TRUETZSCHLER PRODUCTS AND TECHNOLOGIES

TRÜTZSCHLER
SPINNING

CONTENT


Yarn
Quality

CUSTOMER ORIENTATION

Always at the centre: You

On the one hand, trusted and competent contacts with excellent expertise in installation and plant technology. On the other hand, unprecedented knowledge of specific market requirements. And, in addition, short distances to ensure fast and reliable service

Sales

As a Truetzschler customer, you appreciate the trust that has been established over a long period in our sales experts. They stand for competence, consistency and reliability – fully in line with our promise „it's true – it's truetzschler."

Via the new online portal "My Trützschler" you always have access to your digital solutions such as My Mill – the Mill Management Solution, My Wires – the clothing management app and our new online shop.

International customer days play an important role in the further development of our products. Here you experience what our technological plans are; in turn, we find out what is important for your success.

Service

Our more than 300 service experts are at your disposal. We offer you worldwide maintenance, repair and re-clothing from a single source. Our service team knows your installations, knows which materials are used and can produce the best quality for you. This allows you to preserve the potential of your machines over many years - an investment for the future!

Agent

Our representatives are well trained to find solutions for your individual requirements. Technologies and plant concepts are discussed together with the globally operating Area Sales Managers. Your advantage: a future-proof and tailor-made installation design.

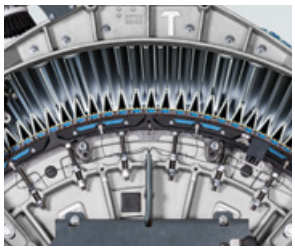
ELECTRONICS PRODUCTION

The big difference for smallest components

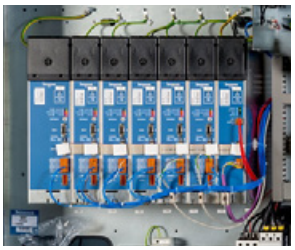
When it comes to computer units for our machines, we are doing something very unusual: We develop and manufacture them inhouse instead of buying them. The same applies to measuring instruments, touch screens, frequency converters, servo axes, drive electronics, sensors and cameras.

We are pursuing this course for good reasons: Only the components developed by our engineers have been perfected for use in the spinning mill environment. They offer a first-class performance, without unnecessarily complicated and failure-prone additional functions.

This – and the long availability of spare parts – makes Truetzschler electronics the benchmark in terms of reliability.



T-GO
Unique carding results through self-optimization functions

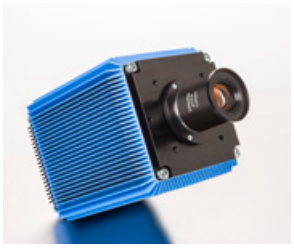


Drive electronics
Latest drive technology for lowest energy consumption.

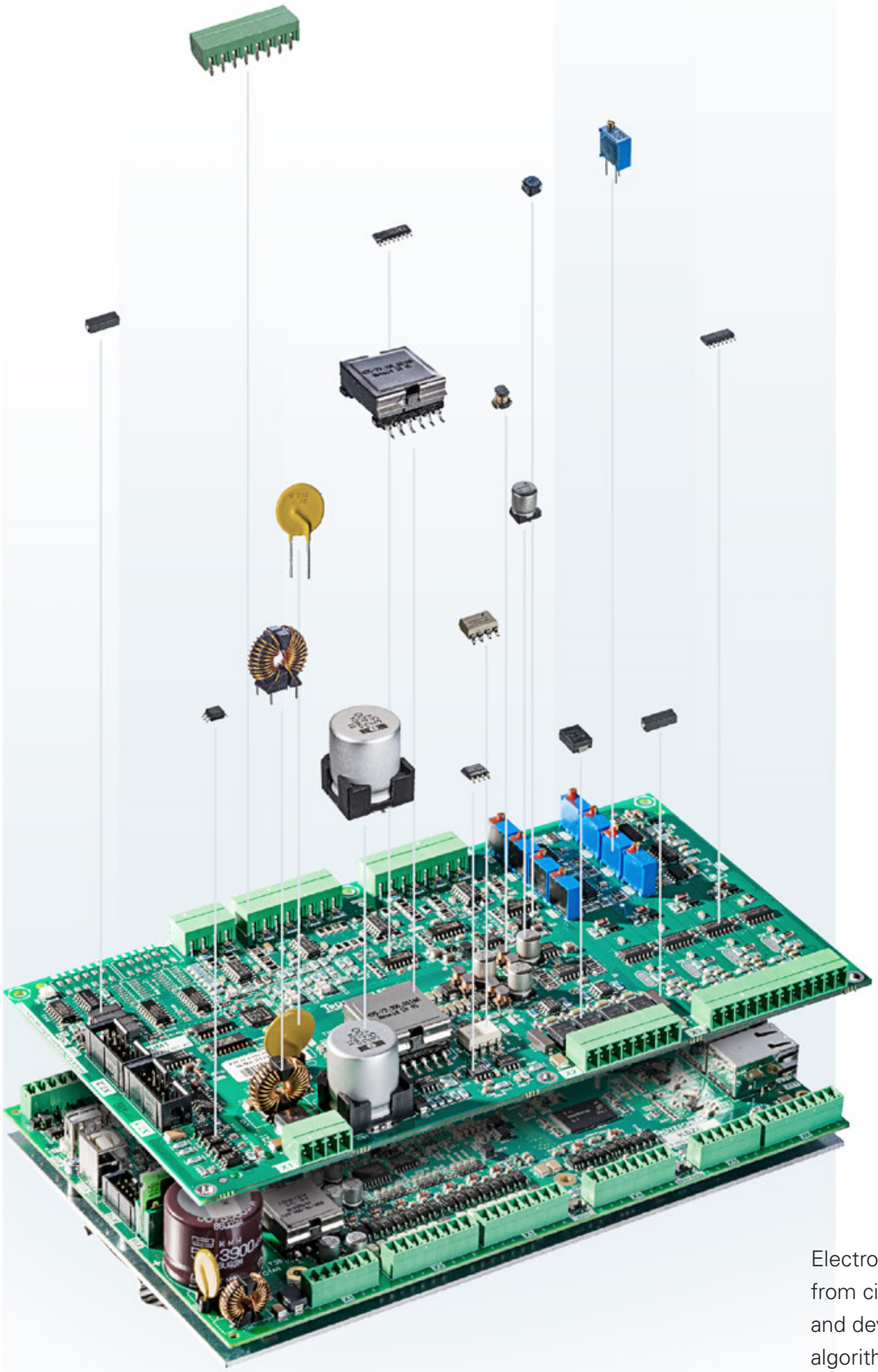
Energy monitoring
With My Mill, a striking increase in energy consumption is noticeable.

WASTECONTROL
Truetzschler sensors place waste quantity and quality in optimum relation to each other.

Multi-touch with RFID technology
Truetzschler sets new standards with User Focused Design for various operating levels.



Foreign part separation
Truetzschler CCD cameras detect parts that no one else can see.



Electronics “made by Truetzschler“: from circuit board design, assembly and device engineering to control algorithms.

T-LED REMOTE DISPLAY

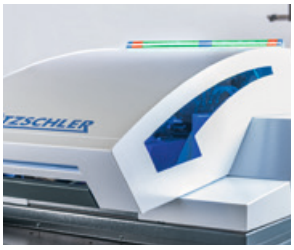
Provides information at the speed of light

Light directs our perception in a special way. Whether turn signal on the car, status light on the mobile phone or – much more romantic – a sunrise: In all cases, we know immediately what is going on.

With T-LED, we have transferred this principle to our machine technology: However, the T-LED indicates more than just “OK”, “Warning” or “Fault”: The number of LEDs within the T-LED strip makes current filling quantities or percentages visible at a glance.

The indication of warning messages always has priority.

Sliver break in the creel with position display
In case of a sliver break, the T-LED of the draw frames automatically switches over and indicates the position of the sliver break in the creel.



A% sliver count variation
If the focus is on the display of sliver count variations A%, T-LED can also show this aspect at a glance.

Chute feed pressure
This mode shows the percentage deviation from the target pressure of the DFK on the TC 19^{i}.

Idle mode display
If there is no material request from the blowroom, a green running light signals that the BO-P is ready for operation.

JUMBO CANS

More productivity through true greatness

The name indicates it: Our JUMBO CANS represent a truly great development. JUMBO CANS can hold 43 % more sliver than conventional 1000 mm cans. This makes them the key to higher efficiency on cards and the downstream process stages of breaker draw frames, lap winders, combers and autoleveller draw frames.

JUMBO CANS are ideal for the gentle sliver coiling system T-MOVE 2, which allows up to 51 % more can content.

Eliminating many thousands of sliver piecings per year and thus avoiding thousands of potential faults automatically increases yarn quality. Great, right?

Even fully loaded – with up to 83 kg card sliver – the JUMBO CANS can be moved very easily over straight hall floors.

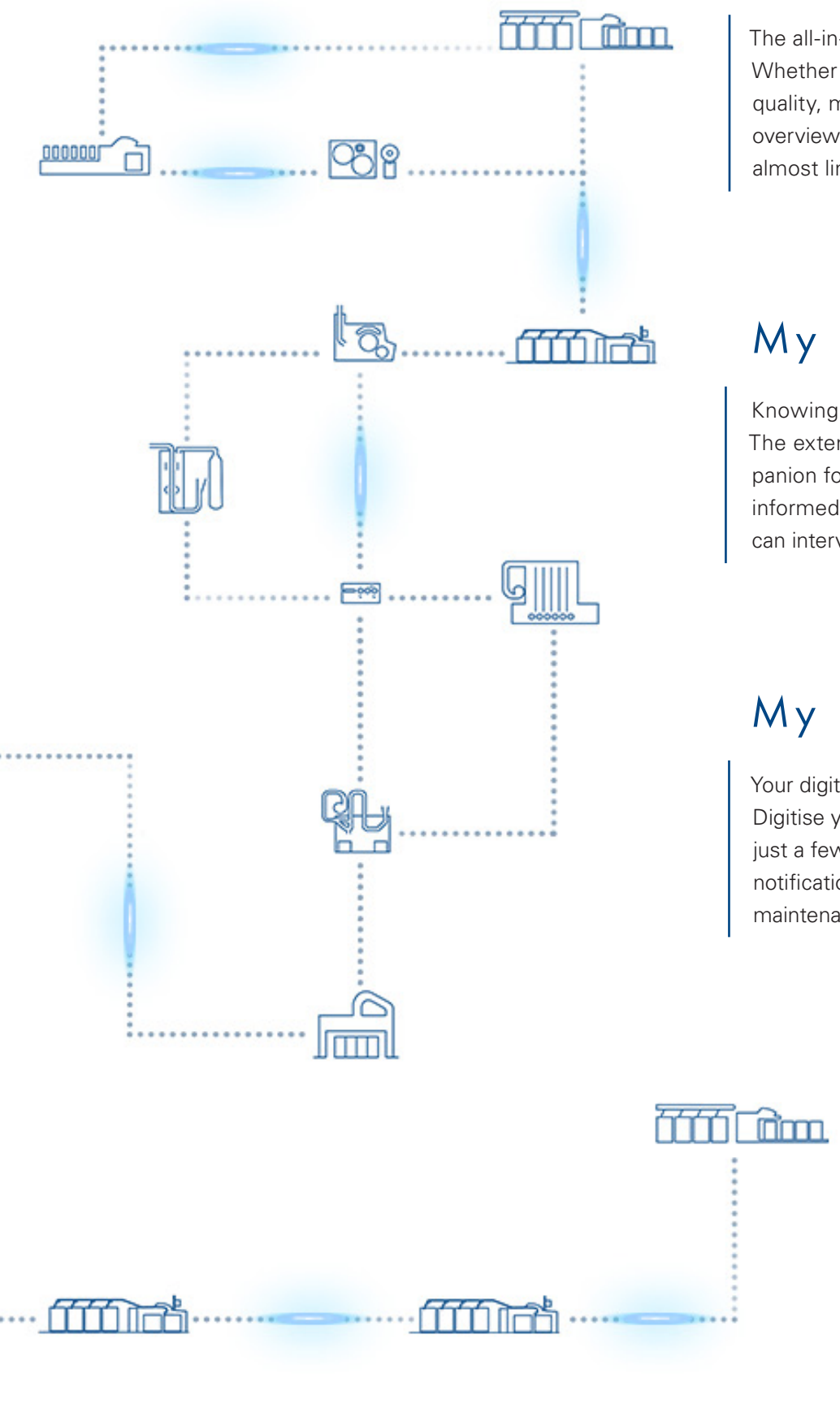
The 43% longer runtimes of the JUMBO CANS in the creel results in reduced downtimes on autoleveller draw frames or lap winders.

The new T-MOVE 2 increases the filling quantity by a further 5%.

DIGITAL SOLUTIONS

Always and everywhere informed

With Truetzschler technology, you can further extend your lead – also in the course of digitisation. Our digital solutions enable you to generate profits faster, bundle resources, optimize processes and save costs with little effort. They are as easy to use as an app and work even if you do not use only Truetzschler technology.



My Mill

The all-in-one platform:
Whether information about your production, quality, maintenance or simply a complete overview – with My Mill your possibilities are almost limitless.

My Production

Knowing what is going on at home:
The extension to My Mill is the ideal companion for managers on the go. You are fully informed practically anywhere on earth and can intervene as necessary.

My Wires

Your digital wire management:
Digitise your wires and their condition in just a few minutes! Receive automatic notifications of pending repeat orders and maintenance.

Our digital offers are cloud-based and extremely secure. We rely exclusively on the highest security standards because data security is just as important to us as it is to you.

Portal Bale Opener BO-P

The Truetzschler portal solution for higher productivity and increased quality

The new Portal Bale Opener BO-P

Up to 106 % more working width for higher production rates

With 2,900 mm or 3,500 mm, the Portal Bale Opener BO-P offers very large working widths for flexible bale placement. Up to 2,500 kg/h or 3,000 kg/h tufts are gently and uniformly worked off.

The new and unique portal concept makes the large working width possible in the first place. Furthermore, with a bale lay-down area of up to 75 m length, the portal concept allows a completely flexible arrangement of various bale lots. ➔

Three very large man-made fiber bales are worked off here side by side.

Above 100 % more working width

for higher production rates

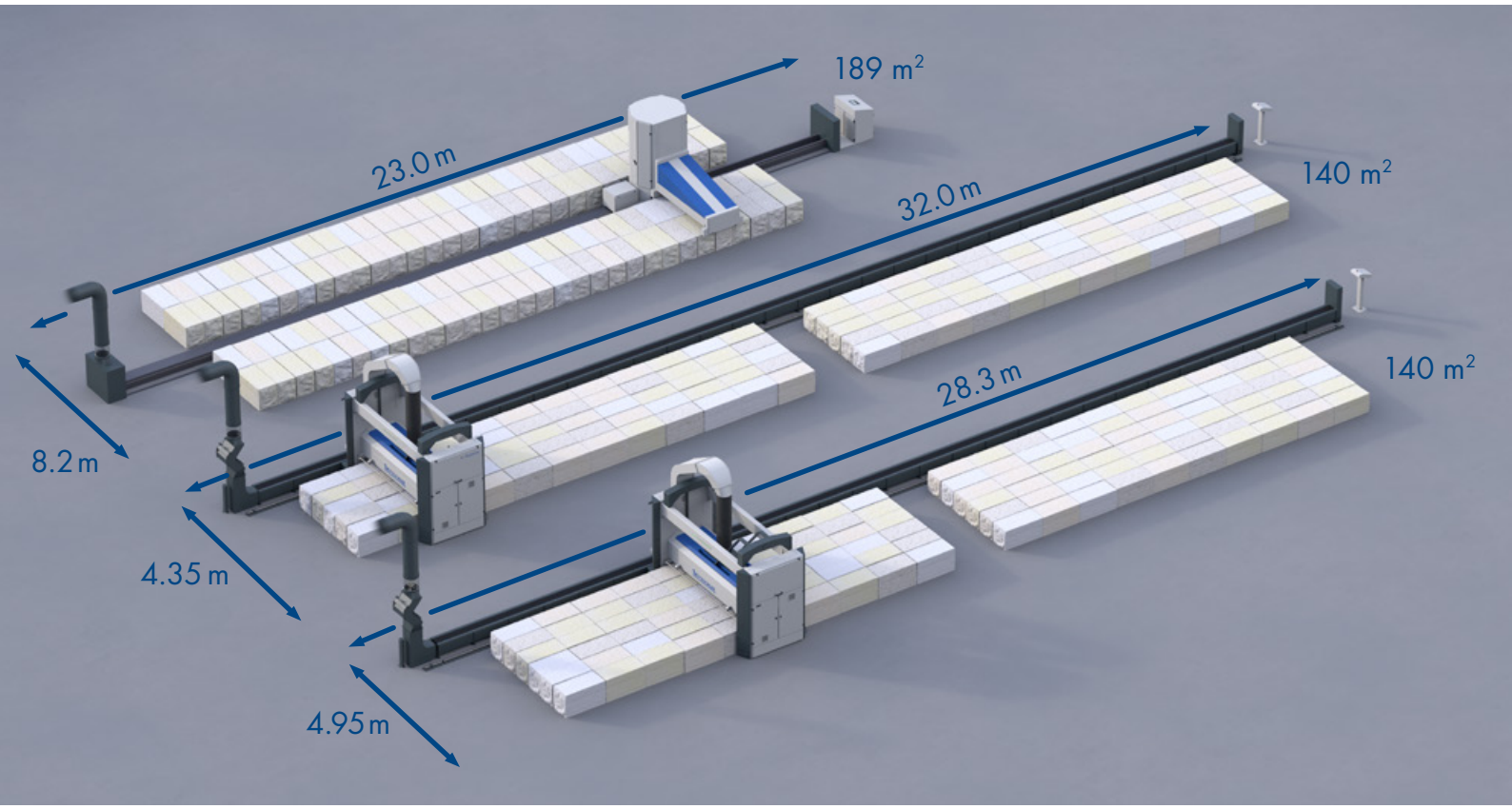
Portal Bale Opener BO-P

25 – 45 % less space requirement due to the larger working width

The concept of the portal with a larger working width significantly saves hall space. To make optimal use of the space, the BO-P can also be positioned close to the wall with free access to the bale lay-down area.

In addition, the new bale lay-down on only one side considerably simplifies the bale logistics in the spinning mill.

The long bale lay-down area can be flexibly used. The areas can have different lengths. This, for instance, can be beneficial to span an unattended night shift or weekend. As shown in the adjacent example, the new Bale Opener BO-P requires 26 % less building space than the BO-A when using 66 bales in the bale lay-down.



