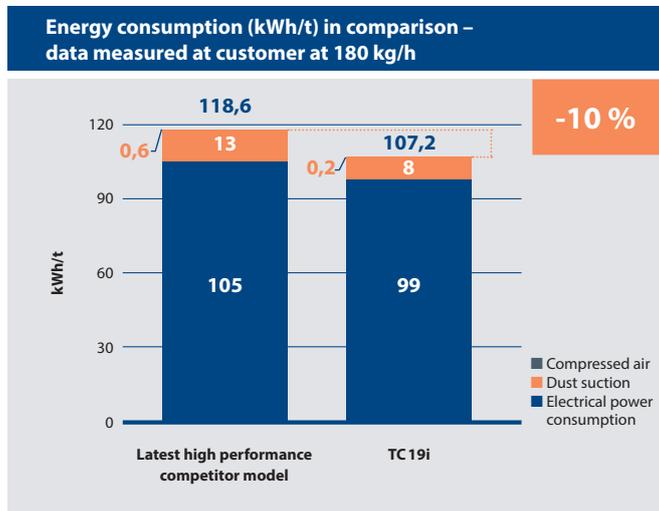
In a head-to-head comparison between the TC 19i and a high-performance card from a competitor, the TC 19i consumed at least 10 % less energy per kilogram of material produced when manufacturing rotor yarn from a cotton and cotton waste mix.

1) <https://www.statista.com/statistics/265598/consumption-of-primary-energy-worldwide/>

2) <https://ourworldindata.org/energy-mix>

3) Increased production leads to higher power consumption per hour. The increase in output outweighs this factor so that power consumption per kilogram of card sliver produced is lower.

The compared energy values included electric power consumption and energy required for suction and compressed air and were measured in both cards at the same production of 180 kg/h.



A 10 % reduction in energy per kilogram of sliver produced, as proven here by TC 19i, can have a significant impact on a spinning mill's profitability; annual savings worth a five-digit sum are frequently possible, depending on factors such as the output of the mill.

The customer trial also showed TC 19i's excellent reliability at the customer's usual production rate of 180 kg/h, and even demonstrated stable performance at 300 kg/h in the same application. Because the TC 19i with T-GO gap optimizer realizes maximum production rates at no compromise in quality, manufacturers can reduce their energy demand and investment costs drastically: Less machines are needed to achieve the desired output, and energy consumption per production (kWh/t) is reduced.

Sets the benchmark for energy-efficient carding:
the intelligent TC 19i



Energy-efficient air technology

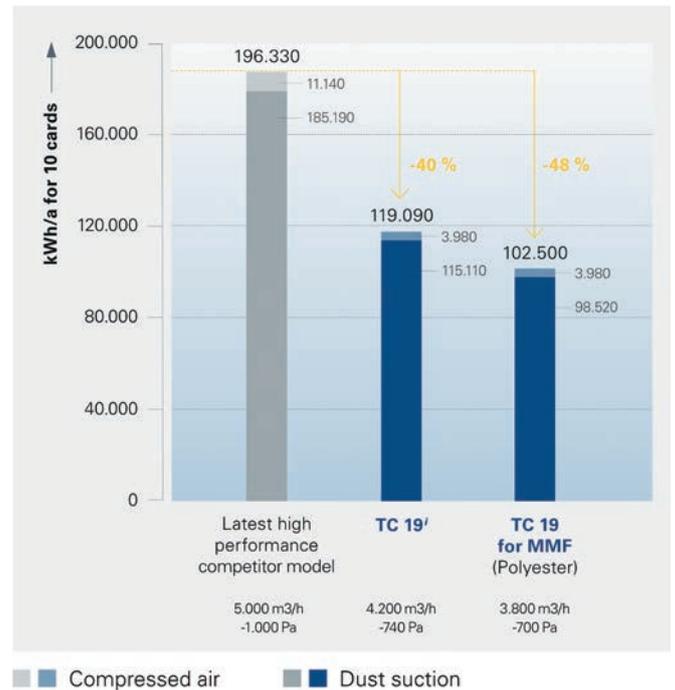
Next to increased productivity, air technology plays a pivotal role in the energy balance of the TC 19i. Christian Freitag, Head of Air Technology at Trützschler, explains how he optimized the TC 19i in this area: "First, we reduced the need for compressed air wherever possible," he says. "And second, we reduced suction pressure and air requirements for suction. All of our air collectors, for example, are carefully developed to eliminate potential resistance and facilitate an ideal flow."

This improvement was made possible by a long and sometimes challenging innovation process involving mathematical models of air flows, as well as flow simulations and prototypes. By combining the final flow-optimized parts in the TC 19i, Trützschler's experts have developed a card that operates with reduced suction pressure and air requirement. This translates into 40 % less energy demand for air technology compared to the latest high-performance competitor model.



Ralf Helbig, R&D Engineer for Air Technology (left) and Christian Freitag, Head of Air Technology at Trützschler (right)

"These achievements are fantastic – but we didn't stop there," says Ralf Helbig, R&D Engineer for Air Technology at Trützschler. "We have also made it possible to further reduce energy demand in polyester applications, which are increasingly important to our customers. In a polyester configuration, the TC 19i can reduce the necessary pressure for waste suction by a further 14 % because of improvements to elements in the pre-carding and post-carding areas, and the removal of suction hoods. The suction is still just as reliable – but it needs much less energy."



Example: 10 cards, 8,000 h/year, Cost of energy: 0,09 EUR/kWh
Air consumption values valid for all production rates up to 300 kg/h



Many trials are necessary to optimize air flows

Good for the environment – and for the balance sheet

With its unique gap optimizer T-GO, its state-of-the-art drives and optimized air technology, the intelligent card TC 19i is leading the market for energy-efficient carding. No other card can match its stable performance at such high levels of productivity, or its consistent quality and energy efficiency.

As a result, the TC 19i makes a valuable contribution to global sustainability – and makes mills even more profitable too.

How to reduce energy consumption in carding

Making smart investments.

Choosing solutions that achieve the required (or better) quality at the highest possible production rate allows to reduce energy consumption per kilogram of output produced. The single card's requirements for suction and compressed air should be as low as possible. In the best case the machine should also offer automatic adjustments for critical settings that affect energy consumption, e.g. carding gap setting.

