CARDS

GETTING FIBERS INTO SHAPE

TRÜTZSCHLER
SPINNING

CARDS

Experience interactive added values with our Trützschler Spinning App

1. **Download the app**
   You can use the Trützschler Spinning App with Android devices as well as iPhone and iPad. Download the app free-of-charge from the Google Play Store (≥ Android Version 4.1) or the Apple App Store (≥ iOS Version 8).

2. **Use the Smartview function**
   Open the Trützschler Spinning App and activate Smartview in the drop-down side menu.

3. **Scanning and viewing additional information**
   Scan the entire page that contains the scan icon with the Smartview function. Touch the screen to play the video. Get started.

www.truetzschler.com/apps

Business partner, with the emphasis on partner
Those who choose Trützschler will receive added values that cannot be taken for granted in view of the increasingly fierce competition. But in our opinion they are imperative.

Reliable and close
For four generations we have demonstrated that our word carries the same weight as a contract elsewhere. Though business numbers are taken seriously by us, we will not bow to them. Instead, we rely on real customer proximity in the textile markets of this world through our international production and service network.

Always innovative
Our actions, which are based on long-term success, ensure that you have a partner that is always available. But also the security to continuously profit from technical innovations that can only be provided by Trützschler in this quality.

In short: Trützschler attaches importance to commercial success, but even more to long-term partnerships.

Customer benefits, with emphasis on benefits
What constitutes a good production installation? Definitely a low TCO (Total Cost of Ownership). The only response of some machine manufacturers is to lower investment costs. We use a different approach.

Compact and secure
The small footprint of our machine technology and its high safety level are good for n ature and user. One results in lower building and operating costs, and the other protects the operator during his work.

Long-term efficiency
Our installations convince in terms of a well-known long service life and low energy consumption. At the same time they make the best possible use of valuable raw materials. Our intelligent technologies retrieve additional good fibers even from alleged production waste. The beauty of this particular type of environment protection and resource conservation lies in the fact that it benefits nature and your production equally.

Anyone who expects sustained added value from an installation throughout the entire production process is demanding – and a Trützschler customer.

Trützschler Card TC 15

Success based on four pillars: Quality, productivity, flexibility and costs

Anyone who wants to assume a leading position on quality in international competition must simultaneously "adjust" productivity and be able to quickly respond to changing requirements.

Quality at the highest level

"The length of the carding section determines the quality". Even though this has been common knowledge for some time, Trützschler is the only one with the longest carding section worldwide. For this reason, Trützschler cards have set the standard for quality for decades. The valuable raw material cotton is optimally used, which ultimately also contributes to an increase in productivity.

15% more productivity

Since the introduction of the new card generation in 2011, continuous developments have allowed a further increase in productivity of many individual TC 15 elements by an additional 15% compared to the TC 11, thus achieving lowest carding costs.

Card installation with Cards TC 11

Unique features of the TC 15 in the high-performance segment are:

- Expansion of performance limits through T-MOVE and T-CON
- Increased delivery speeds during can change (can-∅ 1,000 mm and 1,200 mm)
- Reduced air consumption
- Smallest floor space in comparison to production
- Lowest waste quantities

New web doffing

Today's technology allows delivery speeds well above 400 m/min in practice. For this reason, web doffing and sliver forming have been newly developed for speeds up to 500 m/min for the TC 15.

Flexibility for quick response

The trend towards more variations, smaller batch sizes and changing requirements on fashion products are noticeable in spinning as well. It must be possible to perform production adjustments and frequent lot changes without any problems.

The TC 15 fulfils these requirements in an exemplary manner. All quality-relevant setting parameters allow secure and simple adaptation in minutes:

– Flat setting
– Positioning of carding segments
– Setting of mote knives

Immediately after restart of the machine, T-CON indicates whether and where there is still a potential for optimisation.

DISCOVERING TECHNOLOGY

Computer control with touch screen
Page 40

Setting Optimiser T-CON
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Flexible Integral Feed Tray SENSOFEED+ for perfect clamping and very precise short-term levelling
Page 26

Fully-integrated Tuft Feeder DIRECTFEED with built-in air volume separator and segmented feed tray
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Precision Flat Setting System PFS
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The measuring bar FLATCONTROL is a precision instrument "Made by Trützschler"
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Magnet Flat System MAGNOTOP
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Nep Sensor NEPCONTROL LC-NCT
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Precision Knife Setting System PMS
Page 29

MULTI WEBCLEAN –
flexible for all applications
Page 36

We are motivated to provide you with measurable advantages for your daily operation in terms of quality and economic efficiency. But what exactly does it take to help spinning mills produce the highest possible quality at an economical level? Often the solution lies not in the whole, but rather in the sum of the details. For this reason we have continuously developed our Card TC 11 – the most economic card ever – since its introduction. As a result, the TC 15 features a 15% higher productivity.

KEY FEATURES OF THE TRÜTZSC

Fully-integrated tuft feeder DIRECTFEED	• Uniform card feeding at high production rates
Setting Optimiser T-CON	• For maximum utilisation of the TC 15 potential
Flexible Integral Feed Tray SENSOFEED+	• Short-wave levelling for a low sliver count variation
Precision Knife Setting System PMS	• Waste optimisation in no time at all
Aluminium flat bars without screw connection	• Quick flat exchange, without tools
Magnet Flat System MAGNOTOP	• Change of flat tops without workshop, directly at the machine
Precision Flat Setting System PFS	• Reproducible flat setting in only a few seconds
Flat Measuring System FLATCONTROL	• Objective and very precise flat adjustment

HLER CARD TC 15

Infinitely variable setting of the flat speed	• Exact adaptation to the fiber quality in only a few seconds
Electronic cylinder brake	• Reduces cleaning and maintenance time
Nep Sensor NEPCONTROL	• Online measurement of neps and trash particles
T-DATA	• Web-based data system
Digital motor controls	• Maintenance-free and high-precision
New web formation unit	• With Quality Sensor DISC MONITOR and pneumatic piecing aid
Spectrogram analysis	• Assists in finding the cause of spectrogram errors
Thick place monitoring	• Stops the card in case of excessive thick places in the sliver
Management of maintenance and card clothing	• Targeted maintenance support
3-roll pre-opening unit WEBFEED	• For gentle pre-opening
WEBFEED with one roll	• For the carding of man-made fibers or ELS cotton
Needle or clothed rolls	• Perfectly tailored to your product
Thick place monitoring and metal detection in the feed area	• For quality assurance and protection of the card
Long- and short-wave levelling system	• For perfect card sliver evenness
Special toothed belts for flat guiding	• Flat replacement without tools
Premium clothings from TCC, made of high-grade steel for licker-in, main cylinder and doffer	• Extended service life ensures longer maintenance intervals
High-precision aluminium elements with super-smooth surfaces	• Gentle material guidance in the fiber-carrying areas
Central safety locking system	• High operational safety

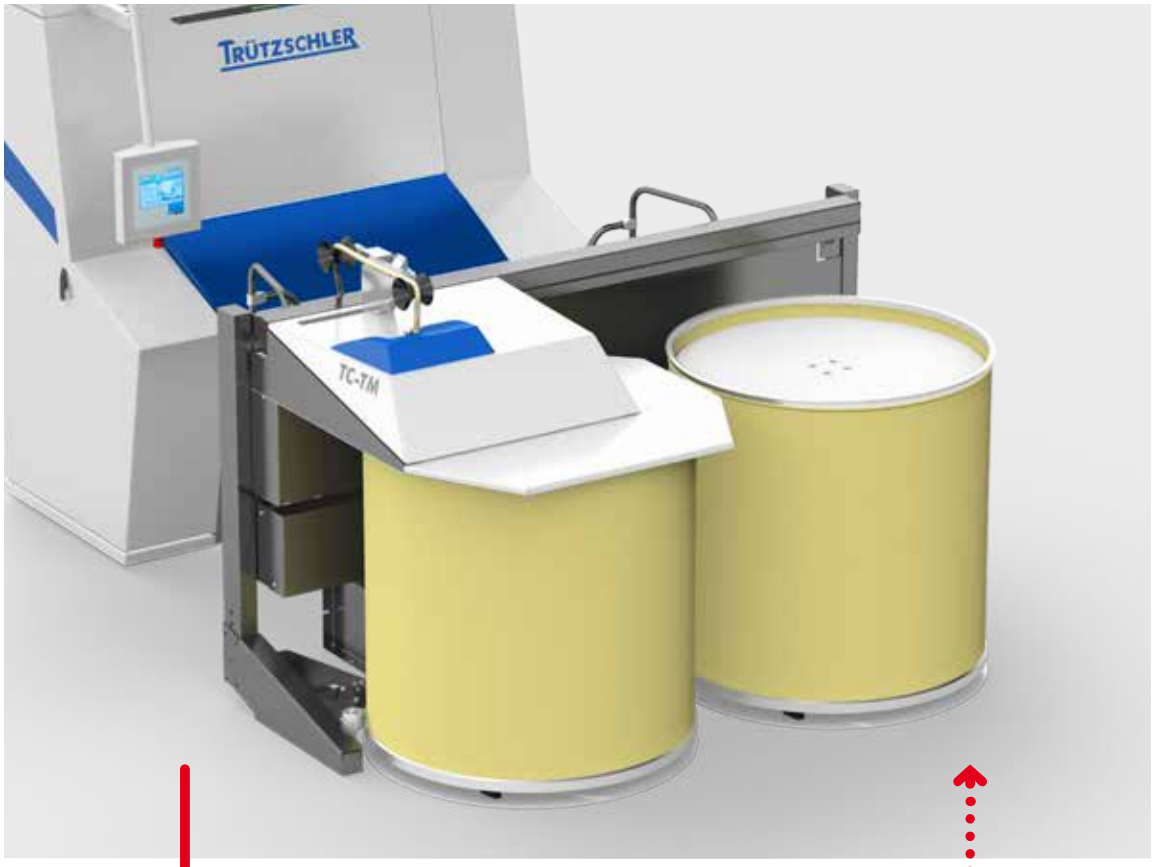
Many of the points listed here are protected by international patents to secure the technical and technological lead for all users of Trützschler cards.

Can Filling Station T-MOVE

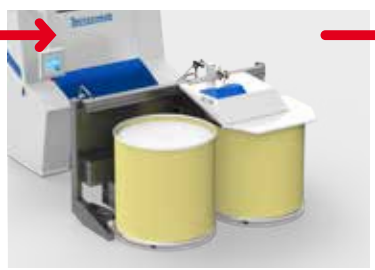
Quick can change for large cans in the smallest space

In the case of new developments, we at Trützschler first ask some basic questions. One of the questions concerning the T-MOVE project was: "Why is it actually necessary to move the can during can change, is there no better solution?" This consideration resulted in the basic idea for the development of the new automatic can filling station.

The T-MOVE concept
Sliver coiling system T-MOVE with Moving Head fills the can on the left. Can on the right ready for change head.



Moving Head fills can on right.
Can on left ready to be replaced by empty can.



Moving Head fills can on right.
Can on left ready for filling process.

Moving Head fills can on left.
Can on right ready to be replaced by empty can.

The sliver feed moves – the can is stationary

The revolutionary change compared to all the other systems in the market is that the cans are not moved during the change. Instead, sliver feeding is moved in linear direction via the sliver coiling plate at high speed from one can to the other.

This happens in a considerably faster and more controlled manner than would be possible by moving the heavy, sometimes even damaged cans. Another advantage: Both cans can be directly side by side. This saves considerable space and facilitates the transition from full to empty can. Consequently there is a significant increase in delivery speed during the change process. During movement of the head a defined sliver separation takes place.

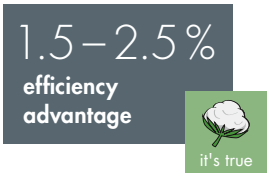
Saving space

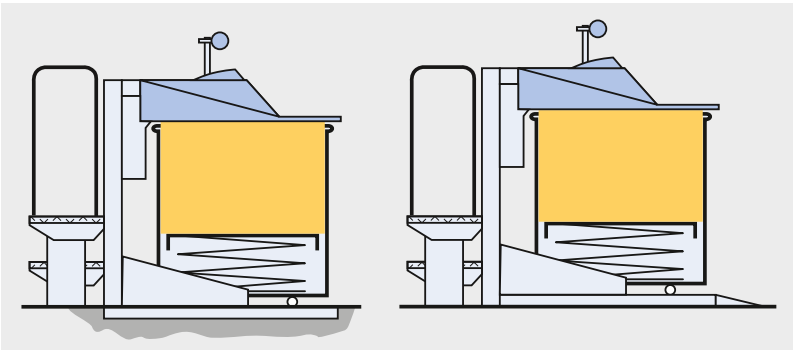
There is no need for a larger distance between the cards, even when choosing the 1,200 mm JUMBO CANS. T-MOVE for 1,200 mm JUMBO CANS requires less space than other can changers for 1,000 mm cans. As has been customer with Trützschler for years, the T-MOVE also features a passage for operation between cards and sliver coiling system. This passage considerably shortens the distance for the operator.

All these factors add up to an approx. 1.5 – 2.5 % efficiency advantage of the Card TC 15.

Benefits:

- Quick change of the filling position
- Increased delivery speed during can change
- Less space requirement
- JUMBO CANS
- Increased card efficiency
- High economic efficiency





The installation under floor has major advantages during operation …

… but an installation above floor is also possible.

The combination of all individual advantages results in the following improvements:

		Conventional can changer	T-MOVE	
Can diameter	mm	1,000	1,200	**+ 20%**
Filling quantity in can	kg	53.0	76.6	**+ 43%**
Space requirement for 5 cards	m^2	120.5	110.9	**– 8.0%**
Production at time of can change	kg/h	29	90	**+ 210%**
Delivery speed at time of can change	m/min	80	250	**+ 210%**
Can change	1/h	3.30	2.34	**– 30%**
Average practical production	kg/h	175.5	179.5	**+ 2.3%**
Card efficiency	%	97.5	99.7	**+ 2.3%**

The sample data refer to the processing of cotton.

T-LED – the new remote display

Larger cans – even more efficiency
In addition to the 1,000 mm can format, the new 1,200 mm JUMBO CANS were of course taken into account during the new development of T-Move. This can with the larger diameter reduces the frequency of change by 30 % in contrast to the comparable 1,000 mm cans.

Simple can handling
T-MOVE is controlled by the card control. The user can find all important data on the coloured touch screen of the card.

The turning devices of the cans are installed under floor. For this reason, the cans can easily be inserted into and removed from the filling station. No step or slope must be overcome. If the floor does not permit installation under floor, then the entire T-MOVE can also be positioned above floor.

T-LED – the new remote display
There is also a new generation of displays: T-LED is based on latest LED technology and is visible to the user even from a long distance. This system, for instance, visualises the can filling. Thus, the user can see at a glance which card requires a new empty can most urgently.

JUMBO CANS 1,200 mm

The new economic efficiency – exclusively at Trützschler

The larger the cans, the greater the efficiency of the down-stream machine. Greatest economic advantage:
43% longer runtime in the creel results in reduced downtimes on autoleveller draw frame or Superlap. Efficiencies can be increased by 1.5-2 %.

JUMBO CANS 1,200 mm

Reduction of can transports and sliver piecings – increase in quality

The filling quantity in the cans has an impact on many factors in the spinning process. Larger can dimensions have a positive influence on:

- Efficiency
  - during processing in the creel of the following machine
  - during filling of the cans
- Number of
  - can transports
  - cans required
- Lower personnel costs
- Quality improvement

it's true

43 %
more card sliver in the new Trützschler JUMBO CANS

43 % more card sliver per can

Compared to a can with 1,000 mm diameter, a can with the new 1,200 mm diameter format holds 43 % more card sliver. The logical consequence is a reduction of downtimes of up to 43 % for the can change. The result is an improved overall card efficiency.

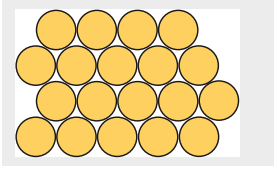
Can transports reduced by 30 %

The full cans must be transported from the card to the breaker draw frame. In a spinning mill with an annual production of 10,000 t this means more than 190,000 transports per year or approx. 24 per hour. With the new can format, only 17 can transports per hour are required.
Even at a weight of 76 kg card sliver (23 kg more than in 1,000 mm cans), the cans can easily be moved across the flat hall floor by means of smooth-running ball castors.

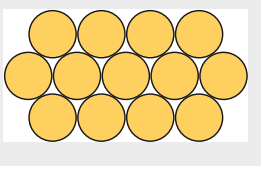
Less cans at same material buffer

To ensure trouble-free operation, material buffers between the production steps are practical. Thanks to the new can concept, less cans are needed for the same amount of material in the buffer.