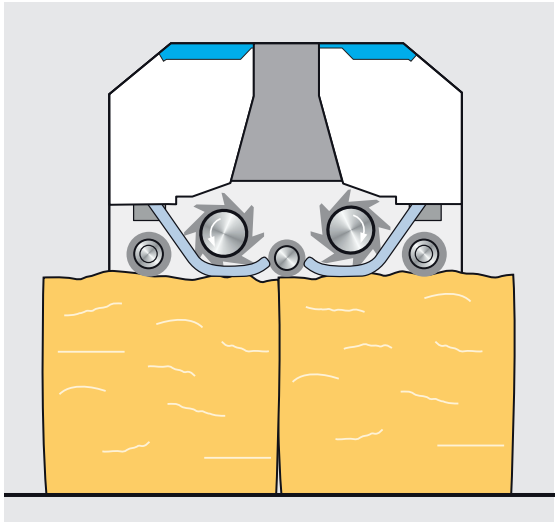
Higher degree of opening thanks to new work-off rolls

The two longwork-off rolls have nearly twice as many teeth, newly arranged. This results in a fiber-friendly work-off and a uniform, homogeneous surface appearance. The work-off is planar, without gap formation.

Naturally, the Portal Bale Opener BO-P is equipped with the patented penetration inversion mechanism known from BLENDOMAT BO-A. Thus, the production is perfectly distributed on two rolls, eliminating wear-intensive deceleration with direction of rotation reversal.

Up to 160 % better blending due to larger working width and finer needling

It is possible to lay down 5 to 7 bales side by side. With its two opening rolls, the working head simultaneously works off up to 14 bales. This lays the foundation for homogeneous blending in the blow room.



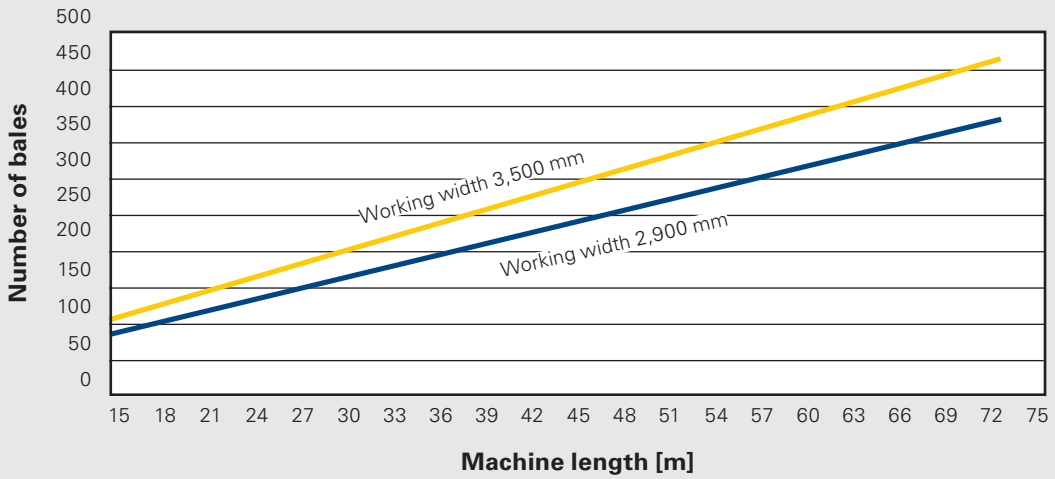
The point density is 25 % higher than on BLENDOMAT BO-A

Savings of up to 45 % building space

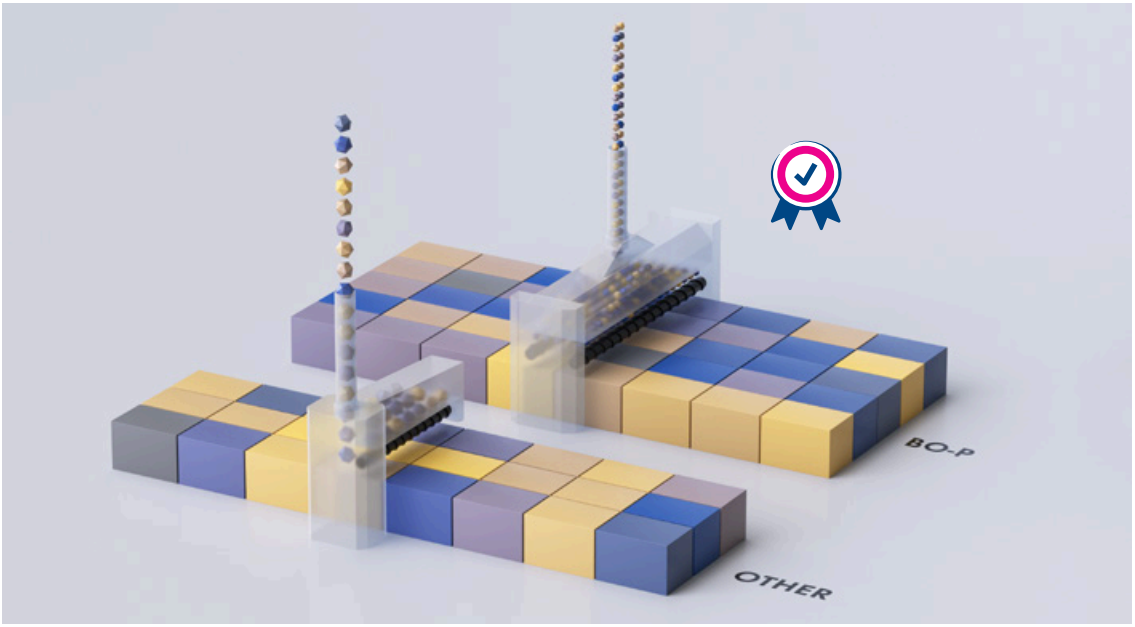
compared to BO-A

Portal Bale Opener BO-P

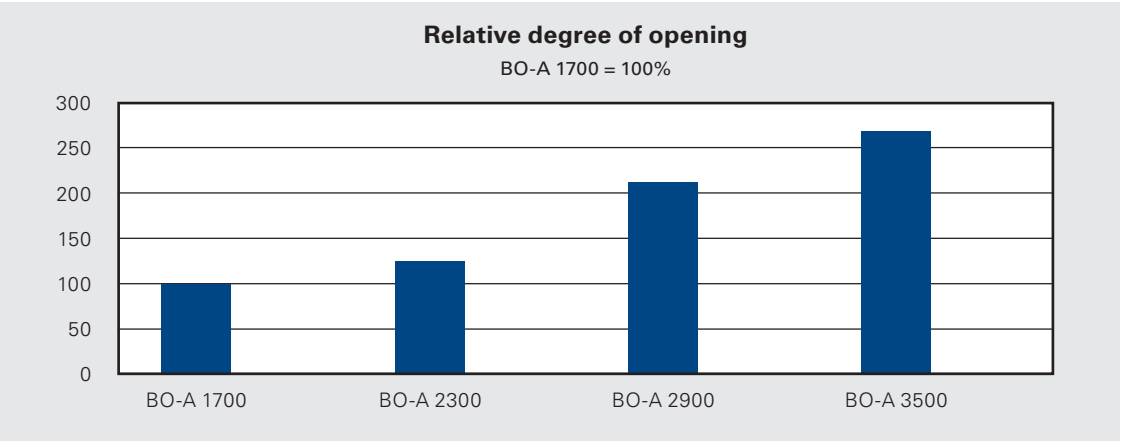
Using as many bales as possible in the lay-down improves homogenisation
Bale dimensions: Length 800 mm, width 600 mm



Better blending and smaller tufts due to larger working width and finely needled opening roller.



Substantially smaller tufts improve the downstream blending.



Intelligent new machine design

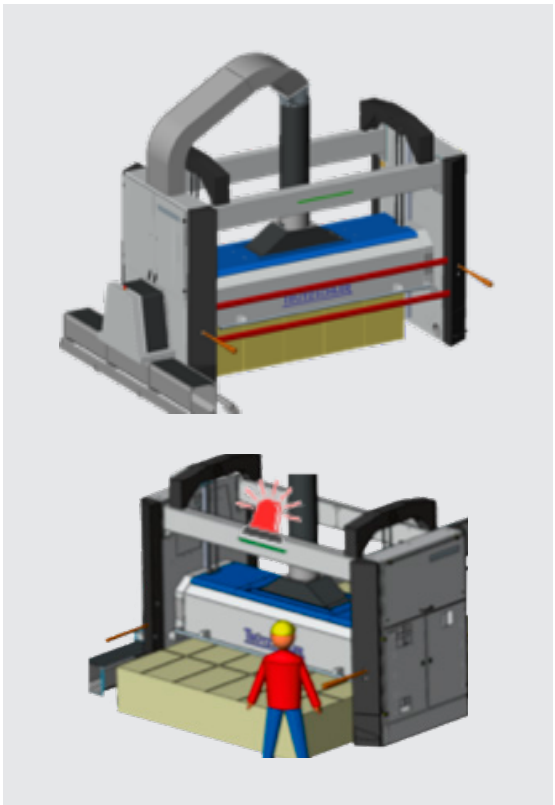
- The machine is virtually maintenance-free. There are no lubricating points or roller chains requiring re-lubrication.
- No cost intensive wear parts.
- The flow-optimised suction ensures a lower air requirement.
- All drives are infinitely variable on the display. This also applies to the opening rolls.
- The position of the operating unit with colour touch screen is freely selectable in the room.
- The programming run at the beginning of a new bale lay-down can be carried out time-efficiently in both directions.
- Assembly time cut in half thanks to pre-assembled machines.
- No special requirements on floor conditions. No concrete or screed work required. The BO-P is robust against uneven floors and up or down gradients.
- The machine can inexpensively be moved or extended.

Hard-pressed waste bales that are difficult to process are worked off here. The gap-free appearance of the bale surface is perfect even at a production rate of 2,400 kg/h.

Simple and easy to operate

The remote display T-LED clearly indicates the operating status also at a larger distance and eliminates unnecessary walking for the operator. In case of malfunctions and prior to machine start-up, clear visual warnings are issued.

The portal bale opener is freely accessible from all sides at any time. The intelligent safety system permanently monitors the dangerous area and reliably protects the operator. During production, the bale lay-down can be monitored at any time.



The immediate area of the bale work-off is permanently monitored by an integrated safety system.

BO-P highlights

- Two working widths, 2,900 and 3,500 mm
- Production up to 3,000 kg/h
- Less space requirement
- Improved blending
- Smaller tufts
- Up to three blends
- Flexible size of the two working areas

Automatic Bale Opener BLENDOMAT BO-A

Establishing the quality chain with maximum performance

The BLENDOMAT BO-A can be flexibly adapted to spatial conditions: one-row or two-row bale lay-downs and feeding of up to three cleaner and opener lines are possible. The quality chain starts with the homogeneous tuft flow from its gentle bale opening.

Flexibility at bale lay-down and during bale work-off

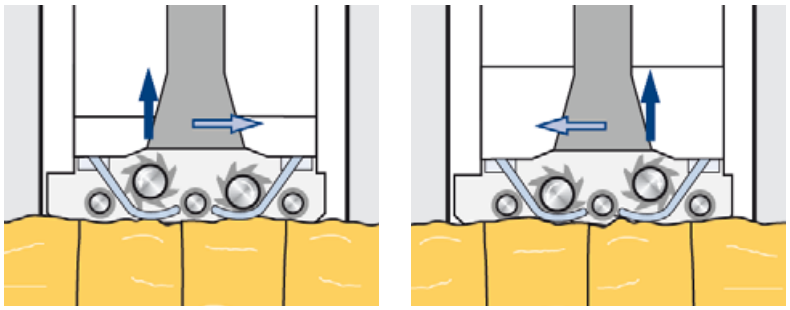
- Production capacity up to 2,000 kg/h
- Work-off of 1 to 3 bale groups per work area, optionally on one or two sides
- Up to 200 bale lay-down for extended, unattended operation (up to three lines simultaneously)
- Different bale heights are possible
- Free work-off area for a complete reserve set of bales: Working width max. 2,300 mm and machine length up to more than 50 m
- Continuous performance in both directions

Optimal start of the quality chain

- Constant tuft sizes and initial blending
- Separate lay-down of different cotton qualities in different lines is possible
- Direct work-off of two or three different fibers, which are blended on a downstream tuft blending installation, on one BO-A.
- Two opening rolls ensure uniform production and small tuft size.

Simple and safe operation

- Fully automated bale work-off
- Self-optimised travel speed
- Intuitive touch screen operation
- Minimal maintenance
- Work area secured by light barrier system



Here one opening roll is lifted and the other one lowered during change of travel direction. This ensures equal distribution of production on both rolls. The usual wear-intensive deceleration and acceleration of the opening roll is eliminated.

Hopper Feeder Bale Opener

Compact and economical

Universal Bale Opener BO-U

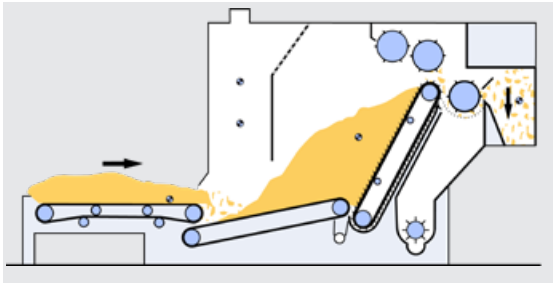
BO-U for smaller lots or in addition to BLENDOMAT BO-A when it comes to powerful performance and economic efficiency:

- Specific blending of different material flows by means of additional trunk feeder
- Dosed addition of cleaned waste and re-feeding of sliver waste
- Selective lay-down of bale layers/bales
- Can be combined with cleaners and openers

Universal Bale Opener BO-U (shown here in version with one trunk feeder)

Bale Opener BO-E

The smaller and space-saving Bale Opener BO-E is ideal for medium production rates up to approx. 750 kg/h. Its technology is comparable to the one of the BO-U.



The Bale Opener BO-E is the economical solution in the medium production range.

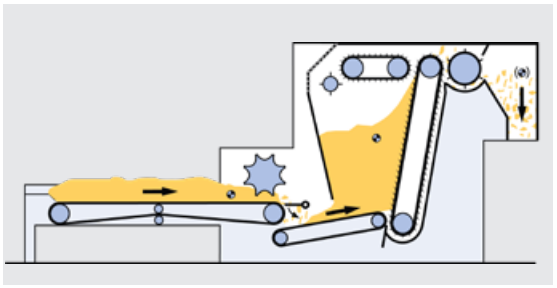
Compact Bale Opener BO-C

The Compact Bale Opener BO-C is specifically designed for opening of man-made fibers at low and medium production rates up to 300 kg/h. It allows highest flexibility on smallest space by direct feeding of individual cards or small card groups.

The Compact Bale Opener BO-C is ideal for feeding of a small man-made fiber installation and can directly feed an opener.

Waste Opener BO-R

The Waste Opener BO-R is ideally suited for feeding small amounts such as card and draw frame slivers. Its specially designed technology ensures uniform feeding even at production rates of only 5 kg/h.



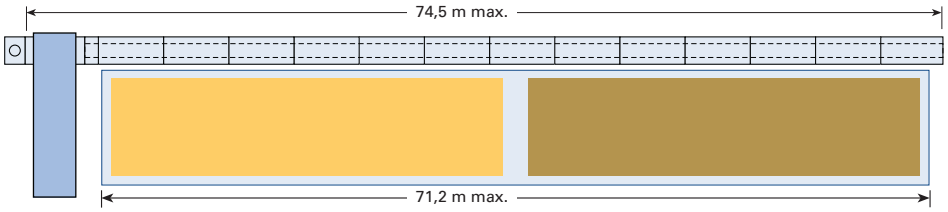
The Waste Opener BO-R reliably opens sliver waste as well.

Technical data

Portal Bale Opener BO-P

Portal bale opener	Machine length mm	Machine width mm	Machine height mm	Work-off length mm	Work-off width mm	Max. bale height mm	Max. continuous power kW	Average power consumption kW/h	Max. continuous production kg/h	Noise level db (A)
BO-P	15,500–74,500	4,340	3,750	12,252–71,300	2,900/3,500	1,800	17.7	12.6	2,500/3,000	< 70

Work-off widths and max. number of bales



Machine length > 9,6	m	9.6	12.5	15.5	18.4	21.4	24.3	27.3	**30.25**[2]	33.2	36.1	39.1	420
Total work-off length[1]	m	6.3	9.3	12.2	15.2	18.1	21.1	24.0	**27.0**	29.9	32.9	35.8	38.8
Work-off width 2,9 m	Number of bales[3]	34	50	66	82	98	114	131	147	163	179	195	211
Work-off width 3,5 m	Number of bales[3]	41	61	80	99	119	138	158	177	196	216	235	254
Work-off width 2,9 m	Total weight[3]	6	9	12	15	18	21	24	27	30	32	35	38
Work-off width 3,5 m	Total weight[3]	8	11	15	18	22	25	29	32	36	39	43	46

Machine length > 45,0	m	45.0	47.9	50.9	53.8	56.8	59.7	62.7	65.6	68.6	71.5	74.5
Total work-off length[1]	m	41.7	44.7	47.6	50.6	53.5	56.5	59.4	62.4	65.3	68.3	71.2
Work-off width 2,9 m	Number of bales[3]	227	243	259	275	291	307	323	339	355	371	387
Work-off width 3,5 m	Number of bales[3]	274	293	312	332	351	370	390	409	429	448	467
Work-off width 2,9 m	Total weight[3]	41	44	47	50	53	56	59	62	65	67	70
Work-off width 3,5 m	Total weight[3]	50	53	57	60	64	67	71	74	78	81	85

1) A distance of 2 m must be considered between the bale groups. This reduces the working length.
2) = Standard length 30.25 m
3) When using 90 % of the theoretical area

Manual bale openers

Manual bale openers		Frame width mm	Total width mm	Total length mm	Total height mm	Max. continuous power kW	Average power consumption kW	Max. continuous production[1] kg/h	Storage capacity m^3	Noise level db (A)
	**BO-C**	1,000	1,464	5,265	2,250	2.8	1.9	300	1.5	71
	**BO-E**	1,600	1,800	6,180	2,520	4.9	3.5	750	5.0	73
	**BO-R**	1,000	1,464	5,265	2,250	2.8	1.9	100	1.0	72
	**BO-U**	1,600	2,464	7,010	3,000	5.4	3.8	1,700	6	74

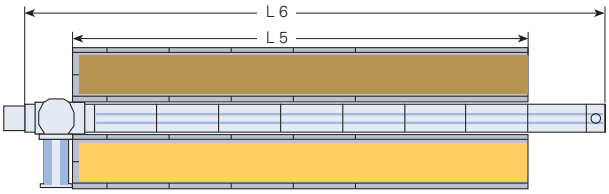
1) depending on material characteristics

Automatic Bale Opener BLENDOMAT BO-A

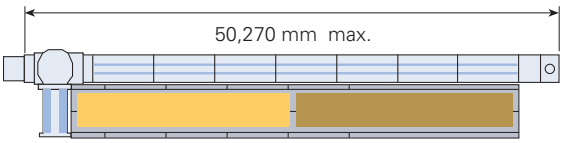
Automatic bale opener	Frame width mm	Height mm	Max. bale height mm	Machine length min. mm	Machine length max. mm	Max. continuous power kW	Average power consumption at max. production kW	Max. continuous production kg/h	Noise level db (A)
BO-A	1,720/2,300	2,900	1,800	10,670	50,270	10,6/10,6[1)]	7,4/8,4[2)]	1,200/2,000	< 70

1) For productions over 1,500 kg/h = 17.6 kW 2) For productions over 1,500 kg/h = 12.3 kW

Length options and max. number of bales for BLENDOMAT BO-A 1720/BO-A 2300



In small rooms it is possible to arrange the working areas in series



BO-A 1720	max. number of bales**	37	69	101	117	133	165	197	229	261	293
	L 5 (mm)	5,810	10,760	15,710	**18,185***	20,660	25,610	30,560	35,510	40,460	45,410
	L 6 (mm)	10,670	15,620	20,570	**23,045***	25,520	30,470	35,420	40,370	45,320	50,270
BO-A 2300	max. number of bales**	50	93	135	157	178	221	264	306	349	392

* = Standard ** = Bale dimensions: L 800 mm × W 600 mm

Equipment

SERIES/OPTION	
	PORTAL BALE OPENER BO-P
●	The standard version of the BO-P has a length of 30,250 mm
○	Using up to 14 extension units of 2,950 mm each, it can be extended up to 74,500 mm
	AUTOMATIC BALE OPENER BLENDOMAT BO-A
●	The standard version of the BLENDOMAT BO-A (2,300) has a length (L 6) of 23,045 mm
○	Using up to 11 extension units of 2,475 mm each, it can be extended up to 50,270 mm
	UNIVERSAL BALE OPENER BO-U
●	Feed table supply
○	Automatic material supply is made possible with a Trunk Feeder BR-FU
○	The feed table can be extended with one to three feed table extensions by 2 m, 4 m or 6 m
○	If an opener is fed directly then it is possible to temporarily bypass the opener via a reversing flap
○	Maintenance platform
	COMPACT BALE OPENER BO-C / WASTE OPENER BO-R / BALE OPENER BO-E
●	Feed table supply
○	The feed table can be extended with one to three feed table extensions by 2.5m, 5 m or 7.5 m

● = Series ○ = Option

Completely secure installation protection

Multi Function Separator SP-MF

Multi Function Separator SP-MF

Multi Function Separator SP-MF provides security and lowers operating costs

The Multi Function Separator SP-MF is located downstream from the Portal Bale Opener BO-P. Supported by an integrated microcomputer control, naturally all functions work reliably at all times, even at production rates up to 2,000 kg/h:

- During suction of the Portal Bale Opener BO-P or the automatic Bale Opener BO-A, the fan speed is self-optimised on the bale lay-down according to position, thus saving energy costs.