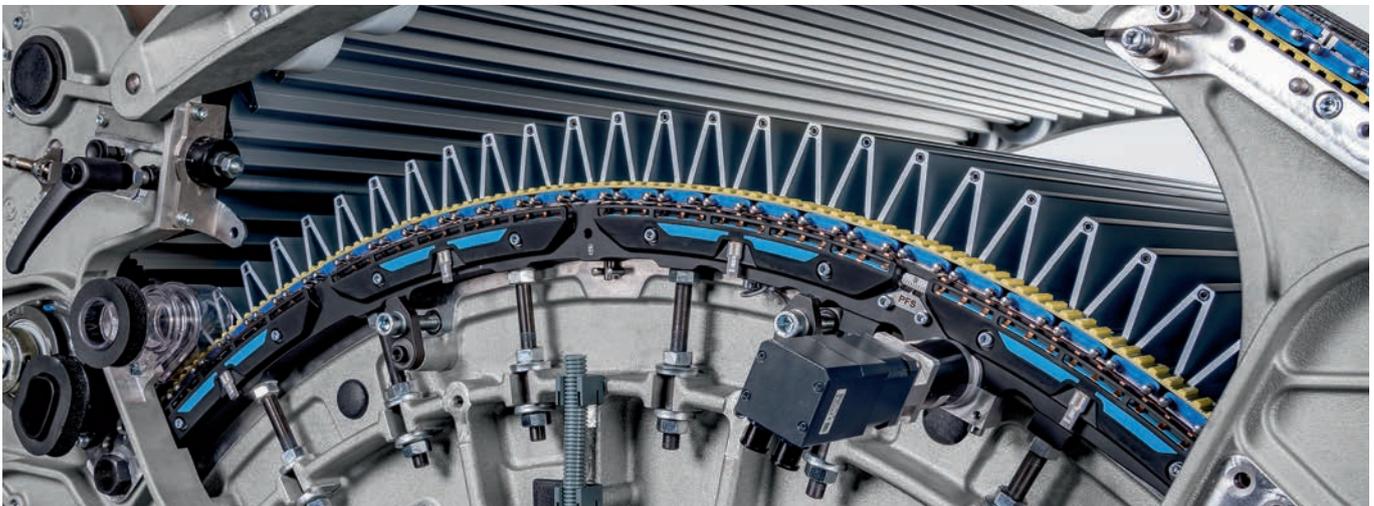
Choosing the right card clothing.

Using flat top clothings that are too fine, for example for man-made fibers, may lead to a higher rate of flat waste which results in friction between flat and cylinder. This will not only slow down the cylinder, but also increase energy consumption and the amount of unnecessary waste. Trützschler card clothing solutions and service ensure that you make the right choice for your application.

Optimizing card settings.

The carding gap should always be optimized with regard to the material and environmental conditions. If the carding gap is too wide, quality deviations might be the result. If the gap is too narrow, card wire might get damaged. When manufacturing man-made fibers, a too narrow carding gap can lead to excessive flat waste leading to friction between flat and cylinder.

The cylinder will need more energy for rotation. The TC 19i, for example, automatically and continuously adjusts the carding gap to those settings that are ideal for the respective cotton or man-made fiber materials. In addition, cylinder speed can be another lever for more energy efficiency. Realizing the desired production and quality with the lowest possible cylinder speed saves energy.



The TC 19i with T-GO gap optimizer allows for significant quality and productivity leaps which reduce the energy demand per kilogram of card sliver

Pre-Cleaner CL-X

demonstrates excellent performance after launch

Author: Dr. Bettina Temath

From the very beginning, the new pre-cleaner CL-X promised to be a gamechanger in the blowroom due to significantly increased productivity, lower energy consumption and excellent cleaning results. Shortly after launch, the CL-X proved to fulfill the above requirements in numerous customer applications – and is in high demand from all around the globe.

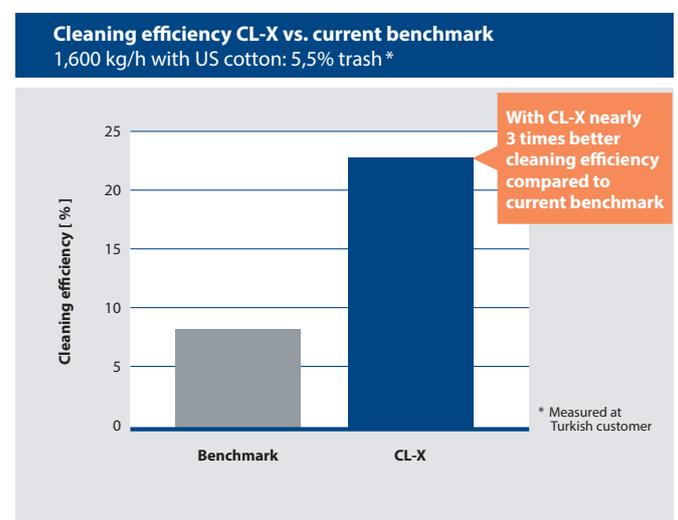
Voices from the market are enthusiastic about the new pre-cleaner: “Since the delivery of our CL-X in May, we have been very satisfied with its cleaning efficiency. We also see a big advantage in its usability – it is easy to handle even for employees with less experience which is a decisive factor in times of staff shortage and high staff costs. Automated processes simplify the handling immensely”, says this customer from China, for example. He is processing 100-percent Xingjiang machine pick-up cotton which usually has a comparatively high trash content. The CL-X reliably pre-cleans this raw material and thus allows for the production of a high quality carded ring yarn Ne 32. “Against the background of rising costs for raw material, energy and personnel in China, the CL-X proved to be the right investment” is the customer’s conclusion.

Harald Schoepp, General Manager Trützschler Textile Machinery China, adds: “The CL-X promises great potential in our market. We are pleased about the strong demand for this machine. Our customers are convinced by its efficiency and productivity. In many cases the CL-X can replace two pre-cleaners. This leads to space, time and cost savings.”

