
TRÜTZSCHLER
TC 19i

The new intelligent Truetzschler Card TC 19^{i}

The new Truetzschler card generation TC 19^{i} is a quantum leap in spinning preparation: It fulfils the dream of the self-optimizing card. The TC 19^{i} meets demands on individual yarn quality never reached before.

This development was made possible by the profound know-how of the best carding technologists worldwide.

The intelligent concept is made possible by the three components:

- Gap Optimizer T-GO – NEW
  optimum carding gap even under changing production conditions
- WASTECONTROL – NEW
  best raw material utilisation and minimum waste
- Reliable NEPCONTROL – continuous monitoring of the nep level in the card sliver

Paper thickness 4/1000" (0.1 mm)

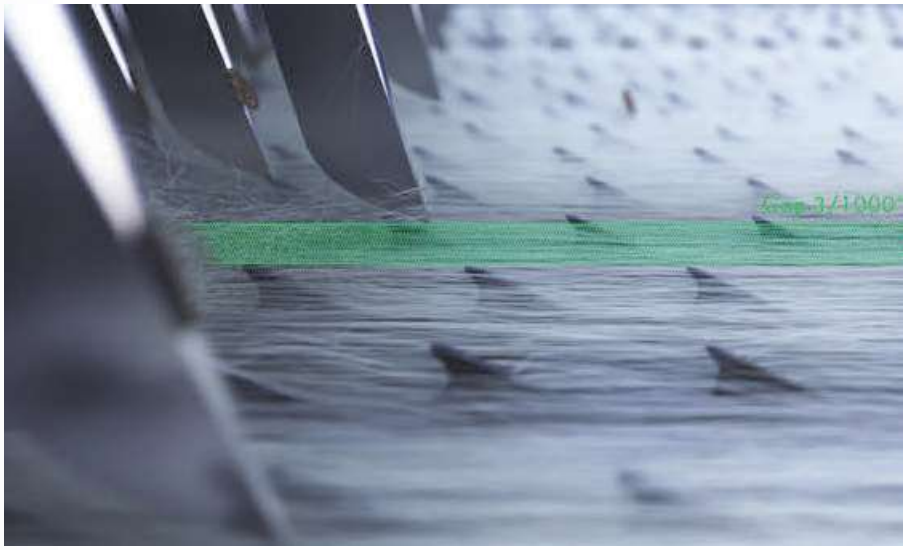
The size of the optimal carding cap of Card TC 19^{i} is 3/1000". Not even a sheet of paper would fit through.

3/1000" in self-optimizing precision

When the cotton fibers work their way from the bale to the yarn, the key point for yarn quality lies between the cylinder clothing and flats clothing.

This is where the quality originates – and the smaller the carding gap in cotton carding, the higher the quality. A constant minimum carding gap of 3/1000", for instance, is now automatically set even under changing production conditions.

This way it is possible to continuously and reliably realise the full quality potential.



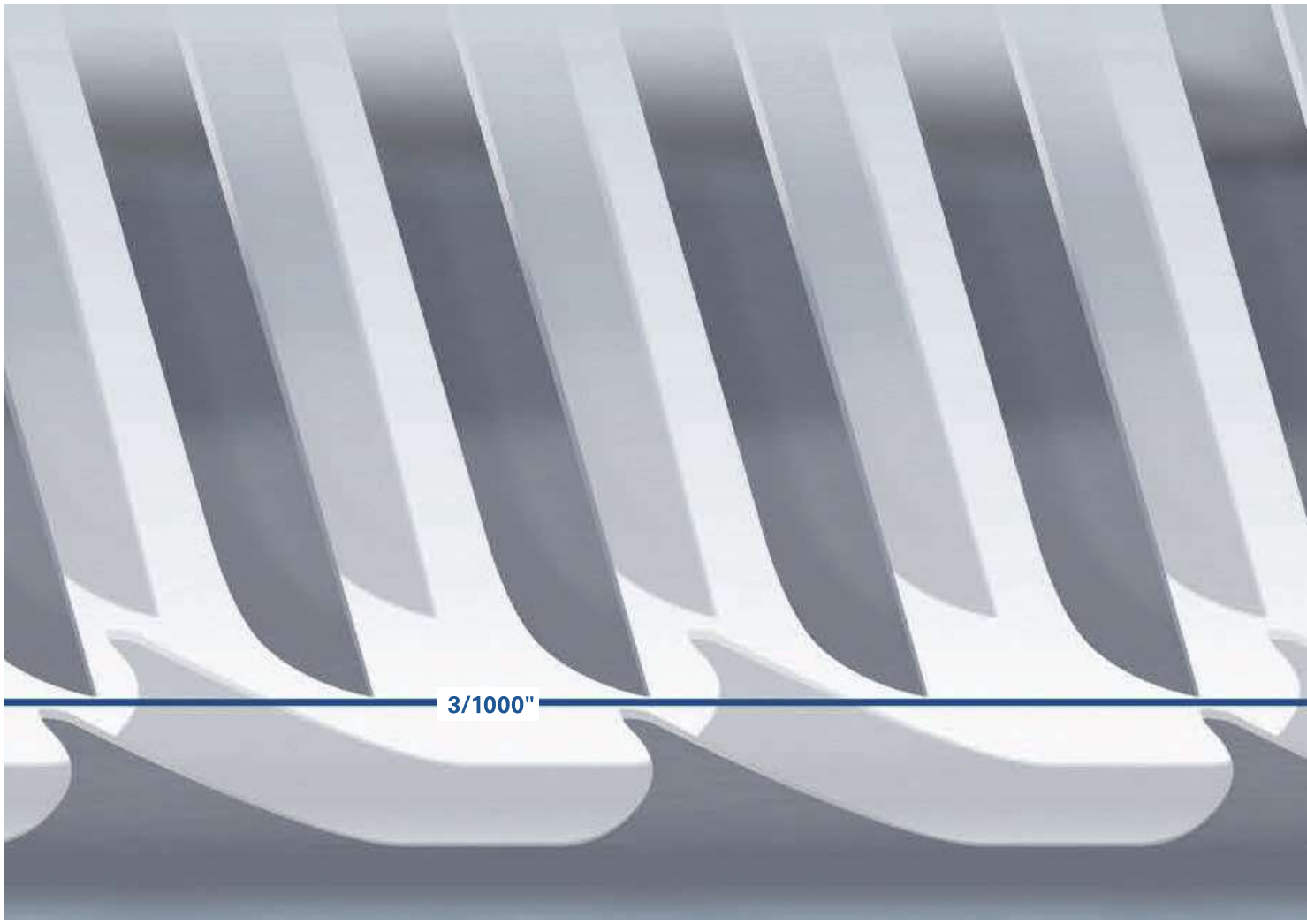
T-GO ensures a constant minimum carding gap of 3/1000" even under changing production conditions.

NEW

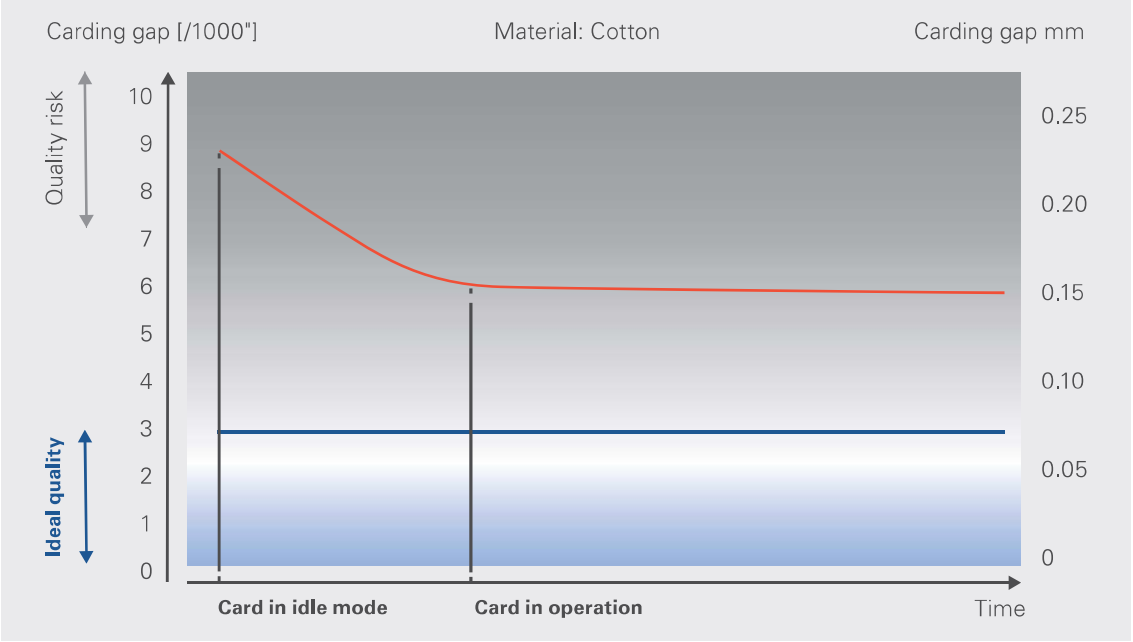
Gap Optimizer T-GO

Carding gap optimization with unprecedented precision

Even an experienced technologist cannot carry out extremely narrow TARGET settings of e.g. 3/1000" with the “cold” card at standstill, because centrifugal forces and expansions due to the temperate increase have a considerable influence on this setting. In addition, a carding gap set once without T-GO results in a “blind flight” in terms of quality in the downstream production process.



Ideal carding gap setting with T-GO



T-GO function sequence

- Before the cylinder starts up, a functional check is carried out
- After the nominal cylinder speed is reached, a reference measurement is carried out
- After the material transport is switched on, T-GO carries out a reference measurement.
- After the machine is heated up, T-GO carries out a reference measurement
- Now a permanent levelling according to T-CON data takes place

After switching off and restarting, the steps are repeated.

The result: The card runs constantly with the ideal carding gap setting under all operating conditions - fully automatically without any manual intervention.

Only active levelling opens up the full potential of the card: The best is permanently brought out of cotton.

Even after maintenance work, such as grinding the flats clothings, T-GO finds the correct setting again via fully automatic self-optimization.

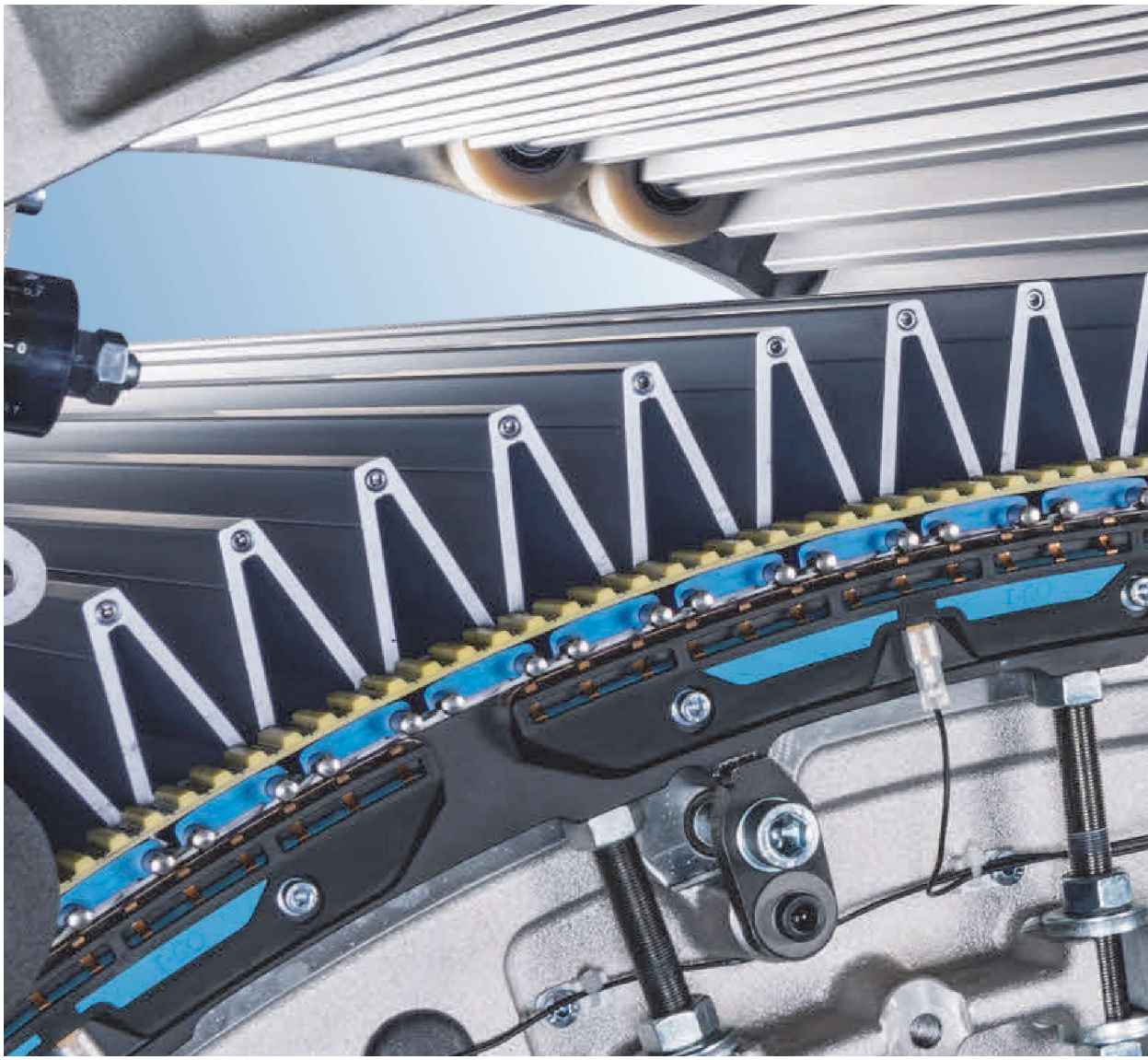
This line is 3/1000" wide →

$^{3}/_{1000"}$ carding gap

kept constant under all operating conditions with the new Gap Optimizer T-GO

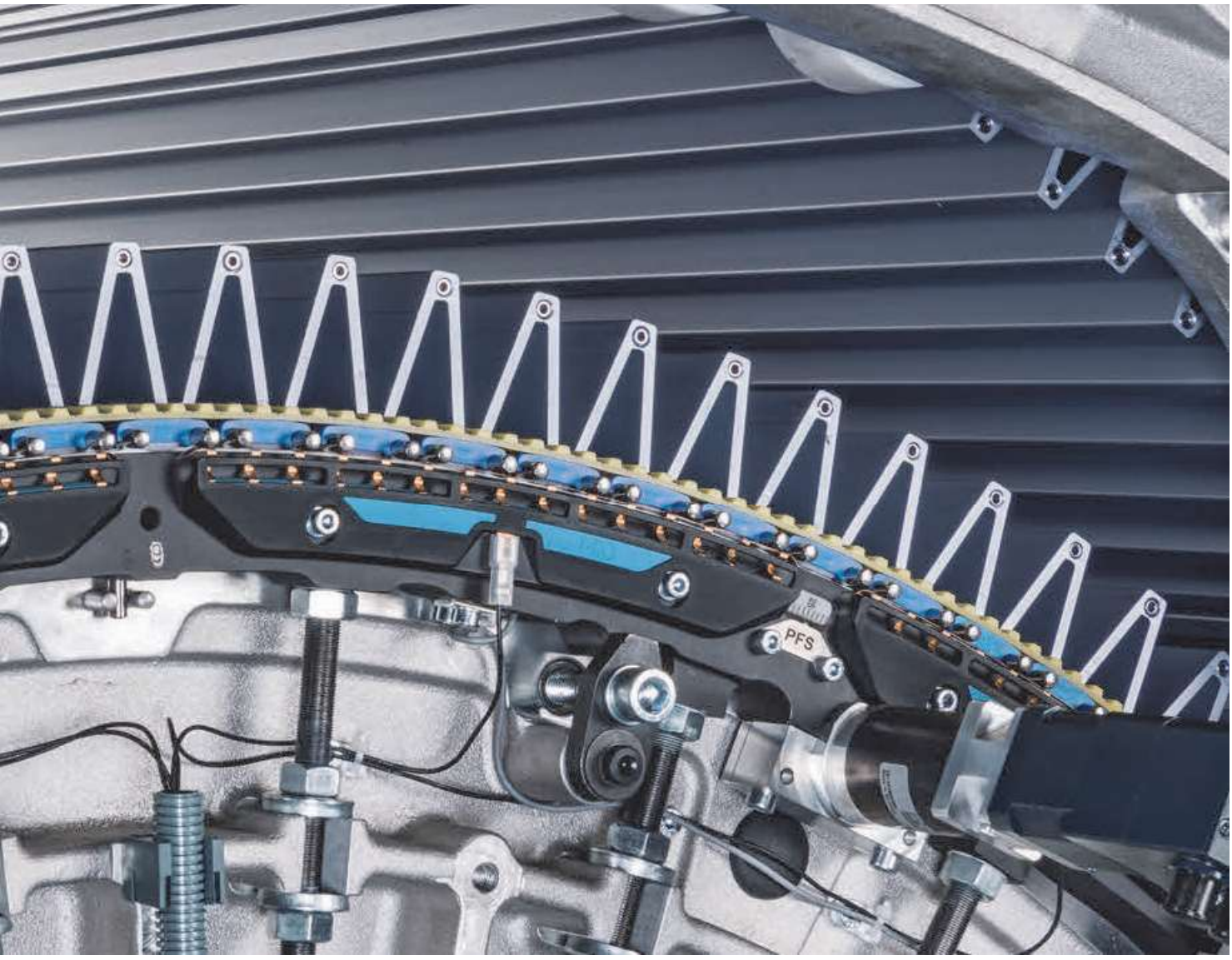
Gap Optimizer T-GO

The four T-GO sensor elements transmit the data to the card control.