In addition to installation safety, the economic benefits are convincing. →

Economic efficiency calculation
2,000 kg/h, 11 USct./kW

4,350 US$
annual savings in energy costs

Multi Function Separator SP-MF

1. Suction
When applying conventional solutions, condenser and fan always operate at highest output level to ensure reliable material transport even at the furthest point. With Truetzschler, the fan operates only at the currently required performance, depending where the Portal Bale Opener BO-P or the BLENDOMAT BO-A is running at the time. Energy costs are considerably lowered.

2. Heavy part separation
Optimal efficiency at minimal loss of good fibers during the separation of heavy parts is ensured by a special fan speed control. The heavy parts are automatically discharged into a waste container.

3. Air separation and dust removal
In conventional systems, the entire air flows from bale opener to filter system. To increase efficiency, Truetzschler is using an integrated air-volume separator in addition to dust removal. It directs only a small amount of air into the filter, which can be designed for approx. 3,000 m^3/h less, resulting in significant savings in energy costs compared to conventional installations.

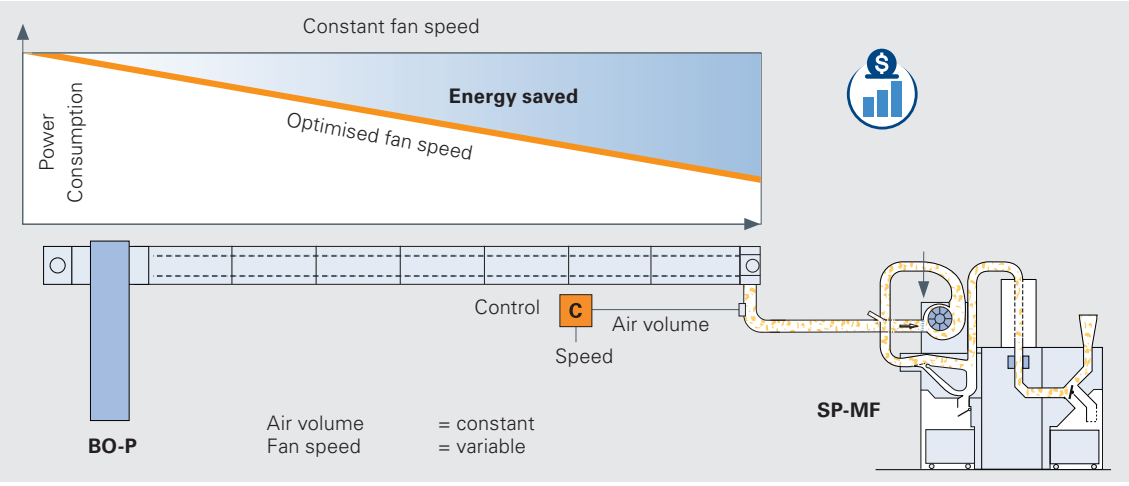
4. Fire protection
In order to reduce fire damage, the machine is equipped with sensors. They are connected to the installation control.*

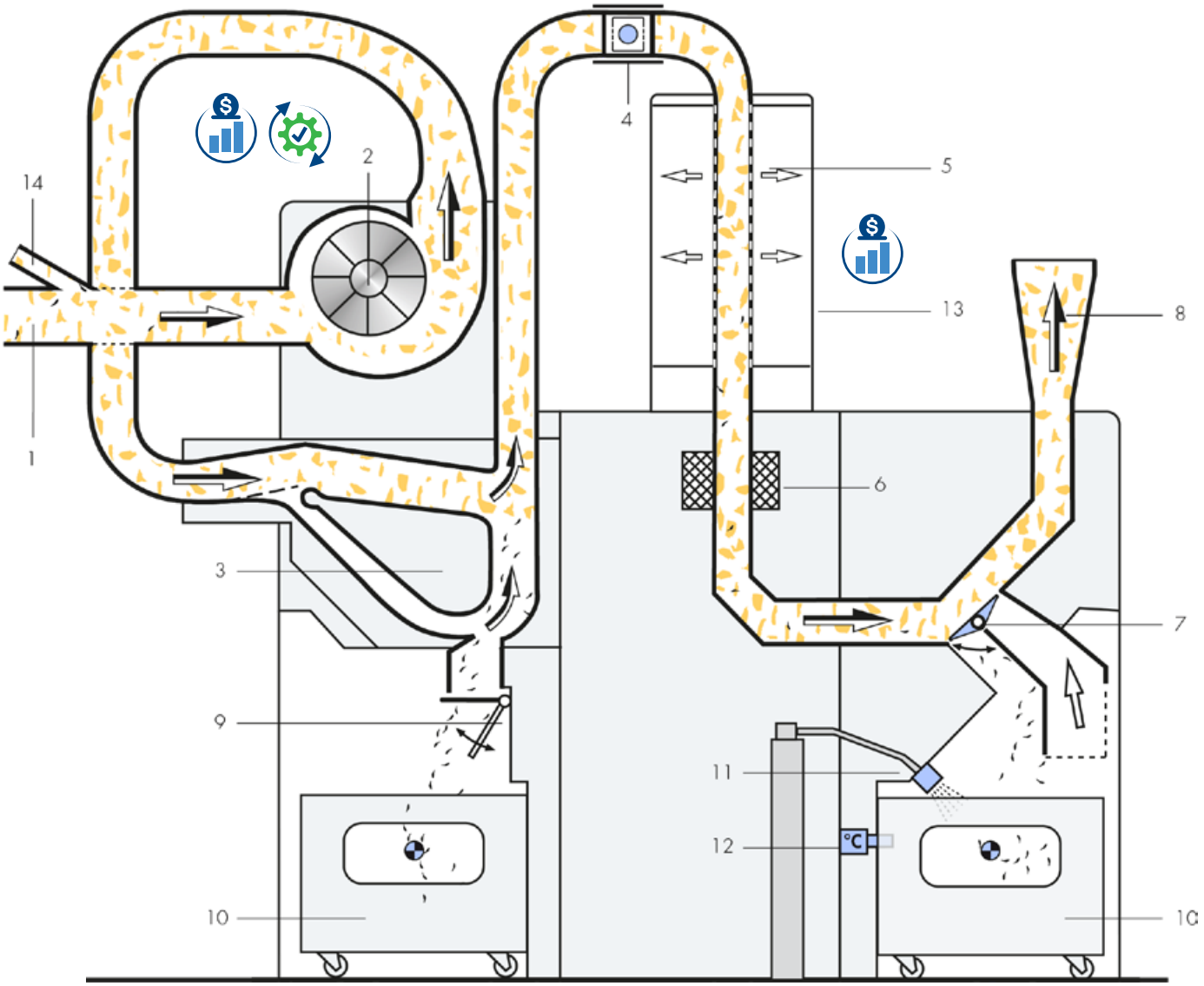
5. Metal separation
Cleaners and cards are securely protected against metal parts: An electronic sensor surrounds the fiber channel and detects metal parts in the SP-MF. The subsequent extraction flap is a special Truetzschler development; since it is actively moved, it responds quickly in both directions. The customary wear-intensive spring pre-tensioning is no longer required.

6. Waste re-feeding
Soft waste, such as opened card and draw frame slivers, can easily be re-fed without the usually required fan: It is sucked up together with the main material flow. Thus, it passes through the entire machine and is also checked for heavy parts and metal particles.

* These devices are no substitute for fire protection and extinguishing equipment to be provided by customer

Energy savings with SP-MF





The Multi Function Separator SP-MF combines many functions in a compact form

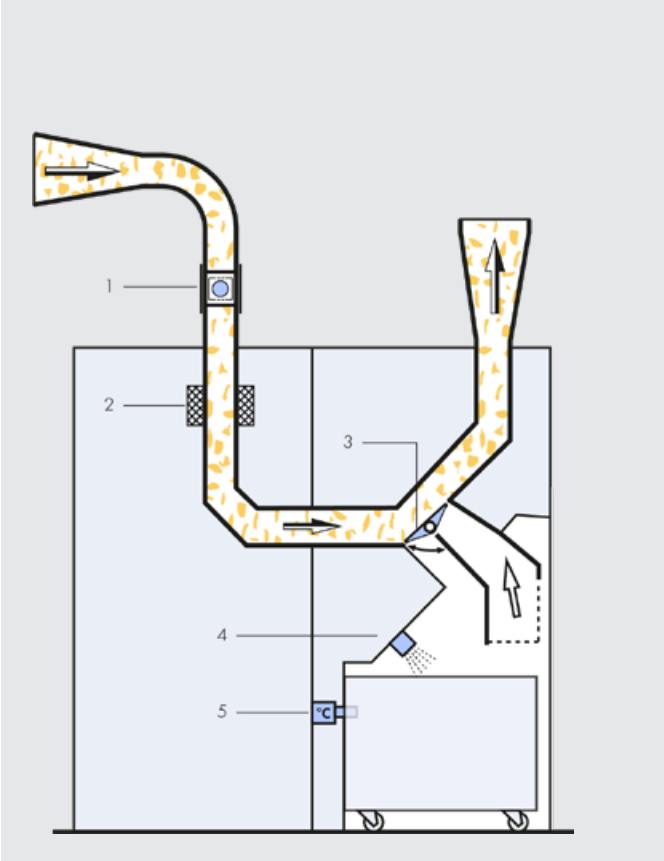
1 The material is suctioned by a Portal Bale Opener BO-P
2 The automatic control of the fan ensures uniform air volume
3 A new guiding profile has been developed for the aerodynamic heavy part separator
4 The rectangular duct is monitored by two spark detectors*
5 The dusty air is extracted in the air separator
6 The metal detector detects all types of metals
7 The extraction flap does not work with pre-tensioned springs, but is actively opened and closed
8 The next machine (e.g. fan in front of mixer) suctions off material
9 A flap conveys the separated heavy parts into the waste cart
10 Both waste carts are generously dimensioned.
11 An extinguishing nozzle is installed at this point*
12 A heat detector monitors the waste container*
13 The dusty exhaust air is fed to a filter system
14 Opened waste from the Waste Opener BO-R can be fed back without an additional fan

* These devices are no substitute for fire protection and extinguishing equipment to be provided by customer

Special machines for installation protection

Protection against heavy parts as well as magnetic and non-magnetic metals

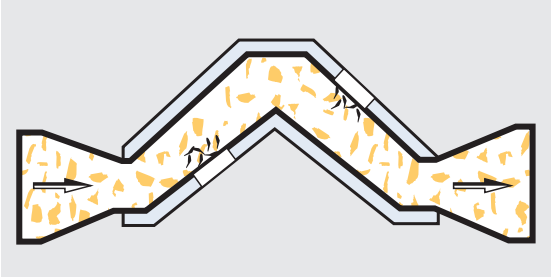
Electronic Metal Separator SP-EM and Pre-Cleaner CL-P



Electronic Metal Separator SP-EM

Basic protection against magnetic particles: BR-MT

The Magnet Trap BR-MT fitted into the pipeline offers basic protection against magnetic particles that are not stuck in material tufts.



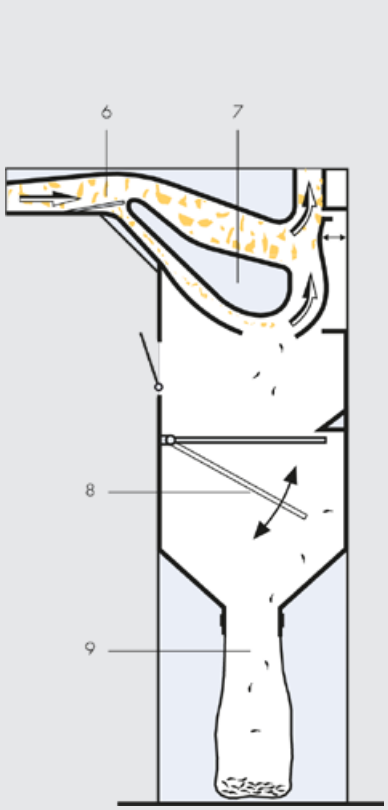
Principle of Magnet Trap BR-MT

Safe metal separation: SP-EM

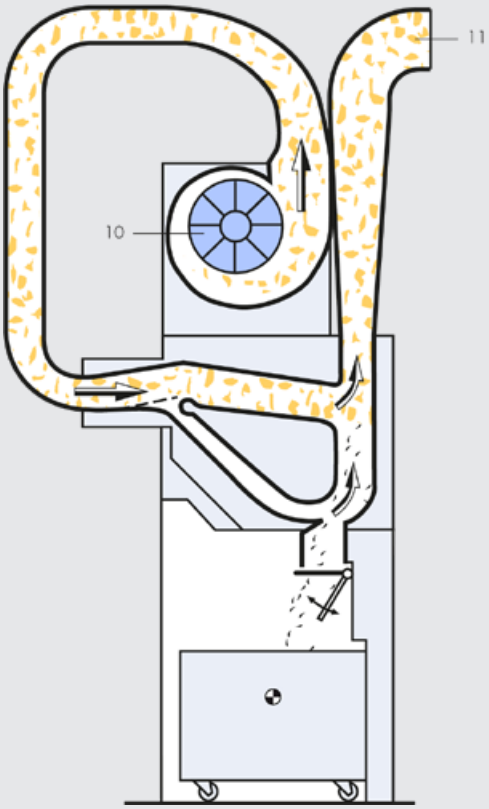
The electronic Metal Separator SP-EM supports the protection of cleaners and cards from metal particles. Since, in the process, the material transport is performed by the downstream machine, it is free of exhaust air and requires no filter capacity.

Heavy parts separation: SP-H

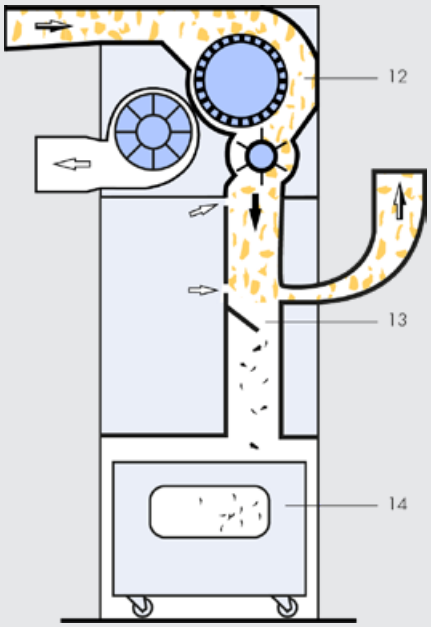
The Heavy Part Separator SP-H reliably separates heavy parts from the tuft flow. Since it is maintenance free and requires no electrical energy, it also does not generate any operating costs.



Heavy Part Separator SP-H



High performance Heavy Part Separator SP-HU



Condenser BR-COU and Integrated Heavy Part Separator SP-IH

High performance Heavy Part Separator SP-HU

The functional principle of the Heavy Part Separator SP-HU corresponds to the SP-H. The integrated fan supply and increased working width resulted in a design for high throughputs.

Integrated separation: SP-IH

The Integrated Heavy Part Separator SP-IH is directly mounted on a Universal Bale Opener BO-U or under a condenser. Since fiber suction is performed at a right angle, the heavy parts fall straight down. There is no simpler and cheaper way.