Cans and space required for 1,000 kg material buffer



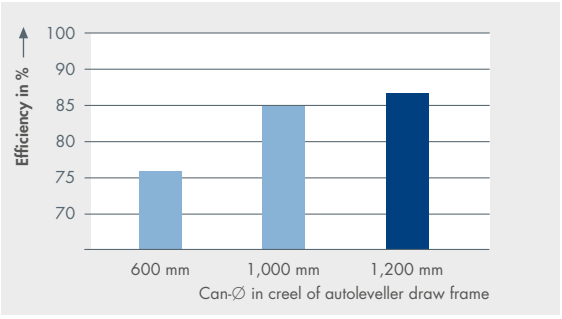
19 cans with Ø 1,000 mm, space required: approx. 20 m²



13 cans with Ø 1,200 mm, space required: approx. 20 m²

Less personnel required

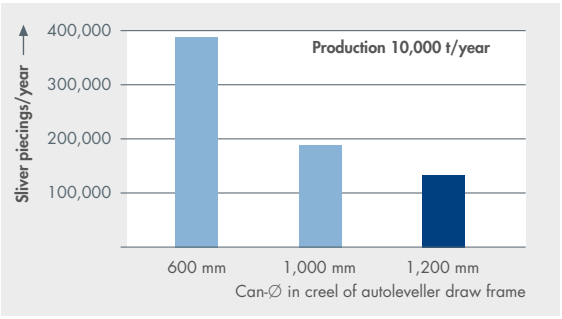
Less can transports and less can changes in the creel reduce personnel requirements or increase personnel efficiency: One person can operate more draw frames/cards.



The efficiency of the draw frame increases with larger can formats

Reduced sliver piecings improve the quality

Of course, 30 % less can changes in the creel also mean 30 % less sliver piecings and thus 30 % less potential error locations. In our spinning mill example with a production of 10,000 t per year, 58,000 fewer sliver piecing are required on the breaker draw frame.



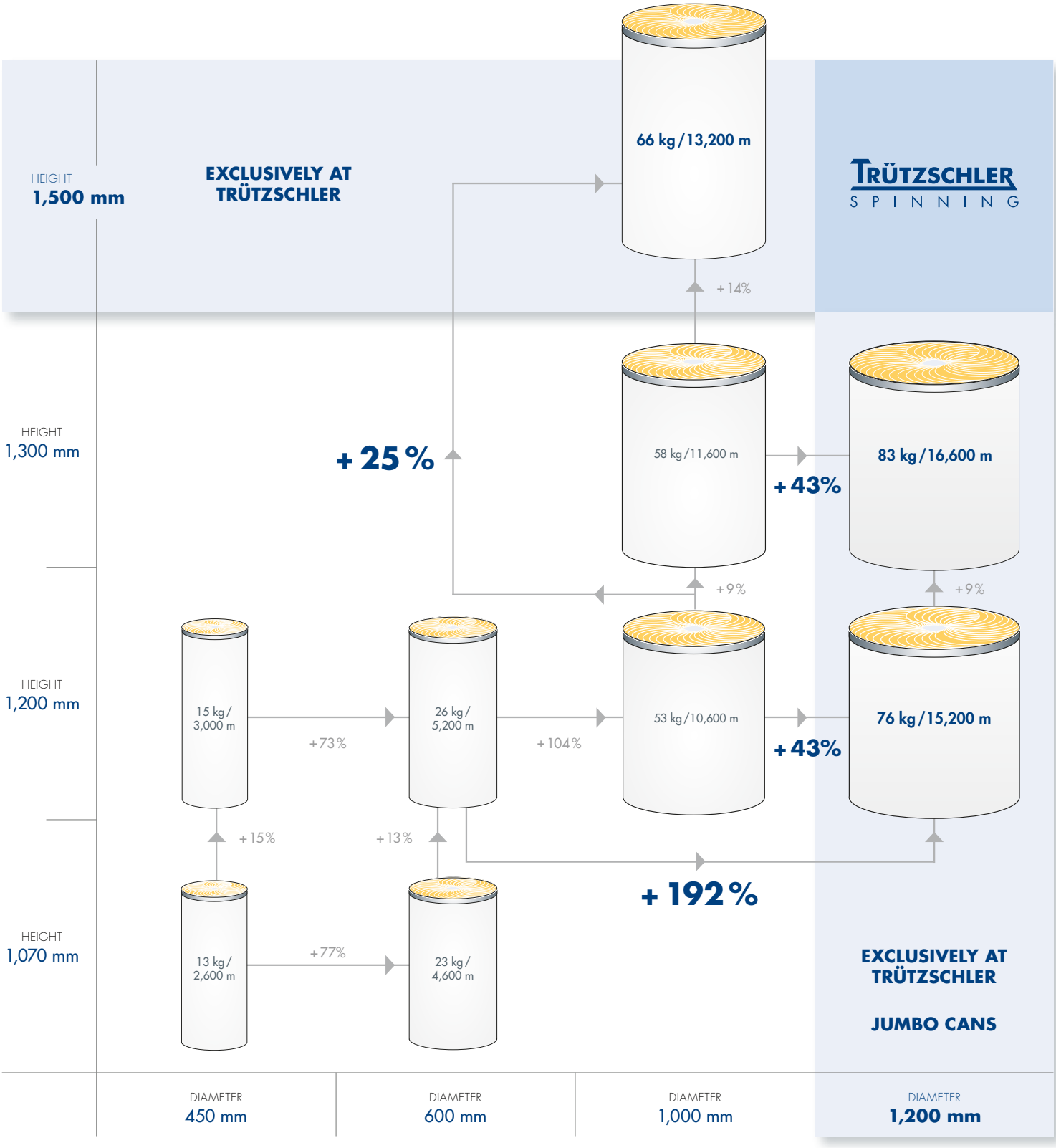
Less sliver piecings reduce yarn imperfections

it's true

58,000
less sliver piecings/year significantly improve the quality.

If 1,200 mm cans are not feasible for operational reasons, then 1,000 mm cans with an increased height of 1,500 mm provide an alternative. They hold approx. 25 % more draw frame sliver. This solution is also exclusively offered by Trützschler.

Up to 1,200 mm diameter, up to 1,500 mm height – these new can dimensions are only available from Trützschler. The result is a significantly higher capacity and even higher economic efficiency.



T-CON supplies all relevant values

Measurable increase of perfection and production

To achieve the full potential of a card is the objective of every spinning mill. The key to higher productions and higher quality lies in the optimal setting of the working elements.

On a day-to-day basis, there are numerous factors that can interfere with an optimal production. Even if operation "feels" as though it is running in the optimum manner, there is always undetected potential which is not accessed. The reasons for this are usually quite trivial:

- Card settings performed in cold condition
- Settings based on "empirical values"
- Changes in ambient temperatures.

To counter these interference factors, conventional cards lack the possibility to reliably measure the current status at the relevant points.

The solution lies in the know-how and evaluation

The patented Trützschler T-CON measures all decisive, actual parameters such as for instance the distances between cylinder, flats and fixed carding elements at all production and quality related points by means of its robust and sensitive sensors. The results appear on the card display and indicate which settings can be improved. There is no easier way to accomplish perfect card settings and thus optimal productivity.

Productions close to the theoretically possible ideal line

T-CON allows tightest settings without making contact with the clothings. The productivity potential of conventional cards is significantly reduced due to overall settings of safety reserves. T-CON, in contrast, offers the possibility to bring productions closer to an ideal line without taking a risk.

Lowering IPI-values in the yarn by 10 %

T-CON also causes an increase in quality: The influence of the conclusions drawn from the measured values can reach all the way to the improvement of yarn quality.

The optimisation options are clearly shown on the screen. The type of fiber and production level are taken into account.

SCAN

The animation shows the procedure of optimisation with T-CON.

Scan page with Smartview.

Only T-CON achieves the full potential

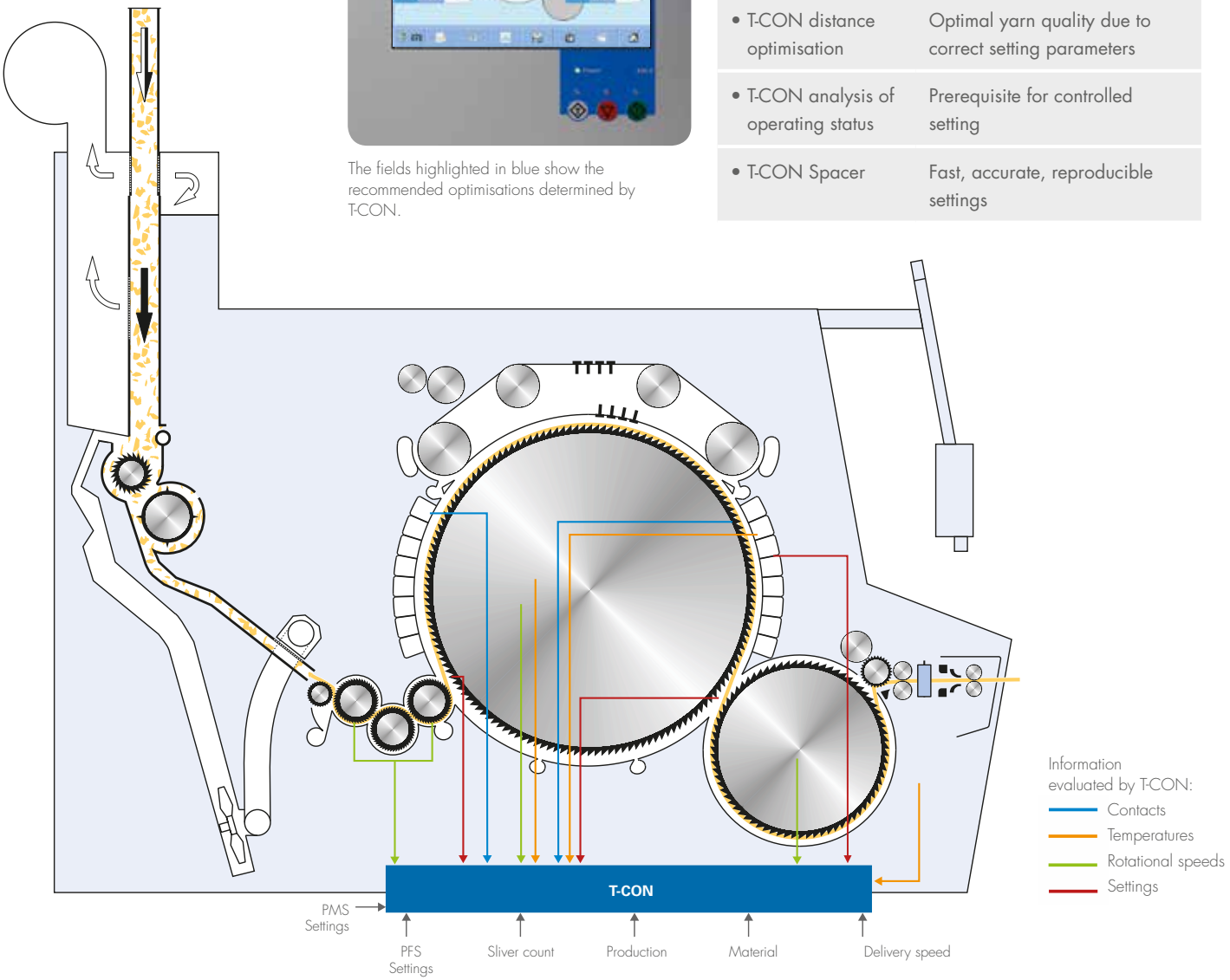
Targeted adjustment of card settings during operation

The distances of the carding elements to each other are the most important settings on the card. They have a major influence on the carding quality and therefore yarn quality. The elements are set while the machine is standing, i.e. in relatively cold condition. During operation, the carding gap of the card is considerably changed, e.g. by centrifugal forces or increases in temperature. The changes which occur during production are unidentified on cards without T-CON and can therefore not be taken into account for quality improvement or production increase. The latest version of the Setting Optimiser T-CON opens up the full potential in carding.

The fields highlighted in blue show the recommended optimisations determined by T-CON.

The five T-CON functions

• T-CON ACTUAL	Display of the most important process variable for carding quality during operation
• T-CON contact monitoring	Maximum safety against clothing contact
• T-CON distance optimisation	Optimal yarn quality due to correct setting parameters
• T-CON analysis of operating status	Prerequisite for controlled setting
• T-CON Spacer	Fast, accurate, reproducible settings



Determining exact carding settings and recommending optimisations

T-CON carries out a permanent analysis of the operating status. Special sensors obtain valuable measured values at all relevant points: e.g. current temperatures or speeds on the rolls.

Through the integration of the T-CON software into the card control it is possible to display the current distances of the carding elements on the screen of the card control. T-CON recommends setting optimisations depending on the fibers that are currently being processed.

Fast and efficient setting optimisation

The flat distance can now be changed within seconds, e.g. via the Precision Flat Setting System PFS, even during production. T-CON determines and displays the new operating condition immediately.

The setting of the stationary carding segments can also be optimised within minutes without measuring tools. To do so, only the T-CON Spacers – precise colour-coded distance elements – have to be replaced.

Reliable protection from clothing damage

T-CON also protects the clothings; if the setting is too narrow, a warning appears. In case the metallic wires of two carding elements actually make contact, the card will be stopped immediately before any damage can occur.

This sensor determines contacts between the carding elements.

280,000 US$
less operating costs
10 % more production
10 % lower IPI values
in the yarn

it's true

The T-CON Spacers can easily be replaced in just a few simple steps and thus allow a reproducible setting of the carding segments.

This sensor performs contact-less measurement of the cylinder temperature.

MAGNOTOP

This is how simple optimal flat tops can be

Maintaining a consistently high quality requires regular change of flat tops. For this purpose, Trützschler has developed the patented MAGNOTOP System together with Trützschler Card Clothing. MAGNOTOP eliminates the need for a flats workshop and prolongs the service life by one grinding cycle.[1)]

The clothing strips fit perfectly from the beginning since super strong neodymium magnets attach the clothing strips to the flat, thus reducing tolerances.

Each clothing change increases the economic advantage
Regular flat top changes are the prerequisite for a consistently high quality. The patented MAGNOTOP system allows easy and quick change of the clothing strips without tools. Depending on labour costs, savings of 300 – 1,100 US$ per card re-clothing can be realised.

200,000 US$
for flats workshop are eliminated.
it's true

Investments in a flats workshop (usually 170,000 – 210,000 US$) are completely eliminated.
Use of the MAGNOTOP system also eliminates the otherwise unavoidable extra costs:

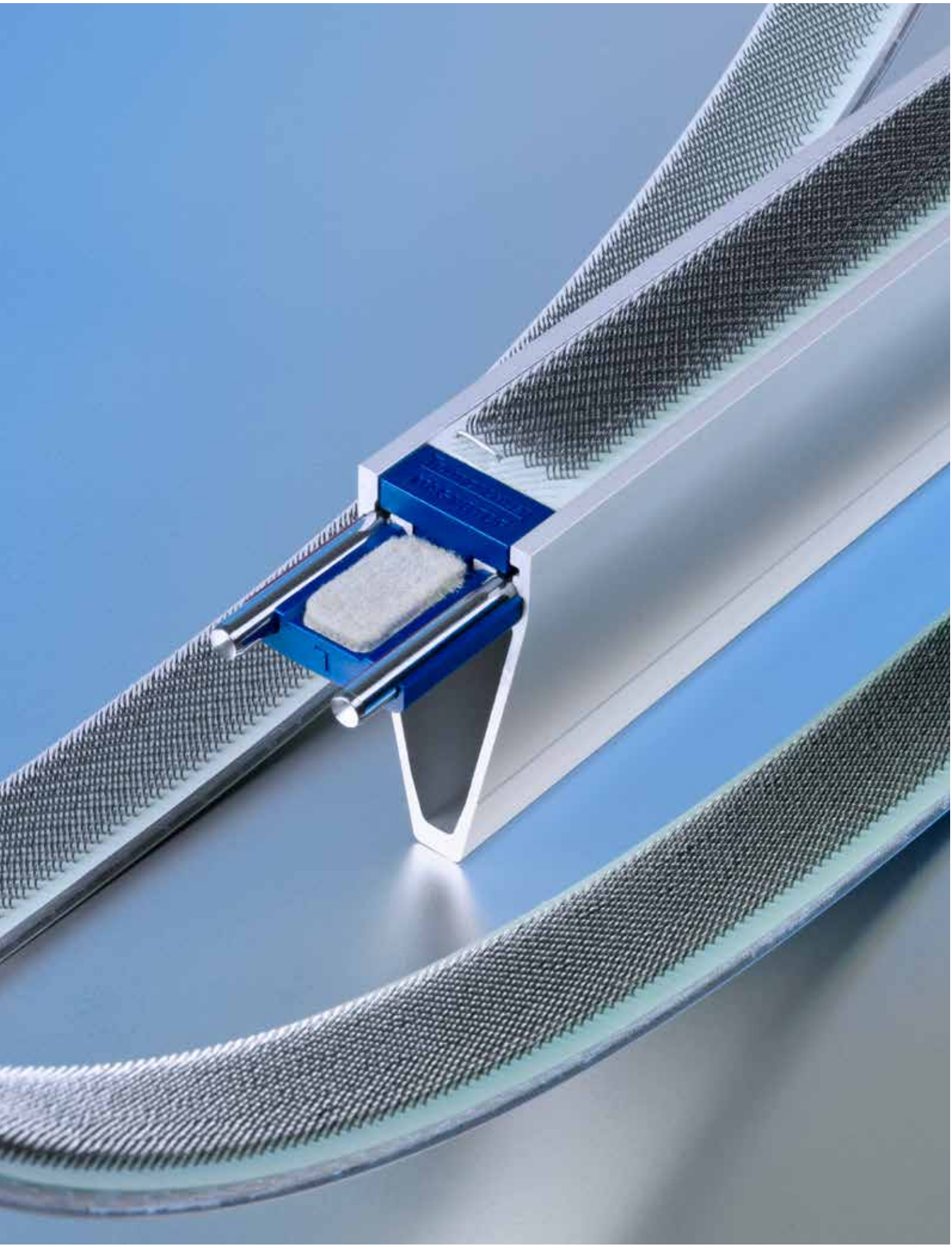
- No spare flat sets required
- No service costs for re-clothing
- No transport costs

[1)] Corresponds to approx. 80,000 kg card sliver

SCAN

The video shows the simple replacement of MAGNOTOP clothings.