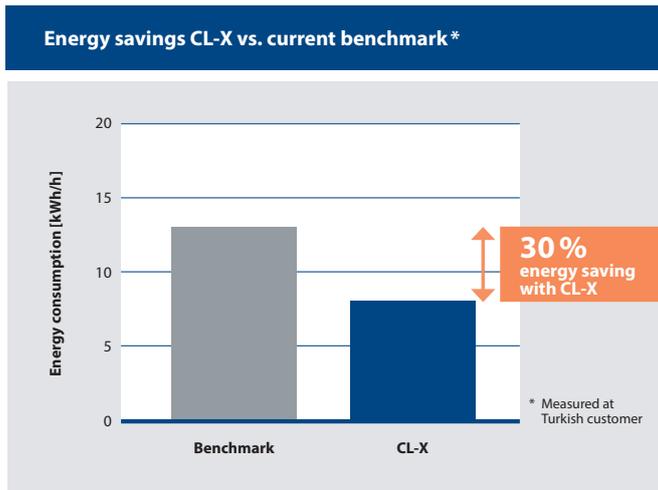
In other booming textile markets, such as Turkey, the CL-X is also gaining recognition rapidly. “The CL-X has taken our blowroom to a whole new level: It reliably and gently removes coarse contaminants like seeds and stalks as well as small impurities at the same time with minimum loss of good fibers. Thus, we can meet the requirements of a high-quality end-product even better”, says Mehmet Yilmaz, Business Manager at the company Biska from Turkey.

Biska, which is one of the leading yarn manufacturers in Turkey, is mainly committed to the manufacture of cotton and produces high quality carded, combed, compact and slub yarns between Ne 6/1 to 100/1. In the customer’s state-of-the-art spinning mill in Gaziantep, a total of four Trützschler blowroom lines, 42 cards and 22 draw frames manufacture 90 tons of cotton per day.

Biska and Trützschler started their long and successful partnership in the 1990s. As Trützschler solutions have never disappointed the customer, Mr. Yilmaz was pleased to have the first pre-cleaner CL-X installation worldwide. And he did not regret it – the results at Biska proved a three-times better cleaning efficiency compared with the current benchmark:



Another important motivation for the customer to introduce the CL-X was the promise of drastic energy savings. "When I started in this business, energy and personnel costs were about at the same level", he says. "But by now energy costs increased much more", explains Mehmet Yilmaz. "To save energy helps us to stay competitive – and to do something for the environment." Comparisons with the current benchmark in combed-cotton-yarn applications showed that the CL-X saved up to 30 % energy:



Christoph Weber, Managing Director Trützschler Spinning Turkey, sums up: "The extremely positive feedback from the market confirms that we have once again taken an important step towards future-oriented innovation with the CL-X. We have broken all previous order records in Turkey and are happy to provide our customers with the best solutions and services steadily."



CHECK OUT ALL
BENEFITS OF THE CL-X
IN OUR ANIMATION



Biska Business Manager Mehmet Yilmaz and Trützschler employees Eike Tammen, R&D Technologist, and Christian Freitag, Head of Air Technology, discuss the excellent cleaning results of the CL-X

Making wipes cleaner and greener

Technologies for biodegradable disposable nonwoven products

Author: Jutta Stehr

Every industry and company takes a unique approach to sustainability – but they all share the ultimate goal of cutting waste and preserving our planet for future generations. At Trützschler Nonwovens, we are constantly seeking ways of reducing the growing volume of waste generated by single-use products like diapers, hygiene textiles, wipes and pads, face masks and disinfectant wipes. Our first approach to this challenge? Biodegradable nonwovens for wet and dry wipes.

Cotton hygiene line



A big challenge for recyclers

Disposable nonwoven products are difficult to recycle because they contain different types of fibers. Baby diapers, for example, usually feature a top sheet made from ultra-thin spunlaid polypropylene, while the core contains fluff pulp with super-absorber particles. Wet and dry wipes, by comparison, often use viscose or polyester fiber blends or binder-bonded fluff pulp. The variation in the materials and design of nonwoven products presents major challenges for recycling companies. For this reason, most disposable nonwoven products are incinerated or sent to landfill – even though synthetic fibers like polyester or polypropylene do not biodegrade.

Governments around the world are introducing legislation for this category, in response to the rising demand for disposable nonwoven products and the growing volume of resulting waste. China and the European Union, for instance, have already launched strict rules for these materials. Altogether, there is an urgent need for sustainable solutions for this market. And our Trützschler Nonwovens team is fully convinced that biodegradable nonwovens are the best answer.

Biodegradable nonwoven products

When we talk about biodegradable nonwovens, we are referring to materials that are free from plastic and chemicals, and made from fibers derived from renewable sources. This might include natural fibers or cellulose-based materials like wood pulp and viscose or lyocell fibers. For single-use wet and dry wipes, organic matter like cotton or regenerated cellulosic fibers offer a sustainable option because they biodegrade. After being broken down by bacteria, these materials leave nothing behind except water, carbon dioxide gas as a result of natural decomposition, and the organic component of soil, humus.

For consumers, sustainability is becoming an increasingly important factor when deciding what product to buy – but functionality and performance are still the top priority. If a wet or dry wipe is flimsy or irritates the skin, consumers will not buy that product again.

Researchers at Trützschler Nonwovens have spent many decades exploring sustainable wipe technologies that also provide outstanding performance. The next pages show a few examples.

Cotton spunlacing line





1

Transforming traditional cotton fibers

Spunlaced cotton wipes are still very popular among consumers because they are soft, absorbent and strong, and they are perceived as being close to nature. However, cotton comes with two big challenges: processing and price.

For processing challenges, Trützschler offers several high-impact solutions. Our specialized roller cards – the NCR random card and the NCA airlay card – reliably and efficiently form high-quality cotton fiber webs. The NCR and NCA feature carding sections that switch away from conventional worker/stripper configurations and use a series of smaller, similar-sized rollers instead.

This reduces mechanical stress on fibers and minimizes nep generation. Several spunlacing line configurations are available for making excellent carded/spunlaced wipes, and can process virgin cotton fibers, blends containing virgin material and less expensive comber noils, or even 100 % short comber noils.

Nevertheless, due to price reasons cotton wipes will remain an excellent and sustainable option for premium markets.



2

Wipes made of 100 % viscose or lyocell fibers

Viscose and lyocell are highly absorbent and skin-friendly, which makes them a popular material for medical applications. As man-made fibers, they are both easy to process into carded/spunlaced nonwovens. And because they are spun from regenerated cellulose, they are also fully biodegradable.