1 The rectangular duct is monitored by two spark detectors.*
2 The metal detector detects all types of metals.
3 The extraction flap does not work with pre-tensioned springs, but is actively opened and closed.
4 An extinguishing nozzle is installed at this point.*
5 A heat detector monitors the waste container.*
6 .A large comb directs the tuft flow upwards into the suction. Heavy parts fall down through the comb
7 The guiding profile ensure different air speeds in the suction on top and the separation area at the bottom
8 The flap separates the separation area from the waste bag in terms of ventilation
9 The large-sized waste bag can be replaced during production
10 Material feeding
11 Material suction
12 The condenser separates fibers and transport air
13 The adjustable flap permits only heavy parts to pass
14 The large waste cart can be emptied during production

* These devices are no substitute for fire protection and extinguishing equipment to be provided by customer

Technical data

Separators

TYPES	Frame width mm	Total width mm	Total length mm	Total height mm	Max. continuous power kW	Average power consumption kW	Max. continuous production kg/h	Noise level db (A)
 **SP-MF**	1,000	1,664	4,485	4,140	1.4 [1)]	1.0	2,000	76
 **SP-H**	600	635	1,750	3,250	–	–	600	< 70
 **SP-HU**	1,000	1,664	2,025	4,140	9 [2)]	7.2 [2)]	2,000	< 76
 **SP-IH [4)]**	[5)]	[5)]	[5)]	[5)]	[3)]	–	2,000	< 70
 **SP-EM**	1,000	1,664	2,460	3,390	1.4	1.0	2,000	< 70

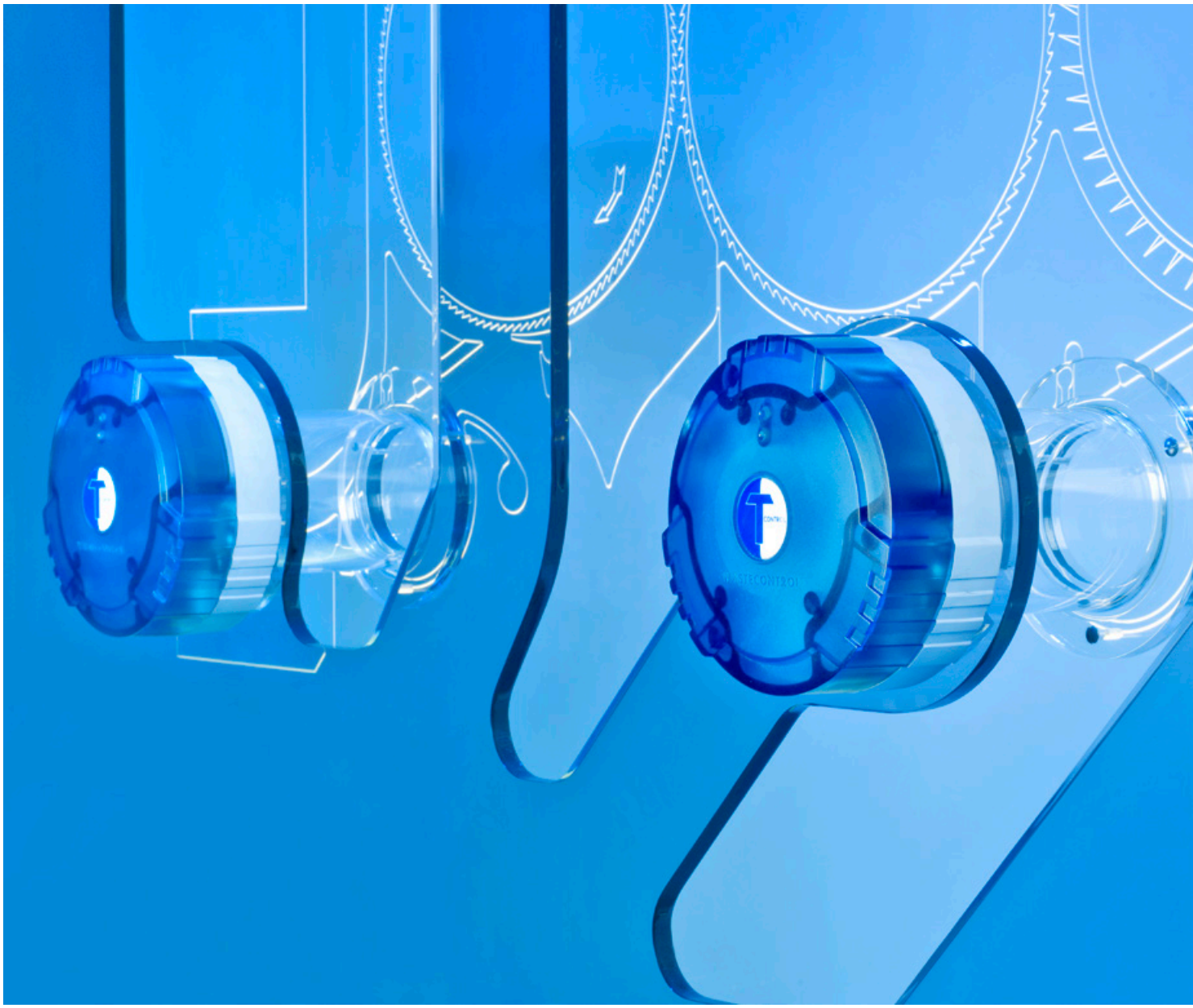
1) Without fans
2) With fans
3) Without condenser
4) Combined with a condenser or a manual bale opener
5) Depending on upstream machine


TRÜTZSCHLER

WASTECONTROL BR-WCT

Intelligent cleaning saves hundreds of bales of cotton per year

The world exclusive Waste Sensor WASTECONTROL remains unrivalled in terms of raw material yield. It allows the surge in productivity from which leading spinning mills profit today.



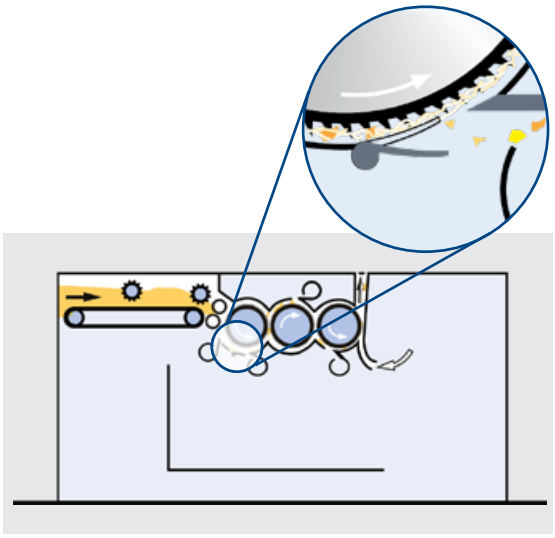
Small and intelligent: WASTECONTROL reduces waste and lowers raw material costs.

Perfect cleaning – the key to efficient production

The cleaning of cotton has a decisive influence on the economic efficiency of the installation. Even half a percent too much waste results in high, unnecessary additional raw material expenditure.

The settings of the cleaning elements should not be left to chance. The optical WASTECONTROL sensors check the waste composition in the suctions. This ensures that excessive fiber loss is identified in due time. The settings of the deflector blades or knives are controlled by small servo motors.

WASTECONTROL is part of the standard equipment of CLEANOMAT Fine Cleaners CL-U and CL-C3.



The unique technology of the adjustable deflector blades controls the amount of waste on the first cleaning rolls of the CLEANOMAT.

Economic efficiency calculation

With cotton usage of 20,000 t/a, WASTECONTROL saves approximately 320 bales of cotton/year as a result of a good fiber yield which is typically improved around 0.4 %. At a cotton price of 72 ct./lbs., this results in savings of 127,000 US$.

Annual savings of 320 bales of cotton

CLEANOMAT system

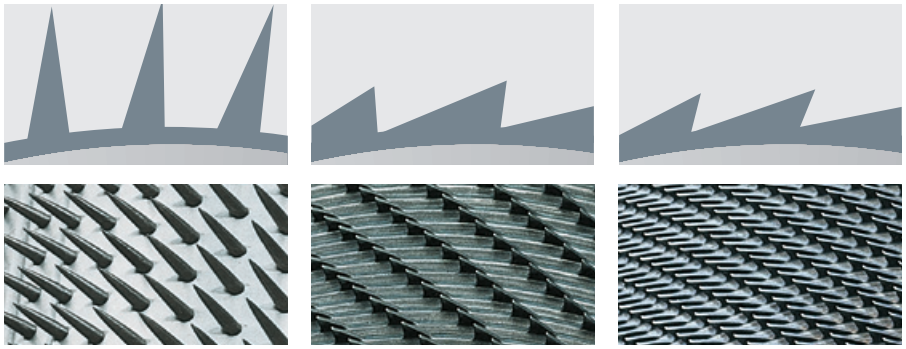
Optimal economic efficiency, even at more than 1,000 kg/h

The decisive factor for efficient cleaning is working at the optimal point between degree of cleaning and economic viability.

CLEANOMAT system:

- Optimal opening and cleaning combined with extremely gentle fiber treatment, even at 1,000 kg/h and more
- Freely selectable degree of cleaning by means of individually adjustable cleaning elements at any time, even during production
- Perfect adaptation to every cotton by means of specially developed needle and saw tooth rolls
- Rapid raw material adaptation by means of infinitely variable roll drives
- Clean machine thanks to direct suction, allowing processing of even sticky cotton
- Greater yarn quality and improved running behaviour in spinning through specific permanent dedusting of the cotton
- Reduced maintenance outlay due to belt drives and maintenance-free motors
- Permanent monitoring and precision control by means of integrated Truetzschler microcomputers

CLEANOMAT CL-C3 for heavily contaminated cottons in rotor spinning

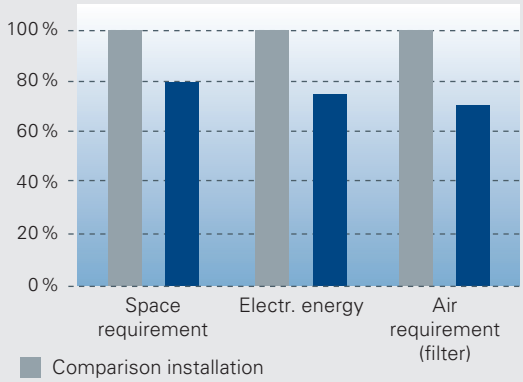


The Cleaner CLEANOMAT CL-C3 features increasingly finer clothing and steeper angles of the clothing teeth from roll to roll

CONTIFEED 2: Self-optimising continuity of production increases quality

Full utilisation of the potential of a cleaning or opening line is only possible with the control module CONTIFEED 2. With CLEANOMAT cleaners, a high degree of cleaning is achieved even at high production rates due to the continuous material flow instead of stop and go. This self-optimised, continuous production flow is another component for ensuring cleaning quality.

Savings potential with CLEANOMAT system



25 % savings in energy costs

compared to a conventional cleaning line

Universal Cleaner CL-U

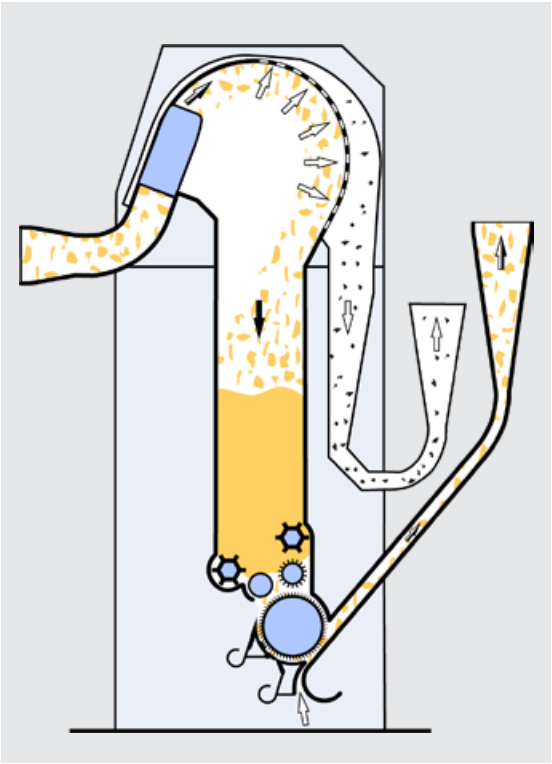
Self-optimised cleaning performance

The Universal Cleaner CL-U has a compact design and requires little space

The Truetzschler WASTECONTROL uses optical sensors to monitor the two suctions of the CL-U. The application of a special lighting technology enables the sensors to distinguish between trash and fibers. If the sensors detect too many good fibers in the waste, the servo motors adjust the knives and deflector blades of the CL-U. If required, this self-optimisation is performed while machine is operating at full capacity. The material and waste suction is permanently monitored by two additional special Truetzschler pressure sensors.

The CL-U combines a wide range of functions:

- Self-optimisation of the cleaning quality
- Effective fine dust removal
- Excellent cleaning technology
- Adjustable degree of cleaning
- Optical monitoring of the waste quality via WASTECONTROL
- Continuous card feeding without stop and go
- Easy operation on colour touch screen
- Production rates up to 1,200 kg/h made possible through 4-roll feeding.
- The core of the cleaner features a large-sized cleaning roll with two cleaning elements.



Universal Cleaner CL-U

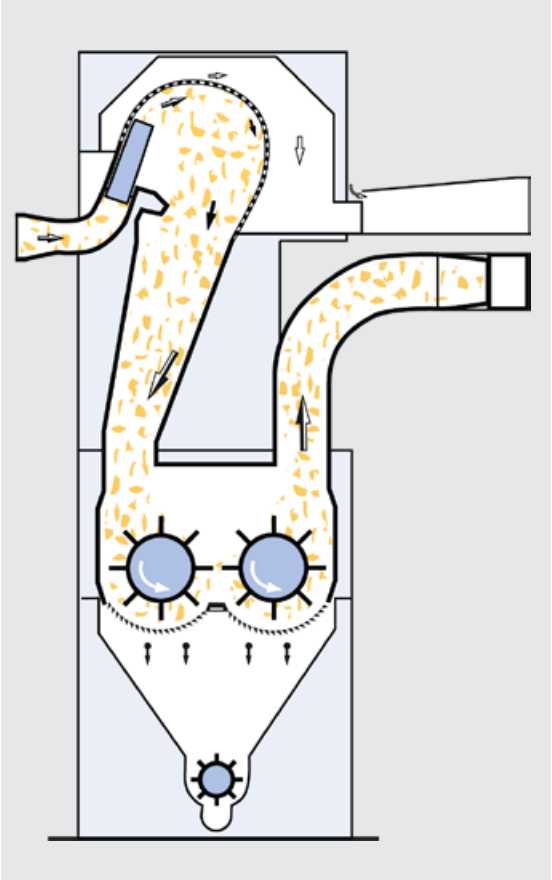
Elements of self-optimisation and monitoring

1 Servo motor knife
2 WASTECONTROL sensors
3 Servo motor deflector blades
4 Pressure sensors of suctions

CLEANOMAT cleaner

Specialists for clean work

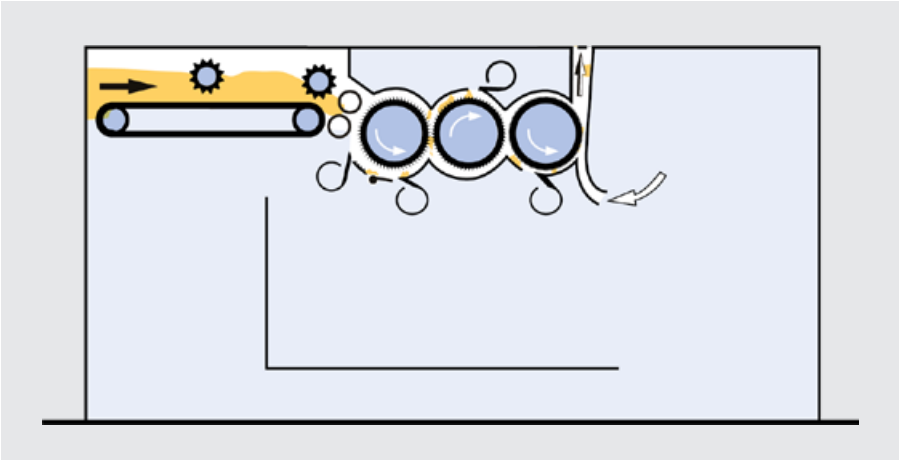
Fiber-friendly cleaning: CLEANOMAT Pre-Cleaner CL-P



Pre-Cleaner CL-P

The first fiber-friendly cleaning: CLEANOMAT Pre-Cleaner CL-P

The Pre-Cleaner CL-P is the ideal addition to a cleaning line when the gentle removal of coarse contaminants from the raw material is required. For processing ELS cotton, one CL-P in the line is sufficient for complete cleaning.



Fine Cleaner CL-C3

The fine cleaner for heavily contaminated cotton: CLEANOMAT Cleaner CL-C3

The CL-C3 is a stand-alone cleaner designed for severely contaminated cottons in short, compact lines. In combination with the Pre-Cleaner CL-P, it can be used for almost all cottons – a flexibility that provides the spinning mill with investment protection and future reliability.

Waste Cleaner CL-R

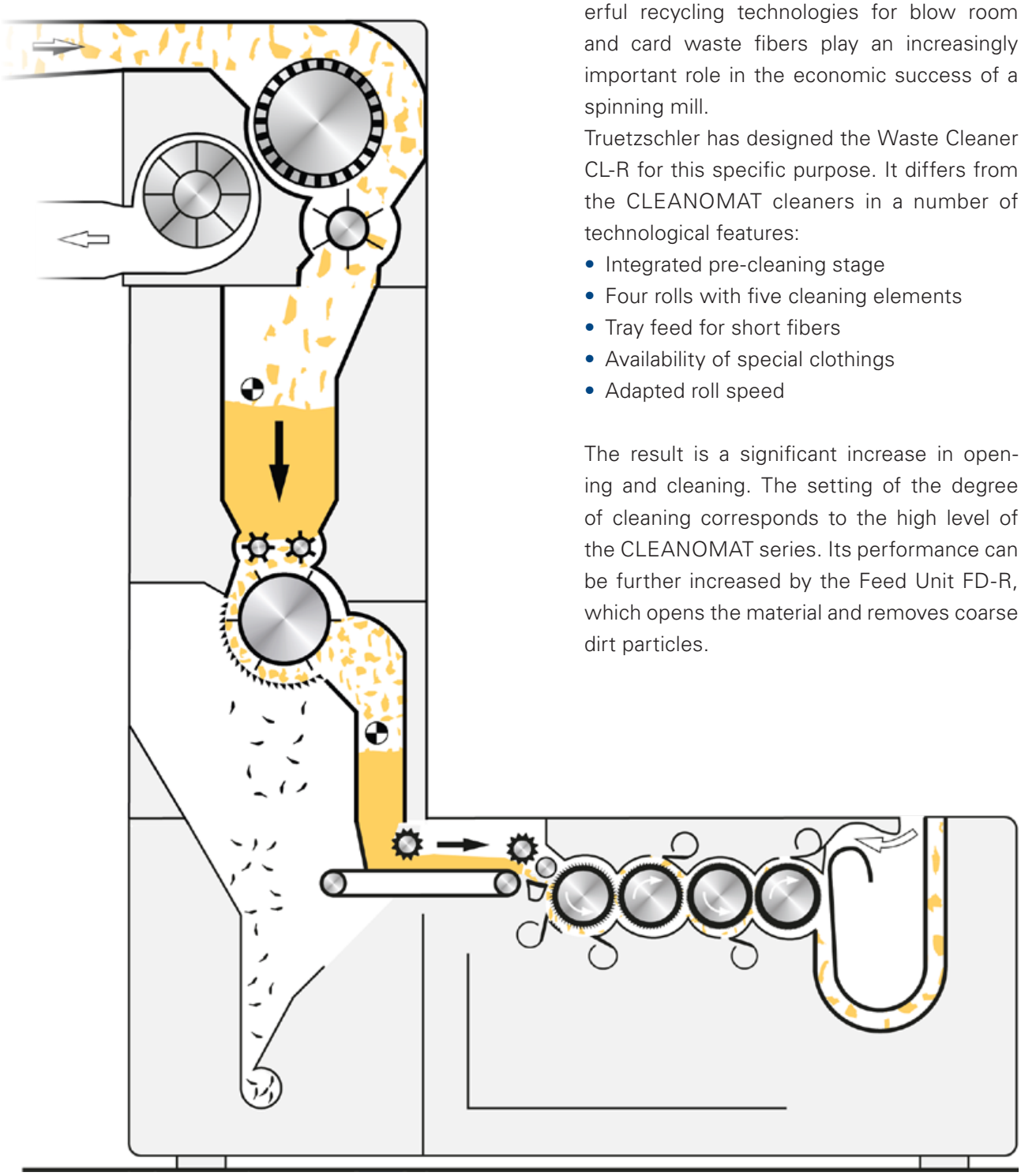
Recycling waste means saving costs and conserving resources

The higher the usage of raw material cotton down to the last fiber, the higher the value creation of the capital invested. Hence, powerful recycling technologies for blow room and card waste fibers play an increasingly important role in the economic success of a spinning mill.