The qualitative and economic benefits of the intelligent self-optimization "made by Truetzschler" become apparent in a direct comparison to a manual setting:

- *What happens if a technician adjusts the carding gap too wide?*
  The potential quality is not realised.
- *What happens if a technician adjusts the carding gap too narrow?*
  There is a risk of damage to the clothing or the card.



The self-optimization responds automatically to changes in important parameters:

- Material properties
- Production level
- Cylinder speed
- Environmental influences such as the room temperature

T-GO and T-CON 3 provide the essential information for the intelligent self-optimization of the TC 19^{i} via bus system to the card control. These are for instance speeds, velocities, temperatures, settings, etc.

NEW

Adapted T-CON 3

Valid data for an optimized carding gap

T-CON 3 makes an important contribution to the intelligence of the TC 19^{i}. The proven functions have been harmonised with T-GO for this purpose. T-CON 3 continues to inform the technicians about possible improved settings around the cylinder. And the safety functions of T-CON 3 also continue to provide protection against potential hazards. If any element touches the cylinder clothing, the machine is switched off before damage can occur.

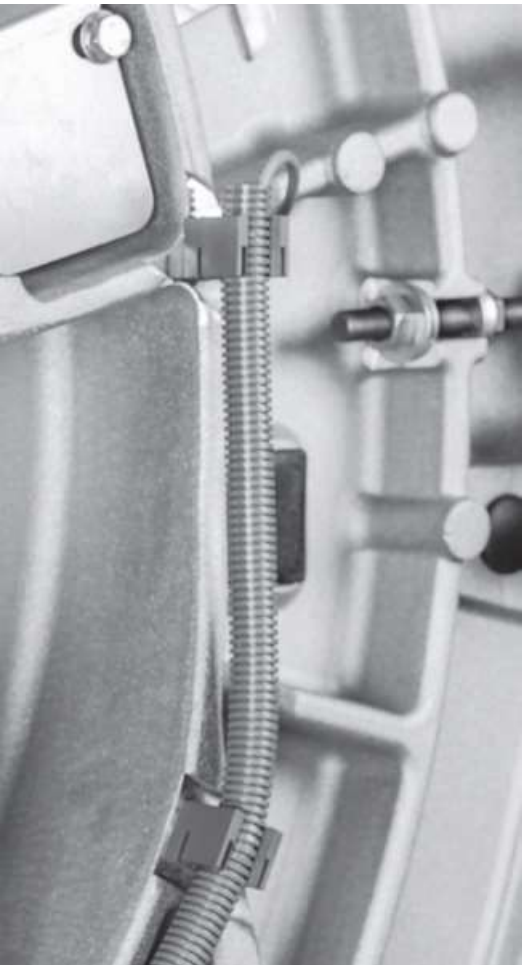
T-CON 3 gives distance recommendations for different materials at the touch of a button.

The T-CON 3 spacers are available in different thicknesses.

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

Truetzschler Spacer – the quick setting aid

T-GO takes over the flat setting. But Truetzschler cards also allow quick and precise settings of the fixed carding segments in the pre-carding and post-carding section. Small gauges, so-called spacers, ensure the correct setting. To change the settings, only spacers with a different thickness need to be used. Measuring tools or dismantling of segments are not necessary. The colour-coded spacers are available in increments of 2/1000" or 0.05 mm.



The T-COn 3 spacers can easily be replaced in just a few simple steps and thus allow a reproducible setting of the carding segments.

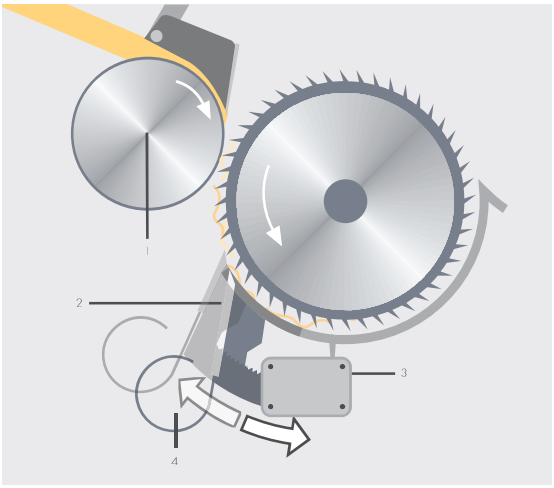
NEW

Intelligent waste optimization with WASTECONTROL TC-WTC

Truetzschler cleaners with WASTECONTROL have ensured the best raw material utilisation and minimum waste for years. From now on, WASTECONTROL is also part of the intelligent carding with the TC 19^i.

The optical sensor of WASTECONTROL TC-WTC permanently monitors the waste quality at the most important cleaning point, the licker-in. If too many good fibers are registered in the waste, the system optimizes the mote knife adjusting system via the servo motor.

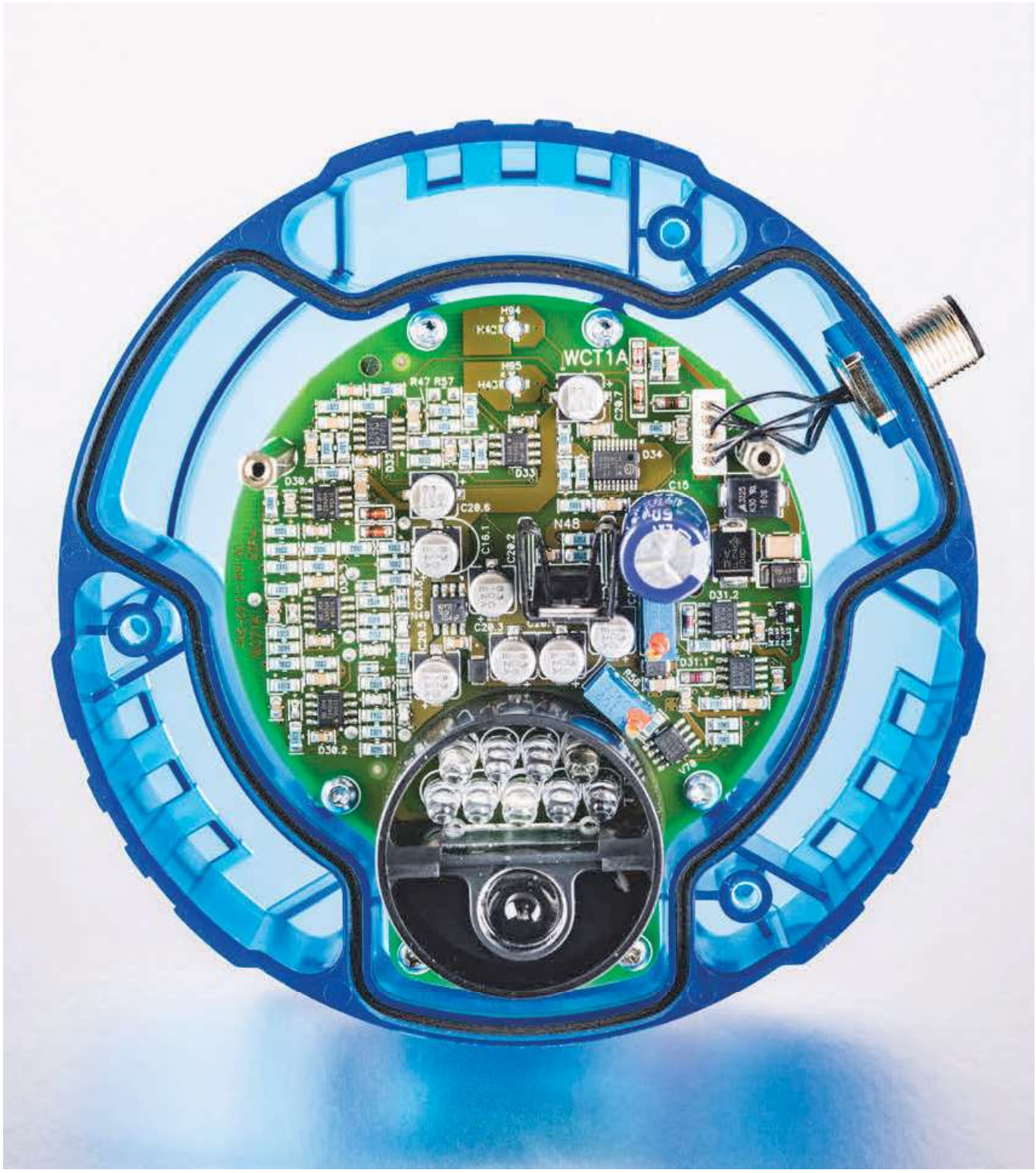
The influence of WASTECONTROL on the cost-effectiveness of carding is tremendous. Savings as small as a few tenth of a percent result already in enormous raw material savings. Whereas on other cards the waste separation is not measurable and cannot be influenced during production, the TC 19^i always works at optimum efficiency thanks to its networked data.



1 Feed roll
2 The adjusting slide moves with the knife in a circular path around the centre of the needle roll.
3 The motor regulates the amount of waste.
4 The permanent suction keeps the card clean in this area as well.

The blue sensor monitors the waste quality and the precision motor adjusts the mote knife if necessary.

With WASTECONTROL, the best is permanently brought out of cotton.



WASTECONTROL sensor

Economic efficiency calculation
When using 20,000 t/a of cotton, the WASTECONTROL saves approx. 320 bales of cotton per year, for instance due to an additional 0.4 % yield in good fibers. At a cotton price of 63 cents/lb this corresponds to savings in the amount of 110,900 US$.

110,900 US$ savings in raw material purchase

NEPCONTROL LC-NCT

Each metre of web is checked

Prompt identification of quality deviations

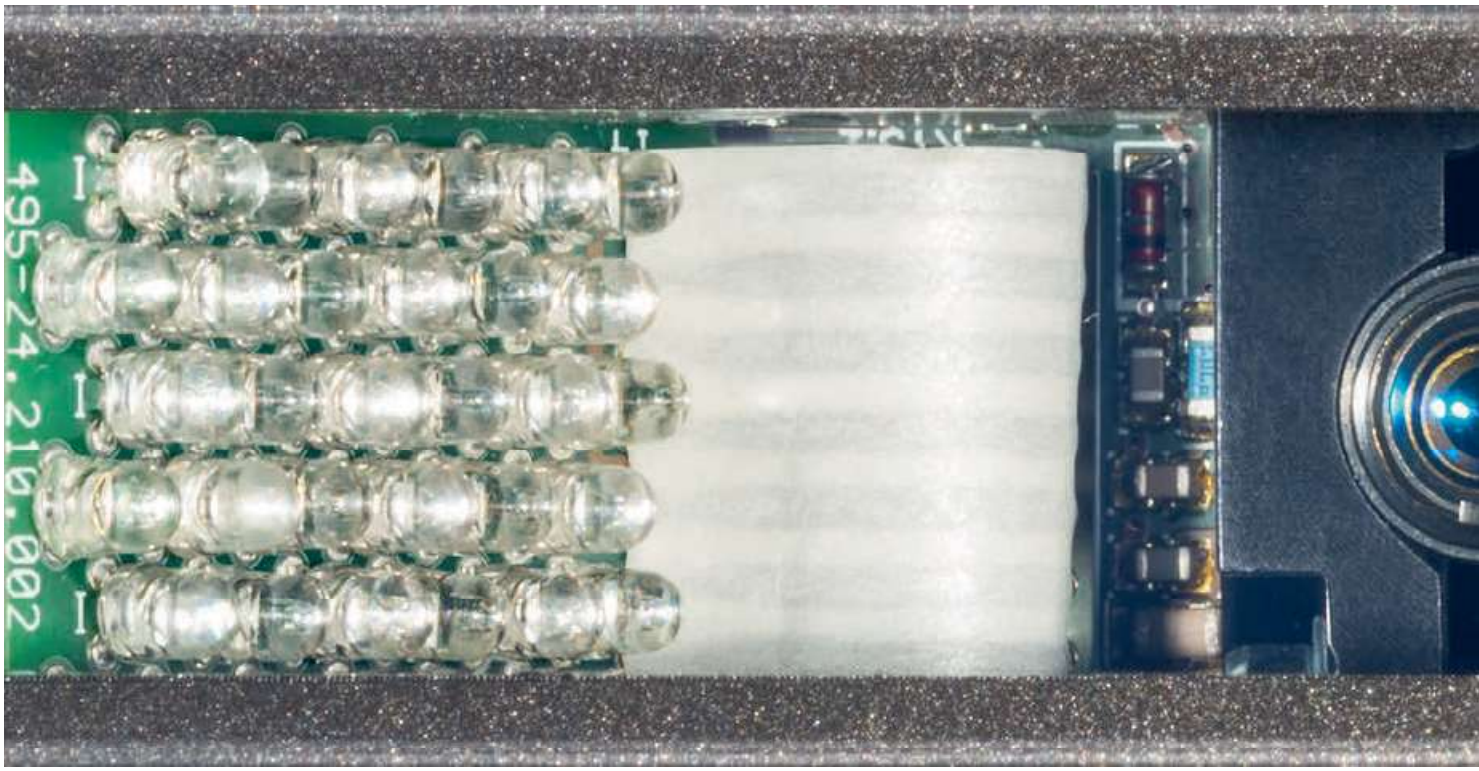
Nep reduction is the most important quality criterion during carding. For this reason, the nep level in the card sliver should be permanently monitored. Deviations from quality are detected immediately, not hours or days later during laboratory tests.

NEPCONTROL LC-NCT monitors each single metre of card web during production and provides concrete insights into quality.