Scan page with Smartview.



MAGNOTOP flat tops

Faster resumption of production

In the past, each one of the 84 flat bars had to be manually handled six times during the replacement of flat tops. With MAGNOTOP this is only necessary once – which reduces the approximately 14 hours spent by personnel to less than 2 hours.

Replacement of flat tops in less than two hours

it's true

Replacement of conventional flat tops requires much time and costs. MAGNOTOP provides increased speed and cost efficiency. The system uses neodymium magnets, which are considered to be the strongest permanent magnets ever: One neodymium magnet, smaller than a cigarette pack, can easily lift or hold a weight of 100 kg.

Change of flat tops, entirely without tools

The patented MAGNOTOP flat tops use neodymium high energy magnets in form of strips. On the back of the clothing strips there is a matching thin, flexible metal strip.

Once positioned on the flat bar, the clothing strips independently occupy their precise position and are securely attached – the magnetic forces exceed the developing carding forces by a multiple. Thus, the fastening is absolutely reliable; on the other hand, the clothing strips can simply be "peeled off" from the flat bar with little effort.

The perfect points of new flat tops are preserved because levelling after replacement of flat tops is not necessary.

Lower costs, higher quality

Flat tops service without detours directly on the card.

The clothing strips can be replaced without any effort and without any tools.

The direct way to increased time and cost efficiency

Today, replacement of cylinder and doffer clothings directly on site is a matter of course. MAGNOTOP allows the complete replacement of flat tops on the card in a simple and direct manner.

Simple testing of other clothing types

Another advantage is the quick and easy testing of new types of flat tops. The previous MAGNOTOP clothing strips which are still in working order can be reused at any time.

Significant quality increase

The patented MAGNOTOP fastening system also compensates tolerances. This simplifies precision setting of flat tops even more, which in turn improves the carding results and leads to less neps in the yarn.

Extended service life

With MAGNOTOP, the usual levelling that compensates deformations caused by clip assembly can be eliminated since MAGNOTOP automatically has a perfect fit. This prolongs the service life of the flat bars by one grinding cycle.

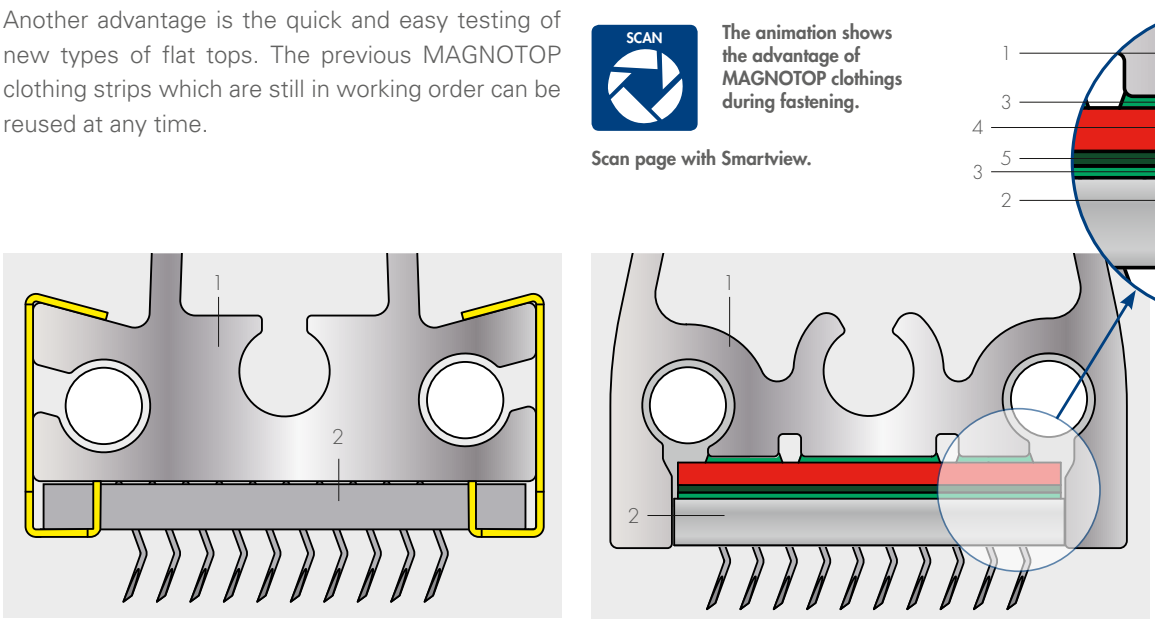
MAGNOTOP advantages at a glance

- Improved yarn quality through higher precision
- Elimination of investments in a flats workshop, operating costs, etc.
- Elimination of providers' service costs
- Elimination of investment for one or several spare flat bar sets
- No inventory of spare flat sets required
- No grinding of flat tops after re-clothing
- No transport costs, simplified logistics

SCAN

The animation shows the advantage of MAGNOTOP clothings during fastening.

Scan page with Smartview.



1 Aluminium flat bar
2 Clothing strips
3 Adhesive and compensation layer
4 Neodymium magnet
5 Thin metal strip

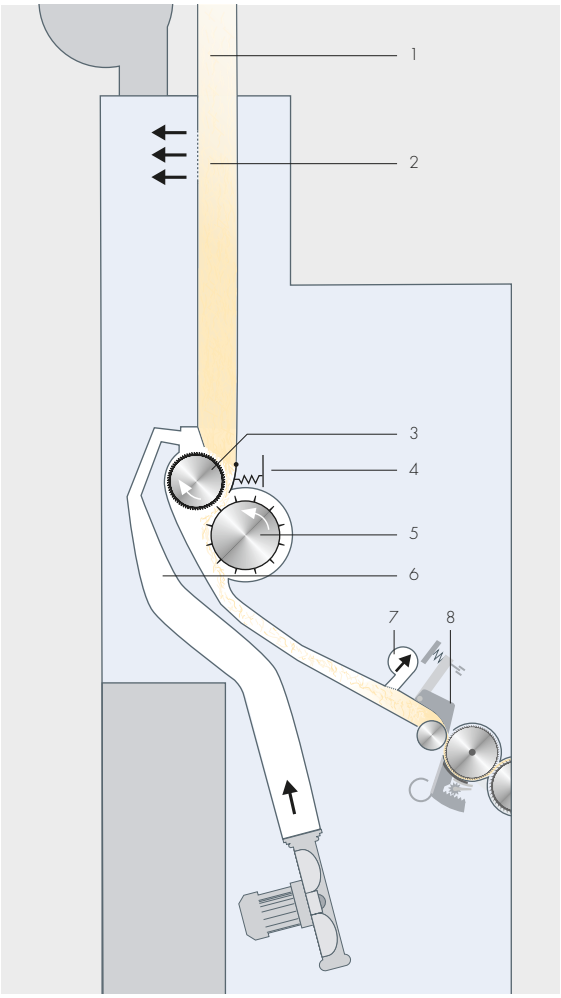
Conventional system with clips

MAGNOTOP system

DIRECTFEED and SENSOFEED+

Quality begins with optimal tuft feeding

"Quality from the beginning" is one of Trützschler's maxims. That is why we attach great importance to optimal tuft feeding.



Tuft Feeder DIRECTFEED
1 New high-volume upper trunk
2 Integrated air-volume separator
3 Feed roll, electrically coupled to the feed roll of the card
4 Segmented tray for secure clamping
5 Opening roll with gentle needling
6 Closed air circuit with integrated fan
7 Self cleaning air outlet comb
8 Flexible Feed Tray SENSOFEED+

More than 25,000 cards delivered with DIRECTFEED

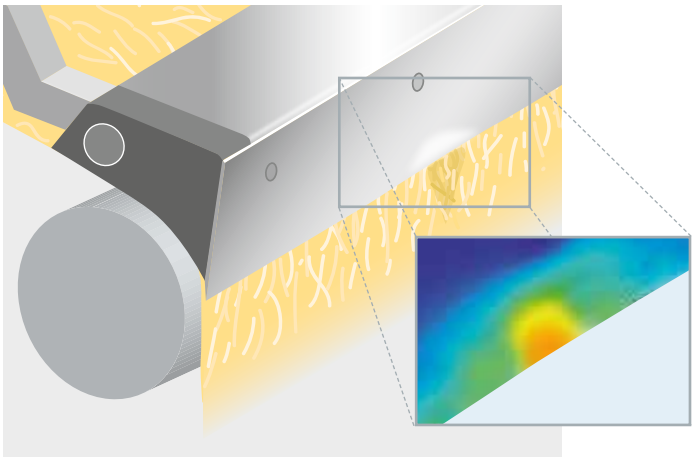
On conventional cards, faulty drafts can occur already during feeding due to wrong or suboptimal settings. The Tuft Feeder DIRECTFEED is an integral part of the TC 15. The delivery roll of tuft feeding and the feed roll of the card are identical, thus the reliable Trützschler quality starts already with feeding.

The double trunk principle of DIRECTFEED ensures a higher material reserve thanks to a significantly larger volume. The special geometry of the lower trunk and the extended material fly form the foundation for excellent sliver CV values. The air outlet comb with

direct and permanent suction is positioned right in front of the feed roll; it is only here, just a few centimetres in front of the nip line of the feed roll, that the actual web is formed.

SENSOFEED+

The web is fed to the pre-opening unit WEBFEED via the flexible Integral Feed Tray SENSOFEED+. From there the compacted tuft web is guided to the knife-shaped feed tray tip. The material at this top allows a partial elastic deformation during the feeding of material slubs. This deformation is only a few hundredth of a millimetre and has hardly any influence on the overall deflection of the feed tray. Accurate actual values allow efficient short-wave levelling.



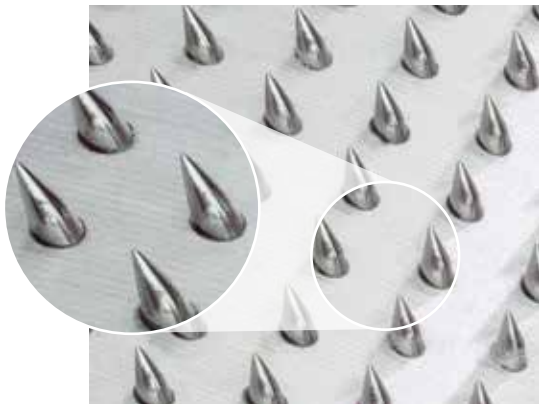
The feeding of material slubs leads to a minimal deformation at this point of the tray edge. In the simulation the effective forces are highlighted in colour.

WEBFEED

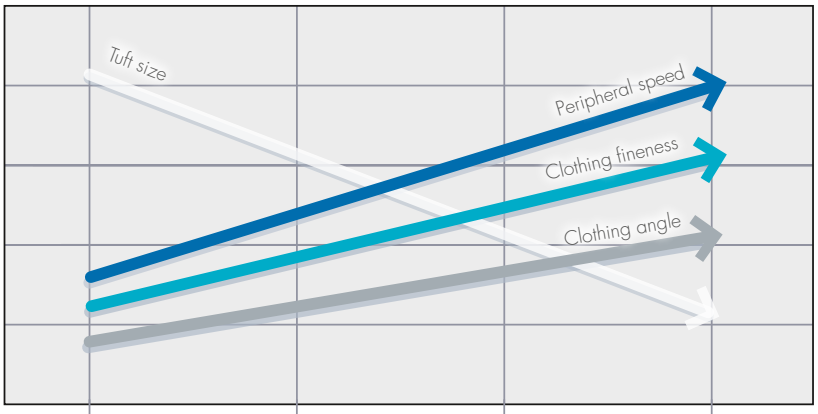
Gentle and efficient tuft opening

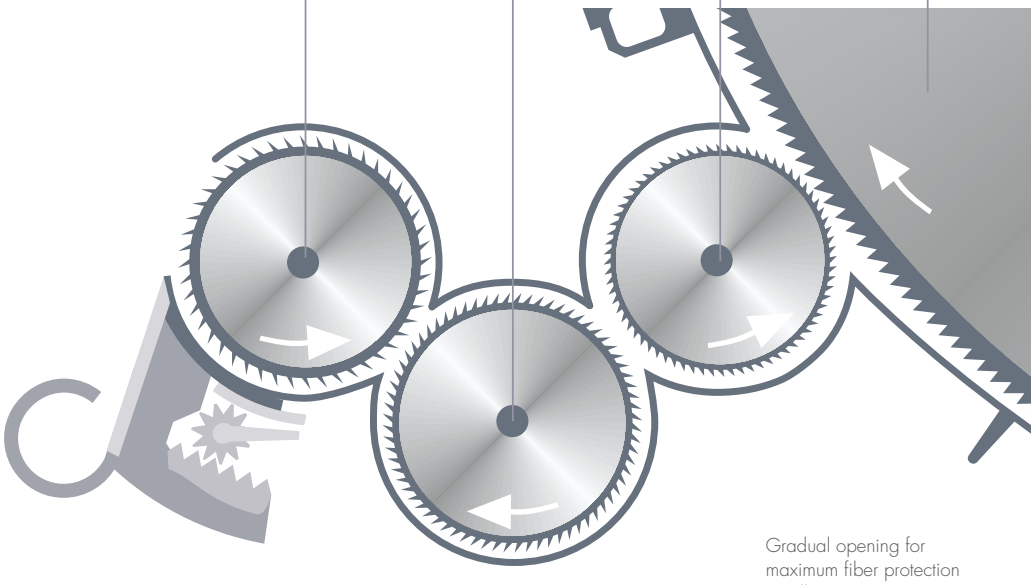
Compared to conventional licker-ins, the WEBFEED system with one large or three smaller opening rolls connected in series ensures that the tufts are opened in a gentle way, resulting in an even and fine web. This fiber pre-opening is of decisive importance to the carding process.

• 3 rolls – first roll: Needles	e.g. cotton at high production rates
• 3 rolls – first roll: Metallic wires	e.g. cotton / man-made fiber blend yarns
• 1 large roll: Needles	e.g. man-made fibers + ELS cotton



Twenty-fold durability due to needles made of special steel (as compared to metallic wires)

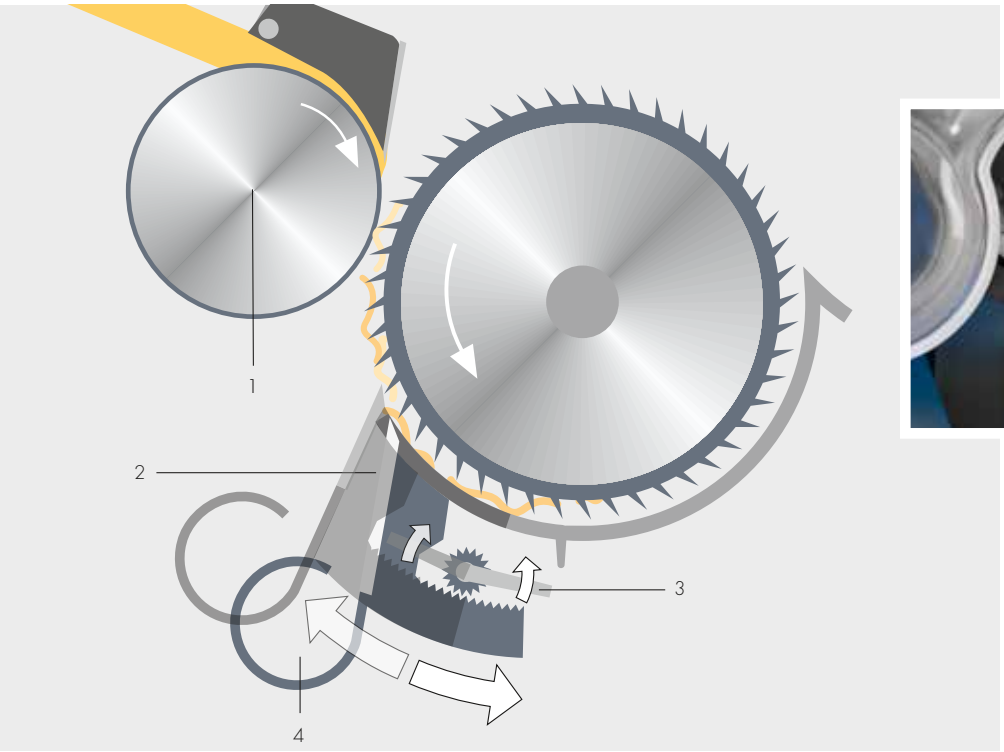




Gradual opening for maximum fiber protection (3-roll WEBFEED)

Precision Knife Setting System PMS-M

Adjustment in no time at all



Through the circular adjustment the top edge of the knife always remains at an optimum distance to the needles.