Truetzschler has designed the Waste Cleaner CL-R for this specific purpose. It differs from the CLEANOMAT cleaners in a number of technological features:

- Integrated pre-cleaning stage
- Four rolls with five cleaning elements
- Tray feed for short fibers
- Availability of special clothings
- Adapted roll speed

The result is a significant increase in opening and cleaning. The setting of the degree of cleaning corresponds to the high level of the CLEANOMAT series. Its performance can be further increased by the Feed Unit FD-R, which opens the material and removes coarse dirt particles.



Feeding Unit FD-R – Waste Cleaner CL-R

Installation concepts for waste cleaning:

1. When waste cleaning is integrated in production, the waste can be optionally returned into the process, for instance by a central filter system via a heavy part separator and the Waste Cleaner CL-R. It can either be fed to a bale press or the laydown of another lot.
2. Waste cleaning as separate line consists of a Universal Bale Opener BO-U and a Pre-Cleaner CL-P, which removes coarse contaminants. Another cleaning occurs in the Waste Cleaner CL-R. Then the waste can be fed to a bale press.

Truetzschler waste cleaning concept

Typical waste 100 %
Blow room waste with a typical fiber content of approx. 50 % (starting material = 1,000 kg)

Fiber recovery 76 % after Pre-Cleaner CL-P
Fiber recovery = 760 kg of starting material

Good fibers 46 % after Waste Cleaner CL-R
Good fibers = 460 kg of starting material

Secondary pre-cleaning waste = approx. 24 % of starting material

Secondary waste of Waste Cleaner CL-R =approx. 40 % of fiber recovery after the pre-cleaner

Economic efficiency calculation
20 cards
100 kg/h card sliver production
8 % blow room and card waste
8,000 operating hours per year
Raw material: 17,280 t
1.0 % fiber yield = 138 t
Cotton price: 72 ct/lbs
Waste price: 15 ct/lbs
Savings: 227,500 US $ / year

Gain 227,000 US $/year

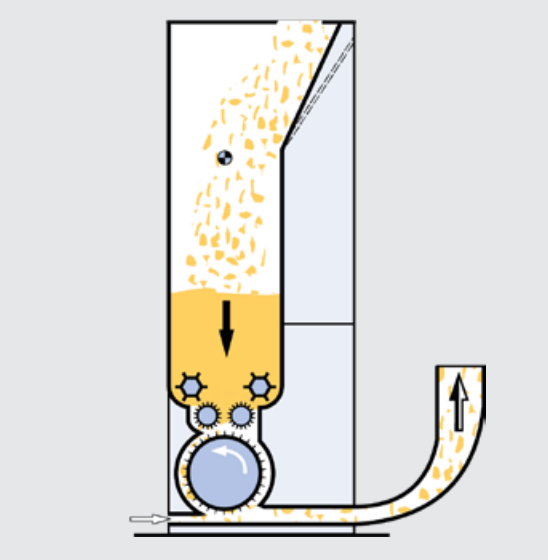
from waste at 1.0 % fiber yield, cotton price 72 ct/lbs

TUFTOMAT system

The tailor-made opener program

TUFTOMAT system

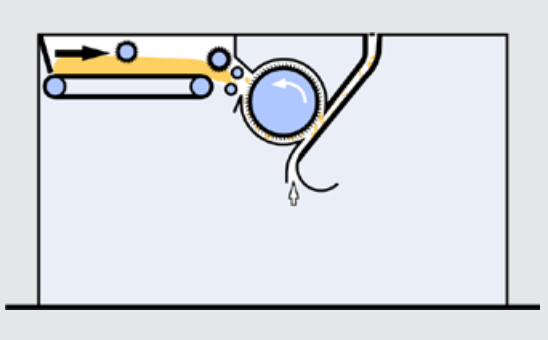
The TUFTOMAT system offers perfect solutions for every application: From universal opener for all fibers ≤ 130 mm to special openers for PES/Viscose/Acrylic and other man-made fibers. Other individual requirements can be realised by different opening rolls.



Dosing Opener FD-S

Dosing Opener FD-S

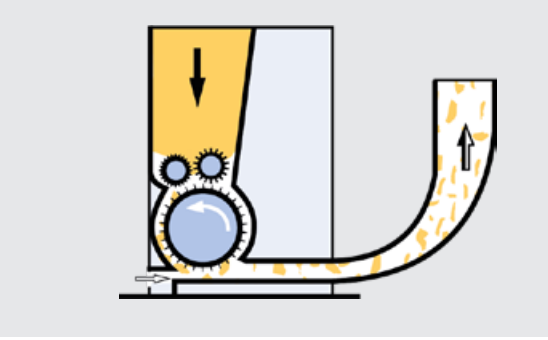
- High performance opener for all fibers
- Three different opening rolls for each material and each application



TUFTOMAT TO-T1

TUFTOMAT TO-T1

- PES/Viscose/Acrylic
- For almost all fibers in the man-made fiber short staple spinning mill
- Maximum fiber protection



Fine Opener TO-C

Fine Opener TO-C

- Man-made fibers
- Direct feeding through a Universal Bale Opener BO-U
- Ideal for direct feeding, i.e. of a card or small card group

Feeding can look this good

Truetzschler cleaners and openers can be equipped with various devices. The selection of the optimal combination depends on material, production level, available space and individual installation configuration.

Feeding Unit FD-O

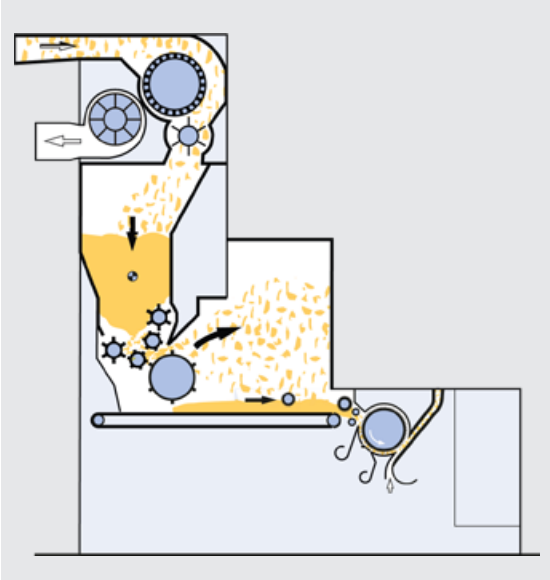
The intelligent design of the FD-O with its pre-opening function gives fine openers a clear performance advantage.

Trunk Feeder FD-T

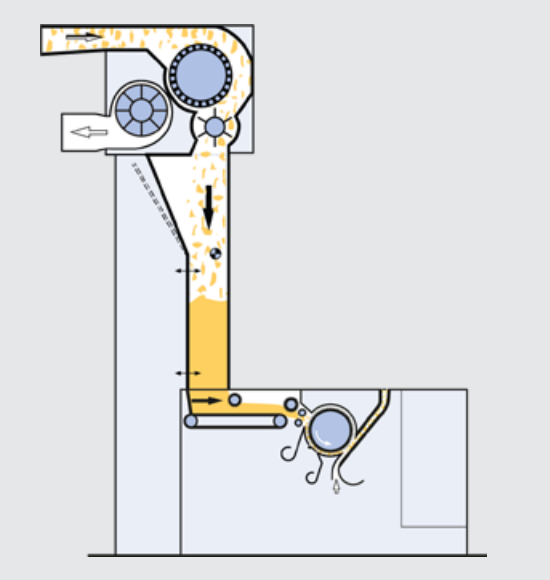
The most cost-efficient feeding option is the Trunk FD-T in combination with a CLEANOMAT cleaner.

Integrated Mixer MX-I

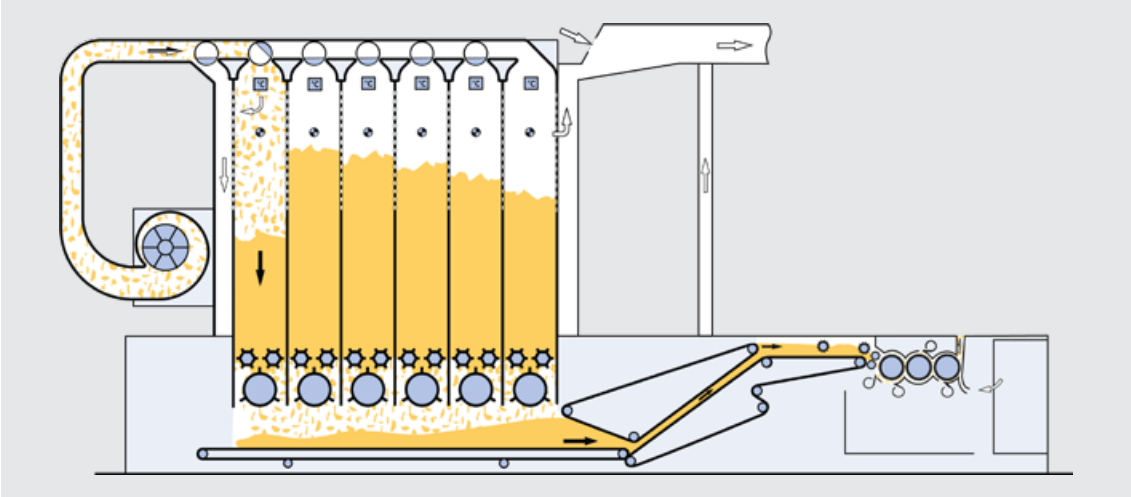
A very homogeneous cotton lay-down for cleaners is possible as the most space and energy saving solution in combination with a mixer.



Feeding Unit FD-O



Trunk Feeder FD-T



Integrated Mixer MX-I

Technical data

Cleaners

CLEANOMAT cleaners		Frame width mm	Total width mm	Total length mm	Total height mm	Max. continuous power kW	Average power consumption kW	Max. continuous production kg/h	Noise level db (A)
	**CL-P***	1,300	1,964	1,485	3,250	7.9/11.4	3,9/5,7	800/1,000	< 70
	**CL-C3**	1,600	2,264	2,455	1,250	17,0	6,0	1,000	< 70
	**BR-COI/ FD-R/* CL-R**	1,600	2,264	3,265	4,230	27.4	16.4	200**	72
	**CL-U**	1,600	2,200	1,480	3,900	5.9	3.0	1,200	< 70

* Maintenance platforms are optionally available
** Input 300 kg/h

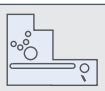
Openers

Opener TUFTOMAT		Frame width mm	Total width mm	Total length mm	Total height mm	Max. continuous power kW	Average power consumption kW	Max. continuous production kg/h	Noise level db (A)
	**TO-T1**	1,600	2,264	2,165	1,250	6.1	4.3	1,000	< 70
	**TO-U**	1,600	2,064	1,100	1,250	5.9	4.1	1,800	< 70
	**TO-C**	1,000	1,464	860	1,250	2.4	1.7	250	< 70

Feeders

Types		Max. continuous power kW	Average power consumption kW	Noise level db (A)
	**FD-R**	1.3	0.9	72
	**FD-O**	2.4	1.2	73
	**BR-COI**	6.6 – 8.6	5.3 – 6.9	77
	**BR-MS**	0.12	0.1	73
	**FD-T**	–	–	–

Machine combinations

Types		CL-C3 Total length mm	TO-T1 Total length mm
	**With FD-O***	4,320	4,030
	**With FD-T***	3,115	2,825

* Maintenance platforms are optionally available

Mixer MX-U and MX-I

Controlled mixing at high precision

In the area of one component staple fiber blends, Truetzschler mixer systems offer individual solutions for every assignment:

- Individual mixer sizes for every task
- Maximum homogeneity due to controlled, reproducible blending
- Uniform product appearance by optimising the blend

If the mixer temporarily does not request any material, an automatic changeover to Energy Saving Mode takes place, thus reducing the fan speed to an energy-saving minimum.

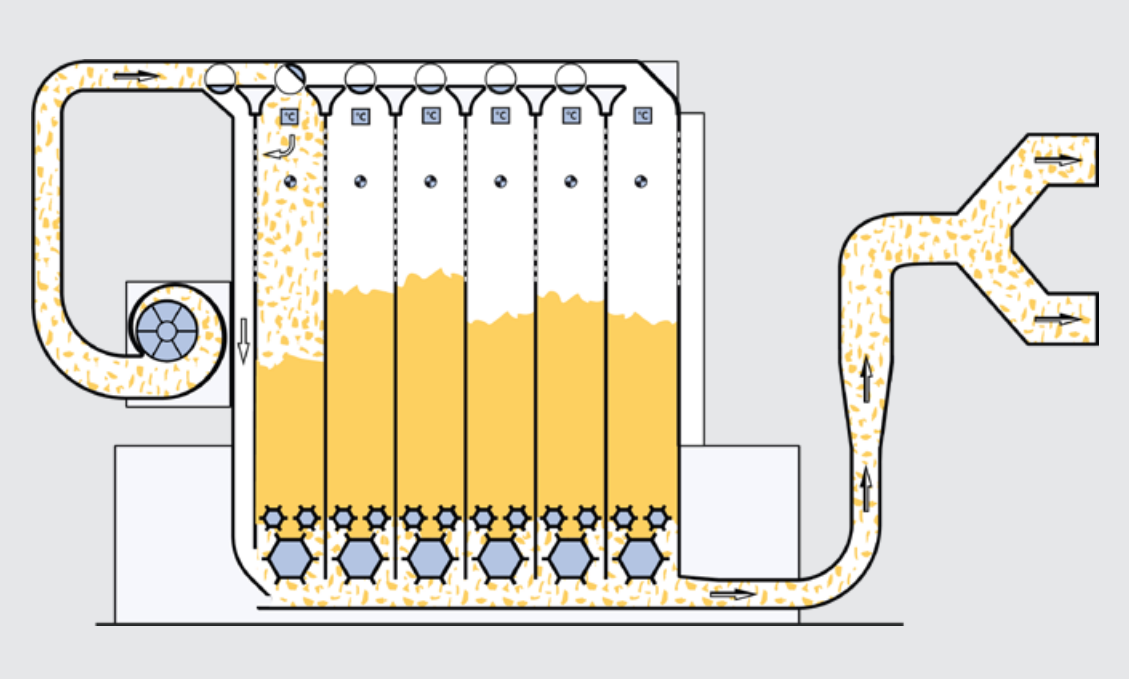
Controlled blending

The mixers are designed as universal (MX-U) and integrated (MX-I) machines. Depending on requirement, six or ten trunks are sequentially filled from the top and simultaneously emptied at the bottom on both types. This principle guarantees maximum homogeneity of the mix. In case of highest requirements, two mixers are set up in series (tandem mixing).

MX-U: the flexible solution for every installation

The Universal Mixer MX-U is ideal for the feeding of two parallel cleaners. The tufts reach the 6 or 10 trunks of the mixers via a fan. In contrast to Mixer MX-I, suctioning of the mixing duct takes place directly below the opening rolls. The MX-U uses the injected transport air for conveying the tufts to the downstream machine and requires no filter capacity. ➔

To reduce fire damage, the machine is equipped with sensors that are connected to the installation control. However, these devices are no substitute for fire protection and extinguishing equipment to be provided by customer.



The Universal Mixer MX-U is ideal for feeding two parallel installations.

Mixer MX-U10

Mixer MX-U and MX-I

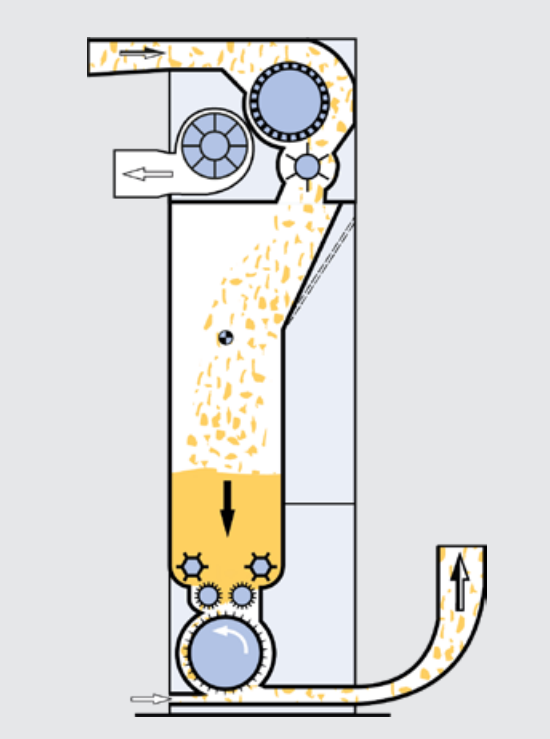
Integrated Mixer MX-I 10, directly coupled with a CLEANOMAT Cleaner CL-C3

MX-I: the direct linkage

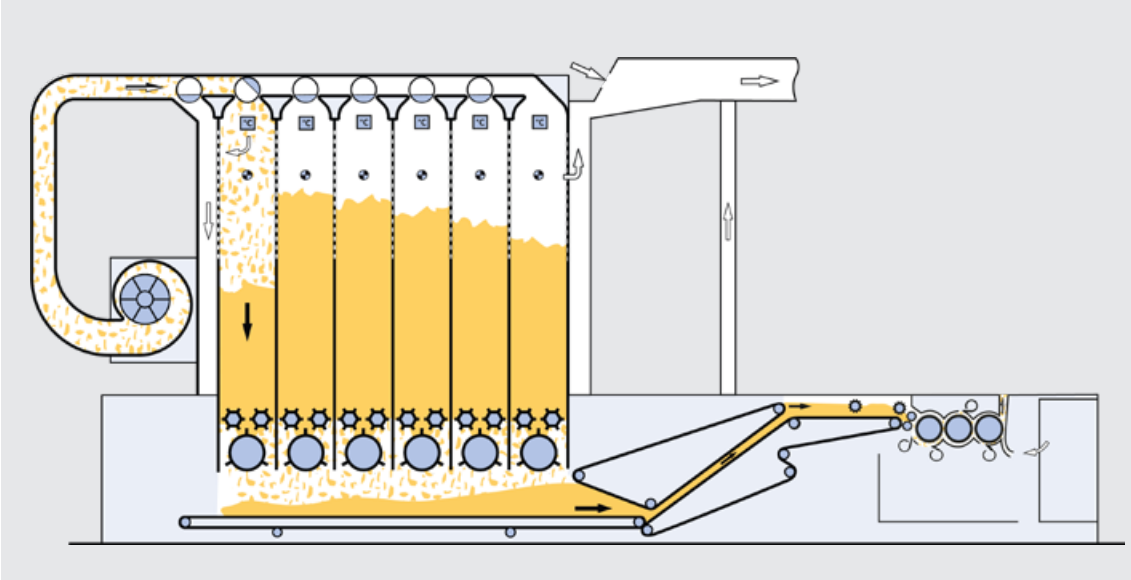
Its direct coupling with a cleaner or opener makes the Integrated Mixer MX-I ideal for compact installations. The mixing chambers are fed from the top by the directly attached fan: Low-maintenance rotating flaps forward the material in sequence to all the trunks. In the lower section of the trunks it is passed to a mixing conveyor belt via delivery rolls and large dimensioned opening rolls: Material layers from all the trunks are stacked in sandwich format and uniformly fed to the downstream CLEANOMAT cleaner.