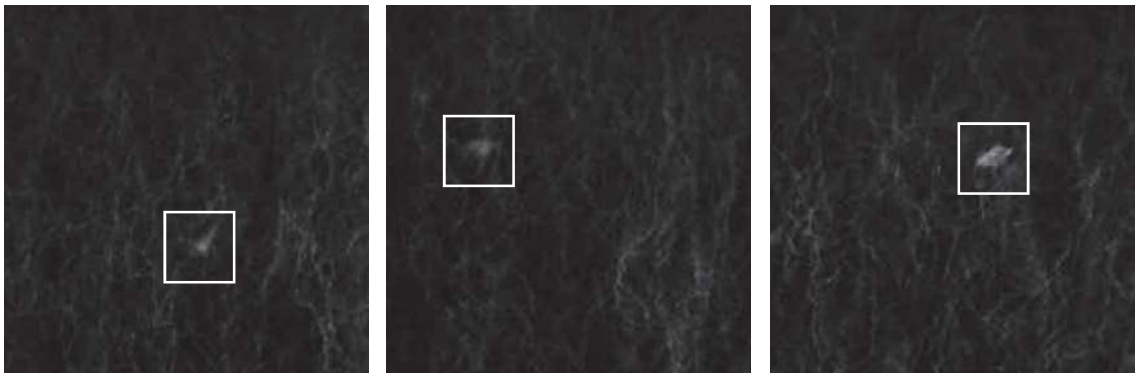
Focus on nep level

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.



Camera and flash of the Nep Sensor NEPCONTROL LC-NCT



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

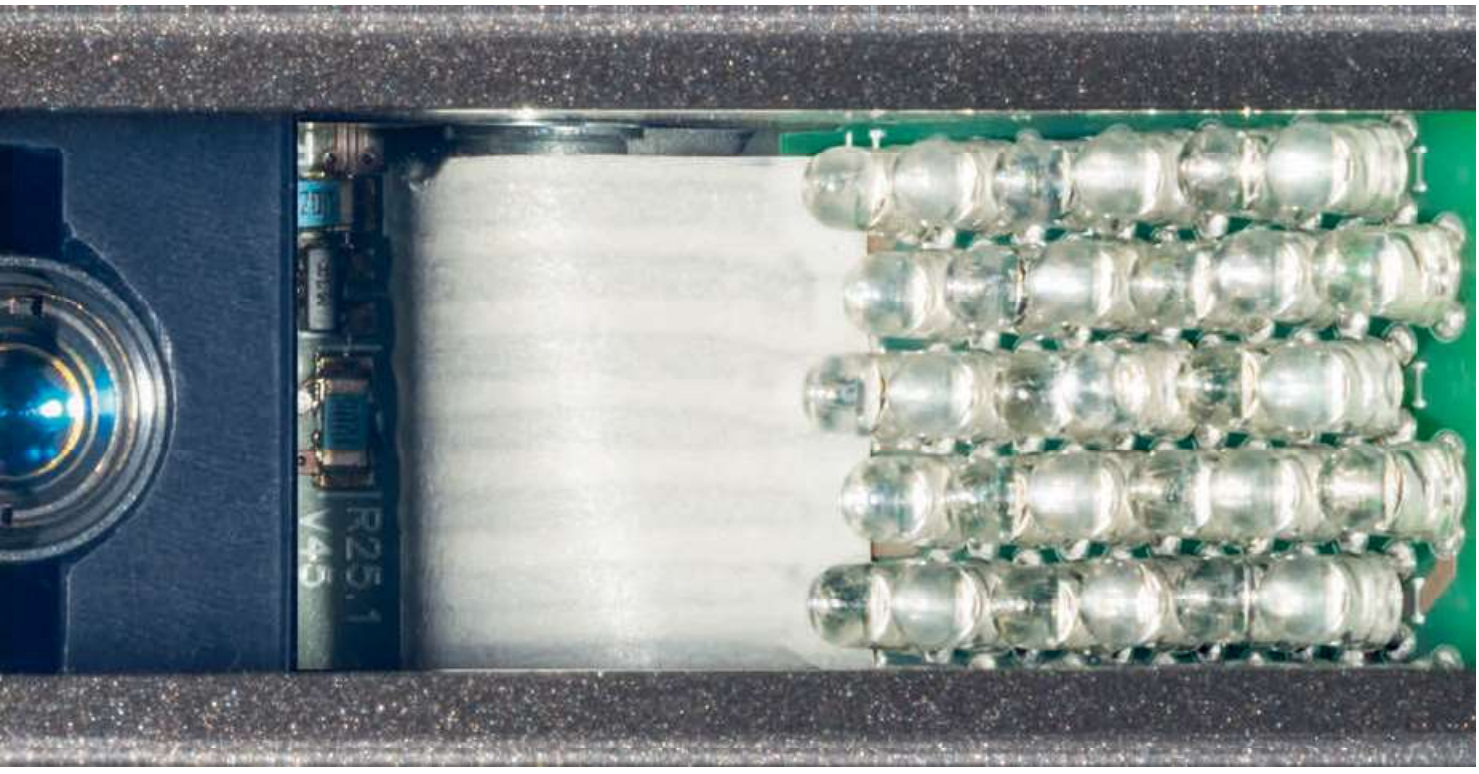
NEPCONTROL and Mill Monitoring System "My Mill"

NEW

The NEPCONTROL data is transmitted to the higher-level production and quality information system My Mill. 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.



NEW

MAGNOTOP 3

This is how simple optimal clothings for flats can be

Maintaining a consistently high quality requires regular change of flats clothings. For this purpose, Truetzschler has developed the new MAGNOTOP 3 system together with Truetzschler Card Clothing. MAGNOTOP 3 eliminates the need for a flats workshop and prolongs the service life by one grinding cycle. [1)]

With the new MAGNOTOP 3 flat bar, the precision of the MAGNOTOP system has been further improved. The new flat bars with the new profile cut the already narrow tolerances of the system in half.
The clothing strips fit perfectly from the beginning since super strong neodymium magnets attach the clothing strips to the flat bar, thus reducing tolerances.

Each clothing change increases the economic advantage

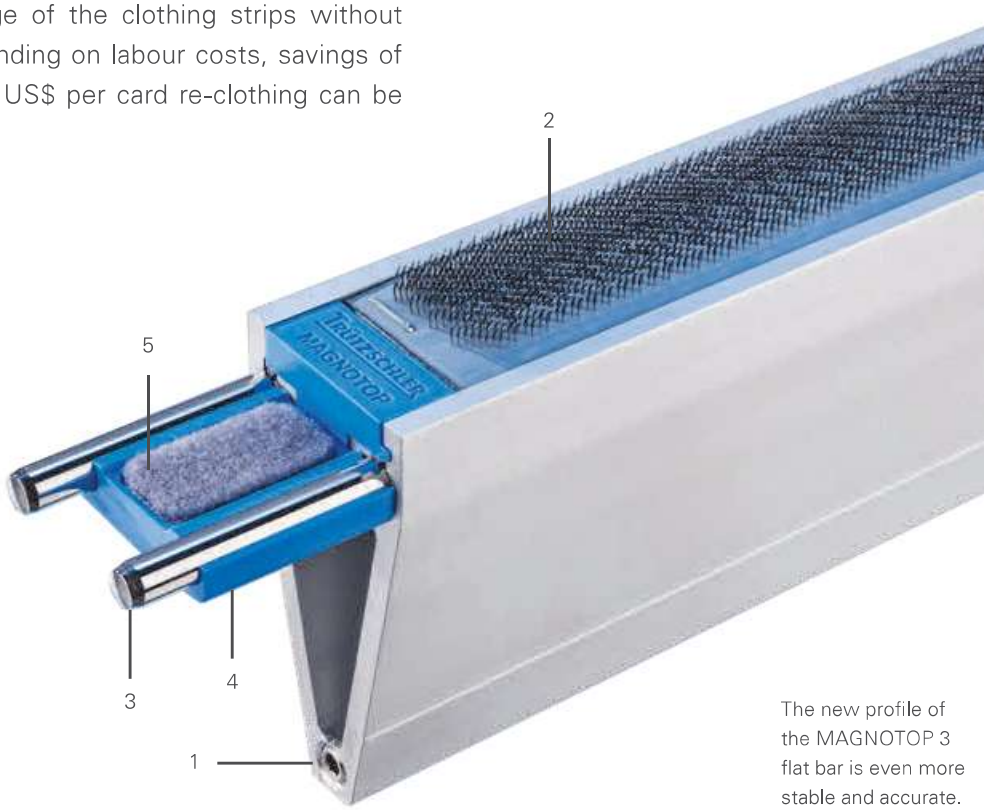
The MAGNOTOP 3 system allows easy and quick change of the clothing strips without tools. Depending on labour costs, savings of 300 – 1,100 US$ per card re-clothing can be realised.

Investments of 170,000 - 210,000 US$ in a flats workshop are completely eliminated

Use of the MAGNOTOP 3 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



The new profile of the MAGNOTOP 3 flat bar is even more stable and accurate.

The Truetzschler flat bar – proven millions of times

1 Optimized, light-weight aluminium profile
2 Flats clothing
3 Wear-resistant hard metal sliding pins
4 Plastic support
5 The cleaning felt keeps the sliding plastic clean.

Savings of 200,000 US$ for a flats workshop are realised.

MAGNOTOP 3

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

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

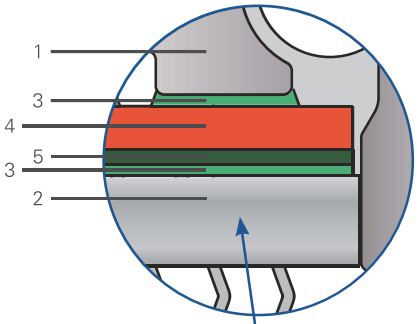
Extended service life

With MAGNOTOP 3, the usual levelling that compensates deformations caused by clip assembly can be eliminated since MAGNOTOP 3 clothing strips automatically ensure a perfect fit.

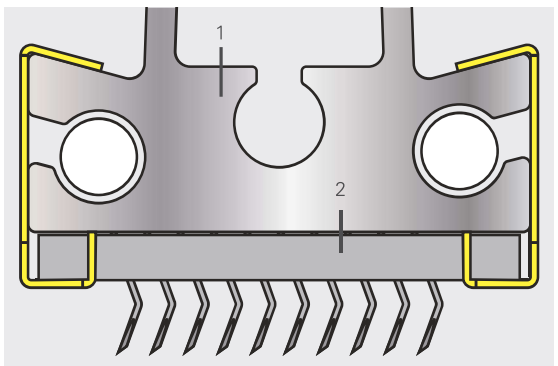
Overview of MAGNOTOP 3 advantages:

- No investments in a flats workshop, no operating costs, etc.
- No service costs for external service providers
- No investment in one or several spare flat bar sets
- No inventory of spare flat bar sets
- No grinding of flats clothing after re-clothing
- No transport costs, simplified logistics

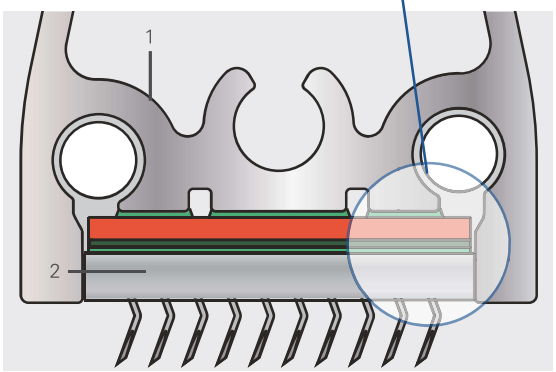
The adhesive layers (3) compensate even the smallest tolerances.



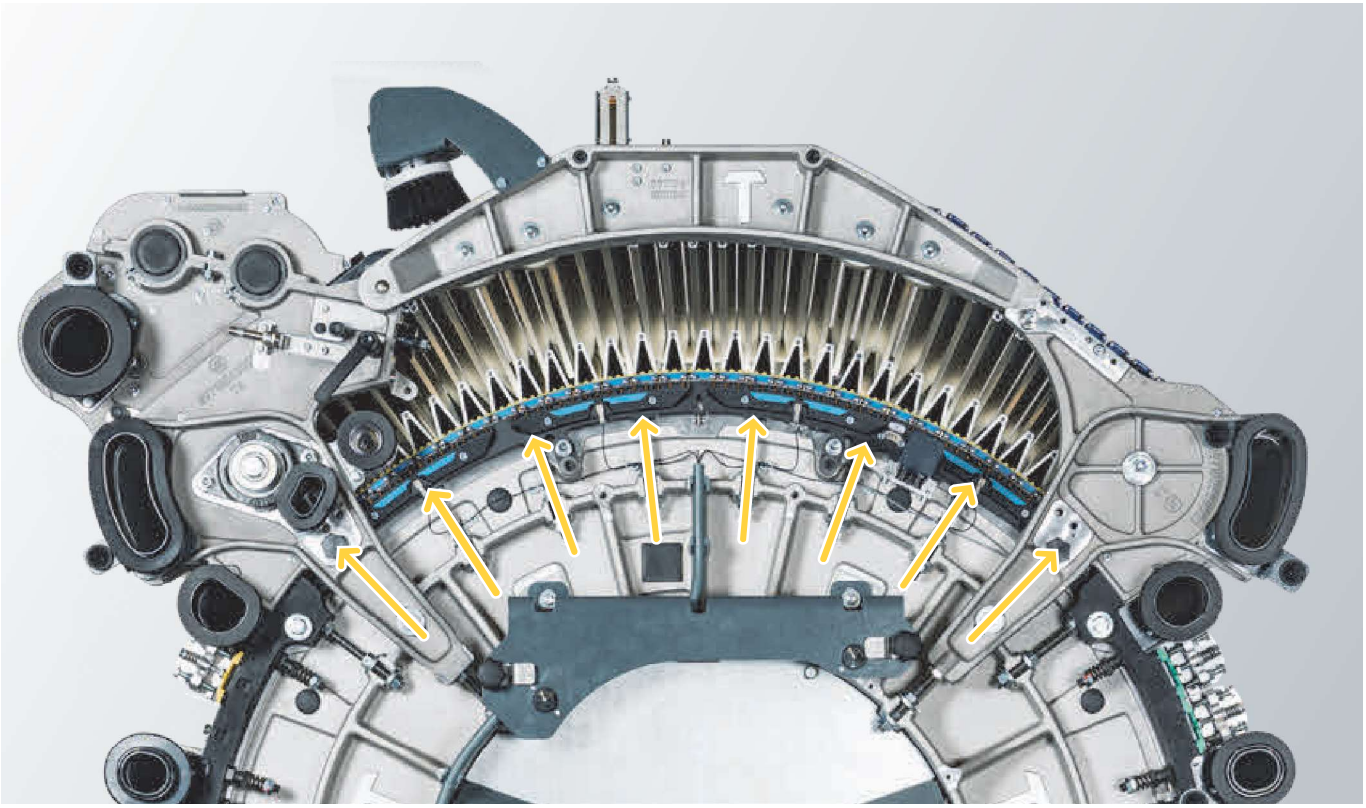
1 Aluminium flat bar
2 Clothing strip
3 Adhesive and compensation layer
4 Neodymium magnet
5 Thin metal support



Conventional system with clips



MAGNOTOP 3 system



NEW

In addition to MAGNOTOP 3, a contribution is also made by the new setting system of the carding bow. Eight spindles instead of six allow an even more precise basic setting.