1 Feed roll
2 The adjusting slide moves with the knife on a circular path around the centre of the needle roll
3 With this lever the position of the knife is adjusted in no time at all
4 The permanent suction keeps the card clean in this area as well

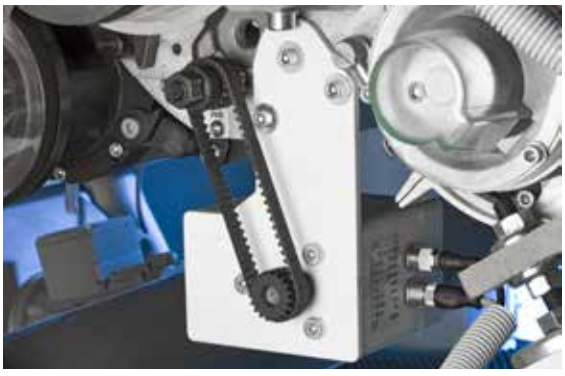
The first cleaning zone of the TC 15 lies in the area of the first roll of the WEBFEED system. Here, the reliable Precision Knife Setting System PMS ensures an optimal waste composition.

The mote knife is infinitely adjustable within seconds while card is running. The distance of the knife point to the needles is exactly the same in every position since the knife circles around the centre of the needle roll. A glance into the transparent suction ducts immediately shows the success of the readjustment.

PMS-M with motor

Perfect setting within seconds

A small step motor with big advantages: increased user friendliness and higher setting precision. The knife of the first WEBFEED roll can be precisely adjusted via the touch screen of the TC 15 while machine is running. All values can be stored according to lot. For extremely short changes from one material to the next, the setting values of the PFS-M (see page 35) and of the PMS-M, as well as the speeds of the cylinder roll and WEBFEED roll, can be stored according to lot in the memory of the control.

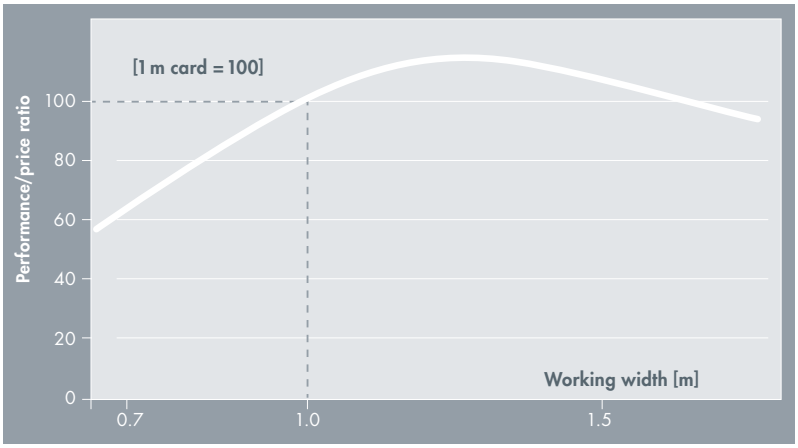


This small step motor adjusts the knife circularly around the centre of the first roll of the WEBFEED.

Exclusively from Trützschler: 5.3 m²

The perfect balance of quality and economic efficiency

The TC 15 encompasses everything that defines Trützschler: more than 125 years of experience, a team of first-class engineers as well as countless analyses, simulations and practical tests. The result is the most productive card in the market while maintaining highest quality standards.



The diagram shows that the best performance to price ratio is reached in the range between 1.25 – 1.30 m. With a working width of 1.28 m, the TC 15 is precisely in this range.

Longer carding section = more quality

"The greater the distance covered by the fibers on the cylinder, the better the carding quality."
Based on this quality formula, the more than 2.8 metre carding section of the TC 15 provides the condition for maximum quality. In addition to the ideal number of flats, there is also room for sufficient carding segments and cleaning units.

Reducing imperfections by 10 %

In connection with the patented quality optimisation system T-CON, the number of imperfections on the TC 15 can be lowered by up to 10 %.

More carding width = more productivity

"More width while maintaining the roll geometry means more productivity."
Experiences gained from practice since 2011 confirm the following: The working width of 1.28 m represents the perfect balance between productivity and efficiency. The request for even more width is limited by requirements on precision and the control of the rotating masses for economical production costs.

Economical

The technical qualities of the new TC 15 are impressive. However, it shows its strengths also in terms of efficiency.

- Best performance/price ratio
- Lowest operating costs

Low investment costs*

The advantages from the carding width of 1.28 m at highest quality level due to the cylinder circumference of 4.10 m are also evident when looking at investment costs.
When apportioning the investment costs over the globally recognised high service life of Trützschler cards to 1 kg of card sliver produced, the TC 15 offers the lowest proportional investment:
– simply less cards are required.
– a smaller building size

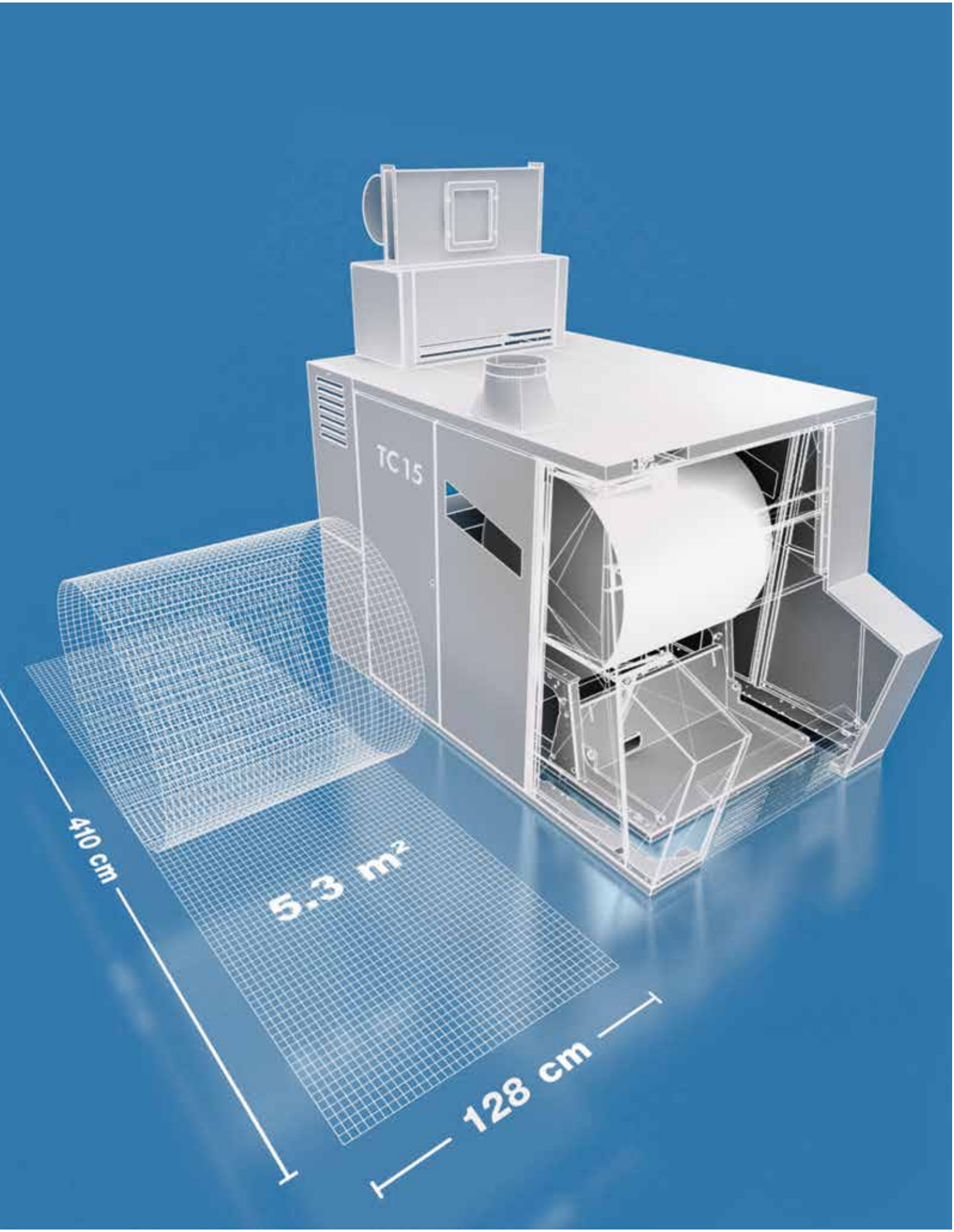
Lowest operating costs*

it's true

105,000 US$
in annual savings!

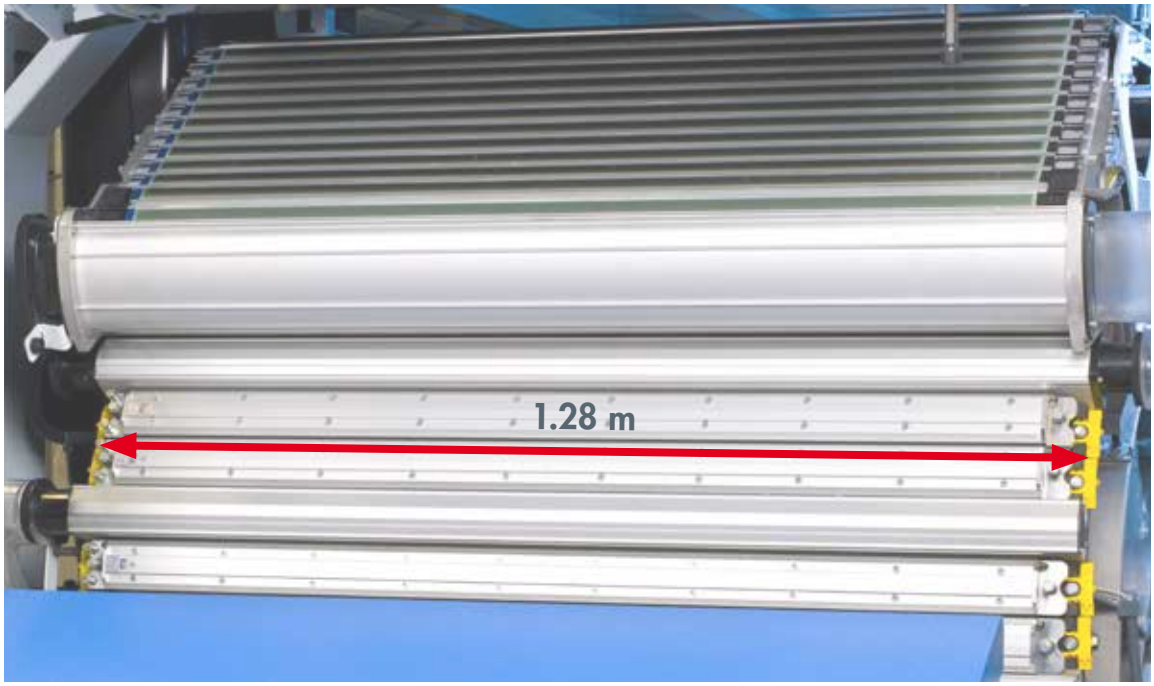
The life-cycle-costs of the TC 15 allow an incomparably quick Return of Investment. Annual savings in the amount of approx. 105,000 US$ can be achieved in the areas of energy, filter and maintenance costs.

* approx. 14 cards, 140 kg/h 8,000 operating hours per year. The raw material use is approx. 15,680 t, purchased at a cotton price of 65 USct/lbs.

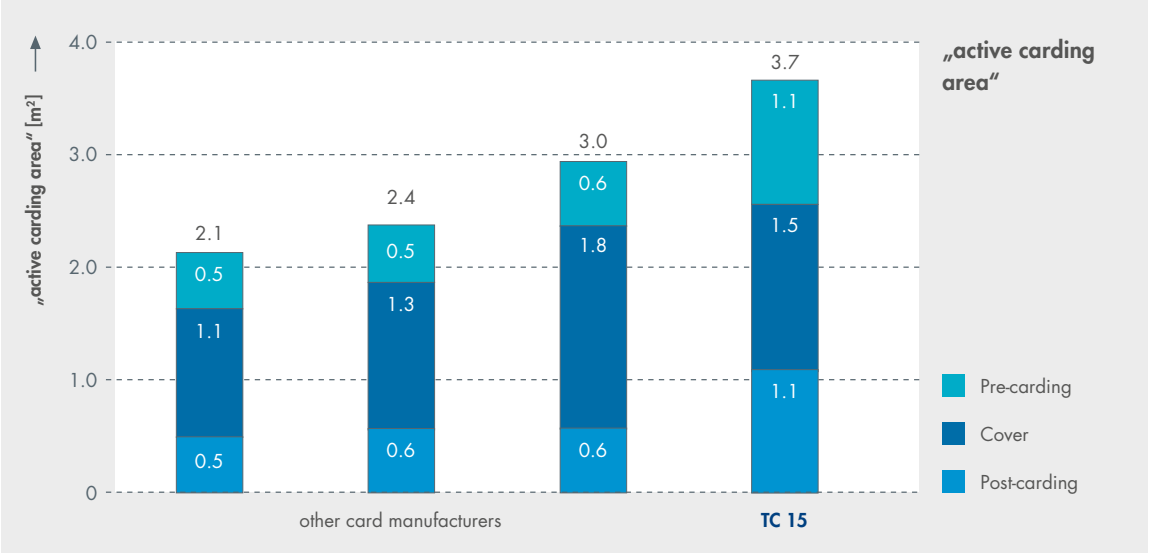

TC15
410 cm
5.3 m²
128 cm

Only available with TC 15

Maximum productivity: "active carding area" of 3.7 m²

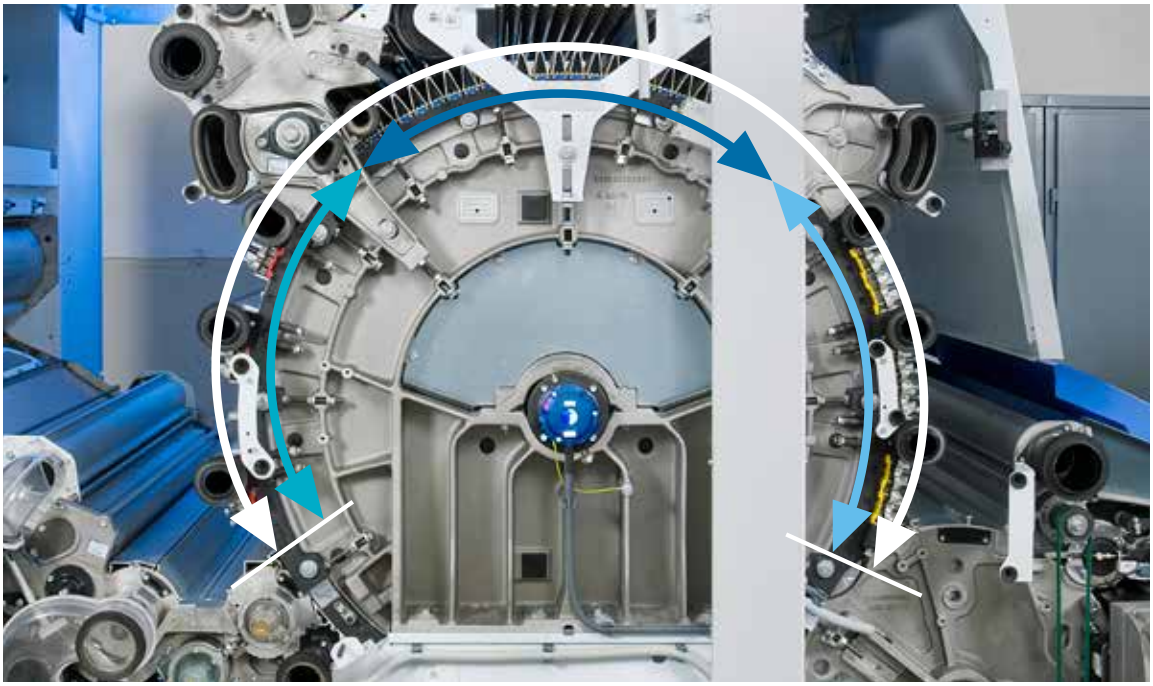


The 1.28 m width of the Trützschler cards is the result of an intensive development process. Using the current design and production methods, an even larger width would no longer be economical. The precision of the masses to be controlled would be impaired, and thus sliver quality. On the other hand, a smaller width would waste valuable productivity. During production, a degree of precision was achieved that contributed to increased productivity and at the same time ensured the proverbial Trützschler sliver quality. Through analysis – among other things with the help of the T-CON measuring data – it was possible to further increase the already significantly improved productivity of the new card generation TC 15 by another 15 % through higher precision of all working elements, advanced web doffing and optimised clothings.