FD-S: small dosing opener for great uniformity

To obtain a more continuous material flow it is practical to use small buffer units in some cleaning and opening lines for uniform feeding of downstream machines.



The Dosing Opener FD-S buffers small material amounts and releases them in doses.

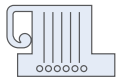


Integrated Mixer MX-I, coupled with a CLEANOMAT Cleaner CL-C3

To reduce fire damage, the machine is equipped with sensors that are connected to the installation control. However, these devices are no substitute for fire protection and extinguishing equipment to be provided by customer.

Technical data

Mixers*

Types		Number of trunks	Trunk width mm	Trunk depth mm	Width [1] mm	Length [1] mm	Machine height mm	Max. continuous power kW	Average power consumption kW	max. continuous production kg/h	max. filling weight [2] kg	Noise level db (A)
	**MX-U6**	6	1,600	500	2,264	5,500	4,040	5.6	3.9	depends on the down-stream machines	500	< 70
	MX-U10	10	1,600	500	2,264	7,500	4,040	7.6	5.3		875	< 70
	**MX-I6**	6	1,600	500	2,264	6,000	4,160	6.0	4.2		400	< 70
	MX-I10	10	1,600	500	2,264	8,000	4,160	8.6	6.0		700	< 70

1) Without maintenance platform, without fan
2) Depends on degree of opening and material type
* Maintenance platforms are optionally available

Dosing Opener*

TYPES		Working width mm	Width mm	Length mm	Height [1] mm	Max. continuous power kW	Average power consumption kW	max. continuous production kg/h	Noise level db (A)
	**FD-S**	1,200	1,664	1,100	2,980–3,980	5.8	2.9	1,300	< 70
		1,600	2,064	1,100	2,980–3,980	5.8	4.0	1,800	< 70

1) With condenser BR-COI 1,000 mm higher
* Maintenance platforms are optionally available

Truetzschler T-SCAN TS-T5

High-end quality foreign part separation

The supreme discipline of foreign part detection are transparent parts and thin, white, thread-shaped parts. The Truetzschler T-SCAN TS-T5 meets these and other detection requirements with unprecedented quality.

Self-optimisation with embedded image processing technology

The machine control performs a number of optimisation functions on request or permanently:

- Balancing of white reference value
- Detection of cotton colour and colour variations
- Permanent consideration of current material speed
- Stop and go detection in feeding and corresponding adjustment

Intelligent waste prevention

Cotton tufts of different colour, trash, stem parts or leave fragments are also foreign parts. These, of course, are detected as well. However, waste prevention optimisation eliminates high separation rates. It is better and safer to remove such parts on the card. A separation on the T-SCAN would result in unnecessary fiber loss. Naturally, the separating sensitivity can be adapted to the cotton quality ➔

Truetzschler T-SCAN TS-T5

The separation of such parts should be handled by the card


TRÜTZSCHLER
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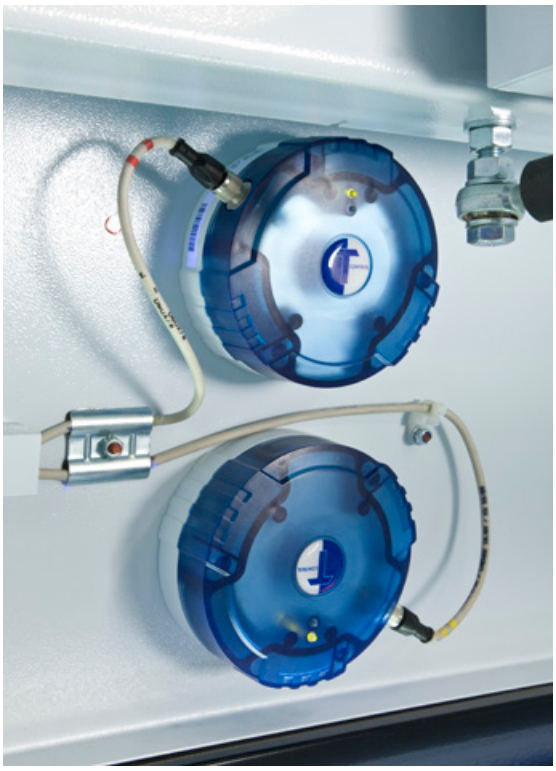
Truetzschler T-SCAN TS-T5

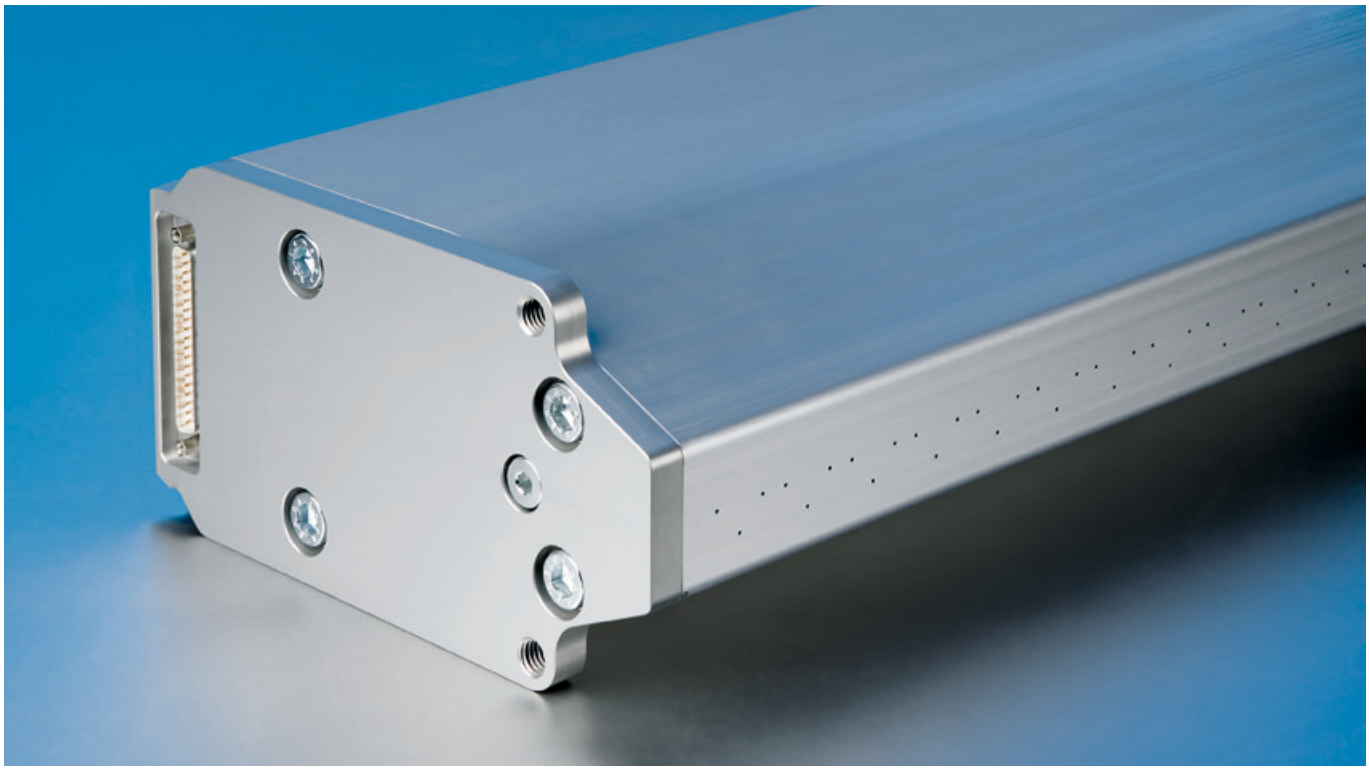
Reduced loss of good fibers and lower air requirement

The controlled flow in the flat and wide fiber channel distributes the tufts evenly over the width. The selective response of one of the 48 valves ensures that only a minimum amount of good fibers is separated. Compared to other systems, this results in annual material savings of 20,000-50,000 US$.

The permanent speed measurement of the tuft flow also makes it possible to reduce the response time of the nozzles to a minimum. As a result, the compressed air requirement is only approx. 20 % of that of other systems



Truetzschler speed sensors minimise the compressed air requirement and fiber loss.



The nozzle beam with 144 tiny nozzles

Reducing cleaning to a minimum

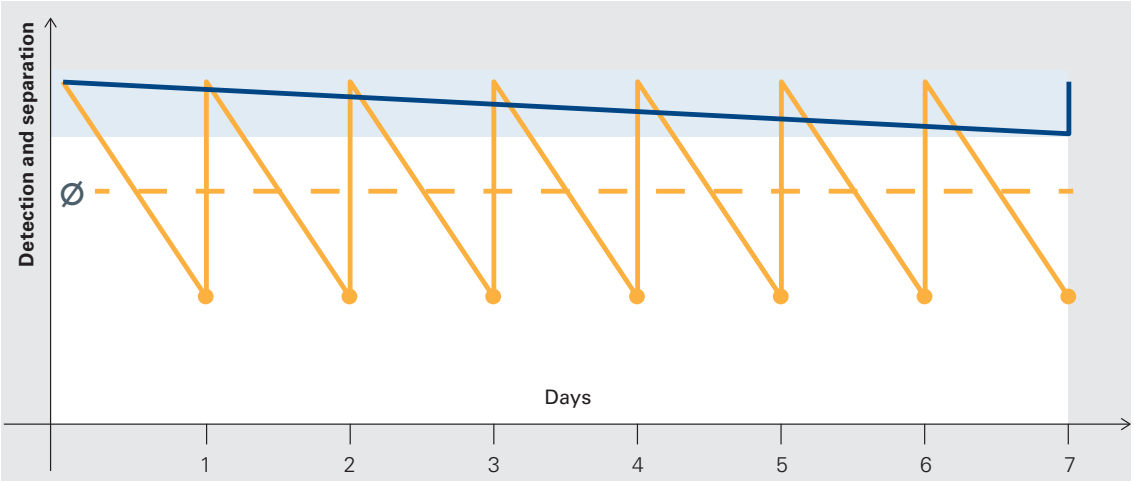
The Truetzschler T-SCAN is very effectively sealed against penetration of dust. Compared to other systems, it requires substantially less cleaning. Thus, downtimes are reduced by more than 80%.

Minimal maintenance

Standard fluorescent tubes permanently lose their intensity in the blue light range. They must be replaced approx. after 6 months, otherwise the separation effectiveness declines. The Truetzschler LED module with 2 times 536 LEDs is monitored and readjusted as needed. This self-optimisation function ensures a constant light intensity.

Every downtime means a production loss and a restart of blow room and cards. The Truetzschler T-SCAN runs for approx. one week without having to be cleaned. Other systems must be cleaned daily or sometimes even once per shift.

Due to the increasing contamination, their separation effectiveness declines as well.



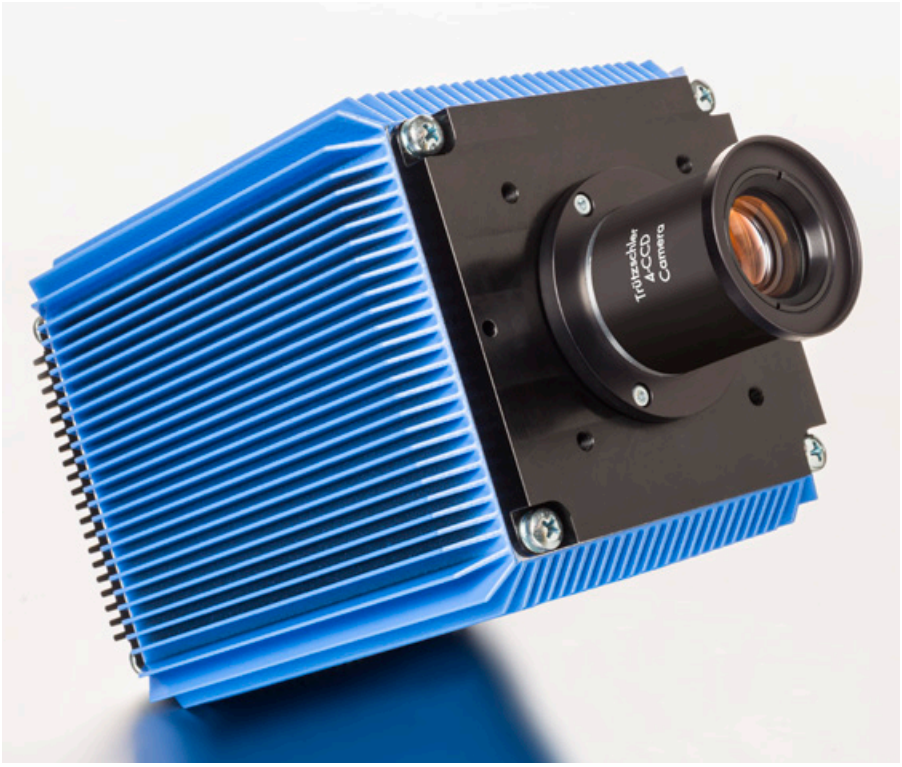
Stop for cleaning
Average detection and separation (competition)
Truetzschler T-SCAN

T-SCAN modules

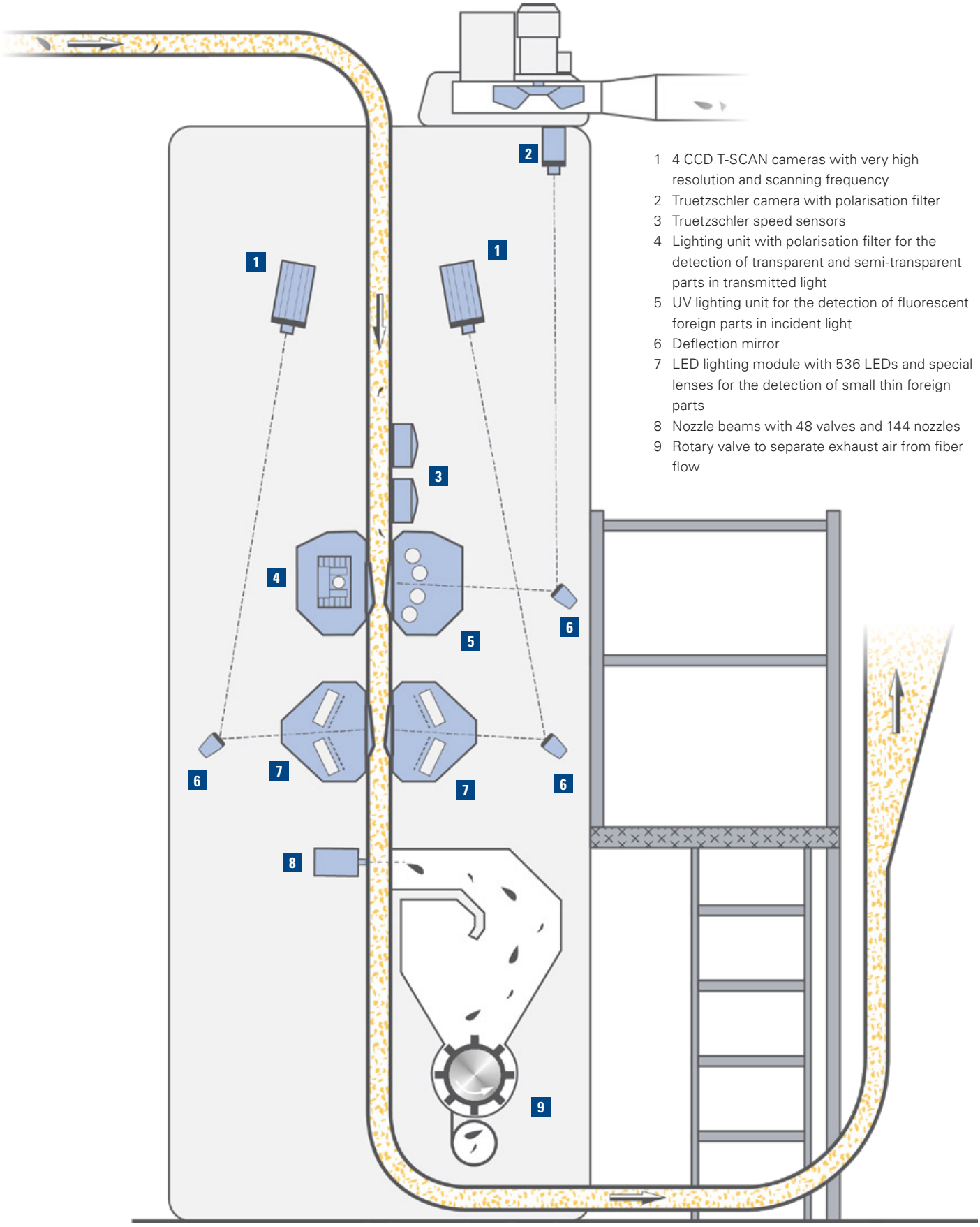
Trützschler uses five modules for the detection of foreign parts. Each one is specialised to reliably detect the characteristic of various foreign parts in the fast fiber flow.

The reliable detection of foreign parts provides the basis for reaching an extremely high separation rate of foreign parts in the downstream process and simultaneously preventing the separation of too many good fibers. This unique Truetzschler technology makes the T-SCAN TS-T5 essential for the quality formation in the blow room. ➔

Module	Type of foreign part detection
• F-module	Coloured/dark foreign parts
• P-module	Transparent foreign parts
• UV-module	Fluorescent foreign parts
• G-module	Shiny foreign parts
• LED-lighting	Small/thin foreign parts



In addition to colour, 4-CCD T-SCAN cameras can also detect shininess.



1 4 CCD T-SCAN cameras with very high resolution and scanning frequency
2 Truetzschler camera with polarisation filter
3 Truetzschler speed sensors
4 Lighting unit with polarisation filter for the detection of transparent and semi-transparent parts in transmitted light
5 UV lighting unit for the detection of fluorescent foreign parts in incident light
6 Deflection mirror
7 LED lighting module with 536 LEDs and special lenses for the detection of small thin foreign parts
8 Nozzle beams with 48 valves and 144 nozzles
9 Rotary valve to separate exhaust air from fiber flow

Truetzschler T-SCAN TS-T5

T-SCAN modules

F-module detects coloured parts (1)

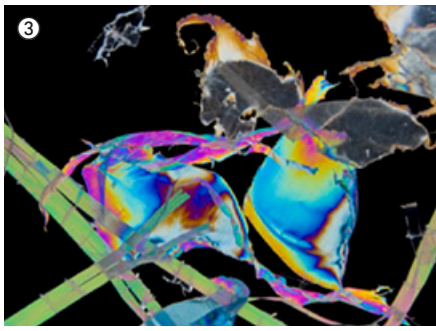
Truetzschler uses internally developed T-SCAN cameras with even higher resolution and scanning rate. The flow of cotton tufts is continuously monitored from both sides with reliable detection of even small coloured foreign parts.