Trützschler offers several inline configurations with NC or NCT high-speed cards that can be used for plain, structured or perforated wipe production. The line concepts for processing 100 % viscose or lyocell fibers are the same when using the popular polyester/viscose fiber blends. High-speed lines feature 2 inline NCT cards, crosslapped webs with a balanced MD/CD ration are delivered by a NC card preceding and an optional second NC card succeeding the crosslapper.



3

Innovating for pulp-based wipes

Paper-grade pulp is a relatively new material for wipes. To explore its sustainable properties, we launched a partnership with the wet-laying specialist Voith in 2013. Together, we have brought two exciting technologies to market.

The first of these innovations is wet-laid/spunlaced nonwovens (WLS). This involves a blend of pulp and short-cut viscose/lyocell fibers that are dissolved in water and laid on an inclined wire to form a homogeneous, random web. Subsequent spunlacing can be used to create flushable materials or strong, biodegradable baby or body wipes.

The second breakthrough technology is carded/pulp (CP) products. These nonwovens are composites that feature a wet-laid pulp layer that provides volume and absorbing capacity, as well as a carded web layer from viscose or lyocell to give strength and softness. The AquaJet is able to bond these two layers in order to create affordable and sustainable wipe materials.



Disposable nonwoven products make life more hygienic, safe and comfortable. This appeal is at the heart of the rising demand for these products. However, growing environmental concerns and increasing legislation are generating an urgent need for more sustainable wipe materials that are still able to deliver the level of performance consumers expect.

Innovators at Trützschler Nonwovens have developed a range of biodegradable technologies for wet or dry wipes that offer a valuable and environmentally responsible response to these trends – for premium and mass-market products.

Celebrating 20 years of success and making big plans for our future

Author: Yu Zhenzhen

2021 marks the 20-year anniversary of Trützschler's first subsidiary in China, the world's largest textile market. For two decades, our colleagues at the 42,500-square-meter facility in Qingpu, near Shanghai, have been building customer relationships – and building business success for Trützschler Textile Machinery (Shanghai) Co., Ltd. (TTMS). It's a story of great people, amazing innovations and outstanding service. And we've got big plans for the years ahead...

Opening ceremony of TTMS Shanghai in 2002





A big milestone in the history of TTMS: The delivery of the 8000th card to the Chinese market in 2021



Harald Schoepp, General Manager TTMS

Deep roots and steady growth

Today, Trützschler has a strong presence in China – but we had to earn that position by listening to customers and building our knowledge of this fast-paced and constantly changing market. Our learning process began in 1988, when we started exporting our DK 714 carding machines from Germany to China. As demand for our machines grew, we collected regular feedback from our customers in China to understand their needs and offer value-adding innovations. By founding TTMS in 2001, we committed to our customers in this country and began developing next-generation machines that could meet their shifting requirements. The TC 05, which was launched in 2008, in particular, was an incredibly popular innovation that opened up the Chinese market for Trützschler. It was followed by further successful models like the TC 8 and TC 10 up to our latest card generation, the 1.28-meter-wide TC 15, which already set new benchmarks. With the delivery of the 8.000th card to the Chinese market in 2021, we have reached a big milestone in the history of TTMS.

This passion for customer-focused research and development is at the heart of our success in China – and it will be at the heart of our future success too. Our teams continue to upgrade and reimagine our products and services to maximize the value we create for our Chinese customers. Trützschler's mission is to lead the development of the textile industry by constantly exploring new technologies, and we are only able to do this because our customers trust us and collaborate with our expert teams. As a family-owned company with a culture of honesty and integrity, we interact with our customers in an open and uncomplicated manner. This combination of innovative technologies and excellent service enables Trützschler to be quick and flexible, which is extremely important in such a dynamic market.

Embracing Chinese culture and empowering Chinese customers

Harald Schoepp has first-hand experience of our company's progress in China. He is General Manager of Trützschler Textile Machinery China, and has worked for Trützschler Group for more than 40 years. "When I came to China in 2003, I faced the same challenges in my own life that Trützschler faced in this market," he said. "We didn't know enough about the Chinese culture and the textile market here. That's why we were so lucky that our Chinese colleagues helped us to understand the way of doing business in China and supported our efforts to adapt our products and strategies for this unique market."

Schoepp continues: "At the beginning, our products were designed to meet the needs of a small segment of the market in China, and our sales volume was quite small. We wanted to introduce our products to more Chinese spinning mills and show how they boost productivity and quality without raising costs. As we gained a better understanding of the needs of Chinese customers, we changed our designs to support them even more effectively. For example, twenty years ago, we found out that Chinese customers only needed one licker-in roller instead of three. Now, as machine-picked cotton becomes more common, we have switched back from one licker-in to three. It's important to keep up-to-date about market changes – and we're going to make sure we do exactly that as we develop our next generation of innovations for China."



TTMS building in Shanghai

A success story supported by strong service

Trützschler's achievements in China are a direct result of our unwavering commitment to dedicated and expert customer service. "Our Sales team wins us the first order from a new customer, and the outstanding performance of our machines wins their respect. However, our success in China is built on strong and long-lasting relationships with our customers. Those relationships exist because we provide outstanding after-sales service – it makes sure equipment provides our customers with reliable and value-adding performance for a very long time", says Chen Jie, Spinning Machine Sales Manager for TTMS. He joined TTMS in 2001 and meanwhile looks back on ten years of professional experience in service as well as another ten years in sales. "Trützschler is a family business and it feels like a big family – among our customers, as well as our team. My work makes me realize that our great reputation in China is also generated by the close cooperation between all our departments working hand in hand every day."



Our Customer Relationship and Technical Marketing Manager for China, Mr. Yuan Dezhu, echoed this sentiment. "Trützschler Textile Machinery (Shanghai) Co., Ltd.'s presence in this market is a powerful example of how a foreign-owned enterprise can succeed in China, especially in the textile machinery industry," he said. "Our market share is still growing as we continue to introduce advanced technologies for our customers here."