Only available with TC 15

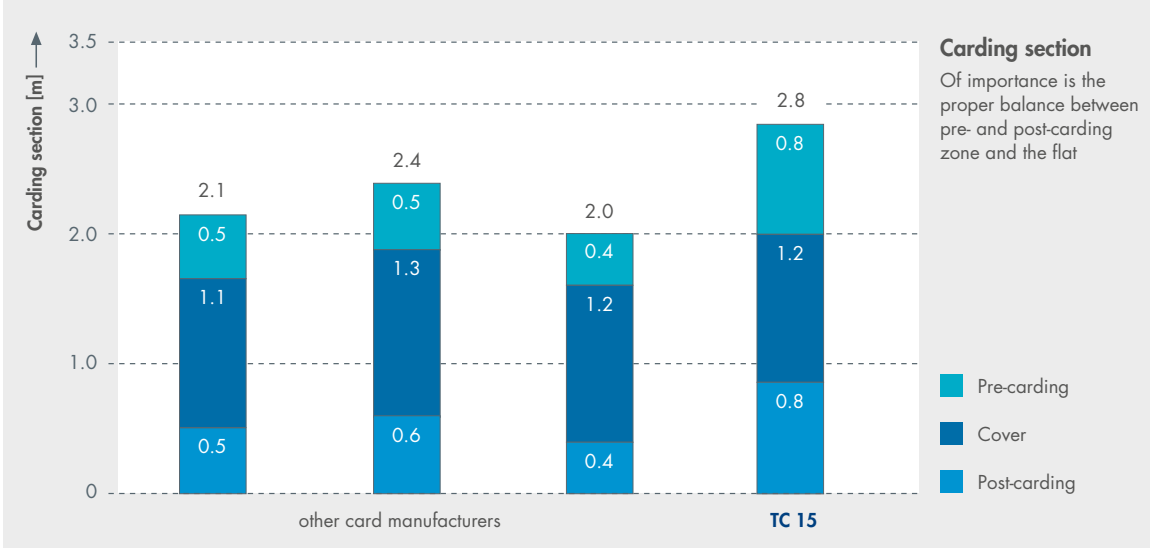
Maximum quality through the longest carding section of 2.8 m



Pre-carding
Cover
Post-carding

The Trützschler Card TC 15 features the longest carding section in the market. The length of 2.8 m allows an optimal distribution of the pre-carding area, the revolving flats and the post-carding draw frame. It is here where the maximum quality of the fiber web is generated.
The revolving flat is of particular importance: With an optimal number of flat bars, it is responsible for cleaning as well as extracting neps and short fibers.

To ensure the optimal function of the revolving flat, the fiber web in the pre-carding area must be perfectly prepared by means of the cleaning and carding elements. For more intensive carding and thus higher productivity, pre-opening is performed at the highest possible level. The large post-carding area ensures an even cleaner sliver and higher fiber parallelism.



Changing flat bars

1 hour, 0 tools

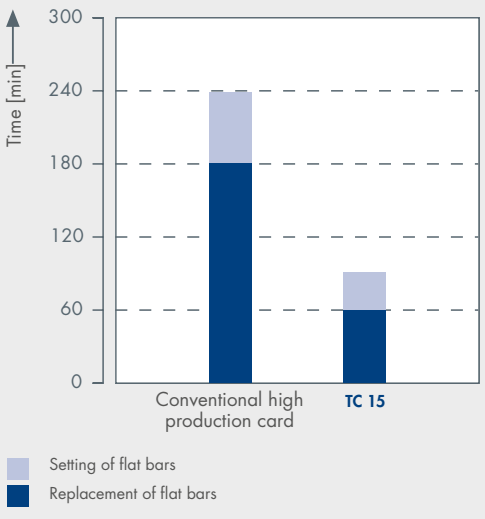
Each individual flat bar is made of high-strength aluminium profiles, which are lightweight and extremely stable. The flat bars are directly connected via a cam to two toothed belts that ensure perfect guidance. The hard metal pins at the ends of the flat bar glide across a special plastic strip. This arrangement has the advantage that a complete flat replacement can be performed by just one person without tools in less than one hour.

The Trützschler flat bar – proven millions of times

1 Optimised, light-weight aluminium profile
2 Flat top
3 Wear-resistant hard metal gliding pins
4 Plastic support
5 The cleaning felt keeps the sliding plastic clean

The flat bars can be inserted into the cams of the toothed belt easily without tools.

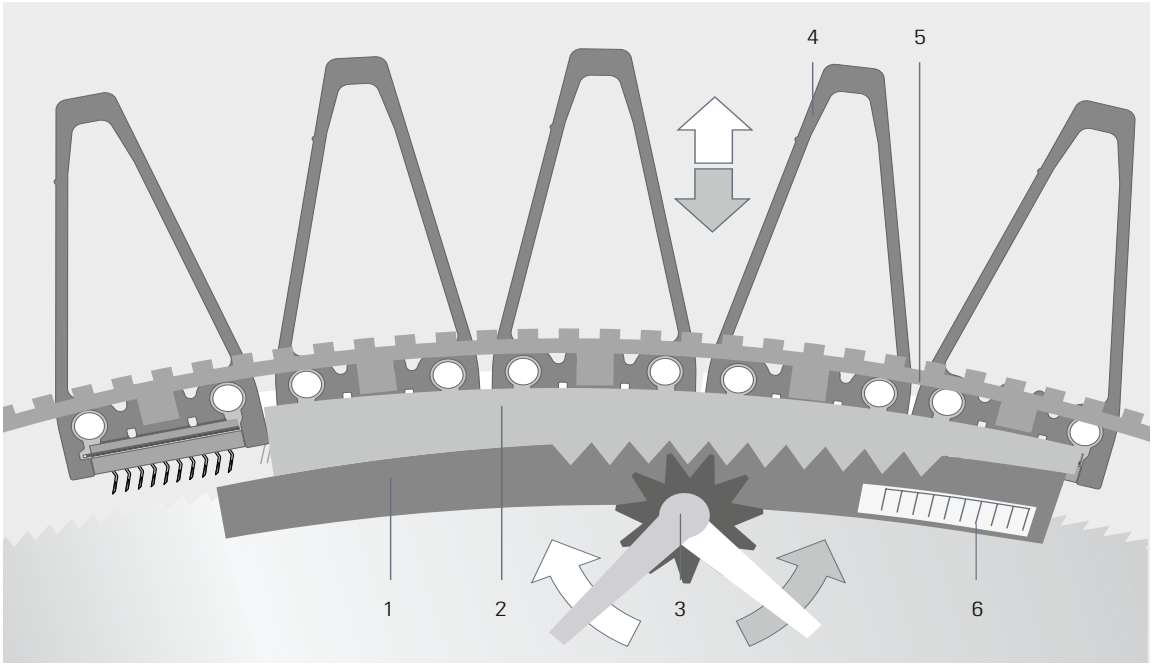
Via remote control it is possible to move the flat for service-purposes also while card is at a standstill.



Replacement of flat bars requires one person to work only approx. one hour.

Precision Flat Setting System PFS

Optimisation of flat setting in no time at all



Precision Flat Setting System PFS

1 Metal flexible bend
2 Wear-resistant special plastic slide rail
3 Setting lever
4 High-precision aluminium flat bars
5 Cam toothed belt for the flat drive
6 The distance setting can be read directly from a scale

Automatically faster: Flat setting

Trützschler developed the Precision Flat Setting System PFS for central adjustment of the whole flat to the cylinder. It adjusts the flat exactly by the specified dimension within seconds. After this setting, the PFS system ensures that the distances throughout the entire service life of a clothing set are precisely maintained.

The basic setting is further facilitated by the use of the Flat Measuring System FLATCONTROL TC-FCT. Once the basic setting has been carried out, only a handle needs to be turned on each side of the card to increase or decrease the distance of all flat bars in working position to the cylinder. A scale shows the current setting in relation to the basic setting.

PFS-M with motor

Centrally controlled precision

With PFS-M, the motorised adjustment of the flat system can be performed during production within seconds in a precise and reproducible manner on the touch screen of the TC 15. From a central control, PFS-M ensures that the distance of all working flat bars increases or decreases in the same ratio to the cylinder. The adjustment is indicated accordingly and, same as all other settings, can be managed in the lot memory.

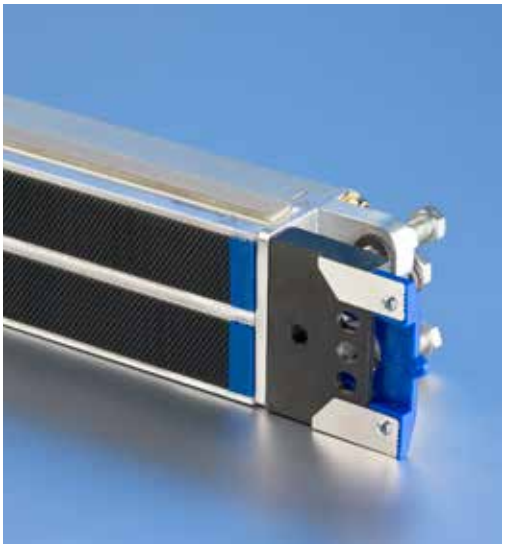
A step motor performs the flat setting on both sides of the card.

MULTI WEBCLEAN

Flexible adjustment of carding conditions

The three elements of the MULTI WEBCLEAN systems

Cleaning element
A mote knife with a hood under permanent suction ensures the separation of small dirt particles, seed coat fragments, dust particles and fiber fragments.



Carding element
The carding element consists of two clothing strips in a support (TWIN TOP), which can be equipped with a number of different clothing types and finenesses, depending on position and fibers.

Cover element
If one of the eight variable positions in the pre-carding and post-carding area is not in use, a cover element is mounted.

The carding conditions must be adjusted depending on fiber, production level and quality desired. To get simple and quick results, the MULTI WEBCLEAN system allows individual attachment of ten special elements each in the pre-carding and post-carding area of the cylinder. Only the first and last element are specified; the remaining eight elements are configured according to the required application.

Depending on application, the MULTI WEBCLEAN consists of the cleaning, carding and cover elements.

Replacement within minutes

Once the elements are precisely adjusted, they can be immediately put into operation again even after removal, without the need for readjustment. Specially developed fixing elements secure the original setting. In principle, any element can be mounted to each of the 16 positions. The card is delivered in a configuration that has been individually specified in advance.

SCAN

This video shows the use of spacers for quick setting optimisation.

Scan page with Smartview.

Continuous efficient suction

Save operating costs – increase quality

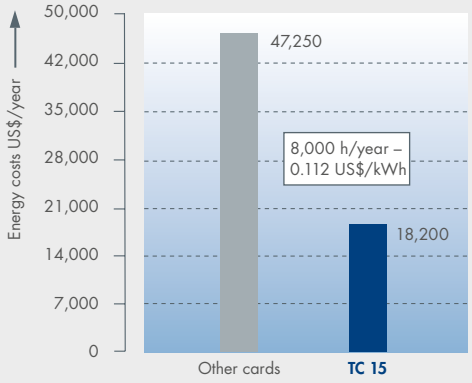
A permanent suction at all relevant points provides optimal dust removal, even under high production conditions. This standard ensures that the TC 15 also features increased cleanliness, cost effectiveness and efficiency.

The main reason for the efficiency of the permanent suction is the low operating under pressure of -740 Pa and the low air requirement of only 4,200 m³/h. To allow a realistic comparison of the air requirement with cards from other manufacturers, it must be in relation to card production.

These values are possible because the flow of each individual duct element is optimised. The impact becomes strikingly obvious in the transparent duct parts of the suction hood while card is in operation.

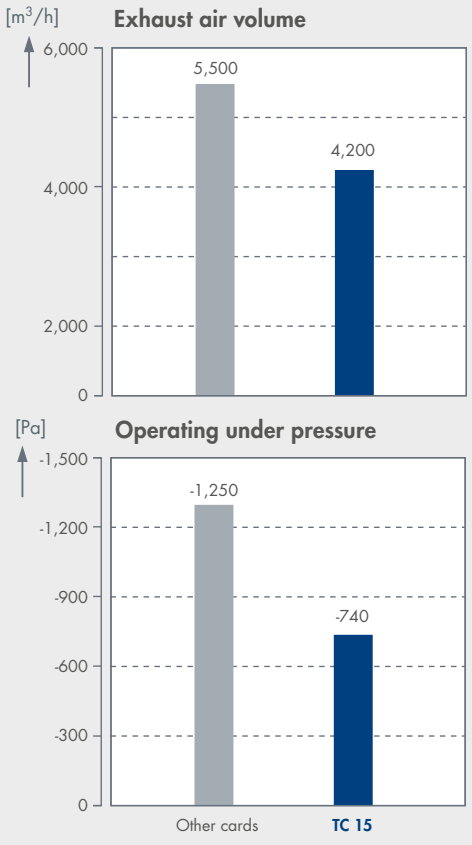
it's true

29,050 US$
lower annual energy costs of the filters (reduced exhaust air, less under pressures)



In comparison: other cards 5,500 m³/h at -1,250 Pa
TC 15 4,200 m³/h at -740 Pa
Example: 14 cards, 140 kg/h

The suction ducts are fastened entirely without tools. Pulling off and putting on takes place via a quick-change system.

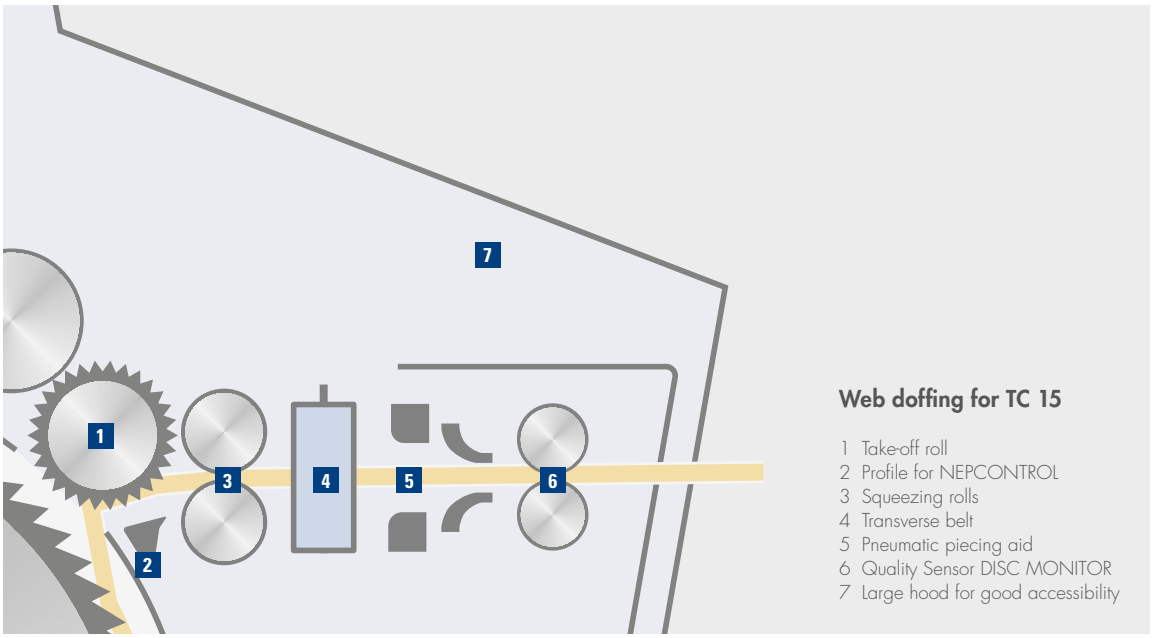


Low exhaust air volumes and operating under pressures reduce the operating costs considerably.

Innovative web doffing

When delivery speed matters

Today's technology allows delivery speeds well above 400 m/min in practice. For this reason, web doffing and sliver forming have been newly developed for speeds up to 500 m/min for the TC 15.



Web doffing for TC 15

1 Take-off roll
2 Profile for NEPCONTROL
3 Squeezing rolls
4 Transverse belt
5 Pneumatic piecing aid
6 Quality Sensor DISC MONITOR
7 Large hood for good accessibility

An integrated pneumatic piecing aid makes the operation of the new web doffing very simple.

Functions of the web doffing unit at the card:

- Takeover of web from the doffer
- Web condensing
- Sliver formation
- Seamless quality control of sliver
  – Sliver count variation
  – Evenness
  – Thick places
  – Spectrogram
- Transport of the sliver to sliver coiling system

Reliable control of higher speeds

Higher delivery speeds usually require higher drafts in the area of web formation. But a low draft promotes the evenness of the card sliver.

For this reason, importance was attached to gentle web guidance with low drafts during the new development of the unit. Combined with an effective suction, this results in a running behaviour that is nearly free of sliver breaks. An integrated pneumatic piecing aid makes the operation very simple.

Reproducible quality, metre by metre

The tried and tested sliver sensor DISC MONITOR, known from Trützschler levelling draw frames has been integrated into the new web doffing as well. It measures every metre of card sliver in a reproducible and precise manner before it is deposited into the can. The significantly reduced air consumption results in an economic advantage.

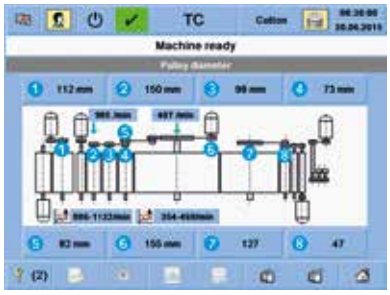
TC 15 control

Reliable and user-friendly

The heart of the card control is a robust industrial computer that works in a reliable and accurate manner even under the most demanding production conditions. Sensor data are safely recorded, displayed and converted into according control commands.