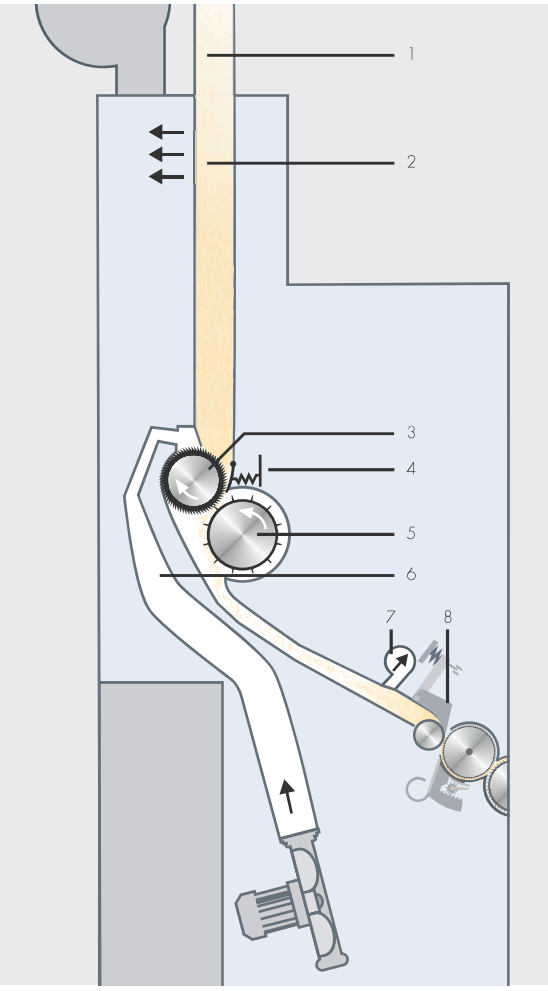
This basic setting is carried out by Truetzschler specialists and never requires readjustment afterwards. The large setting range of 40/1000" is also sufficient for regrinding or clothing change.

Better yarn quality due to higher precision

DIRECTFEED and SENSOFEED+

The unique Truetzschler direct feeding system

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



Tuft Feeder DIRECTFEED

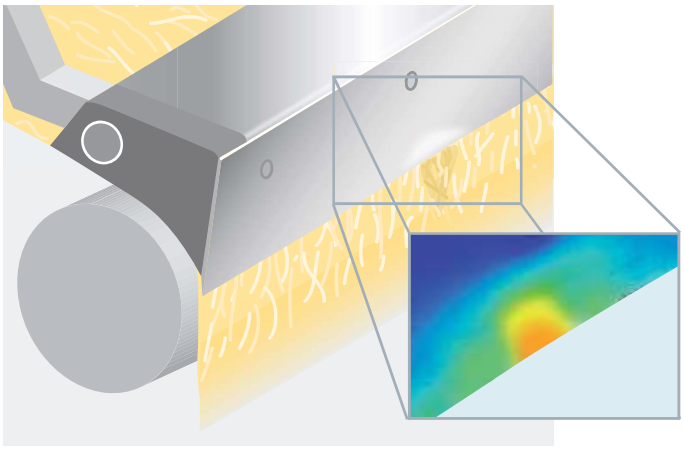
1 New high-volume upper trunk
2 Integrated air-volume separator
3 Electric feed roller, coupled to the feed roll of the card
4 Segmented tray for secure clamping
5 Opening roll with gentle needling
6 Closed air circuit with integrated fan
7 Self cleaning air outlet comb
8 Flexible Feed Tray SENSOFEED+

The carding quality begins with the feeding of the card

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 19^{i}. Its delivery roll and the feed roller of the card are identical. There is no sensitive web transmission.

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

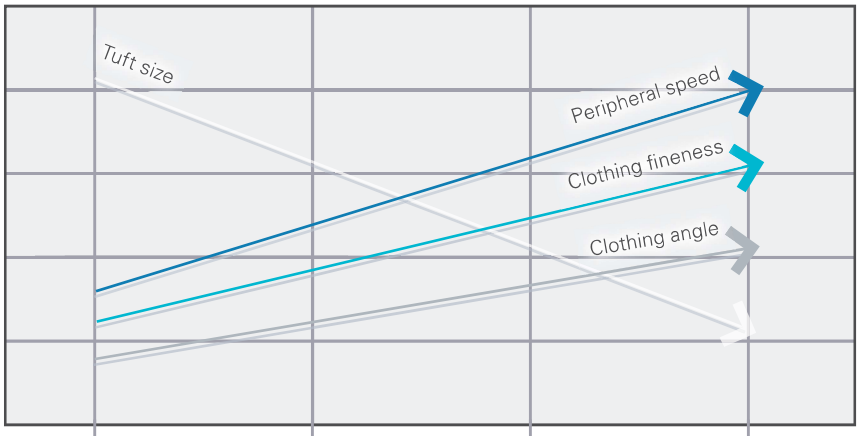
Gentle and efficient tuft opening

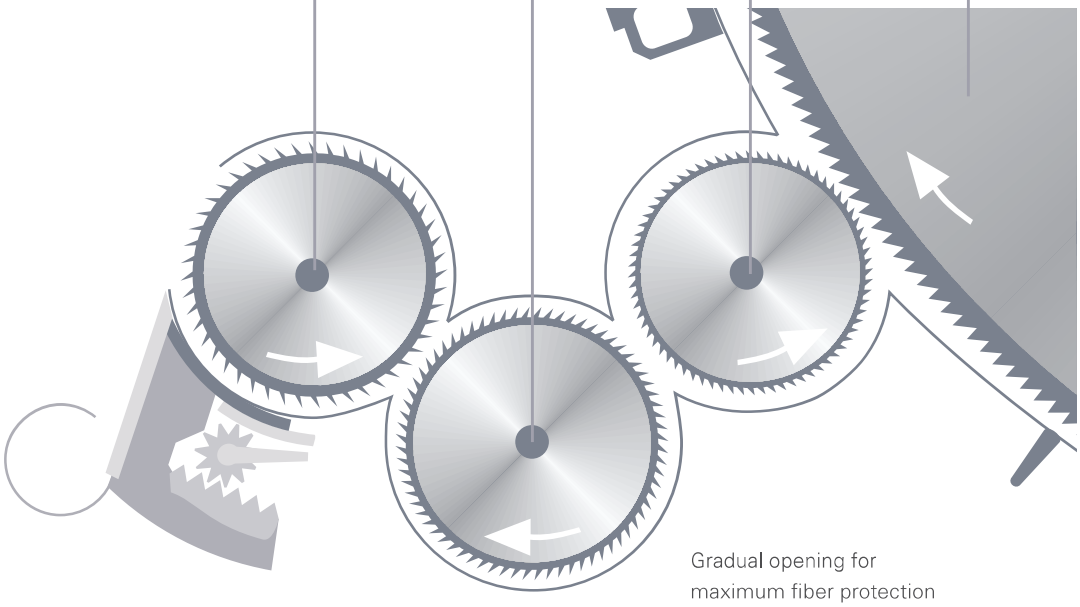
Compared to conventional licker-ins, the WEBFEED system with one large or three smaller opening rolls connected in series ensures gentle tuft opening, resulting in an even and fine web. This fiber pre-opening is of decisive importance to the carding process.

Various arrangements are available:

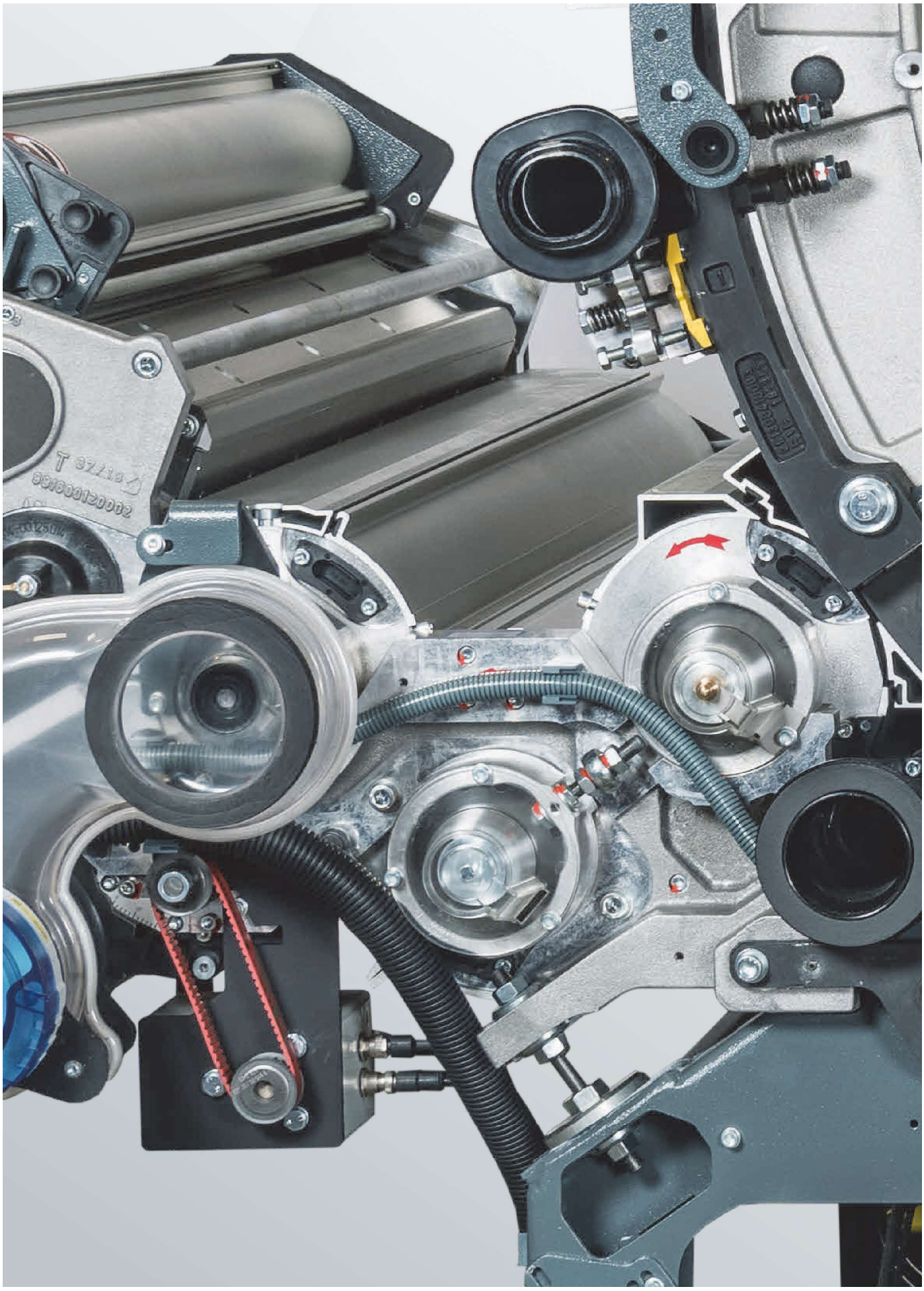
- **3 rolls – first roll: Needling**
  e.g. cotton at high production rates
- **3 rolls – first roll: Metallic wires**
  e.g. cotton / man-made fiber blend yarns
- **1 large roll: Needling**
  e.g. man-made fibers + ELS cotton

20 times longer service life due to needles made of special steel (as compared to metallic wires)





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



The perfect balance for your yarn quality and productivity

The new TC 19^{i} also has a unique geometry: large cylinder diameter and perfect working width.

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 19^{i} 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.

More carding width = more productivity

"More width while maintaining the roll geometry increases the productivity."
Experiences gained from practice confirm: 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.

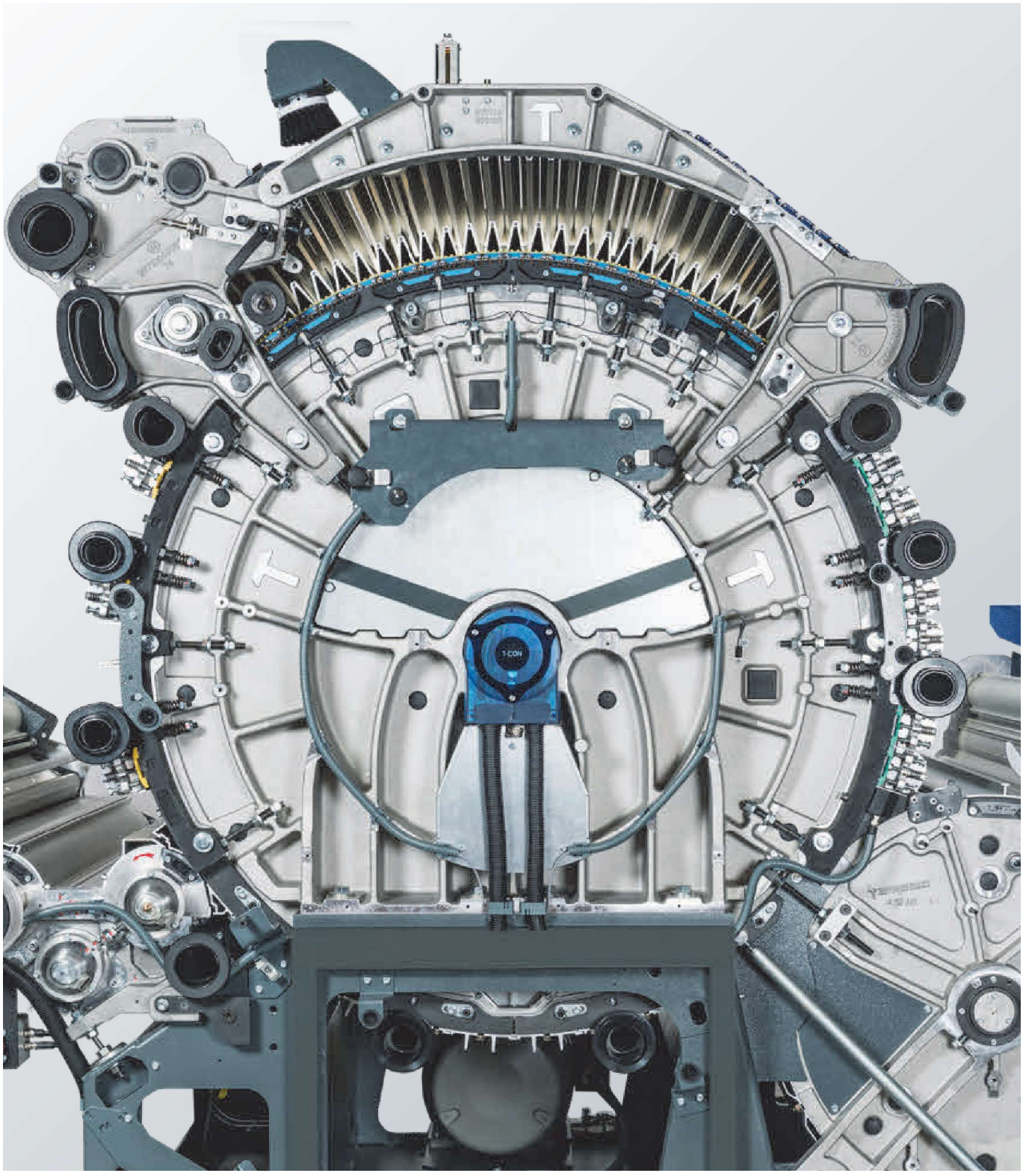
Economically convincing

The new intelligent Truetzschler card convinces not only technologically, but also economically:

- **Low investment costs**
  The advantages from the ratio of carding width of 1.28 m to the cylinder circumference of 4.10 m become apparent when considering the investment costs in relation to the globally recognised long service life of Truetzschler cards. Based on 1 kg of card sliver produced, the TC 19^{i} requires the least investment:
  – less cards are needed
  – a smaller building size is possible

- **Lowest operating costs**
  The life cycle costs of the TC 19^{i} allow an incomparably fast return of investment. Considerable savings per year can be achieved in the areas of energy, filter and maintenance costs.

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 19^{i} is precisely in this range.