The 20-year anniversary of our factory near Shanghai is an important moment to reflect on our experiences in the Chinese textile market – and to reinforce our ambitions for the future. These ambitions include a strong focus on our nonwoven business, which has constantly expanded during our time in China. In fact, Trützschler established a second wholly-owned subsidiary in China in 2019 to produce and sell equipment for the nonwovens industry, and to provide a range of spare parts and service options. A new site for this business is now under construction and will be completed in November this year.

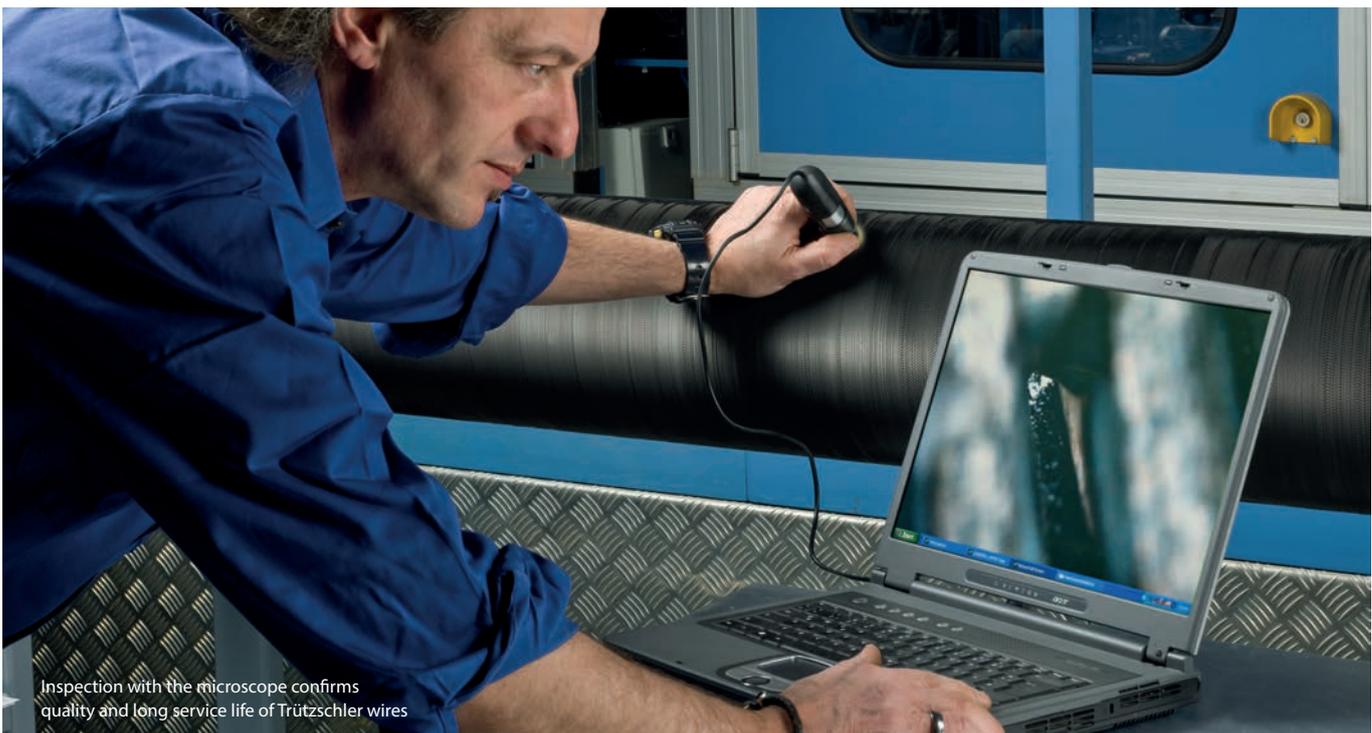
Of course, we plan to invite our colleagues and customers to celebrate the opening ceremony for this new facility, and to honor the 20th anniversary of Trützschler Textile Machinery (Shanghai) Co., Ltd. Together, we can share memories from our success in China – and turn this great momentum into great momentum for our shared future.

Chen Jie, Spinning Machine Sales Manager for TTMS, and Ms. Yang Si, the second management generation of Hubei Shufeng Textile Co. Ltd. where the 8000th Trützschler card was installed in 2021 in the Chinese Market

Trützschler Card Clothing: Condenser wires for roller cards

Author: Yu Zhenzhen, Jutta Stehr

In nonwoven web production, rollers and wires work hand in hand to perform important tasks including fiber opening, separating, parallelizing, randomizing, condensing and fiber transport. The geometry and quality of the wires have a significant impact on production efficiency and on the final quality of the finished web. Low-quality wires increase the probability of frequent maintenance and cleaning. Trützschler Card Clothing's (TCC) new generation of condensing wires are the solution to this problem in the card's doffing section: Their unique geometry and premium processing ensures their durability and promises our customers a long-term success – goodbye frequent condenser roll cleaning!



Inspection with the microscope confirms
quality and long service life of Trützschler wires

What is the problem?

For end products requiring a high-volume web, for instance all kind of wipes, condensing rollers are built into the roller card's doffing section, with two on the top and two at the bottom. The slow-rotating condensing rollers fold fibers up and thus increase the volume of the nonwoven web. Low-quality condensing roller wire can cause serious wrapping on the roller. That means frequent shutdowns, cleaning and maintenance – which costs time and money, and has a negative impact on the availability and stability of the production process.

What is the solution?

Condenser wires from Trützschler Card Clothing have a proven track record of solving this problem – and they are recognized by customers including Wangjin, Nanfang, Tianlun, Sunshine and many other high-profile companies. Our solutions are able to significantly reduce fiber accumulations because they feature a special combined surface treatment and hardening processes, as well as a unique tooth geometry. Wires from Trützschler Card Clothing help our customers to achieve excellent performance when using roller cards from Trützschler, or roller cards from any other OEM.



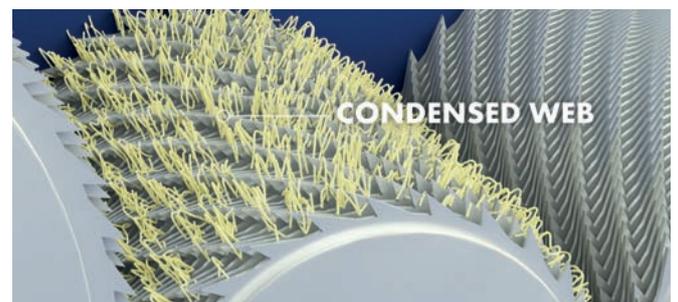
Why choose a Trützschler card clothing?