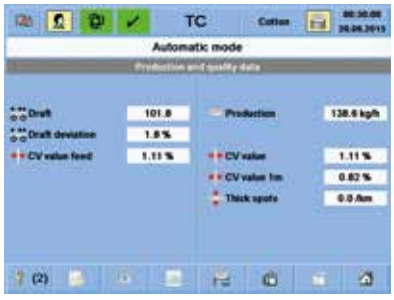
Operating level: Machine personnel

A few simple diagrams and symbols, independent of language, inform the operator about the status of the machine.



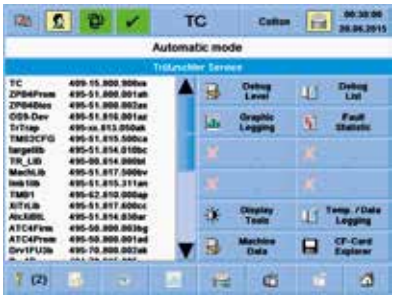
Operating level: Servicing personnel

Here a variety of settings can be performed via protected password, among other things limit values for all quality shut-downs.



Operating level: Plant manager / Quality manager

Persons with special access authorisation have the possibility here to change, among other things, machine configurations and customer-specific data.



Operating level: Trützschler service technician

Trützschler specialists are able to call up specific data, to perform the service call in a fast and effective manner.

A large touch screen provides operators, maintenance specialists and quality managers either with a clear overview or deep insights into card production at any time.

Easy to understand and individually configurable

The major advantage of monitor control is the language-independent operation via generally understandable symbols, diagrams and pictures. At the same time it is possible to display only those operating functions that are currently necessary or useful. In the event of a malfunction, the point of failure is clearly classified and precisely identified by means of a detailed picture or diagram.

Perfect interaction

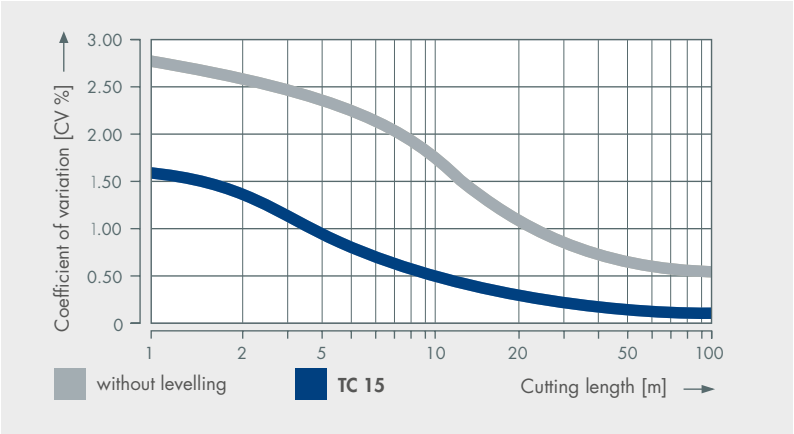
Four levelling systems adapted to each other

For the production of an even card sliver, a number of measures must interact perfectly:

1. Card feeding
In Trützschler installations, already the material flow to the card is continuously controlled via the CONTIFEED 2 System. Furthermore, the production requirements of all cards of a line influence the production of the last machine in the blow room. This connection contributes to a continuous card feeding, and thus to a sliver evenness.

2. Card feeding
Additional homogenisation is made possible by the double trunk principle of the tuft feeder. Its continuous, pressure-controlled feeding of the upper and lower trunk prevents unevenness of the card sliver, which for instance can occur during start up and shut-down of the card. In such cases the speed of the tuft feeder's feed roll is automatically adjusted to the respective card production.

3. Long-wave levelling
In addition to the sliver mass measured by the DISC MONITOR, the feed roll speed is also measured and controlled via a single sensor. It covers the entire spectrum of the regular card sliver counts.



The TC 15 guarantees excellent values concerning evenness over the entire length spectrum.

4. Short-wave levelling
The Card TC 15 is also equipped with a short-wave sliver count levelling. This system, which is already effective for a sliver length of less than 1 m, considerably improves card sliver evenness. While the thickness of the tuft web is constantly scanned by the Integral Feed Tray SENSOFEED+, the card control calculates a possible adjustment of the feed roll speed from the incoming values.

Four levelling systems adapted to each other guarantee a perfectly constant sliver fineness and an excellent evenness.

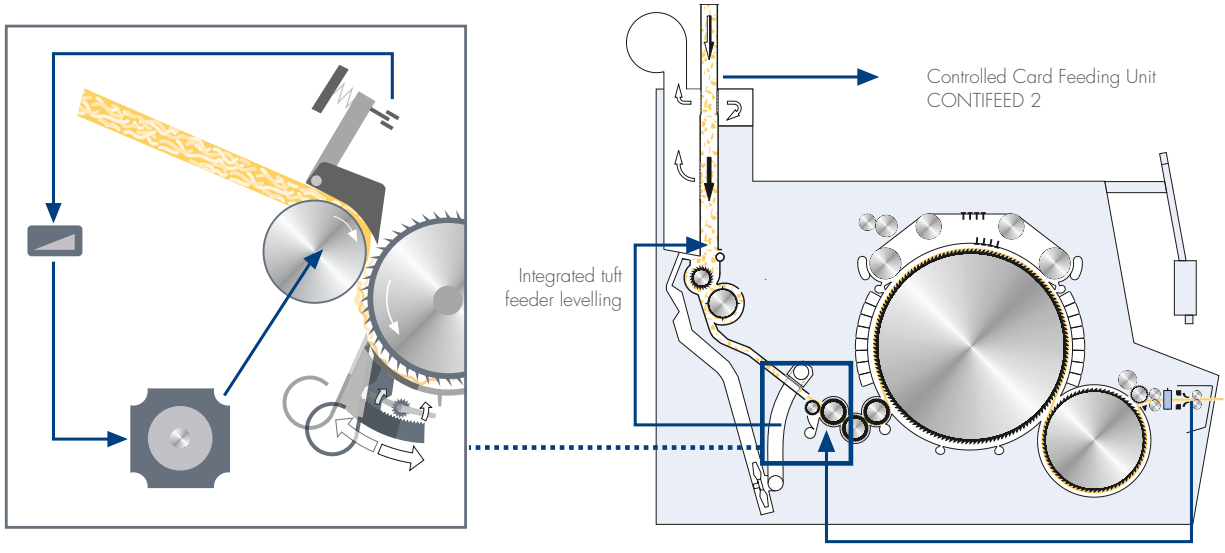


Diagram of short-wave levelling

Complete quality control

Safety for the production

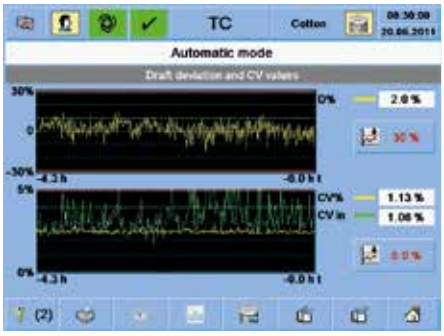
Before it is deposited into the can, the quality of each individual metre of card sliver is permanently controlled by the integrated sensors.

The data for all relevant criteria are determined and combined:

- Sliver count
- Sliver evenness
- Spectrogram
- Frequency of thick places
- Optional: Number of neps, dirt particles, seed coat fragments

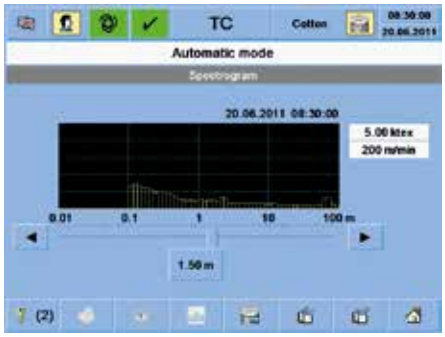
The data is evaluated by the card control, and the results appear in form of a diagram on the touch screen. The TC 15 stops automatically as soon as the pre-defined limits are exceeded. This type of production control of every metre of card sliver is clearly superior to random laboratory checks because it is performed permanently and online.

Optionally, quality management can be supported by other systems: Thus, for instance, the online Nep Sensor NEPCONTROL LC-NCT permanently records the number of neps, dirt particles and seed coat fragments (option).

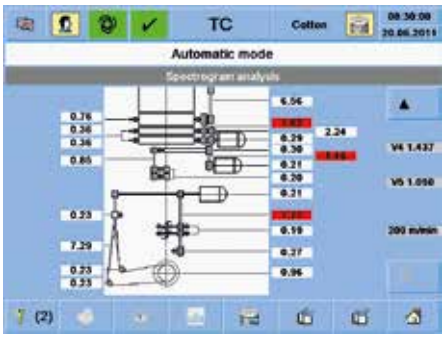


The evenness of fed material, card sliver and draft deviation is clearly displayed on the same time line.

Pictures or diagrams provide visual information, which often is superior to text messages (e.g. in case of fault messages).



With the virtual slide controls below the continuously calculated spectrograms, the error sources can be located more quickly.



The error source calculated by the automatic spectrogram analysis is shown directly in the gearing diagram.

Maintenance and clothing management benefit from concrete additional information.

Production parameters can simply and quickly be entered via touch screen.


TRÜTZSCHLER

NEPCONTROL LC-NCT

Each metre of web is checked

Prompt identification of quality deviations

Nep reduction is the most important quality criterion during carding. For this reason, the nep level in the card sliver should be permanently monitored. Deviations from quality are detected immediately, not hours or days later during laboratory tests.

The Nep Sensor NEPCONTROL LC-NCT is a unique, patented solution for permanent quality control: LC-NCT monitors each single metre of card web during production and provides concrete insights into quality.

Focus on nep level

Under the take-off roll, a camera takes approx. 20 pictures per second of the passing web. In doing so, the camera moves about the whole working width of the card in a special, fully closed profile. This optical principle copies the visual perception of a person, and is thus superior to indirect measuring methods. A high-performance computer directly attached to the profile evaluates the pictures with a special software, distinguishing between neps, seed coat fragments and trash parts.

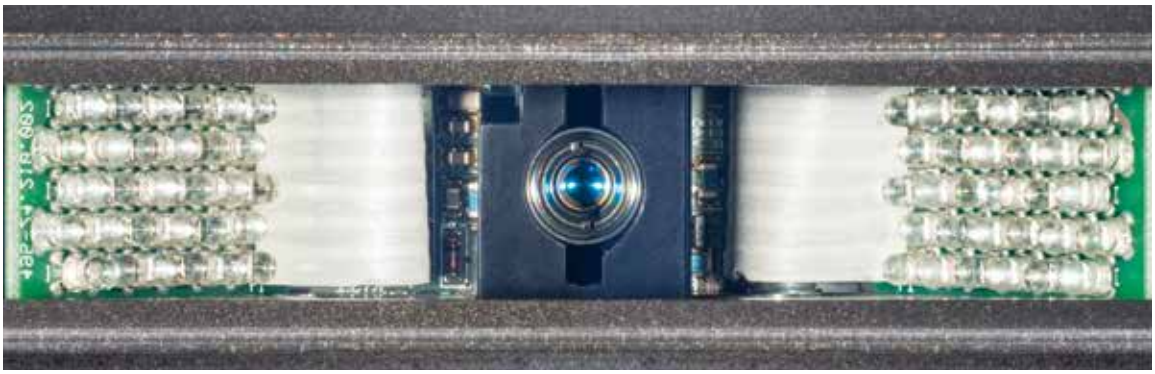
With NEPCONTROL LC-NCT it is also possible to establish a distribution profile of the nep and particle level over the working width. Possible clothing damage or incorrect settings become immediately visible this way.

NEPCONTROL and T-DATA

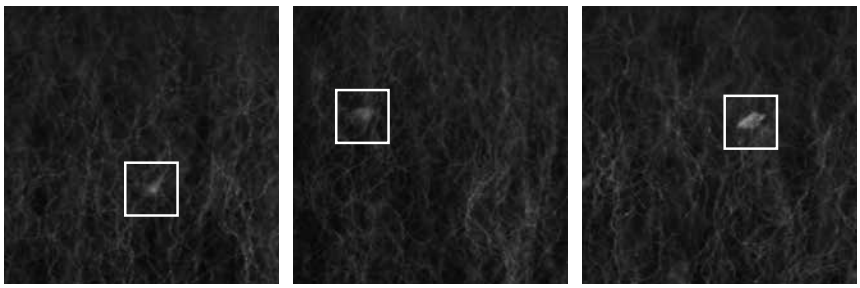
The NEPCONTROL data are transmitted to the higher-level production and quality information system T-DATA (see also page 58). The intelligent evaluation and display of the results immediately indicates:

- Are any of the values outside the desired quality range?
- Is there any clothing damage?
- Has there been a change to raw material data?
- Is clothing maintenance required?

The quality manager can respond without delay, even while on the road.



Camera and flash of Nep Sensor NEPCONTROL LC-NCT



The camera's view of the web with trash particles (neps, seed-coat fragments, trash parts).

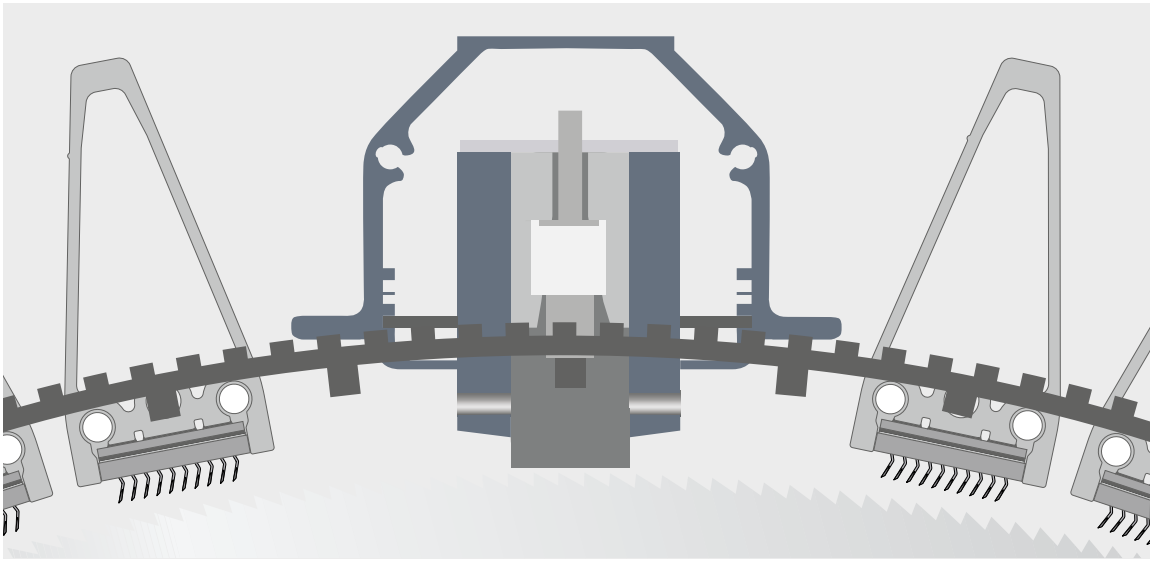
SCAN

The video shows the function of NEPCONTROL.

Scan page with Smartview.

FLATCONTROL TC-FCT

Quick and accurate flat settings



For the time of the measurement, three normal flat bars are replaced by a measuring flat.

FLATCONTROL TC-FCT efficiently prevents quality losses caused by too widely set revolving flats. The setting variation within one card group can also be systematically reduced by FLATCONTROL TC-FCT, thus each card works within an optimal range at all times. The entire quality level increases significantly. Due to the fast and accurate calculation of the distance between cylinder and flat, the Measuring System FLATCONTROL TC-FCT offers numerous benefits:

- Better card sliver quality due to smaller setting tolerances
- Extended service life of clothing
- Quick flat setting
- Reproducible, verifiable settings
- Independent of personal influences

Basic settings reproducible at any time

When performing basic flat settings with FLATCONTROL TC-FCT, first the measuring flat is moved to the corresponding setting position via remote control. The current distance to the cylinder is graphically indicated on the colour screen of the notebook. The distance of flat to cylinder can now be set within seconds – considerably more accurate than with feeler gauges.

The screen shows the current condition of the flat settings. To perform the setting, the technician just needs to take one look at the screen.

Measurements covering the entire flat area

The FLATCONTROL measuring flat is temporarily replaced by three regular flat bars. Sensors are used to record the distance to the cylinder clothing. All measurement values are automatically saved, wirelessly transferred to a notebook and displayed in form of a diagram.

Scope of delivery of Flat Measuring System FLATCONTROL

- Measuring flat
- Notebook PC with accessories
- Calibration device
- Solid metal case
- Service carriage for transport

SCAN

The video shows the basic setting with FLATCONTROL.

Scan page with Smartview.

Efficient maintenance

Quick access from all sides

After removal of the doors, all areas of the card are optimally accessible.