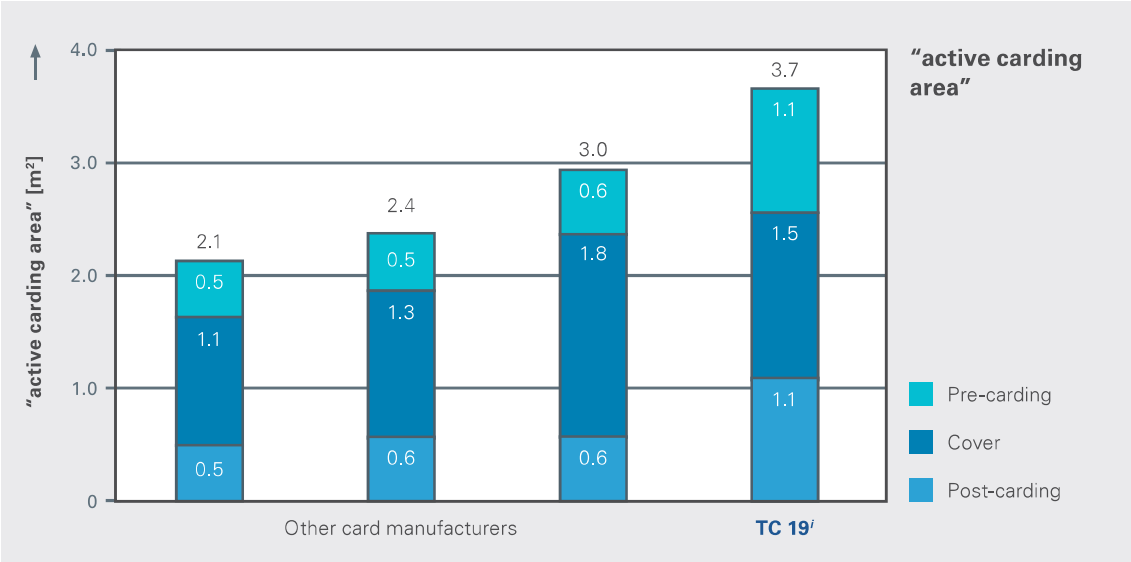
Low investment costs
Minimal operating costs

Maximum productivity

The largest "active carding area" of 3.7 m^2

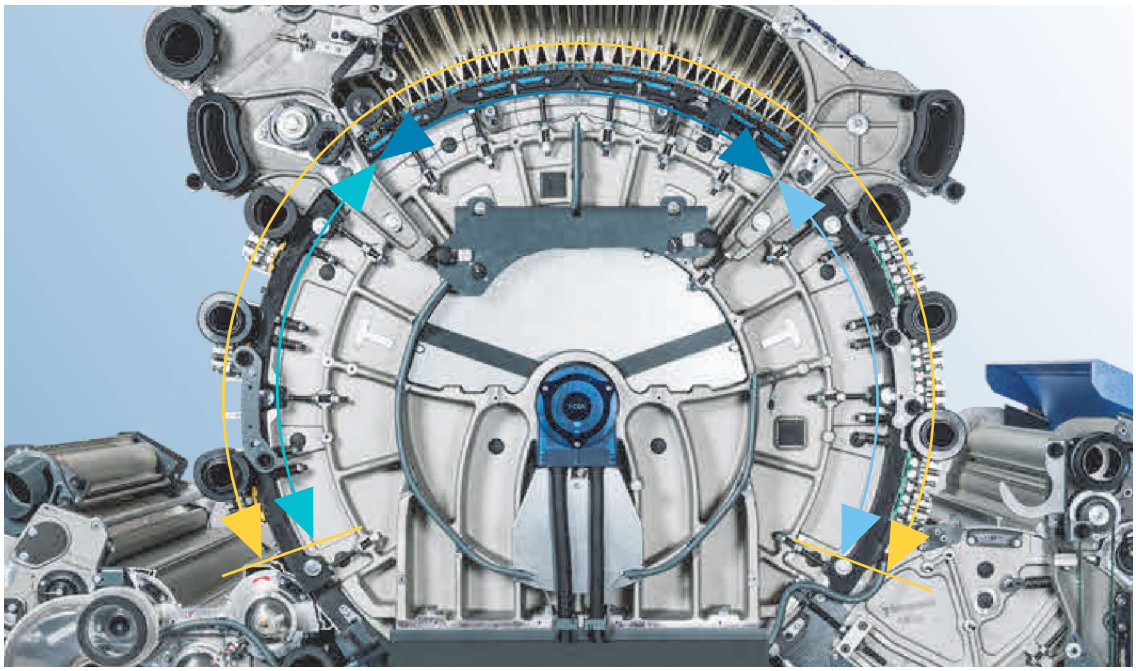
The 1.28 m width of the Truetzschler cards is the result of an intensive development process. Using the current design and production methods, an even larger width would no longer be economical. The masses to be controlled would result in losses in precision and thus in sliver quality. On the other hand, 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 Truetzschler sliver quality.



Maximum quality

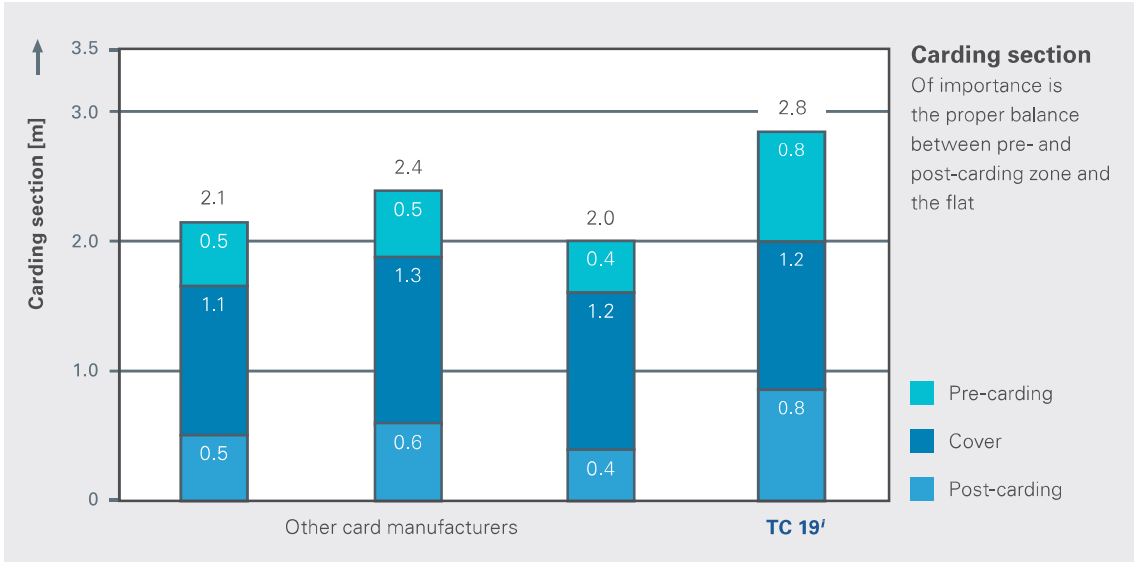
The longest carding section of 2.8 m



Pre-carding
Cover
Post-carding

The Truetzschler Card TC 19^{i} 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.

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.



MULTI WEBCLEAN

Flexible adjustment of carding conditions

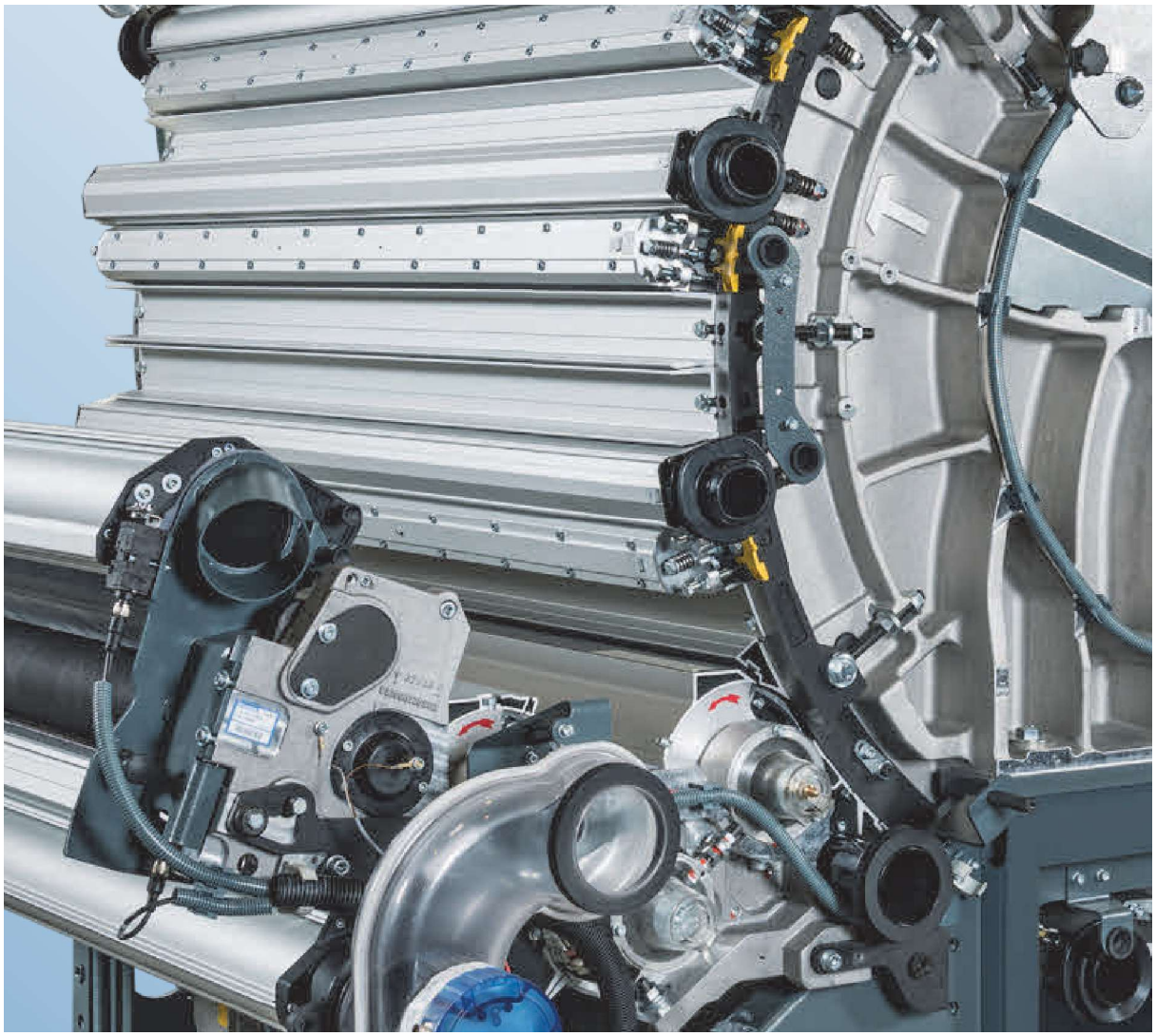
The three elements of the MULTI WEBCLEAN systems:

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

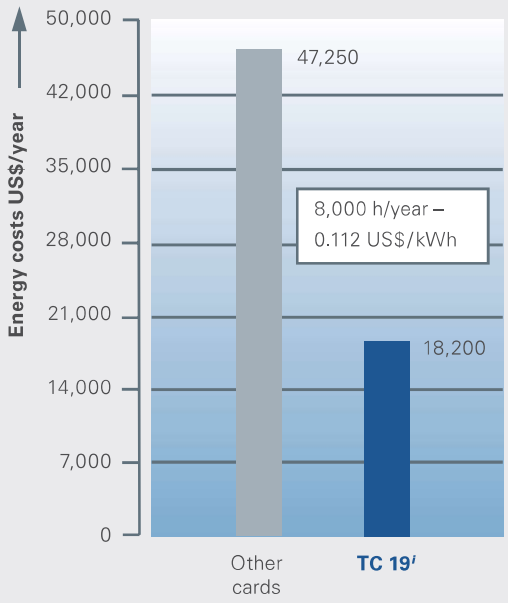
Once the elements are precisely adjusted, they can be immediately put into operation again even after removal, without the need for readjustment. Specially developed fixing elements secure the original setting. In principle, any element can be mounted to each of the 16 positions. The card is delivered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

The TC 19^{i} saves operating costs

A permanent suction at all relevant points provides optimal dust removal, even under high production conditions.

The main reason for the efficiency of the permanent suction is the low operating vacuum 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.

The low air requirement and thus the required, small-scale filter capacity can only be achieved because each individual duct element is flow-optimized. The impact becomes strikingly obvious in the transparent duct parts of the suction hood while card is in operation.

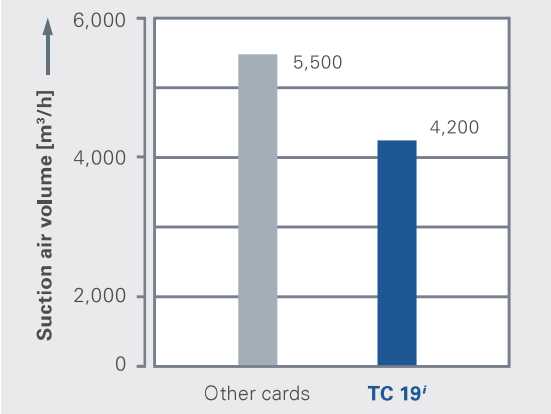


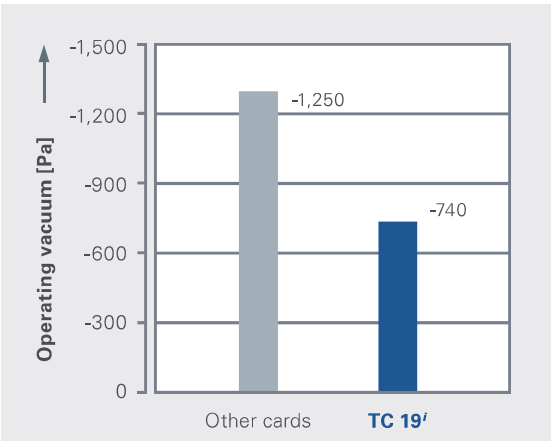
In comparison:

Other cards	5,500 m³/h at -1,250 Pa
TC 19^{i}	4,200 m³/h at -740 Pa

Example:

14 cards, 140 kg/h, 8,000 h/year, 0.112 US$/kWh





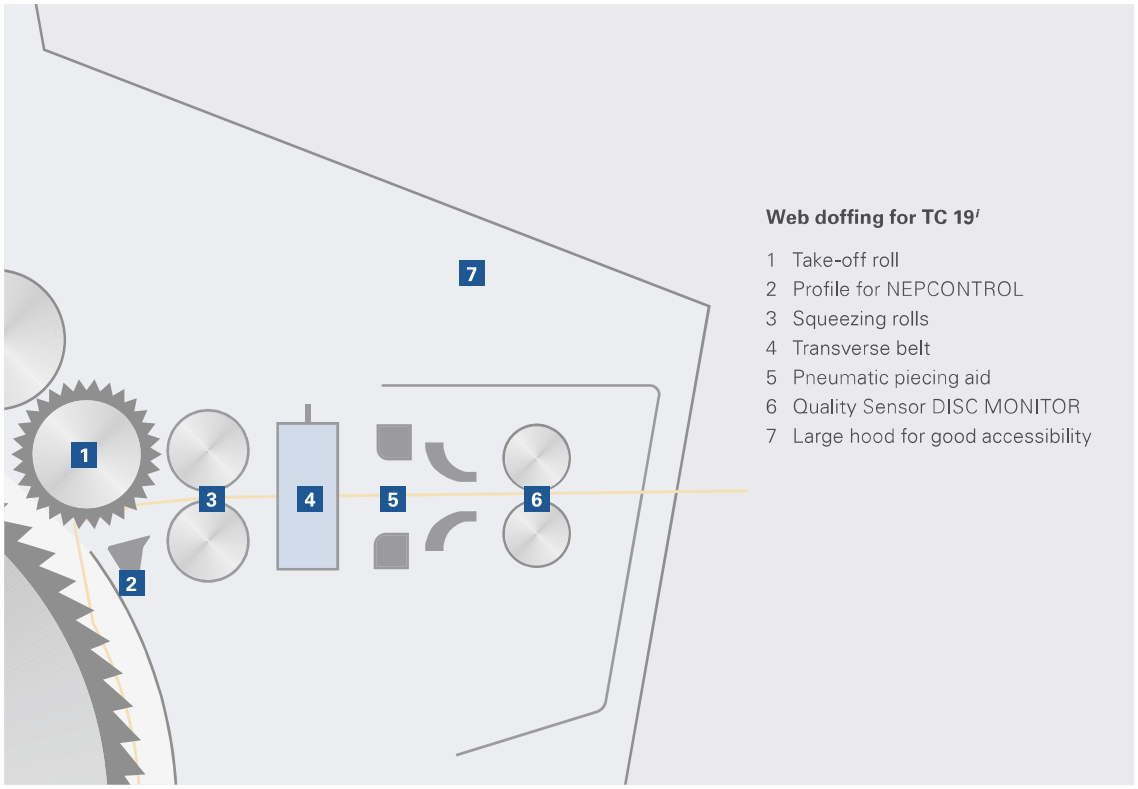
Low exhaust air volumes and operating vacuums reduce the operating costs considerably.