Trützschler Card Clothing offers a wide range of features that provide outstanding performance. This includes:

- R&D expertise and close collaboration
 - 80 years of experience in developing clothing
 - Efficient development combined with the Trützschler card and roller card machines
 - Precision experiments in the Trützschler Nonwovens Technical Center in Germany
- Top quality and service life through optimized material base and processing technology
- Professional, responsive service team and a comprehensive offer of tools and accessories for daily maintenance

Unleashing the maximum potential

TCC offers more than 400 types of wire for every roller on the machine. Customers can select the best possible wire for their needs depending on the roller card configuration, the type of raw material that is being processed, the production rate and several other key process parameters. When each clothing is correctly selected and well matched, it is possible to achieve the best possible performance of the roller carding machine. And when each individual wire and every interaction between two rollers is perfect, customers are able to unleash the maximum potential of the roller card – and turn a common problem into a unique competitive advantage.



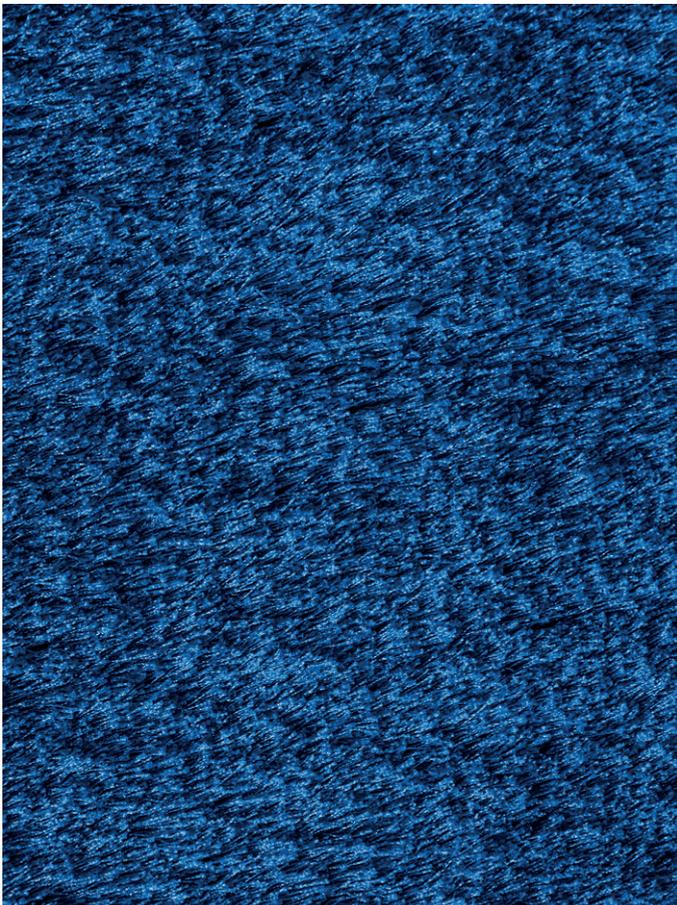
TO40 puts color into carpet

Trützschler introduces the first 4-end tricolor system

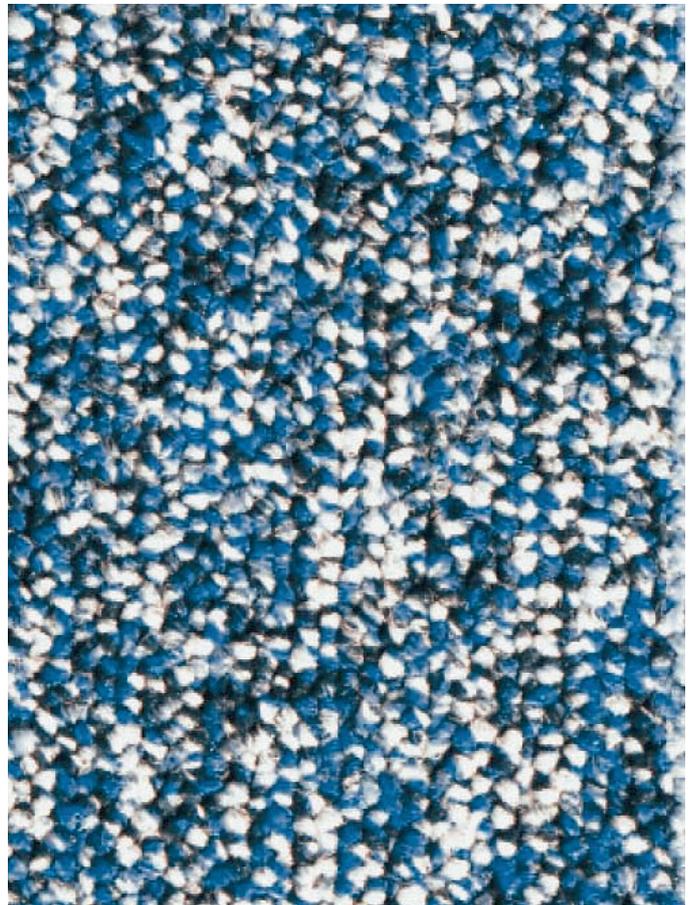
Author: Jutta Stehr

At ITMA Asia 2021, the time was right: Trützschler Man-Made Fibers introduced the TO40. The first bulk continuous filament (BCF) system based on the 4-end OPTIMA platform serves the small, but fine niche market for tricolor yarns. The BCF OPTIMA family thus covers the entire product spectrum for carpet yarns made of polyamide, polyester and polypropylene – from fine to coarse qualities. All 4-end systems offer the highest productivity to customers.

Close up of a monocolour carpet



Close up of a tricolor carpet





From spinning to bobbin

Mono- and tricolor yarns

Most extruded carpet yarns are monocolored, i.e. single-colored. Depending on the material, they are dyed using different processes: Polyester and polyamide are often extruded and spun without dyeing. Since no color pigments are added during extrusion, the finished bobbins are raw white. They are either subsequently dyed or the finished carpet is printed. Polypropylene, however, is already melted with color pigments in the extruder, since the untreated polymer does not absorb color due to its chemical properties as a yarn.