The TC 15 also sets standard for maintenance friendliness:

- Doors can be removed without tools in just a few minutes.
- The drives are concentrated on the right side of the machine.
- The operators are protected by a central safety locking system.
- Very simple replacement of the pre-opening unit WEBFEED because it can be changed in one part.
- The same applies to the Integral Feed Tray SENSOFEED+.
- The complete flat cleaning device and the web doffing can be disassembled within shortest time.
- Since the can changer has no mechanical connection to the card, cleaning work is simplified in addition to operation.
- Conventional drive covers that can obstruct maintenance work are completely eliminated.

Targeted maintenance management

The card control is a valuable tool for the service technician during maintenance tasks, like clothing care or maintenance intervals.

- Example clothing change:
  The card control indicates this early enough on the screen.
- Example error detection and recovery:
  The control offers special tools for this as well.
- Example operating conditions:
  In addition to the distances of the carding elements as determined by the Setting Optimiser T-CON, for instance rotational speeds, speeds or negative pressures are also displayed.

Digital drives

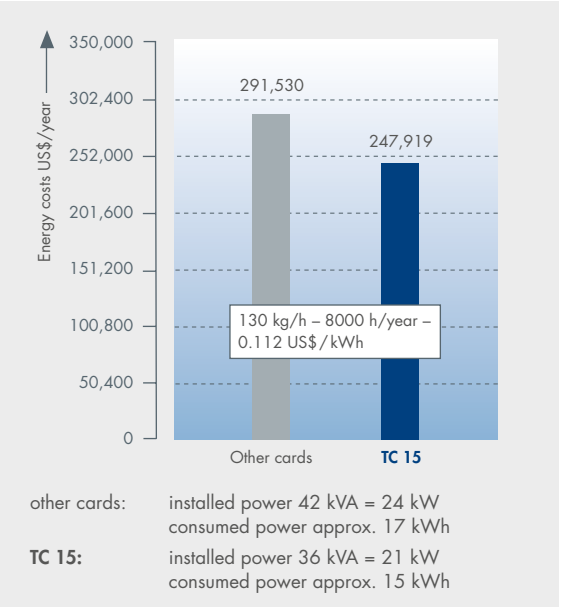
Measurable savings in maintenance costs

Meanwhile more than 25,000 Trützschler cards are equipped with completely maintenance-free adjustable motors as standard feature. They are used for doffer, web doffing and can changer. Another advantage of the digital drives is their high efficiency, which reduces electrical power losses. Furthermore, they provide a maximum of speed and control accuracy at low speeds, which results in improved sliver CV values. The control of the digital drives communicates directly with the card control.

it's true

43,000 US$
energy savings per year

Completely maintenance-free: The digitally controlled motor has neither carbon, brushes nor fans, and is completely enclosed.



other cards: installed power 42 kVA = 24 kW
consumed power approx. 17 kWh

TC 15: installed power 36 kVA = 21 kW
consumed power approx. 15 kWh

Comparison of annual energy costs

Assembly of the motor controls takes place at Trützschler in Mönchengladbach, Germany.

TC 15S

The highly specialised card exclusively for man-made fibers

Usually card development focused primarily on cotton processing. Man-made fibers are processed on only slightly modified cards. However, today the trends towards technical textiles place higher requirements that can only be met by highly specialised cards. The Card TC 15S is the result for man-made fiber processing.

Extremely resistant:
The fiber-guiding elements

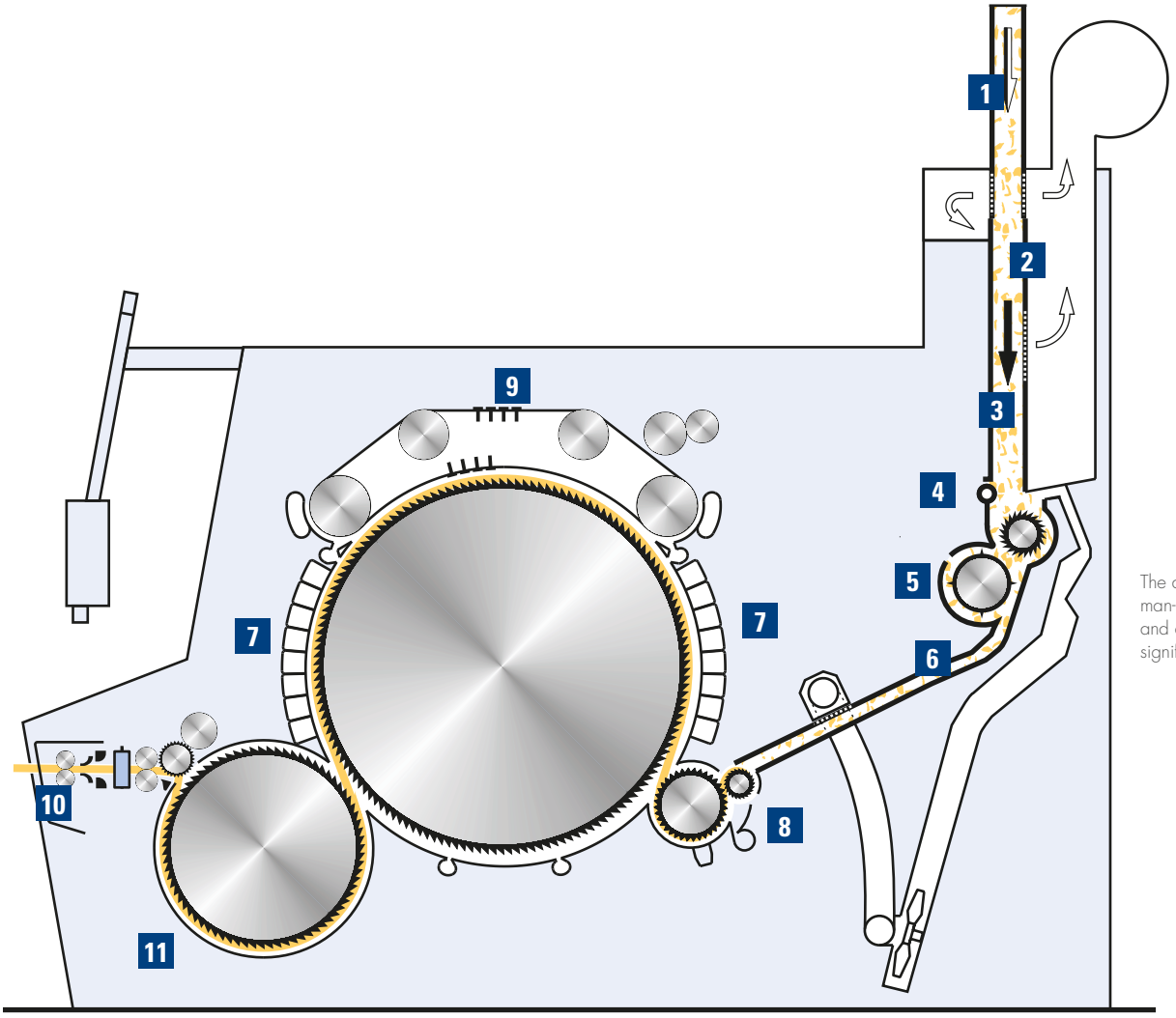
The fiber finish used for many man-made fibers has an aggressive effect on paint and base metals. As a result, paint may peel off and metal surfaces may become sticky, thus impairing optimal fiber flow in the card. This leads to production limits and frequent production interruptions in cleaning work.

On the Trützschler Card TC 15S, all plates in the tuft feeder and in the transfer section to the card are made of stainless steel. All covering elements relating to cylinder and doffer consist of high-precision aluminium elements. An anodizing process protects these parts from the aggressiveness of man-made fibers. During sliver coiling, gentle sliver guidance is ensured by the stainless-steel sliver coil tube and coiler plate.

11-fold difference: Differences between man-made fiber card and cotton card

1. Stainless steel comb instead of screen fabric
2. Stainless steel cleaning flap
3. Stainless steel reserve trunk
4. Segmented feed tray
5. Special opening rolls for higher speeds
6. Stainless steel reserve trunk
7. More carding and less cleaning elements
8. WEBFEED with a large needle roll
9. Man-Made Fiber T-CON
10. Additional deflection roll
11. New doffer clothing TCC NovoDoff 30[1]

[1] protected by patent



The differences between man-made fiber card and cotton card are significant.

TC 15S with modified WEBFEED

Higher performance, quality and service life

The fiber-guiding elements, as in this case the transfer section between DIRECTFEED and card, are made of stainless steel.

The enhanced WEBFEED system for the TC 15S is substantially different from the cotton card. For high production application of cotton, a pre-opener system with three rolls is essential. For processing of man-made fibers there is another solution. The WEBFEED developed for the TC 15S has:

– one large single roll, featuring an approx. 50 % larger diameter
– special needling of the roll
– novel surface finish

Needle roll with significantly increased service life

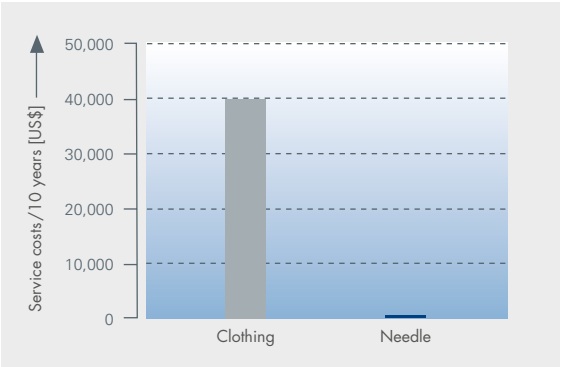
Another advantage of the especially for man-made fiber processing developed needle roll is its significantly longer service life. It is approximately twenty times that of a clothing roll, thus significantly improves efficiency. All of these measures combined contribute to the significant production increases.

Improved quality – 30 % less yarn imperfections

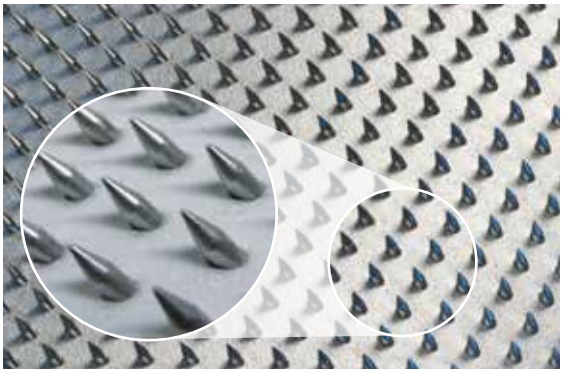
The WEBFEED system of the man-made fiber card allows an improved yarn quality with an average of 30% less imperfections.

40,000 US$
savings in service costs over 10 years

it's true



In the course of 10 years, the clothings of the licker-in must be re-clothed about 20 times per card. During the same time frame, a needle roll is maintenance free.



Needled Trützschler pre-opening rolls have a special surface finish.

T-Con for TC 15S

Protecting man-made fibers from damage

Thermal influences affect the carding of man-made fibers completely different than processing of cotton. Without the systematic evaluation of T-CON data from a long series of trials, this would never have been discovered.

For instance, the rule "the tighter the flat setting, the better the result", does not apply to man-made fibers. On the contrary; here it is essential to maintain a certain minimum distance. It prevents electrostatic charges that have a negative effect on carding quality, and subsequently also on yarn quality.

Hence, the T-CON system for man-made fiber carding uses other algorithms and thus provides the basis for precise setting recommendations. The result is a clearly increased production.

TC-MMF

For cotton and man-made fiber blends

On the Trützschler Card TC 15 with the Optional Set TC-MMF, cotton blends can be processed with polyester, viscose or polyacrylic. The TC-MMF features stainless steel surfaces that take the particular fiber-metal friction values into account. Its clothings are specifically designed for cotton/man-made fiber blends, thus eliminating the settling of finishing. An important distinguishing feature is also the number and type of carding segments of the MULTI WEB-CLEAN system. Because the carding of a blend containing polyacrylic fibers requires another configuration than the carding of cotton/viscose.

The Optional Set TC-MMF:

- The fiber-guiding elements in the tuft feeder are made of stainless steel
- Additional carding elements from 90 to 640 points/inch^2
- Special clothings for cylinder, doffer and flat

The clear quality advantages can be confirmed in the laboratory.

Cards for hygiene products

The number 1 in hygiene applications

Trützschler cards can do more than only card sliver. They also provide technology for products outside the field of spinning. Some simple changes and the combination with machines from Trützschler Nonwovens or our cooperation partner Rosink result in compact solutions, for instance for the production of cotton swabs, cotton balls, tampons and cotton pads.

Efficient production of cotton swabs and cotton balls

The production of cotton swabs requires particularly fine and even sliver ranging from 1.3 to 1.7 g/m. A major challenge for cards. But no problem for the Trützschler Card. It is currently the most efficient machine for the production of high-quality cotton swabs in the market. It produces four fiber slivers in parallel per machine, but requires very little space due to its compact design. The automatic control of the sliver weight ensures best quality at high production rates. A combination with the Rosink Web Splitting Unit provides increased efficiency as well. It allows a quick take-off and, due to the compact web delivery, prevents sliver breaks from occurring. Following this, the automatic Rosink can changer "Quad Coiler" simultaneously coils the slivers into four cans.
The equipment also allows flexible application for cotton balls. To produce cotton balls, the web is divided on the card to obtain the required sliver weight of 3.0 to 3.5 g/m. The materials used for cotton swabs and cotton balls are cleaned and bleached blow room and card waste as well as noils with a fiber lengths of 13 to 17 mm.

High-precision production of tampons

For the production of tampons, mainly viscose is used: either one type of viscose or a blend of various viscous materials. A homogeneous material blend is

Installation for the production of cotton swabs shortly before commissioning

Compact web doffing with four-fold delivery

essential for a good and consistent product quality. In addition, the stringent limits for the absorption of tampons must be followed. Thus, to achieve the accurate target weight of tampons is of greatest importance. This requires rectangular sliver of very high evenness. With Trützschler cards it is possible to achieve these high requirements at simultaneously high production rates.
The Rosink Strip Forming Unit is the perfect addition to the card for the production of tampons. At the card outlet, the fiber web is joined to form a sliver with a rectangular cross-section and pressed over an integrated calender system.

A specially developed coiling system ensures perfect coiling geometry when depositing the web strips into the rectangular cans. Can covers allow a perfectly hygienic interim storage of the material.
The combination of Trützschler and Rosink machines stands for compact, space-saving, high-efficiency machines. Though there is very little operating and maintenance work, production quality is very high.

Trützschler card with automatic can changer "Quad Coiler" from Rosink

Cotton pads: Everything from a single source

Trützschler is the fully reliable partner when it comes to the production of cotton pads: The modular system from Trützschler Spinning and Trützschler Nonwovens allows free planning and highly flexible adjustment to product and material. This provides an economical solution even for smaller productions. The installation also convinces by its low maintenance work and its optimal use of raw materials.
The raw materials used for cotton pads are bleached cotton waste and noils. After opening and clean-

Web strips with rectangular cross-section

Trützschler card with integrated Web Forming Unit and the Cubic Can Strip Laying Machine from Rosink to deposit the web strip.

ing, the raw material is fed to cards that are aligned behind each other. They feed a multilayer web directly into hydroentanglement, the "MiniJet" from Trützschler Nonwovens.
The carding of the web results in a nep reduction and a high level of web evenness at constant weight. Another advantage is the high degree of material opening, which benefits a high packing volume. In addition to web bonding by means of the MiniJet, other options such as structuring and perforation can be selected.

After hydroentanglement, the web is dried to the desired residual moisture and cut to the required width. Next, large rolls are wound that can be placed directly in front of the punch. Punch scraps are re-opened and returned to the process.

Three cards aligned behind each other supply a multilayer fiber web to the spunlace system Trützschler MiniJet. This is followed by the Trützschler dryer and winder.

After dryer and accumulator, the web is cut and wound into large rolls.

More efficiency

due to fewer process steps

For rotor spinning, a sliver with a lower level of parallelising is of advantage; for this reason, the drafts should be kept small. The one-zone drafting system of the IDF 2 provides an excellent sliver evenness and a significantly better yarn evenness. The better quality is evident in the uniform fabric appearance.

Fewer steps to reach the goal

The „best" process steps are those that do not exist in the first place. Thus, problems can be avoided, errors ruled out and money saved. A reduction of draw frame passages is of particular interest in the spinning mill. And this is precisely what the Integrated Draw Frame IDF 2 achieves by direct coupling to the Trützschler Card TC 15 in the rotor spinning mill. Economic efficiency is improved significantly. Because the Trützschler card/draw frame couplings combine all the advantages of the Card TC 15 with a proven and reliable draw frame technology, the quality of the rotor-spun yarns is improved as well.

Also shorter spinning process

There is no shorter spinning process than feeding the card sliver directly on the OE rotor spinning machine. This requirement is perfectly met by the Integrated Draw Frame IDF 2.

For more information on IDF 2, see "Draw Frames" brochure

The Integrated Draw Frame IDF 2 with automatic can changer

Online Data Monitoring System T-DATA

Transparency in spinning

Due to its unique sensors, only Trützschler can provide valuable insights into the system-relevant parameters during all important process steps. A significant increase in efficiency and quality in spinning is only possible with this statement quality.