G-module detects shiny parts (2)

Many foreign parts show no contrast to cotton, but they reflect light because they are shiny. The Truetzschler gloss module uses this effect. Two T-SCAN cameras detect parts from two sides that differ in their shininess from cotton. To detect smallest shiny foreign parts, this module works with high resolution and scanning frequency as well.

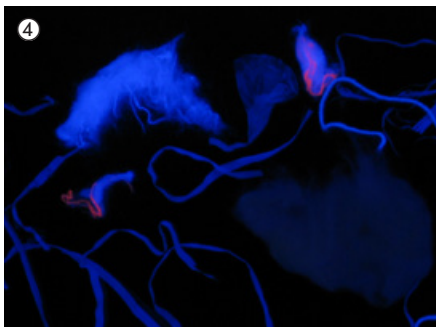
P-module detects transparent and semi-transparent parts (3)

The Truetzschler P-module detects transparent and semi-transparent parts, regardless of their colour. To achieve this, the patented method uses polarised transmitted light. If the cotton contains transilluminable foils, packaging residues from PP fabric and similar parts, they are reliably detected by this module.



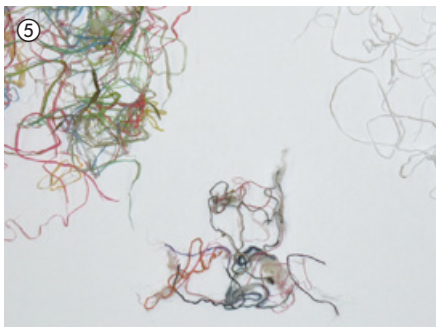
UV-module detects fluorescent parts (4)

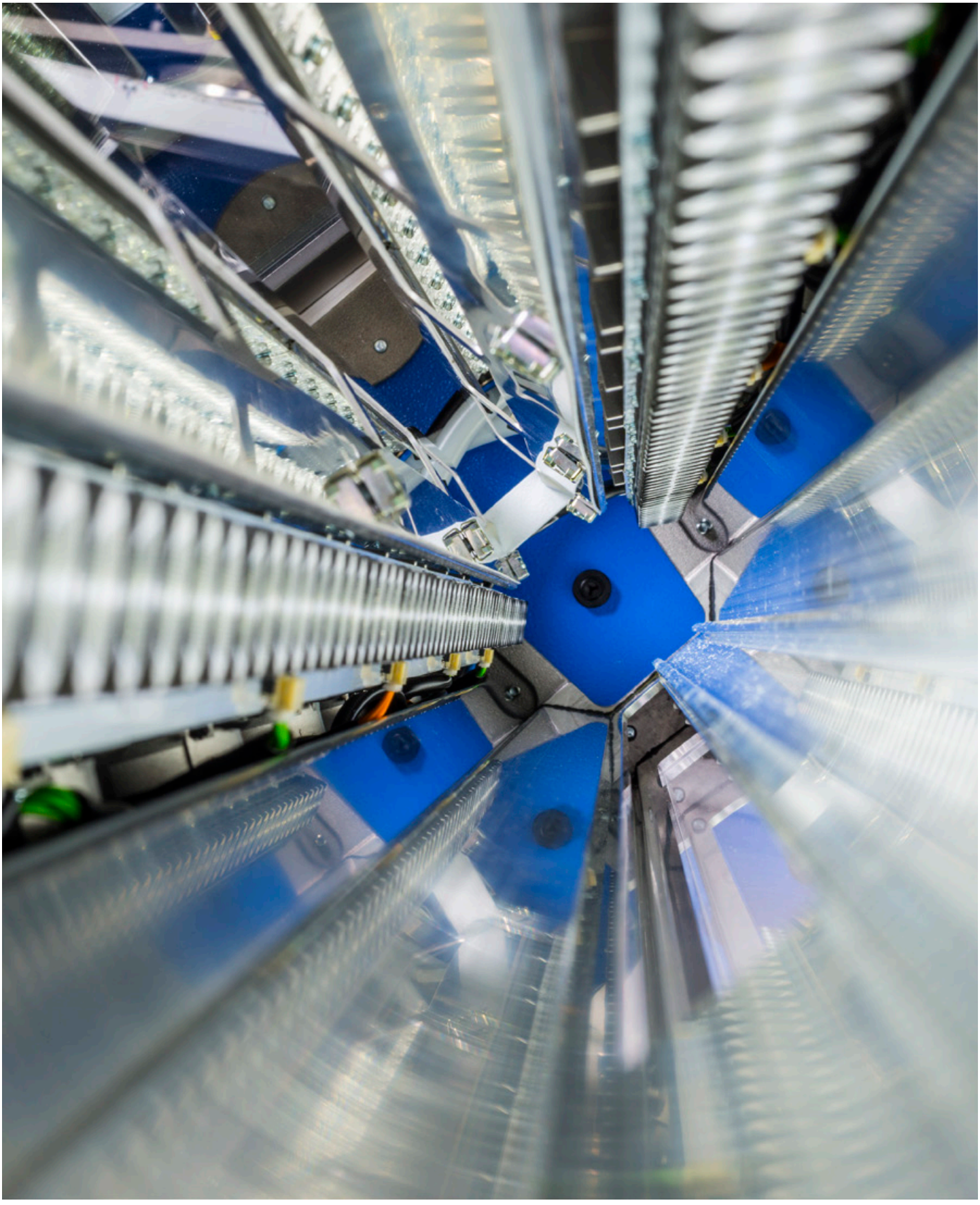
Some cotton sources contain foreign parts that have a fluorescent glow in UV light. Even parts that are difficult to detect, e.g. bleached cotton, PES or fluorescent PP strips, are reliably detected by the Truetzschler UV-module.



LED lighting detects thin, thread-shaped parts (5)

After a few months - invisible to the eye -, the fluorescent tubes of common foreign part separators lose the light's important proportion of blue, which is crucial for color detection of foreign parts. By contrast, 1,072 high-performance LEDs with just as many focused lenses work in the T-SCAN TS-T5. The high light intensity allows the use of cameras featuring increased resolution and scanning frequency. To ensure that the light intensity is maintained in the long run, it is monitored and independently readjusted.





Maximum foreign part separation at minimum fiber loss

Precise hits at minimal fiber loss

The 48 valves for the 144 nozzles are located in a compact aluminium profile. The valves are positioned directly at the nozzles to allow a quick response and minimal short blowing time, which in turn contributes to compressed air savings.

Rotary valve reduces good fibers in the suction

To keep the good fiber loss to a minimum, separation is not to be influenced by the suction air. Only Trützschler separators feature a rotary valve that divides the waste section from the suction.

The Truetzschler remote display T-LED makes the machine conditions visible from far away.

Simple use of optimisation potential

The objective is maximum foreign part separation at minimum fiber loss. The machine control provides all the information required:

- Extensive functional analyses
- Extensive status analysis
- Separation statistics
- Easy to understand screen masks for individual optimisation

The settings are automatically preset by the control. If required, individually adapted settings are possible as well.

Powerful display and easy operation

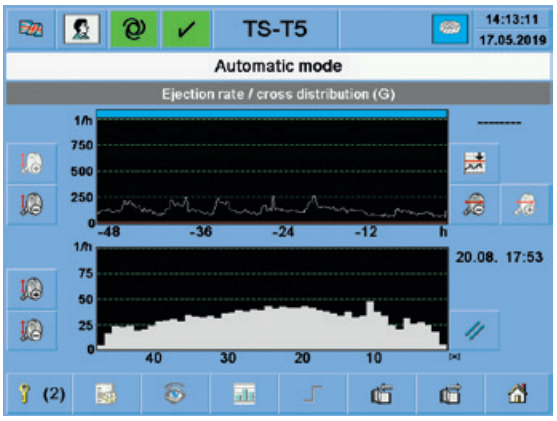
The T-SCAN with large-size touch screen is easy and intuitive to operate. The screen also allows the presentation of quality data in clearly structured diagrams.

T-LED – the Truetzschler remote display

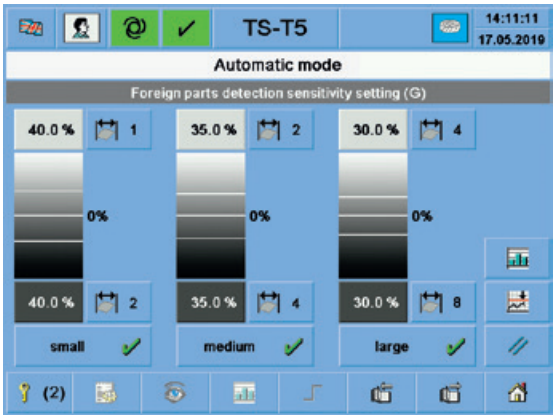
In addition to the touch screen, the Truetzschler remote display T-LED makes machine conditions visible from far away. Thanks to the multicoloured LEDs, various operating statuses can be indicated.

Data transmission to Mill Monitoring System “My Mill”

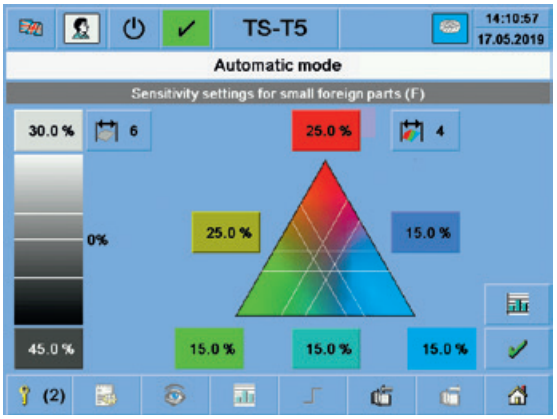
The separation data are important for quality management. For this reason, T-SCAN data can also be forwarded to our higher-level data systems.



Number of separations over the time axis and width of the machine



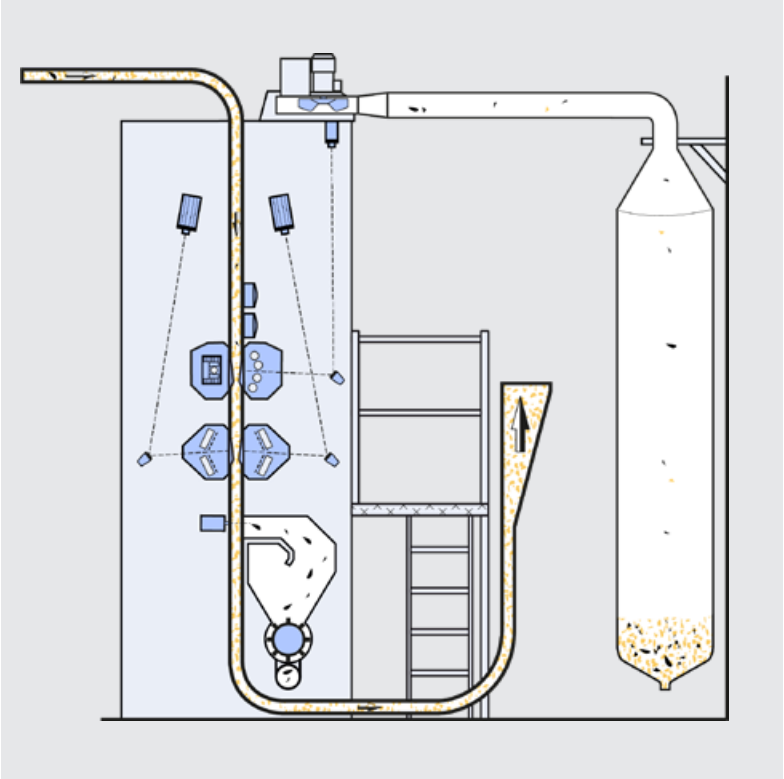
G module settings



The screen is also used for detailed setting information.

Truetzschler Foreign part separator

The right machine for every task

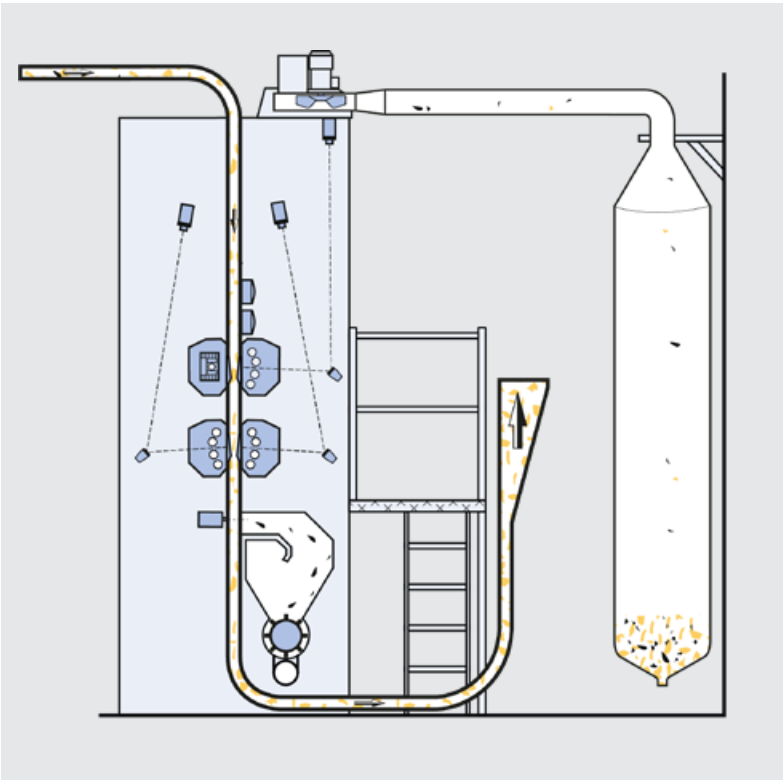


T-SCAN TS-T5

Truetzschler T-SCAN TS-T5

This machine presents the current high end of separation technology. The function, number of detection modules as well as lighting technology are unique in the market. Even problems concerning the detection of colourless and opaque, white PP have been eliminated.

- F-module
- G-module
- P-module
- UV-module
- LED-module



T-SCAN TS-T3

Foreign part separator T-SCAN TS-T3

The TS-T3 is a good choice if low-contrast foreign parts are no problem. Its structure is similar to T-SCAN TS-T5 and includes the modules:

- F-module
- P-module
- UV-module

High performance dust extraction especially for rotor spinning

The effective dust extraction with a DUSTEX SP-DX machine ensures:

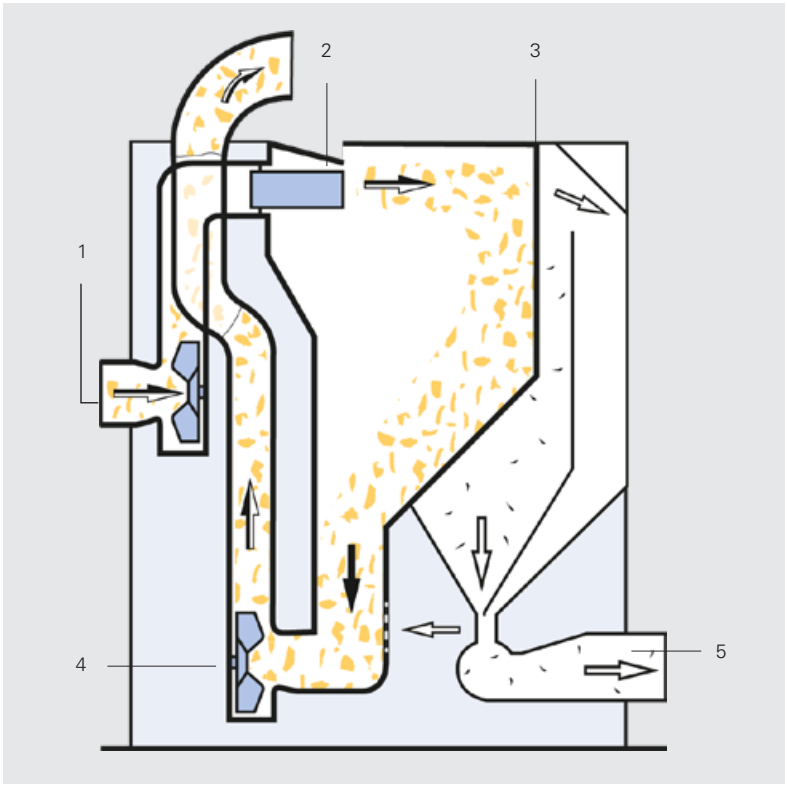
- Higher efficiency
- Longer lives of clothings and spinning components
- Improved running behaviour of the spinning machines
- Increased economic efficiency of the total installation
- Clean ambient air

This is of particular advantage to downstream processing: Thoroughly dedusted slivers ensure optimised running behaviour during yarn formation, e.g. in rotor spinning machines, but also significantly higher efficiency rates (less yarn breaks) in winding, knitting, warping and weaving.

Dust Separator DUSTEX SP-DX

1 This fan sucks the material off the Cleaner CLEANOMAT
2 The distribution flaps distribute the tufts over the working width of 1,600 mm
3 Major dust removal takes place by the tufts hitting the sieve surface
4 The material drops into the suction system and is transported to the cards by the infinitely variable fan
5 The separated dust is permanently sucked off

Dust Separator DUSTEX



Technical data

Separators

TYPES		Frame width mm	Total width mm	Total length mm	Total height mm	Max. continuous power kW	Average power consumption kW	Max. continuous production kg/h	Noise level db (A)
	**SP-MF**	1,000	1,664	4,485	4,140	1.4[1)]	1.0	2,000	76
	**SP-H**	600	635	1,750	3,250	–	–	600	< 70
	**SP-EM**	1,000	1,664	2,460	3,390	1.4	1.0	2,000	< 70
	**TS-T5**	1,200	1,864	2,618	4,450	3.5	2.8	1,200	79
	**TS-T3**	1,200	1,864	2,618	4,450	2.7	1.9	1,200	79
	**SP-DX**	1,600	1,864	2,150	3,110	0.5[1)]	0.4[1)]	1,200	< 70

1) Without fans


TS-T5 TRÜTZSCHLER

Modular tuft blending system T-BLEND

Reproducible and exact

When it comes to fiber blends, top priority is maintenance of the blending ratios. This is only possible with precise weighing. All other indirect procedures are prone to a gradual deviation from the setpoint. Guaranteeing the setpoints today, tomorrow or even a month from now is only possible with weighing.

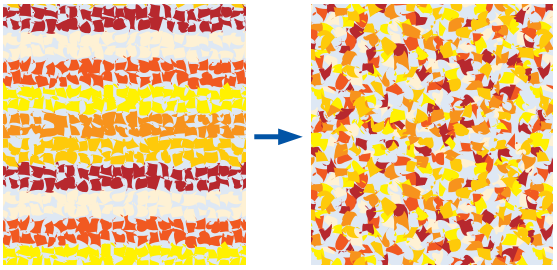
Truetzschler tuft blending system T-BLEND

Precision weighing is the key

Bad product quality at a later production stage wipes out all previous production efforts and is thus a "full cost". This is the reason why the Truetzschler T-BLEND concept for tuft blending relies on a reproducible and precise blending consistency. The self-monitoring system ensures the perfect quality when blending natural or man-made fibers of different lengths, finenesses and colours.