In addition to these monocolored BCF yarn packages, there is also the niche of three-color, so-called tricolor yarns, which receive their color effects already during the primary manufacturing process. The image shows a black/medium gray/light gray tricolor yarn in which the individual color sections stand out clearly. The TO40 from Trützschler allows the production of such a yarn with an unprecedented productivity.



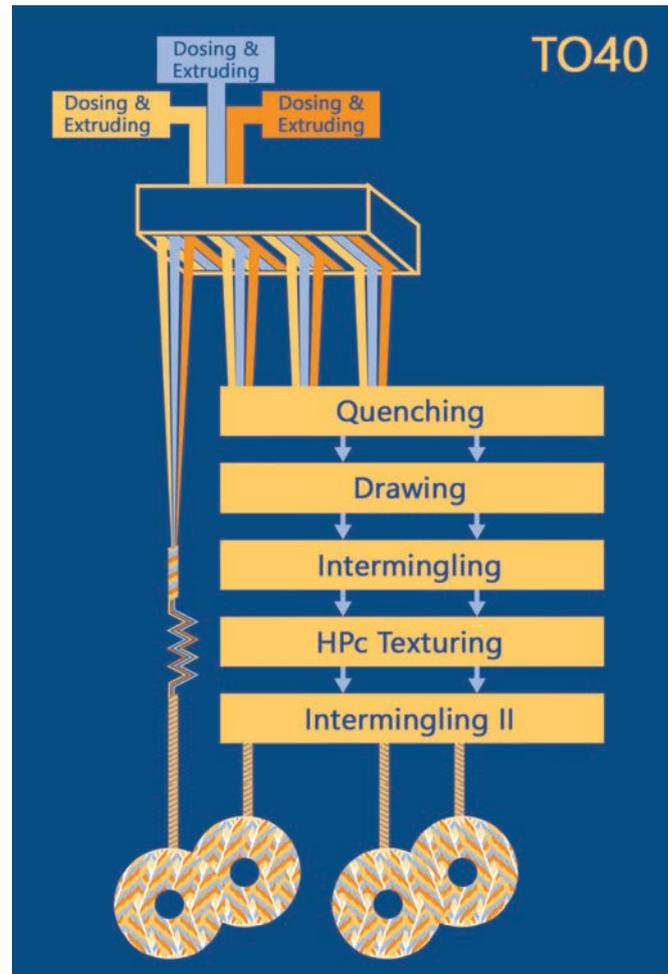
black/medium gray/light gray tricolor yarn

The production process of tricolor yarns

The production speeds of all BCF processes are well above 3,000 meters per minute. How does color reach the yarn at these high speeds? Since the process is far too fast for the color to be applied in the machine, the solution lies in the nature of BCF yarns as multifilaments.

Unlike staple fibers, filaments are continuous yarns. They are formed when molten polymer from the extruder is conveyed at high pressure through the melt line to the spin pack. The core of the spin pack is a metal plate with many fine nozzles through which the polymer is extruded or "spun". The result is a multifilament made of dozens or even hundreds of individual filaments, which is then wound into a bobbin. OPTIMA is a 4-end system, meaning that the machine simultaneously spins four multifilaments, each with many individual filaments.

In a tricolor machine, three small extruders, each with its own metering system, replace the large extruder of a monocolour machine. The spin pack contains three separate inserts with smaller plates instead of a single large nozzle plate. Each extruder supplies "its" own nozzle plate from its own melt line. In the example of the yarn on page 24, this means specifically: Extruder 1 melts the polymer chips with black color particles, while extruder 2 and extruder 3 use medium gray and light gray pigments, respectively. At the final stage, the spun multifilament is made up of three differently colored bundles of individual filaments. To obtain the characteristic properties of a BCF yarn, the filament is stretched, textured, entangled and wound up. The entangling of the single filaments is an essential step in the tricolor process: Depending on the position and type of nozzles, a more or less uniform color distribution is produced in the yarn.



TO40: the first 4-end tricolor system

TO40: the first 4-end tricolor system

Until now, the demanding tricolor processes were limited to 1-, 2- or 3-end BCF systems. For the TO40, the previous 2-end solution of the T20 is adapted to the OPTIMA platform – resulting in the possibility of spinning four yarns in parallel.

Due to the different chemical characteristics of the three-color additives, tricolor yarns require particularly gentle treatment. The MO40-E has already proven that the OPTIMA concept meets this requirement and is excellently suited for the production of sensitive yarns, because low-dpf yarns also require particularly gentle processing due to their fineness and quantity of individual filaments. In this context, the advantage of the absolutely symmetrical yarn path, which transports each yarn from the chute to the bobbin without major deflections, is particularly evident.

Two robust 2-end winders wind the yarns into four perfect yarn packages. The great advantage of the 4-end solution is the absolutely uniform thermal and mechanical treatment of all four yarns. This ensures that the yarn on all packages behaves identical in the downstream processes.

The extrusion and spinning of BCF yarns is an art: The line must run 24/7 to minimize conversion costs. The TO40 meets this requirement. It is OPTIMA-based and features the proven components in extrusion, spinning and the drafting system. As a result, downtimes can be reduced to a minimum, even in the production of sensitive yarns.

Trützschler Card Clothing on a growth path in India

Author: Shiladitya K. Joshi

Today, more and more mills across India put their trust in products and services from TCC – a brand operated by Trützschler India's Card Clothing division. The rapid growth of this brand in the Indian market is a success story that started 10 years ago, when our local Trützschler team began manufacturing flat tops with imported pin-setting machines from our parent company in Germany.





Mr. V. Karthikeyan with his team members



TCC "Service on Wheels"

Since then, we have gained a deep understanding of every aspect of manufacturing for card clothing. Now, TCC is established as a complete manufacturer of metallic card clothing, stationary flats, flat tops, fillets and major accessories. In addition, we also provide wires for new generations of cards from other manufacturers, as well as for the entire range of innovative cards from Trützschler.

Outstanding technical support

We operate this business under the overall TCC brand umbrella. Our team provides a comprehensive range of technical support, sales consultation and Quick Audit. This is a key success factor for our customers because card clothing is a critical process that requires very specific technical service expertise. Pan India technical support to customers is being provided by Mr. V Karthikeyan and his competent team. This expert support – together with the outstanding level of service from the Sales team at ATE Enterprises Pvt Ltd – has made TCC a formidable player in the card clothing market in India, with superior products and services that give our customers a valuable competitive advantage.