All important data in view at all times

The Trützschler Online Data Monitoring System T-DATA gathers all current production and quality data. Due to its modern web architectures, these data are also available while on the road. No matter where you are, Smartphones or tablets allow access to all important data and error statistics of the machines connected, individually and also as overview.

Optimisation of production

Trends in production can be detected at an early stage and malfunctions and faults dealt with faster. This allows a measurable reduction of downtimes and optimisation of machine settings for higher production rates. T-DATA makes sure that every metre of sliver in the can has been checked.

Individual data view

Each customer decides which data is of interest and how it is to be displayed. The Web interface with intuitive operation can easily be adapted to individual requirements. The options range from basic settings to highly sophisticated functions.
Data can be selected from clearly arranged graphics or tables over a freely definable period, and compared with each other.

Special Trützschler sensors at all relevant points

Trützschler sensors measure all important quality and production data that are required for the optimal control of production.

Example neps

NEPCONTROL develops its full potential in combination with T-DATA. The most important quality feature for the carding quality are the neps in the sliver. For this reason, the neps should be permanently monitored at all cards.

It is possible to respond immediately to quality deviations without having to wait on laboratory data for hours or days.

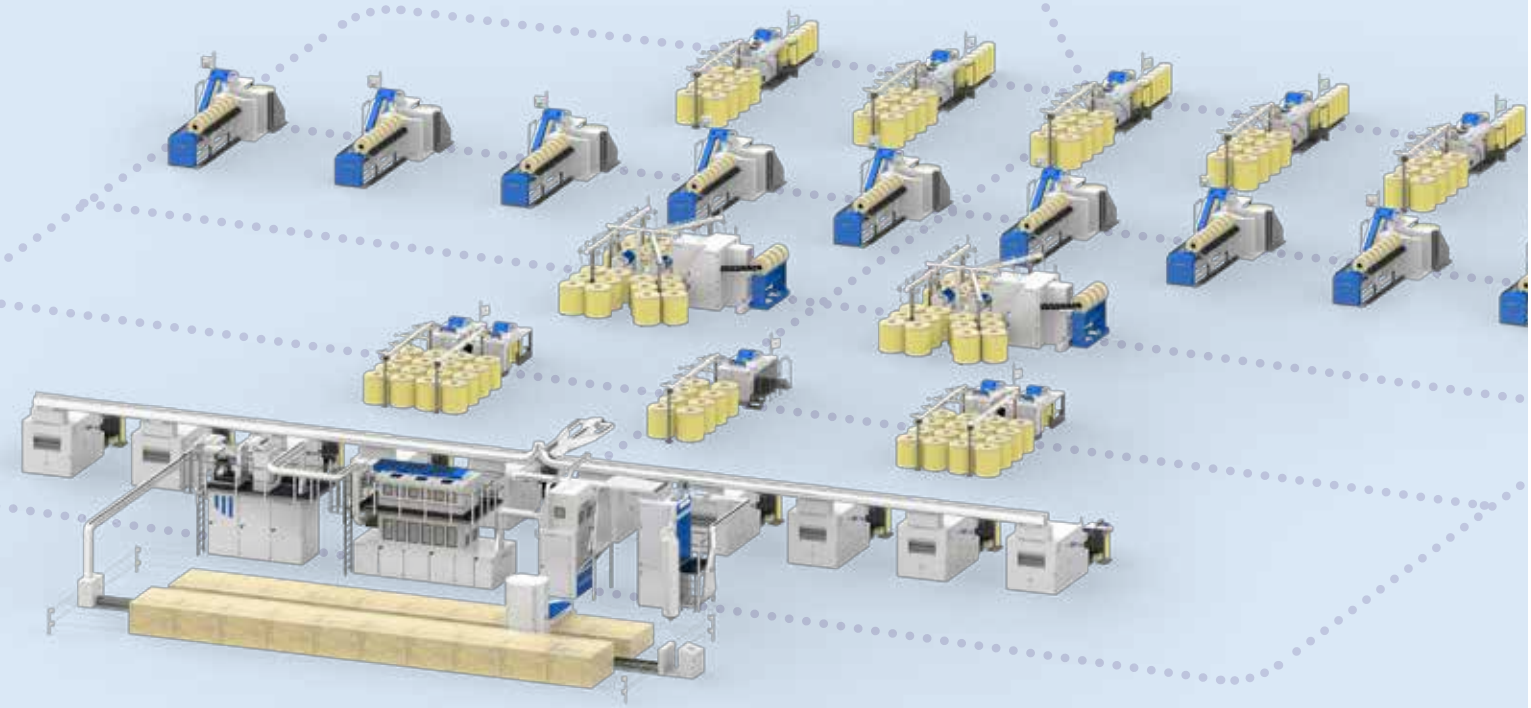
Integration into existing systems

T-DATA can easily be integrated into an existing ERP or control system. In addition to current data, it is also possible to transmit and compare past production data and fault messages via an external interface. This allows easy use of synergy effects.

For more information,
see the brochure "T-DATA".

Graphic T-DATA display

Data of the individual machines, for instance, can be read on the tablet.



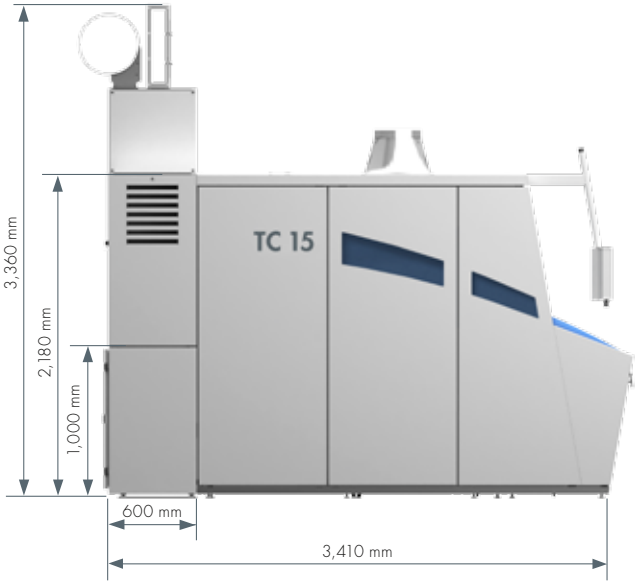
SCAN

Watch the film T-DATA with the Trützschler Spinning app.

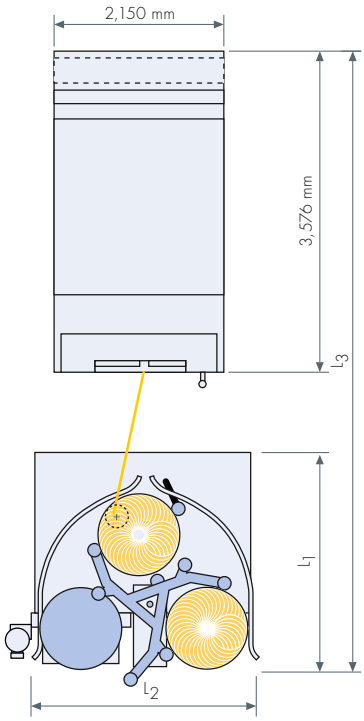
Scan page with Smartview.

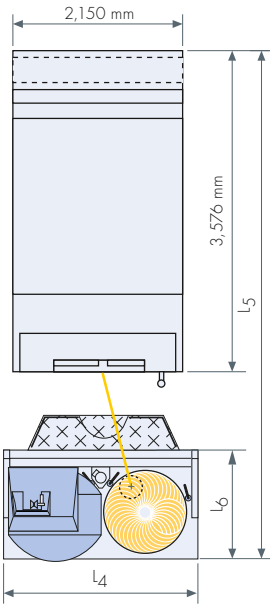
Card TC 15

Technical data



Floor load:	approx. 22,540 N/m²
Max. surface pressure per base plate:	approx. 57 N/m²
Production:	max. 260 kg/h
Suction (continuous):	4,200 m³/h (-740 Pa)
Net weight:	approx. 6,700 kg incl. can changer
Sound pressure level:	67 dB(A) at 100 m/min
	73 dB(A) at 250 m/min
	78 dB(A) at 500 m/min
Air consumption	250 NL/h



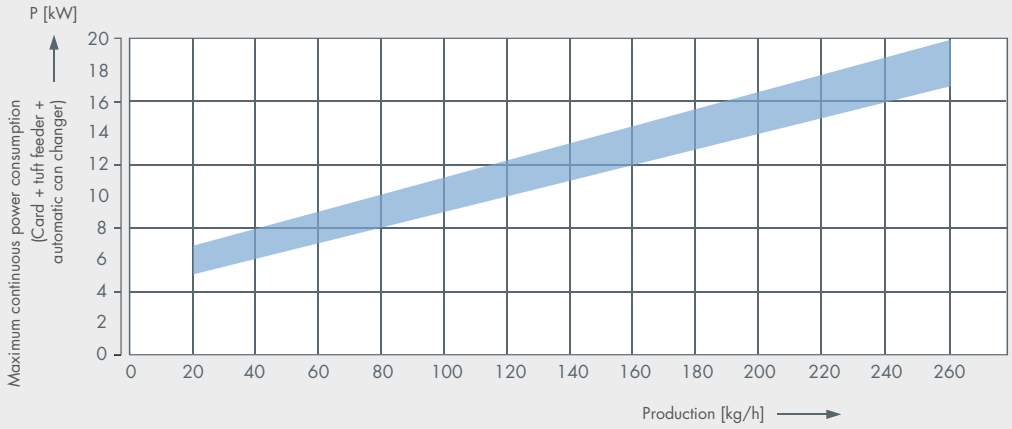


The Can Filling Station T-MOVE can be freely positioned in front of the card since it is not mechanically connected to the card.

The can height can be up to max. 1,500 mm

Can diameter (mm)	L1 [1]	L2	L3 [2]	L4	L5	L6
600	1,715	1,930	5,455-6.345	–	–	–
1,000	2,350	2,750	6,090-6,980	2,400	6,175	1,420
1,200	–	–	–	2,800	6,375	1,620

[1] without can delivery ramps
[2] depending on width of service aisle between card and can changer (under floor)



Apart from production output, the values for current consumption depend also on the various settings and the material.

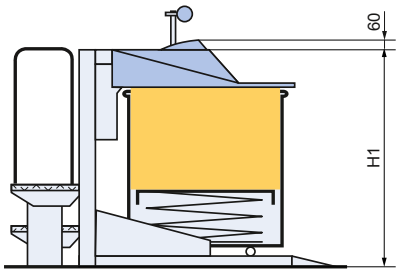
Can Filling Station T-MOVE

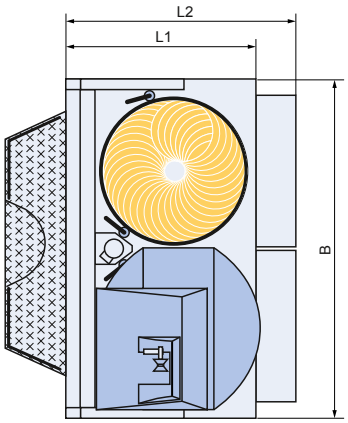
Technical data

Internal can diameter	mm	1,000	1,200
Total can height K	mm	1,200	
Total height H1 (above floor)	mm	1,600	1,600
Total height H2 (under floor)	mm	1,540	1,540
Width B	mm	2,400	2,800
Length L1	mm	1,420	1,620
Length L2 (only above floor)	mm	1,750	1,950
Delivery speed:		500 m/min	
Installed power:		2.5 kW	
Continuous power consumption:		1.0 kW	
Exhaust air output:		200 m^3/h	
Negative suction pressure:		-250 Pa	

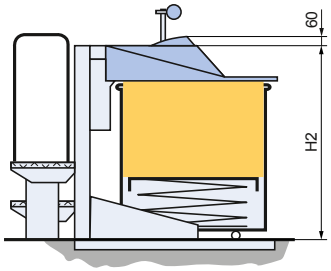
Standard: **Under floor**
Option: **above floor**

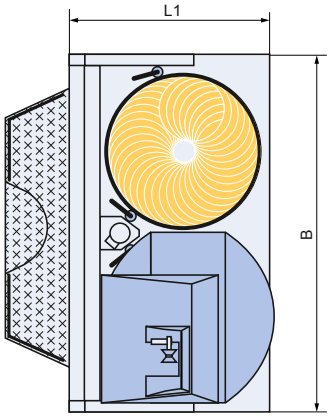
Above floor





Under floor





Standard equipment TC 15 card

- Large cylinder with 5.3 m² clothing surface
- Function-oriented overall design for excellent accessibility
- Setting Optimiser T-CON
- MAGNOTOP System TC-MT
- Integrated Tuft Feeder DIRECTFEED with moveable feed tray
- Integral tray, SENSOFEED+
- Thick place monitoring and metal detection in the feed area
- WEBFEED Unit with 1 or 3 opening rolls
- Precision Knife Setting System PMS
- Tooth belt guided aluminium flat bars
- Precision Flat Setting System PFS
- Premium clothings made by Trützschler Card Clothing TCC
- Computer control with large colour touch screen
- Quality data entry and display
- Quality Sensor DISC MONITOR
- Pneumatic piecing aid
- Spectrogram analysis
- Quality and maintenance management
- TC-CB electronic main cylinder brake
- Digitally controlled, maintenance-free servo motors
- Coordinated levelling systems in short and long-wave area
- Infinitely variable flats speed
- Data exchange via USB stick
- Network connection for communication with LINECOMMANDER
- Monitored continuous central suction above floor
- Central safety locking system

Options and additional equipment

Individual project planning:

- Monitored continuous central suction under floor
- Separate strips suction above or under floor

Application-oriented optimisation:

- Recycling Fiber Set TC-MWC 3
- Man-made fiber version TC 15S
- Man-made fiber set TC-MMF for processing fiber blends on TC 15
- Infinitely variable speed control of cylinder and WEBFEED TC-VSD
- Motorised adjustment for Precision Knife Setting System PMS
- Motorised adjustment for the Precision Flat Setting System PFS

Sensors and measuring systems:

- Nep Sensor NEPCONTROL LC-NCT
- Flat Measuring System FLATCONTROL TC-FCT

Tools for clothings:

- Flat Grinding Device TC-FG
- Grinding Device TC-GD for grinding cylinder and doffer clothing
- Wire Mounting Equipment TC-ME

Options for delivery and sliver coiling:

- Automatic can changers above or under floor
- Can Filling Station above or under floor
- Integrated Draw Frame IDF 2

Grinding devices and mounting equipment

Continuity of carding quality

Flat Grinding Device TC-FG
With the new Trützschler grinding device TC-FG, the activation of flats clothing is now even easier and faster. The grinding roll is perfectly adjusted to the Trützschler Card TC 15 and provides a precise grinding result.
In addition to being light-weight, the grinding device is also simple to operate. Two adjusting screws allow easy adjustment of the roll to ensure an optimal grinding setting.

Grinding Device TC-GD for main cylinder and doffer
With the traversing Grinding Device TC-GD, optimum results are achieved when activating the metallic cylinder and doffer wires of the Trützschler Card TC 15. The wire tips are ground in a smooth and burr-free manner over the entire card width. This leads to best carding results.

Wire Mounting Equipment TC-ME
With the comprehensive Trützschler Wire Mounting Equipment TC-ME, your cards are optimally prepared for clothing and re-clothing:

- a complete tool set for applying Trützschler card clothing,
- a mounting frame for applying clothing to licker-in and cleaning rolls of cards, and
- an unwinding machine for re-clothing

The tool set for applying clothing can be used for all Trützschler cards. It is easy to install and operate, thus ensuring short downtimes. The corresponding T-Winder allows uniform mounting of any clothing type and thickness. Ceramic guide elements in combination with a traveller guide allow a constant winding tension that can be permanently monitored via display.
In case the clothing wire cannot be mounted at the machine itself, there is the possibility to use the supplied mounting frame. The quick-release fastener of the T-Winder allows fast assembly and disassembly.

Quick and simple activation of flat tops by means of the grinding device TC-FG.

With the comprehensive Trützschler Mounting Equipment TC-ME, all cards are optimally prepared for clothing and re-clothing.

The traversing grinding device TC-GD improves carding results for cylinder and doffer.

The corresponding T-Winder allows uniform mounting of any clothing type and thickness.


TRÜTZSCHLER

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GETTING FIBERS INTO SHAPE – SINCE 1888

TRÜTZSCHLER SPINNING

Fiber preparation installations: Bale openers · Mixers · Cleaners/Openers
Foreign Part Separators · Dust separators · Tuft blenders
Waste cleaners | Cards | Draw frames | Combing machines

TRÜTZSCHLER NONWOVENS

Openers/Mixers | Card feeders | Cards/Crosslappers | Wet laying lines | Needling machines
Hydro entanglement | Chemical and thermal bonding lines
Finishing lines Dryers | Heatsetting | Winding | Slitting

TRÜTZSCHLER MAN-MADE FIBERS

Staple fiber lines | Filament lines: Carpet yarns (BCF) · Technical yarns

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TRÜTZSCHLER CARD CLOTHING

Metallic wires: Cards · Cards long staple · Cards nonwovens · Open-end spinning
Flat tops | Fillets
Carding segments | Service machines | Service 24/7

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