29,050 US$ annual savings in energy costs

on filters (reduced exhaust air, lower vacuums)

Web doffing

Optimized for trouble-free operation at high delivery speeds of well over 400 m/min.



Web doffing for TC 19^{r}

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 web doffing operation very simple.

Reproducible quality, metre by metre

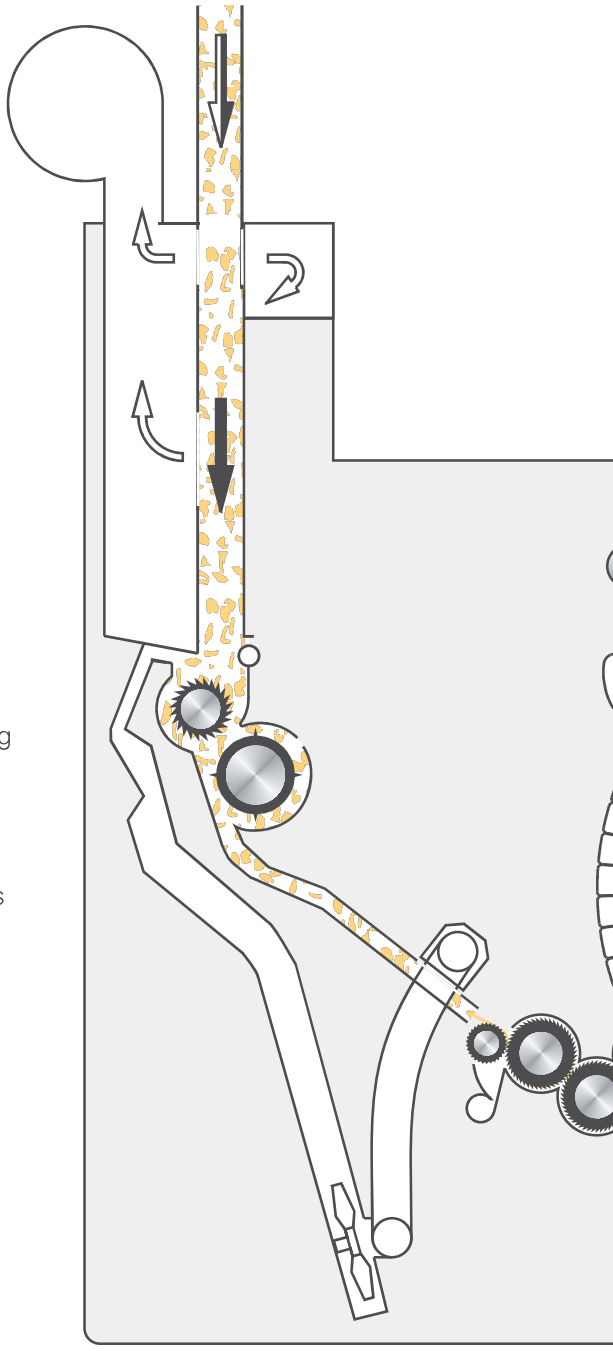
The tried and tested sliver sensor DISC MONITOR, known from the Truetzschler autoleveller draw frames, is integrated into web doffing. It measures every metre of card sliver in a reproducible and precise manner before it is coiled into the can.

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

An intelligent control system for an intelligent card

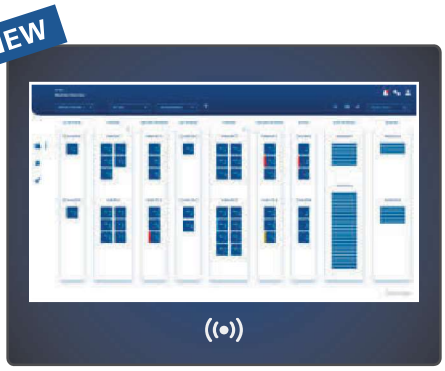
In-house production of the complete hardware – from the circuit boards through the Computing Unit and sensors to the Truetzschler software

The intelligent Computing Unit of the TC 19^{i} performs a number of tasks in conjunction with higher-level data systems such as the Mill Monitoring System "My Mill":

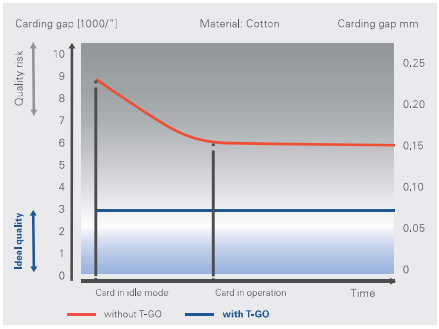


- General control of the card and the Tuft Feeder DIRECTFEED
- Control of the sliver coiling systems such as T-MOVE 2 or the Integrated Draw Frame IDF 2
- Communication with the blowroom, especially with CONTIFEED 2
- Control, monitoring and coordination of levelling systems
- Monitoring of the vacuum in the suction system, the compressed air system etc.
- Control of the Gap Optimizer T-GO
- Evaluation of all relevant sensor signals for setting optimization with T-CON 3
- Control of the self-optimization function of WASTECONTROL
- Seamless quality monitoring with special sensors
- Thick spot and metal monitoring in feeding
- Monitoring of the defined quality limits
- Evaluation of information from the Nep Sensor NEPCONTROL LC-NCT
- Permanent monitoring of energy consumption
- Communication with higher-level data systems such as My Mill
- Log book functions
- Maintenance and clothing management
- Monitoring of the safety system
- Fault identification and display

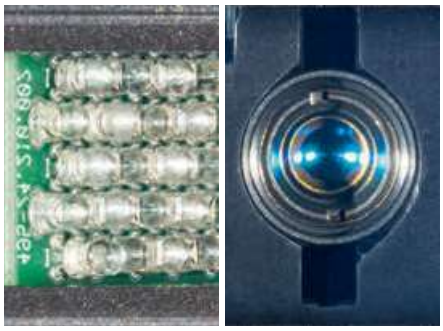
NEW



Always keep the overview with the My Mill All-in-One platform for the spinning mill – the new real-time monitoring system from Truetzschler.

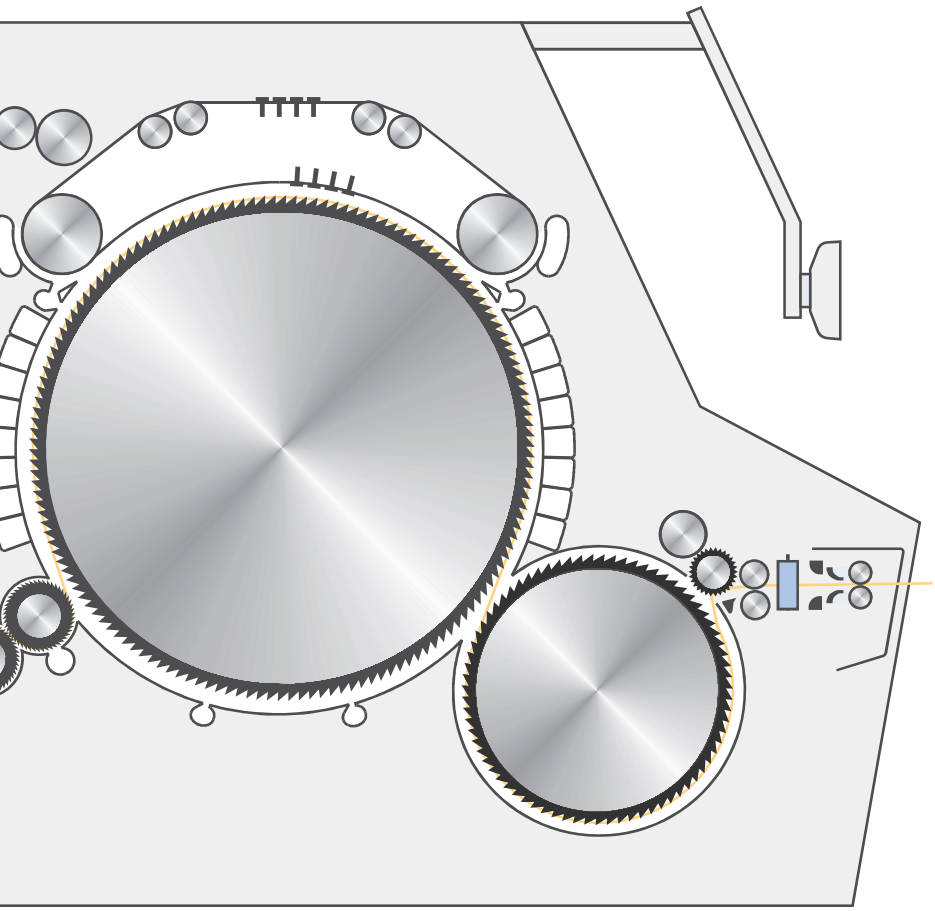


Ideal carding gap setting with the Gap Optimizer T-GO

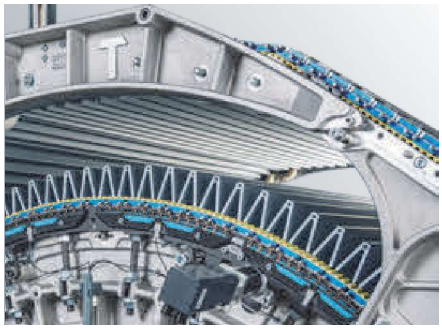


Flash and camera of the Nep Sensor NEPCONTROL LC-NCT

T-CON 3 gives the technician concrete setting recommendations.



Nep Sensor NEPCONTROL LC-NCT



Management of maintenance and card clothing

Operation – as simple as with a Smartphone

For the operator, the most important instruments for controlling the TC 19^{i} are:

- Multi-touchscreen
- LED remote display
- RFDI sensor for identification

NEW

Multi-touchscreen

The monitor forms the interface between the operator and the machine. For the first time, it is designed as multi-touch technology. Operation is just as intuitive as using a Smartphone or tablet.

NEW

Identification via personal chips

The control recognises the person and the authorisation by the chip.


TRÜTZSCHLER
TC 19i

Seamless quality control

Safety for 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 Computing Unit of the card evaluates this data and displays the results graphically on the multi-touchscreen. The TC 19^{i} 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 as well as the seed coat fragments (option).

Overview of the quality data

Control system

The heart of the control system is the robust Truetzschler Computing Unit. This industrial computer is built in-house by Truetzschler. It is designed for the harsh environmental conditions in the spinning mills.

Control of sliver coiling system

The sliver coiling systems such as the Integrated Draw Frame IDF 2, the T-MOVE 2 or the various can changers do not require their own control system. This is always handled by the card control.

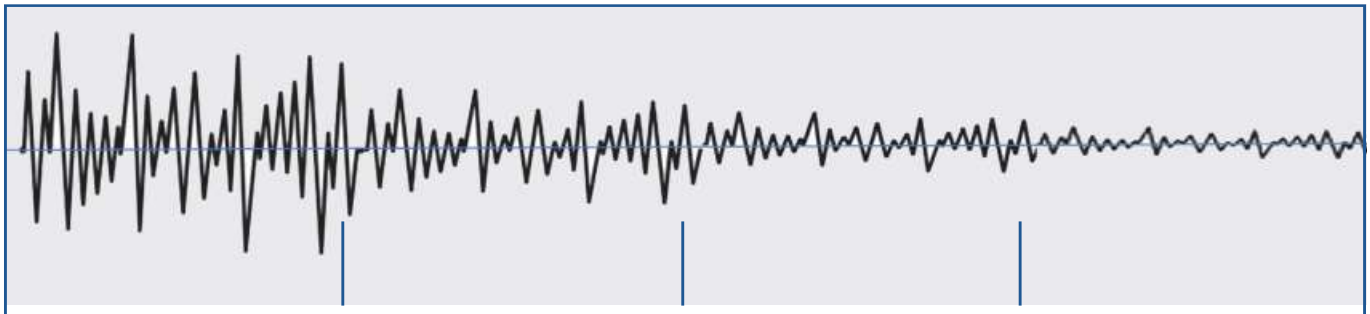
Communication with CONTIFEED

The cards of a line permanently report their material requirements for tufts to the CONTIFEED control system. If a card is not producing in the meantime, the production in the blowroom is adjusted immediately.

Levelling systems

In the TC 19^{i} there is a perfect interaction of four coordinated levelling systems. For the production of an even card sliver, a number of measures must interact perfectly:

Coordinated levelling system of the TC 19^{i}



CONTIFEED-card feeding
The material flow to the card is already continuously controlled by the CONTIFEED 2 system. Furthermore, the production requirements of all cards of a line influence the production of the last machine in the blowroom. This connection contributes to a continuous card feeding, and thus to sliver evenness.

DIRECTFEED levelling
Additional homogenisation is made possible by the double trunk principle of the Tuft Feeder DIRECTFEED. 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 shutdown of the card.

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.

Short-wave levelling
The Card TC 19^{i} 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. For this purpose, the thickness of the tuft web is continuously scanned by SENSOFEED+ and converted into an optimized feed roll speed by the card control.

Truetzschler remote display T-LED

More overview in the card room with T-LED

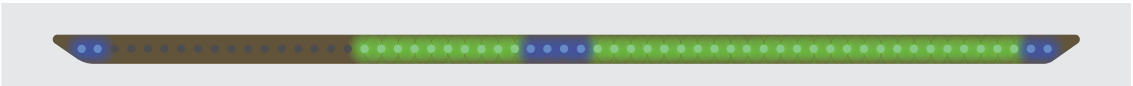
The operator can read the operating status of the machines at a glance from the T-LED remote display over large distances.

The remote display T-LED brings more overview to the card room.

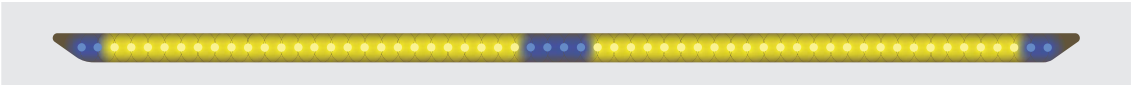
Automatic mode: Green

During normal operation of the card, the Truetzschler T-LED display optionally visualises various operating states. The main colour in automatic mode is green:

- Can filling level:
  How long is it before the can change?
- CV values of the card slivers:
  Is sliver evenness correct?
- Lower trunk pressure:
  Is card feeding uniform?