Innovative service concepts

Our TCC brand also offers a unique range of service options that have played a key role in our impressive growth in India. This includes card clothing service stations that operate in stock yards within important textile hubs across India – such as Coimbatore, Guntur, Chandigarh, Panipat and Ahmedabad. These centers are all equipped with the latest original equipment from Trützschler, like our own universal roller mounting machine, tops clipping machines as well as flat top grinding machine and cylinder grinding machine. On top of this, customers also value our "Service on Wheels" concept – the first service of its kind in India. Trützschler has a fleet of vans that feature the latest re-sharpening equipment, and we drive these vans to visit mills across the country. Experienced technicians then provide all necessary technical services at the customer's site, and can also deliver products at the same time.



ATE and TCC team in Coimbatore

Boosting quality with customer-centric contracts

Our TCC team also offers a range of service contracts to help our customers get the maximum value from their card clothing processes. Wire Management contracts, for example, cover service support from TCC experts throughout the entire product life cycle. Our experienced technicians take care of clothing maintenance tasks at the right time and with the optimal frequency to maintain consistent quality and enhance the working life of the clothing.

Our Life Cycle contracts are another alternative. Many mills in India value these contracts with TCC because it includes regular training programs for technical teams at the mill. In this way, customers are able to enhance their knowledge of card clothing and achieve excellent sliver quality by establishing an optimized and systematic maintenance approach for the card clothing.

A proven partner

This combination of innovative products and fantastic technical service has driven TCC to become a popular provider for card clothing customers across India. Our growth in this market is a powerful indication of the positive impact that we are able to make by working hand-in-hand with our customers. We are excited about the next steps on this growth path in India.

Supporter and companion

Trützschler establishes the Trützschler Foundation

Authors: Kleo Knippertz, Dr. Bettina Temath

This year, Trützschler has created a charitable foundation: the Trützschler Foundation. The Foundation's main focus is on supporting children and young people with learning and education, sport and exercise, and science and research.



Caroline Lange, Chairwoman of the Board of Directors (left), and Georgina Schrötgens, Member of the Board of Directors (right) of the Trützschler Foundation

“As part of the fifth Trützschler generation, we have a social responsibility that we would like to express in a special way through the Trützschler Foundation,” explains Caroline Lange, who, together with Georgina Schrötgens, is a member of the Foundation’s Board of Directors.

“We see the foundation as a supporter and companion and want to give something back by offering young adults equal opportunities for education and support for personal, free development,” adds Georgina Schrötgens.

Many exciting projects are already in the planning and implementation stage. The initial focus is on supporting local educational and sports projects for children and youths in the Mönchengladbach area.

In the long-term, the Foundation also wants to get involved beyond the limits of Mönchengladbach. At its production sites in USA, Brazil, India and China, Trützschler has been supporting charitable projects for many years, such as the German Language and Culture Foundation in North Carolina or the Trützschler Training Academy in India.

Social commitment as part of the Trützschler DNA

Social commitment and the dedication to sound training opportunities for youths and young adults have a long tradition at Trützschler: Ever since the company was founded more than 130 years ago, Trützschler has promoted civic engagement.

At the parent plant in Mönchengladbach, Trützschler has been accompanying young people on their way to their first vocational qualification for more than 70 years. The special value orientation and partnership for which our company stands are also reflected in the personal motivation of those involved:

“I consider voluntary work as an absolute enrichment. Making an active contribution to the lives of many children and young people also expresses my personal gratitude,” says Caroline Lange.



TRÜTZSCHLER
FOUNDATION

Scan the QR code
and get directly
to the Foundation’s
website



Many locations, one DNA: Corporate Citizenship at Trützschler

Author: Kleo Knippertz



NORTH CAROLINA, USA

Zeitgeist Foundation

Since 2019, American Trützschler Inc. has been one of the active sponsors of the North Carolina (N.C.) Zeitgeist Foundation. It was founded in 2014 by Klaus Becker, Honorary Consul of the Federal Republic of Germany, and serves to promote German-American relations in North Carolina in the areas of business, sports and culture.

CURITIBA, BRAZIL

Hospital Erasto Gaertner

In 2020, Trützschler Industria e Comercio de Maquinas Ltda. (TRUINCO) supported the Erasto Gaertner Hospital in Curitiba with donations. Within the scope of extensive renovation work, TRUINCO contributed to the technical upgrade of the children's cancer clinic as well as the unit for patients over 60 years of age.

Visit the website and
get information
about all our projects:



Trützschler has been involved in various charitable projects for many years – from educational programs for disadvantaged school children to promoting German-American cultural exchange. Read more about our activities at our locations around the globe here.



Photo: A. Kraushaar

SCHÖMBERG, GERMANY

Cuddle room

Children's Hospital, Schöenberg

As of 2019, the Schöenberg Children's Hospital has a "cuddle room", the installation of which was financially supported by Trützschler Card Clothing as part of a community project. Founded in 1972, the clinic is one of the first specialized pediatric neurological hospitals in Germany. The patients treated include children and adolescents with autism spectrum disorders as well as xenophobic and auto-aggressive behavior.

AHMEDABAD, INDIA

Mobile Science Labs / Agastya International Foundation

A uniform and practical approach to education: This is the goal of the so-called "Mobile Science Labs", of which Trützschler India Pvt Ltd (TIPL) has already purchased two (2015 and 2016) for the Agastya International Foundation. Since then, TIPL has contributed annually to their operating costs, including teachers' salaries. Primarily in rural areas, Agastya's "Mobile Science Labs" support disadvantaged school children in grades 5 to 10 as well as their teachers through hands-on, interactive learning methods in science education.



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Cleaning expert. Drastically improves cleaning efficiency due to an individual, stepless adjustment of the grid devices and opening roller speeds.

Energy saver. Consumes 30 % less energy* thanks to an optimized fiber air flow.

Lot manager. Automatically customizes the intensity of cleaning to the changing material quality.

Fiber guardian. Offers an automatic adjustment recommendation of waste suction with its integrated WASTECONTROL sensor.

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* compared to current benchmark