During normal operation, the T-LED shows for instance the can filling level.



A can change is imminent.

A malfunction is indicated.

Warning mode: Orange

In warning mode, the card still produces normally, but, for instance, an empty can is missing for a pending can change. T-LED draws the operator's attention to this with orange light.
A can change is announced to the operator by a flashing yellow light. In addition, the T-LED acts as a warning light with a yellow flash before the can changer starts moving.

Faults: Red

Malfunctions, i.e. machine downtimes and interruptions in production, are clearly visualized with the code colour red.

Efficient maintenance

Quick access from all sides

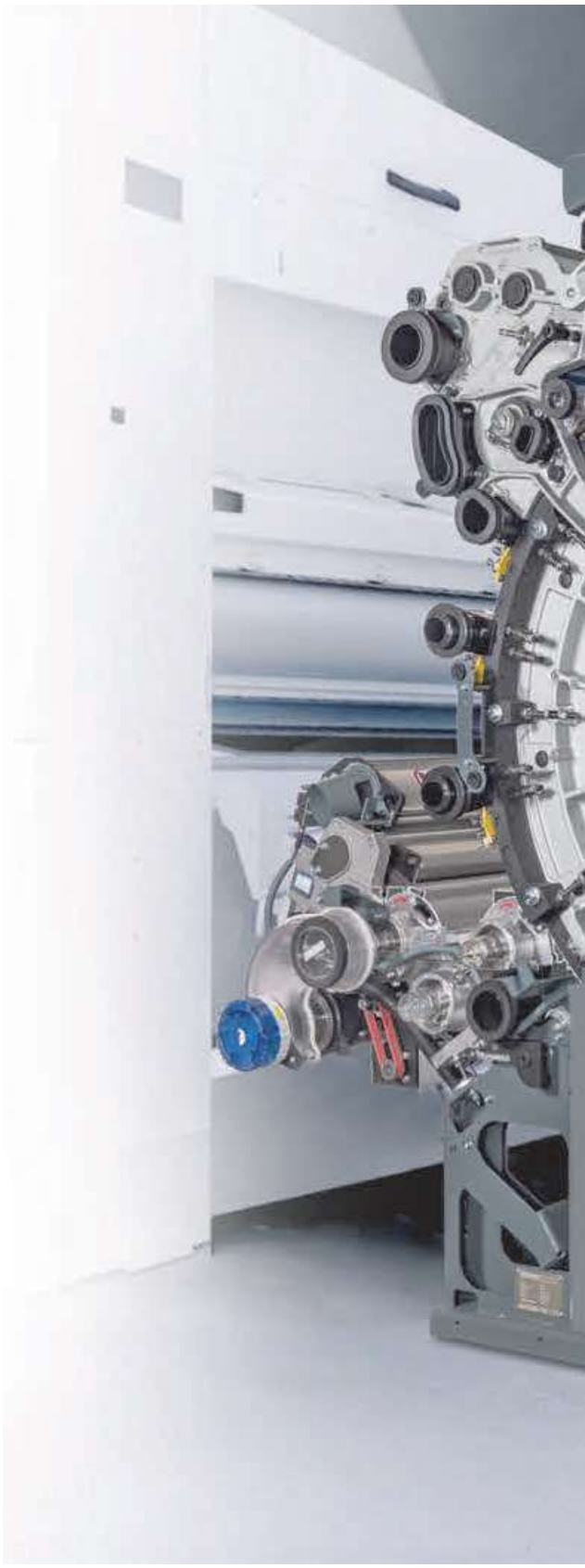
The Card TC 19^{i} also sets standards for maintenance friendliness:

- 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.
- Flats clothing change in two hours thanks to MAGNOTOP flat bars.
- Very simple replacement of the pre-opening unit WEBFEED because it can be changed in one piece.
- The same applies to the Integral Tray SENSOFEED+.
- The complete flat cleaning device and the web doffing can be disassembled within shortest time.
- Since the sliver coiling system has no mechanical connection to the card, cleaning work is simplified in addition to operation.

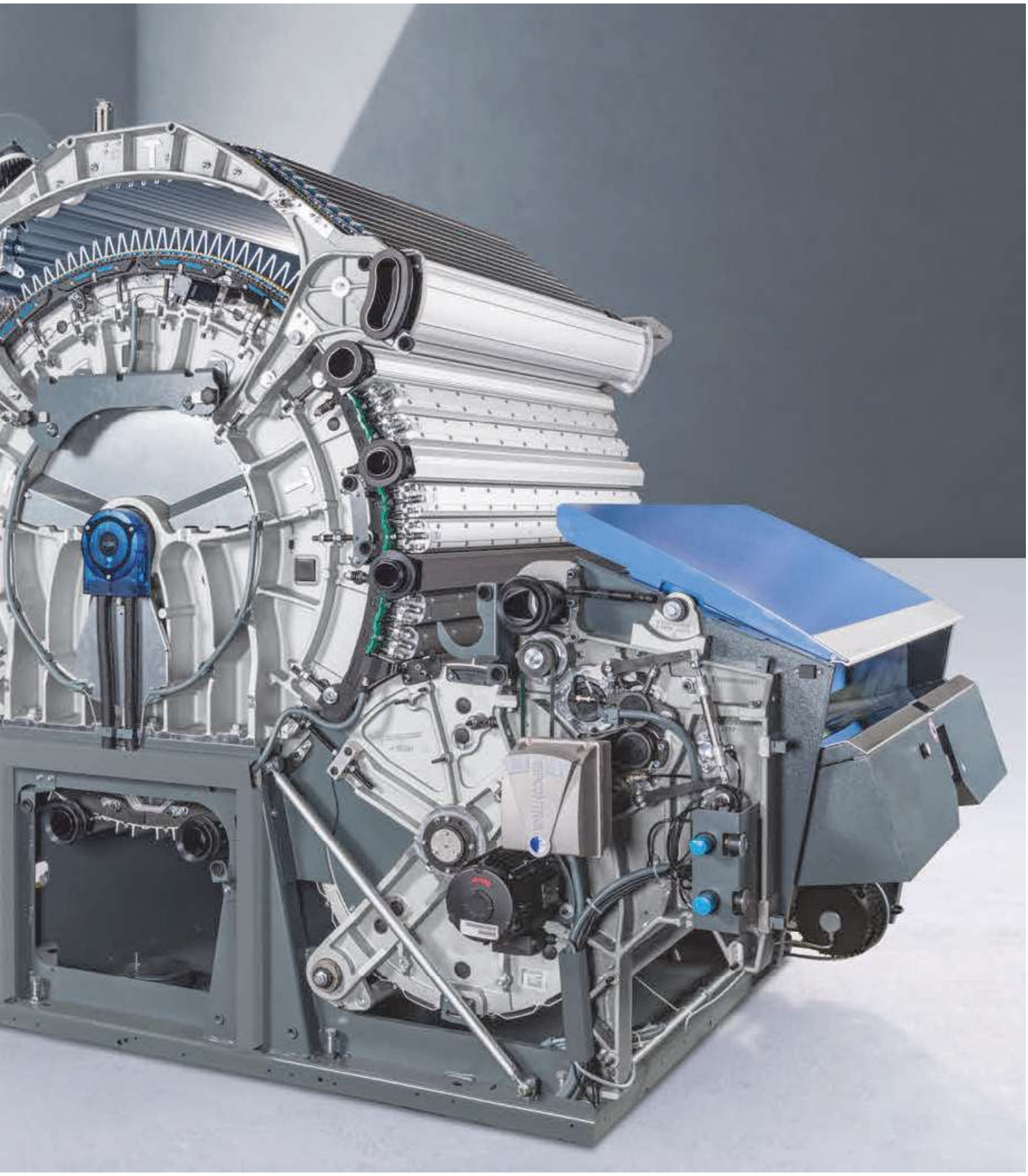
Targeted maintenance management

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

- 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 data from T-GO and T-CON 3, speeds, velocities or vacuums are also displayed.



Like all Truetzschler cards, the TC 19^{i} also excels with excellent accessibility.



The right sliver coiling system for every application

Truetzschler offers tailor-made systems for can filling. What is your focus?

- The largest possible cans to reduce the number of transports
- High delivery speed during can change
- A version that saves as much space as possible
- Process reduction by Integrated Draw Frame IDF 2
- Rectangular cans
- Preparation for an automatic can transport

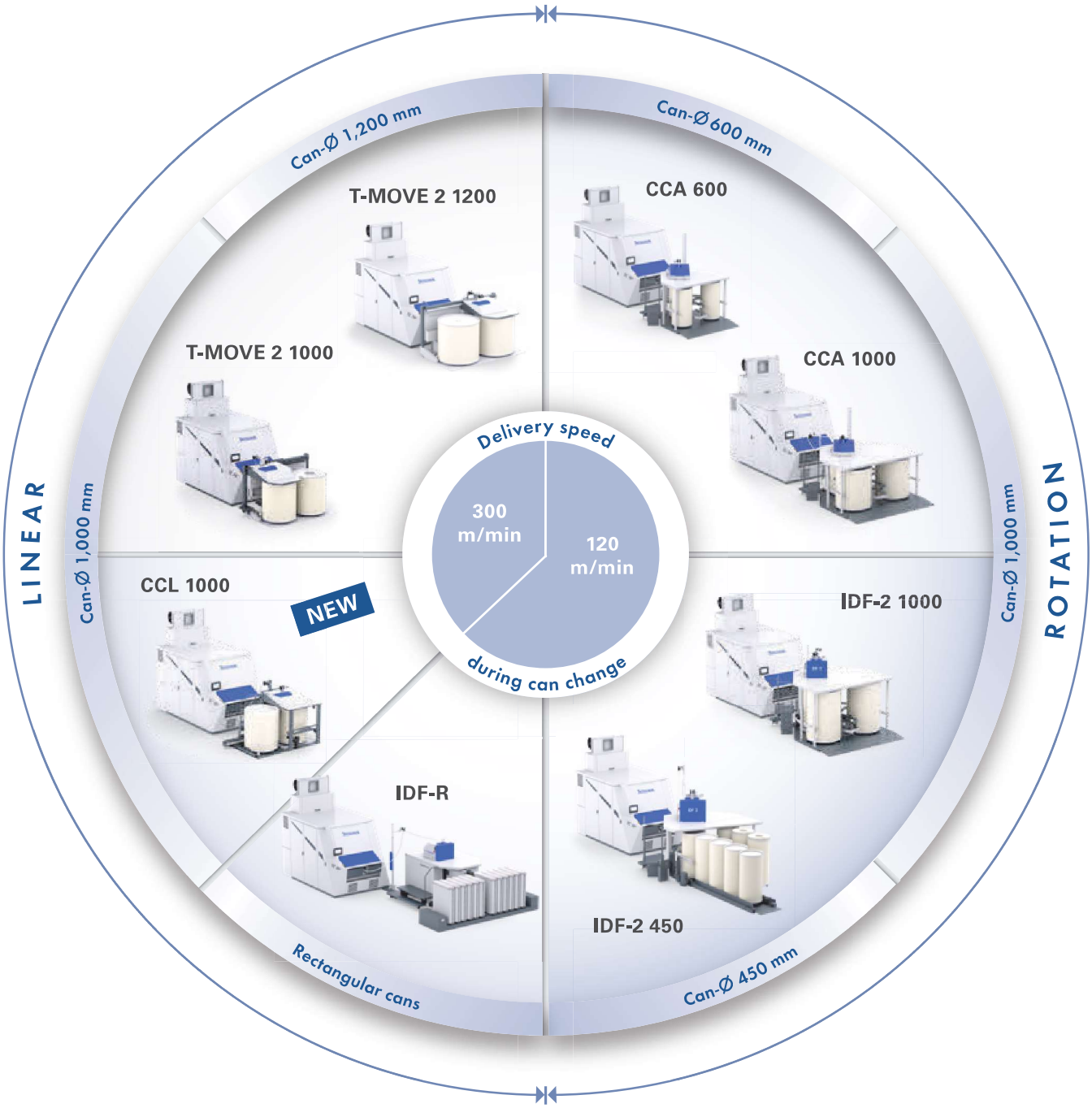
Truetzschler can changer

The sliver coiling systems are controlled by the card control. The operator finds all important data on the coloured multi-touchscreen 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 systems can also be positioned completely above floor. →

Truetzschler can changer

Eight systems – whether rotary, rectangular or integrated sliver coiling – are available for selection:



NEW

Can Filling Station T-MOVE 2

Gentler sliver coiling and quicker can change

Gentler sliver coiling

Previously, the can filling quantity was limited by the bulging of the sliver coiling. In the centre, the slivers are stacked on top of each other and are very strongly compacted.

With the new Can Filling Station T-MOVE 2, the coiling of the layers is offset. This prevents pressure marks in the middle. The slivers are subject to less pressure and keep their round cross-section to a great extent. This results in qualitative advantages during processing in the creel and feeding into the drafting system of the downstream draw frame.

The sliver feed moves – the can is stationary

The sliver feed with the sliver coiling plate (moving head) is moved in a straight line at high speed from the full to the empty can. This is usually done without reducing the delivery speed of the cards. Because the full can does not have to be moved quickly during the change, larger cans with more content can be used: The Truetzschler JUMBO CANS with 1,200 mm diameter and up to 1,300 mm height.

In T-MOVE 2, both JUMBO CANS can be placed directly next to each other. This allows a quick change of the empty can and a clearly defined separation of the card sliver.

T-MOVE 2 with JUMBO CANS reduces the effort for can transport to a minimum.

This JUMBO CAN contains 79 kg of card sliver. The test with the hanging scale shows that no more than 6-8 kg of force is required to move the can.

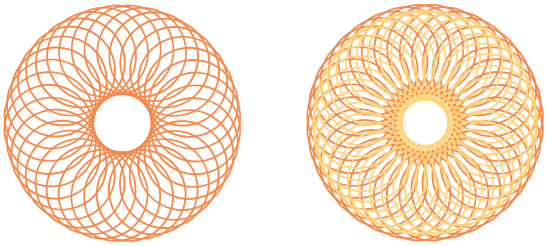
Save space with large cans in the smallest space

Even though the JUMBO CANS have a diameter of 1,200 mm, no greater distance between the cards is necessary.

T-MOVE 2 with 1,200 mm cans requires less space than other can changers with 1,000 mm cans. In addition, T-MOVE 2 allows an operator aisle between the cards and the sliver coiling system. This passage considerably shortens the distance for the operator.

With the new, changing and gentle T-MOVE 2 coiling system, the slivers are subject to less pressure.

On the left, the optimized T-MOVE 2 coiling geometry and on the right, the conventional coiling geometry. Both cans contain 80 kg of card sliver.



After each can rotation, the slivers are coiled with an offset of a few centimetres. As a result, the many crossing points in the middle are not stacked.

Can Filling Station T-MOVE 2

How T-MOVE 2 functions:

The right can is being filled. After each can rotation, the coiler head is offset by a few centimetres. After the next can rotation it is offset in the opposite direction.

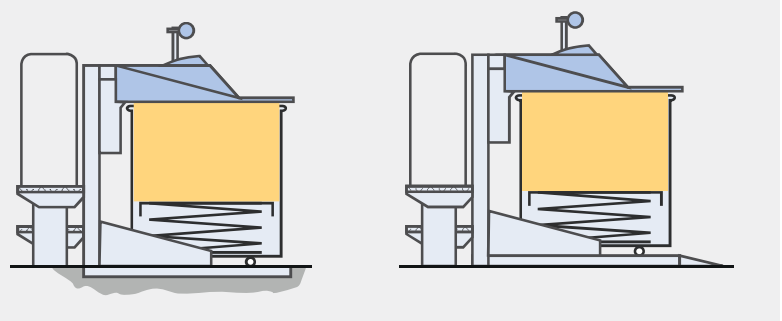
Moving head fills can on right.
Can on left ready for filling process.

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

The right can has been exchanged for an empty can. T-MOVE is ready for the next can change.

The technological and economic advantages:

- Gentler sliver coiling
- Fewer pressed slivers at increased can filling
- High delivery speed during can change
- Less space requirement
- JUMBO CANS
- Increased card 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		**T-MOVE 2**	
Can diameter	mm	1,000	1,200	+ 20 %	1,200	**+ 20 %**
Can height	mm	1,200	1,200		1,200	
Filling quantity in can	kg	53	76	+ 43 %	80	**+ 51 %**
Space requirement for 5 cards	m²	120.5	110.9	– 8 %	110.9	**– 8.0 %**
Card production	kg/h	90	90		90	
Production at time of can change	kg/h	24	90	+ 275 %	90	**+ 275 %**
Delivery speed at time of can change	m/min	80	300	+ 275 %	300	**+ 275 %**
Can change	1/h	1.9	1.3	– 32 %	1.2	**– 37 %**
Card efficiency	%	97.5	99.6	+ 2.2	99.8	**+ 2.4 %**

Total efficiency advantage of up to 2.4 % with T-MOVE 2

on the intelligent Card TC 19^{i}

Sliver coiling – rotation, linear or integrated

Card installation with Rotary Can Changer CCA

Rotary Can Changer CCA

The rotary can changer is available for cans with diameters of 600, 900 and 1000 mm. The can height can be up to max. 1,500 mm. This type of changer is particularly suitable for automatic can transport. The positions for full and empty cans are exactly defined.

Linear Can Changer CCL

The linear can changer for 1000 mm cans is a space-saving variant. It fits even at minimal card centre distance. Here cans up to 1,500 mm height can be used as well.

NEW

Card installation with Linear Can Changer CCL

IDF 2 installation with 450 mm round cans

Integrated Draw Frame IDF 2

The integrated draw frame is used in rotor yarn mills and some applications in air-jet spinning. Here, three different can types are available.

- 1.000 mm round cans
  (If followed by a autoleveller draw frame)
- 450 mm round cans
  (For direct feeding at the rotor spinning machine)
- Rectangular cans
  (For direct feeding at the rotor spinning machine)

IDF 2R installation in a rotor yarn mill

Grinding devices and mounting equipment

Continuity of carding quality

Flat Grinding Device TC-FG

With the new Truetzschler Grinding Device TC-FG, the activation of flats clothing is now even easier and faster. The grinding roll is perfectly adjusted to the Truetzschler cards 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 Truetzschler Card TC 19^{i}. 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 Truetzschler Wire Mounting Equipment TC-ME, all cards are optimally prepared for clothing and re-clothing:

- A complete tool set for applying Truetzschler card clothing
- A mounting frame for applying clothing to licker-in and cleaning rolls of cards
- An unwinding machine for re-clothing

The tool set for applying clothing can be used for all Truetzschler 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 wires cannot be mounted at the machine itself, there is the possibility to use the mounting frame provided. The quick-release fastener of the T-Winder allows fast assembly and disassembly.

Quick and simple activation of flats clothings by means of the Grinding Device TC-FG.

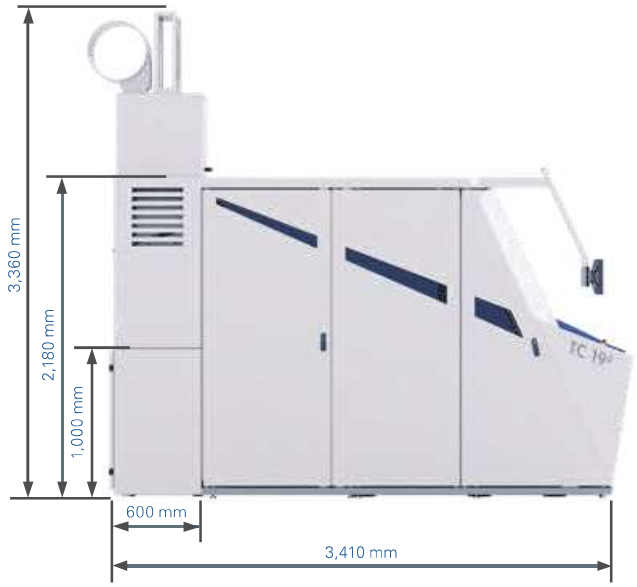
With the comprehensive Truetzschler Mounting Equipment TC-ME, all cards are optimally prepared for clothing and re-clothing.

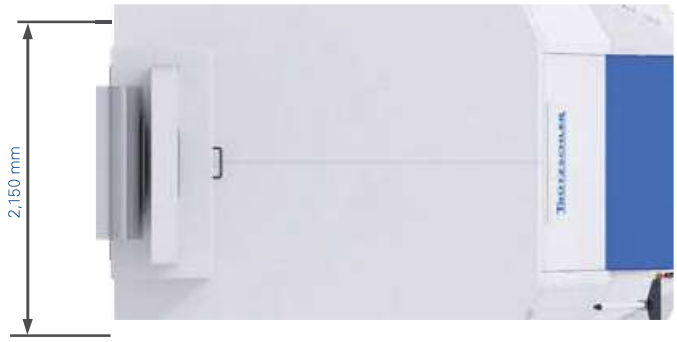
The traversing Grinding Device TC-GD improves carding results for cylinder and doffer.

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

Card TC 19^{i}

Technical data





TC 19^{i}

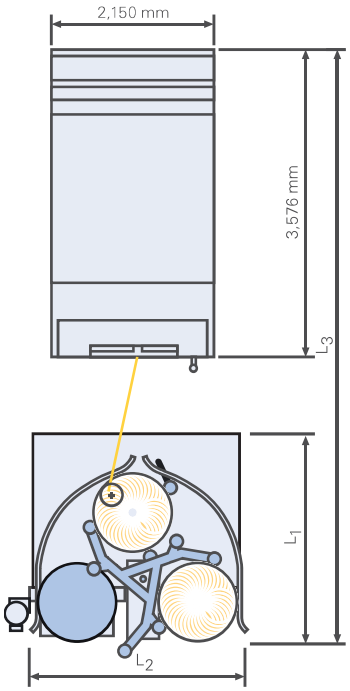
Floor load:	approx. 22,540 N/m²
Max. surface pressure per base plate:	approx. 57 N/m²
Production:	max. 260 kg/h
Suction (continuous):	4,200 m³/h (-740 Pa)
Net weight:	approx. 6,700 kg incl. can changer
Sound pressure level:	67 dB(A) at 100 m/min 73 dB(A) at 250 m/min 78 dB(A) at 500 m/min
Compressed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

T-MOVE 2

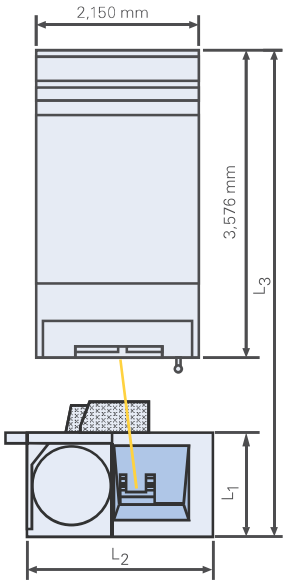
Installed power:	2.5 kW
Continuous power consumption:	1.0 kW
Exhaust air output:	200 m³/h
Negative suction pressure:	-250 Pa

NEW

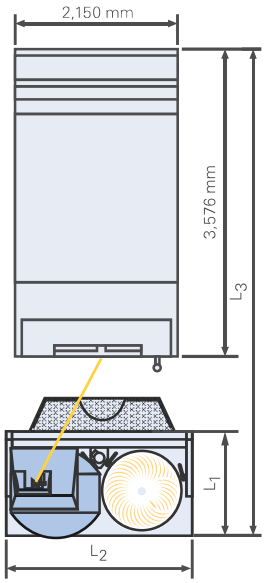
Rotary can changer



Linear can changer



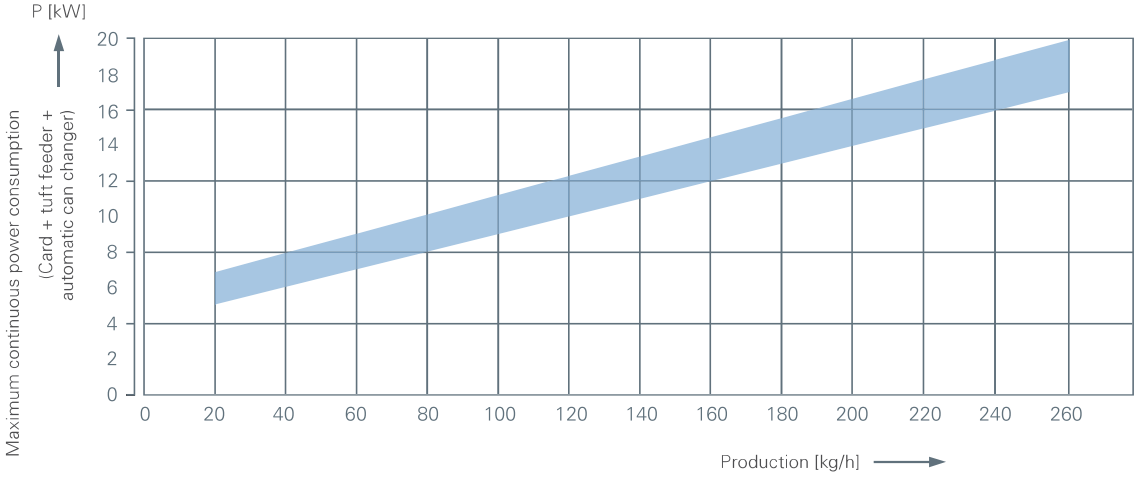
Can filling station



	∅ cans mm	L1 [1] mm	L2 mm	L3 mm	Height under floor	Height above floor	Can height mm
Rotary Can Changer CCA	600	1,715	1,930	6,345	1,345 – 1,970	1,435 – 2,060	900 – 1,525
	1,000	2,350	2,750	6,980			
Linear Can Changer CCL	1,000	1,365	2,340	5,995	1,714 – 2,139	1,794 – 2,219	1,075 1,100 1,200 1,225 1,300 1,500
Can Filling Station T-MOVE 2	1,000	1,420	2,400	6,175	1,540	1,600	1,200/1,300
	1,200	1,620	2,800	6,375			

[1] without can delivery ramps

Power consumption:



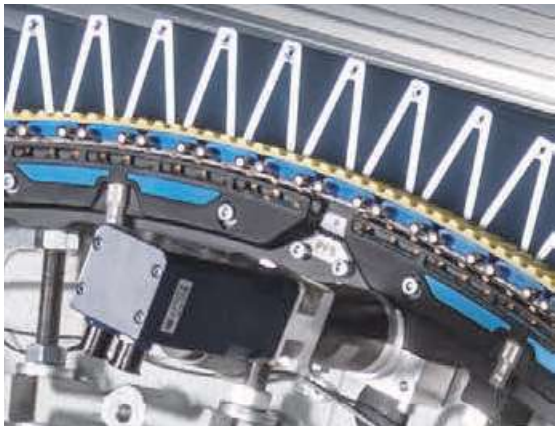
The energy consumption depends on the production output, but also on various settings and the material.

Standard, versions and options

Truetzschler Cards

			The intelligent Truetzschler Card TC 19^{i}			Truetzschler Card TC 19		
			Universal	Fine Count	MMF	Universal	Fine Count	MMF
New	Gap Optimizer	T-GO	•	•	•	–	–	–
New	Setting Optimizer	T-CON 3	•	•	•	–	–	–
New	WASTECONTROL	T-WCT	•	•	–	o	o	–
	Standard Setting Optimizer	T-CON	–	–	–	•	•	•
New	Connectivity Mill Monitoring System "My Mill" and Production Monitoring App "My Production"		•	•	•	•	•	•
New	Wire Management App "My Wires"		•	•	•	•	•	•
New	Ethernet connectivity		•	•	•	•	•	•
	WEBFEED unit with 3 licker-in		•	–	–	•	–	–
	WEBFEED unit with 1 licker-in		–	•	•	–	•	•
	Nep Sensor NEPCONTROL	LC-NCT	o	o	–	o	o	–
New	Manual Flat Setting System (range 40/1000")	PFS	–	–	–	•	•	•
	Stainless steel version		–	–	•	–	–	•
	Man-made fiber set on cotton cards	TC-MMF	o	o	–	o	o	–
New	MAGNOTOP 3 system	MT 3	•	•	•	•	•	•
New	Multi-touchscreen		•	•	•	•	•	•
New	Identification with RFID chip		•	•	•	•	•	•
	Remote display	T-LED	•	•	•	•	•	•
New	Doffer suction hood		•	•	•	•	•	•
New	Linear can changer for 1,000 mm cans	CCL	•	•	•	•	•	•
New	Can filling station for 1,000 mm and 1,200 mm cans	T-MOVE 2	o	o	o	o	o	o
	Automatic can changer for 600 mm cans	CCA	o	o	o	o	o	o
	Automatic can changer for 1.000 mm cans	CCA	o	o	o	o	o	o
	Integrated draw frame for round cans	IDF 2	o	o	o	o	o	o
	Integrated draw frame for rectangular cans	IDF 2R	o	o	o	o	o	o
	Manual Mote Knife Setting System PMS		–	–	•	•	•	•
	Recycling Fiber Set	TC-MWC 3	o	–	–	o	–	–
	Infinitely variable speed control of cylinder and WEBFEED	TC-VSD	o	o	o	o	o	o
	Flat Measuring System FLAT CONTROL	TC-FCT	o	o	o	o	o	o
	Flat Grinding Device	TC-FG	o	o	o	o	o	o
	Grinding device for cylinder and doffer clothing	TC-GD	o	o	o	o	o	o
	Wire Mounting Equipment	TC-ME	o	o	o	o	o	o
	Monitored continuous central suction under floor		o	o	o	o	o	o
	Monitored continuous central suction above floor		•	•	•	•	•	•
	Separate strips suction above or under floor		o	o	o	o	o	o
	Large cylinder with 5.3 m² carding area		•	•	•	•	•	•
	Tuft Feeder DIRECTFEED with movable feed tray		•	•	•	•	•	•
	Integral Tray SENSOFEED+		•	•	•	•	•	•
	Thick place monitoring and metal detection in the feeding area		•	•	•	•	•	•
	Tooth belt guided aluminium flat bars		•	•	•	•	•	•
	Infinitely variable flat speed		•	•	•	•	•	•
	Premium clothings made by Truetzschler Card Clothing TCC		•	•	•	•	•	•
	Quality data monitoring		•	•	•	•	•	•
	Spectrogram analysis		•	•	•	•	•	•
	Quality and maintenance management		•	•	•	•	•	•
	Pneumatic piecing aid		•	•	•	•	•	•
	Electronic cylinder brake		•	•	•	•	•	•
	Coordinated autolevelling systems long-wave to short		•	•	•	•	•	•
	Central safety locking system		•	•	•	•	•	•

• = Standard equipment o = option – = not available



NEW

Precision Flat Setting System PFS

The reliable PFS has been improved in important points:

- The adjustment range is five times as large as before. This allows simple and quick adjustment even after grinding the cylinder or flats clothings and even after replacing the clothing.

Precision knife adjusting system PMS

The first cleaning zone is in the area of the first roll of the WEBFEED system. Here, the reliable precision knife adjusting system PMS ensures an optimal waste composition. It 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.

Flat Measuring System FLATCONTROL

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.