Lot start with self-optimisation of the parameters

Until now, numerous parameters had to be entered before starting a lot. The only information required by the T-BLEND system is the desired blending ratios, the required production height and the assignment of the fibre material to the scales. The BLENDCOMMANDER control finds all other setting parameters in a self-optimising manner. These parameters, for instance, include the ideal filling weight per scale and the corresponding filling speed. →



1. Dosing with T-BLEND

2. Homogenisation using Mixer MX-U

The principle of Truetzschler tuft blending technology:
Creation of precisely dosed layers of different raw materials and perfect blending of all these layers.

Only Truetzschler has this to offer:

- Precision mass measurement
- Auto start: The control finds the optimal parameters in a self-optimising manner
- Direct measurement of the weight
- High capacities up to 2,000 kg/h
- Precise maintenance of blending ratios
- Blending of up to 6 components per process step
- Addition of smallest percentages (up to 1%)
- Automatic taring, very simple calibration
- Formula memory for quick lot changes
- Quality control by means of lot protocols

Tuft Blending System T-BLEND

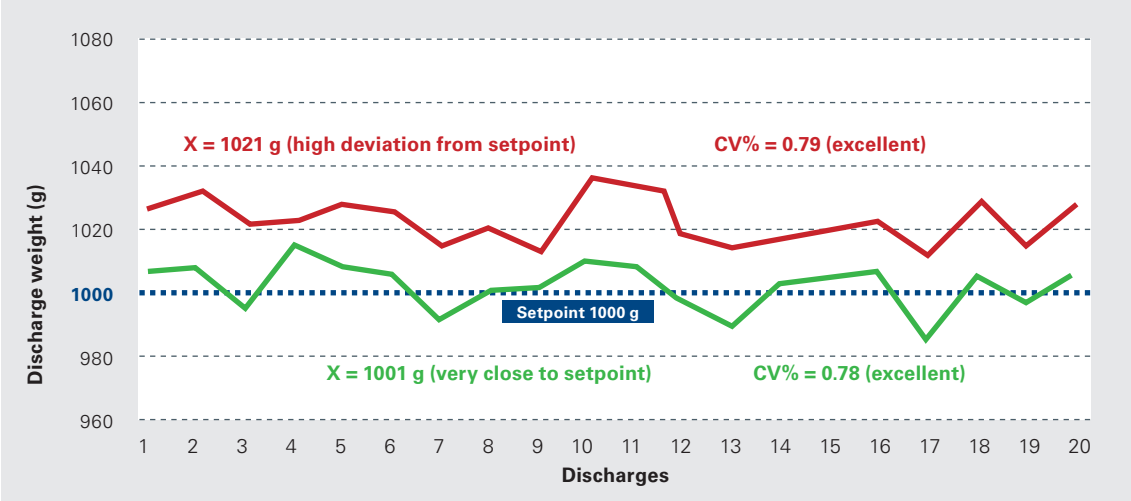
Blending quality newly defined

Usually the CV value is mentioned as quality parameter. However, the mass content of each fiber type in the total weight is even more relevant for the blending accuracy. Hence, Truetzschler uses specially developed precision scales to measure the mass and not the volume. During each weighing, the small difference to the setpoint is captured and compensated fully automatically during the next weighing.

The adjacent diagram shows the serious deviation between CV value and setpoint.

Tuft blending installation for two components with automatic feeding of one component and manual waste feeding

1 Fan BR-FD
2 High Performance Feeder BL-HF
3 Weighing Unit BL-WP
4 Bale Opener BL-BO
5 Tuft Blending Conveyor Belt BL-TC
6 Blending Opener BL-TO
7 Waste Opener BO-R



The target weight is missed despite the good CV value (red line). The blending ratio is incorrect. Maintaining the desired target weight is important. This only works with weighing and not with indirect measuring methods.

Blending six components in one step

Another advantage of the Truetzschler T-BLEND tuft blending installations lies in their flexibility: two to six components can be blended. This results in an application range that covers everything from standard blends (e. g. 50 % cotton / 50 % polyester) to the addition of smallest portions (e.g. 1 % black fibers) or colour melanges.

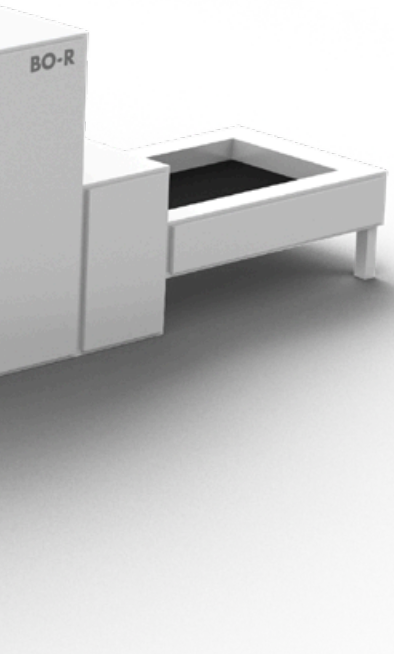
Highest quality in harmony with high production rate

The large volume of the weigh pans and the short weighing cycles ensure a high throughput per weighing unit of up to 800 kg/h. One T-BLEND installation is designed for production rates up to 2,000 kg/h.

New weighing technology for T-BLEND

Compared to previous Truetzschler tuft feeding installations, the performance of the scales has roughly been doubled, allowing more weighings per unit of time and more weight per discharge.

- Auto start: When starting a lot, the control determines the parameters in a self-optimising manner instead of requiring numerous manual inputs.
- Each individual weighing is registered. Minimal deviations are automatically compensated during the next weighings.
- Weighing is performed quicker since the new high-volume scales are suspended at three points, which also prevents vibrations.



Tuft Blending System T-BLEND

Fully automatic start and finish of a lot

The BLENDCONTROL of the T-BLEND system features a fully automatic control of the start as well as the finish of a lot.

Variable blending ratios with one installation

A frequent requirement is the parallel feeding of various blends of the same materials to two lines. With T-BLEND, the typical request of simultaneous processing of PES/cotton 65 %/35 % and 50 %/50 % poses no problem. Depending on the requirement of both lines, the change from one blend to another is performed fully automatic.

Perfect also for different fibers

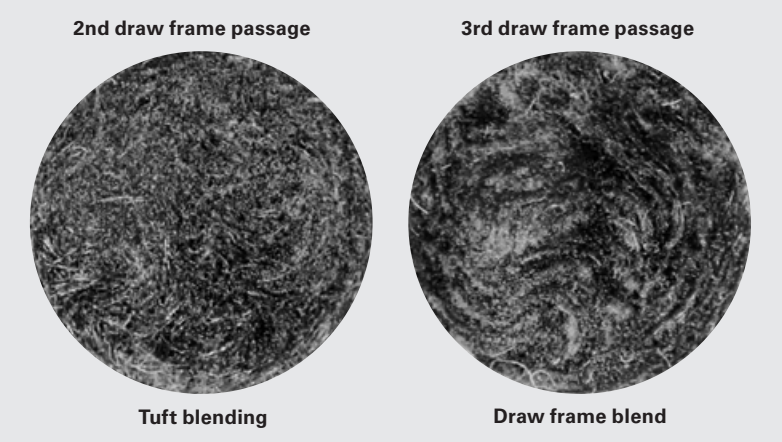
Blending different types of fibers, e.g. flax with cotton, and then subsequently carding them together produces a particularly homogeneous product appearance. Even with critical blends, Truetzschler installations achieve an absolutely uniform result:

- Items dyed tone in tone
- Items where only one component is dyed

This applies above all in comparison to draw frame blending where different card slivers are blended at the draw frame.

Automatic taring prevents weighing errors

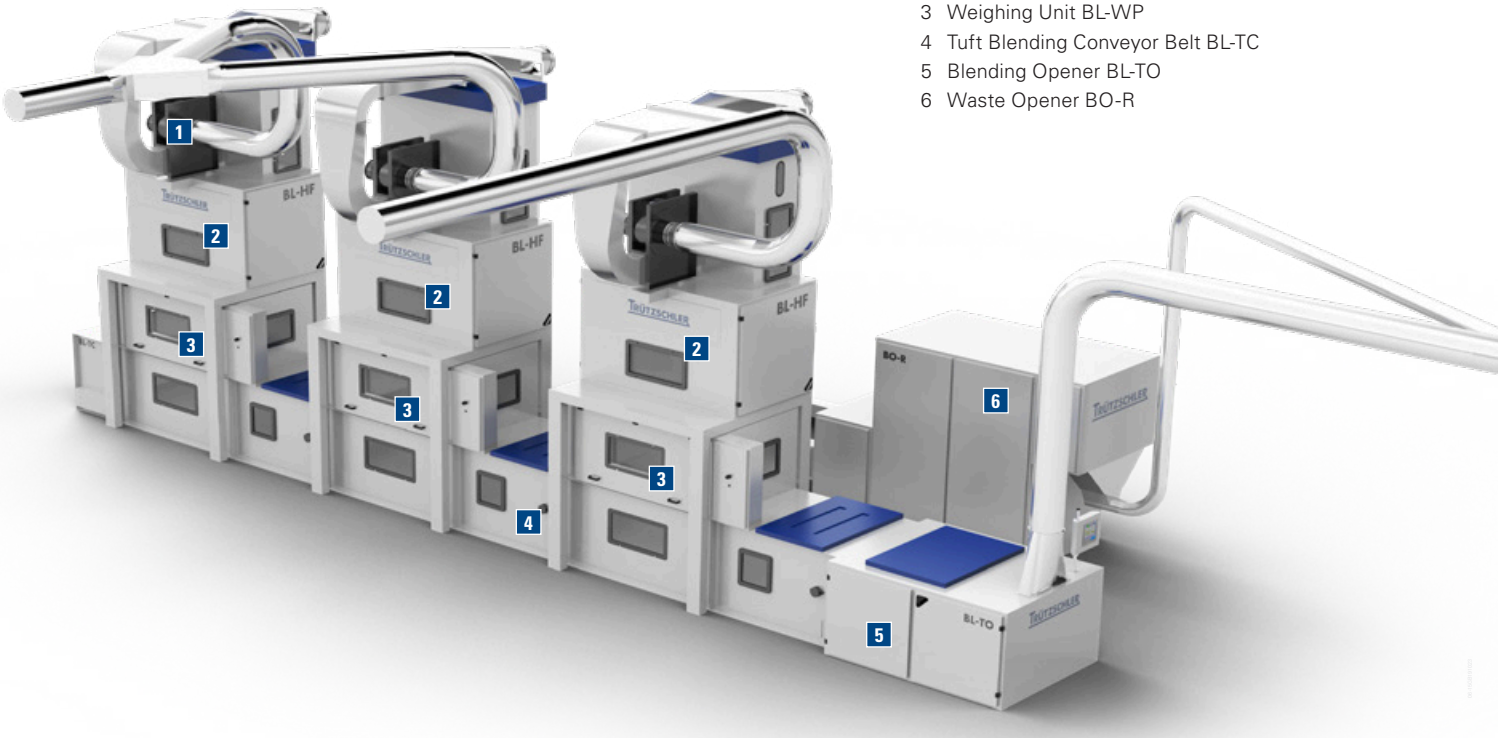
Between the discharge cycles an automatic taring of the scales takes place at chosen intervals to rule out exterior influences on accuracy, e.g. dust deposits. This ensures compliance with blending ratios over a long period of time.



Comparison of tuft blending / draw frame blending:
Cross sections of draw frame slivers (20-fold magnification).
Black: Viscose; white: Cotton

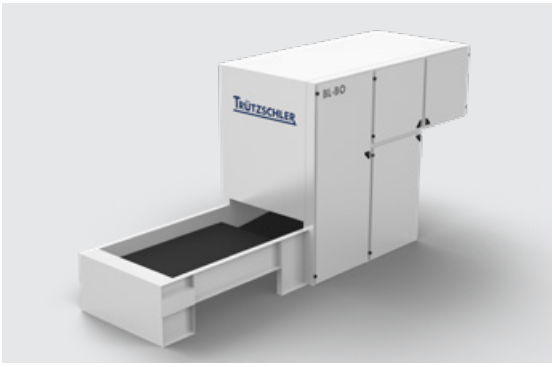
Tuft blending installation for polyester/cotton 65 %/35 %, production 2,000 kg/h with waste feeding

1 Fan BR-FD
2 High Performance Feeder BL-HF
3 Weighing Unit BL-WP
4 Tuft Blending Conveyor Belt BL-TC
5 Blending Opener BL-TO
6 Waste Opener BO-R



Modular T-BLEND system

Precisely coordinated components



Bale Opener BL-BO for manual feeding

Bale Opener BL-BO

Due to manual feeding via the feed apron, the BL-BO is very flexible in its application. Additional feeding from the top via a Material Separator BR-MS is also possible. The feed table can be extended. Production rates up to 1,000 kg/h are possible. The BL-BO discharges the material into the weigh pan of the weighing unit.

The Waste Opener BO-R is suited for the addition of production waste that has already been blended.

Waste Opener BO-R

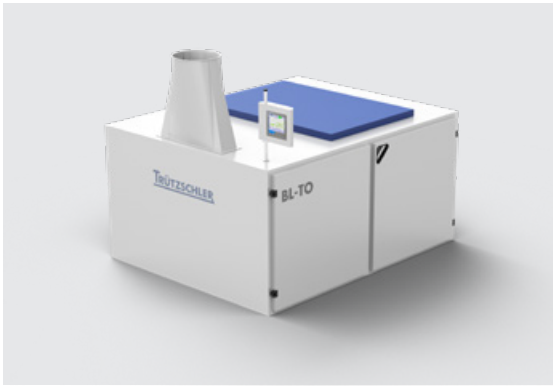
This is the unit for accurate addition of spinning waste such as card or draw frame slivers. These materials are already blended and are therefore added downstream from the Blending Opener BL-TO. Here it is also possible to extend the feed table.

The Weigh Pan BL-WP is suspended at three points on a solid frame.

Weighing Unit BL-WP

The weighing unit has been designed for high accuracy and high performance.

- An innovative three-point suspension prevents vibrations.
- To prevent unwanted vibrations, the weigh pan is not connected to the feeders.
- 50 % increase in weigh pan volume.



The Blending Opener BL-TO delivers the blended tufts usually to a trunk mixer.

Blending Opener BL-TO

At the end of the tuft blending conveyor belt, the blending opener takes on the fibers from the conveyor belt, blends and opens them. The four-roll feed unit ensures a high output up to 2,000 kg/h. The large diameter of the needled opener roll ensures gentle opening.

High Performance Feeder BL-HF with automatic feeding

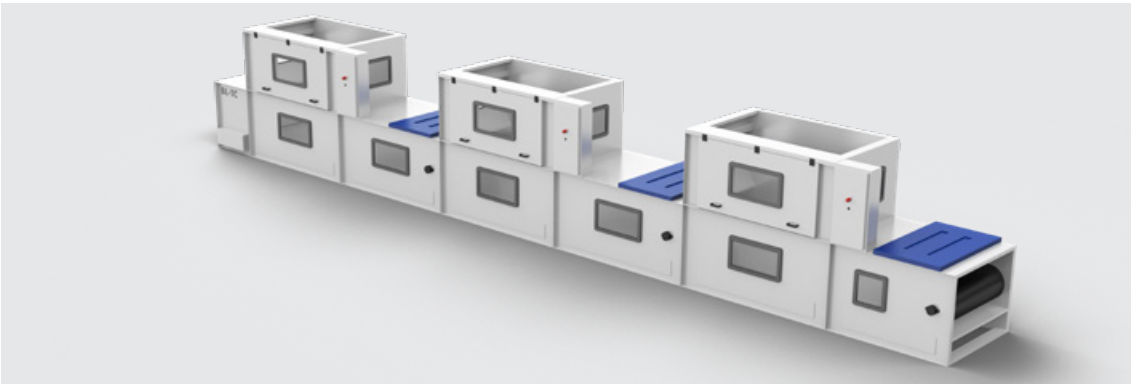
Precision Feeder BL-PF for precision dosing

High-Performance Feeder BL-HF

This very space-efficient feeding version can automatically feed productions up to 800 kg/h. The material, for instance, can be provided by a cotton cleaning line or a Portal Bale Opener BLENDOMAT BO-P. The High Performance Feeder BL-HF discharges the material into the weigh pan of the weighing unit.

Precision Feeder BL-PF

This feeder is designed for adding very small blending components in small productions. A typical application example are blends with less than 10 % of a component. The Precision Feeder BL-PF discharges the material into the weigh pan of the weighing unit.



The Tuft Blending Conveyor Belt BL-TC has a modular structure. Weighing units can perform 2 to 6 feedings.

Tuft Blending Conveyor Belt BL-TC

The tuft blending conveyor offers a high volume particularly for bulky fibers. Special elements ensure a very good width distribution even at production rates up to 2,000 kg/h.

BLENDCONTROL – the T-BLEND control

Consequent direction controlling quality and economy

Precise calibration and fully automatic taring

Electronic scales can be calibrated quickly and precisely by inserting a standard weight. In the process, the electronic is automatically calibrated; operator-based errors are almost completely excluded. During operation, taring is performed fully automatic in adjustable intervals. This guarantees exact weighing at any time during production.

Other tuft blenders that work with continuous material flow do not allow taring during production and are thus prone to a gradual deviation of the blending ratio.

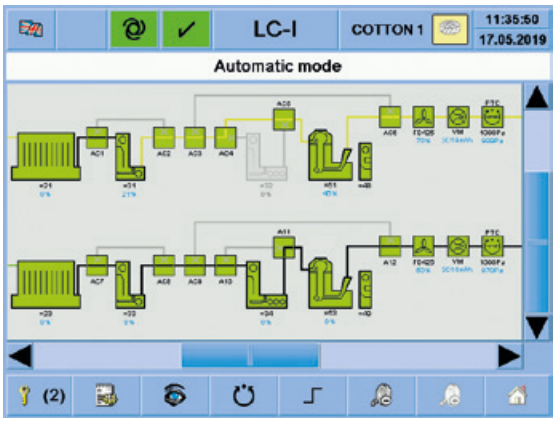
More flexibility, speed and clarity: BLENDCONTROL LC-BC

The BLENDCONTROL LC-BC which is integrated into the installation control of the tuft blending installation is operated via the screen of the LINECOMMANDER. New lots

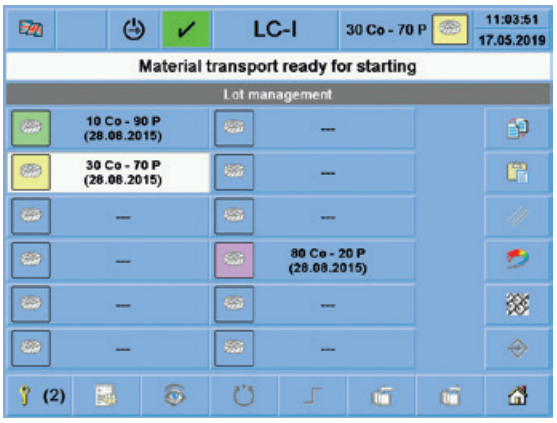
as well as the required settings (e.g. production rate) can easily be selected. A second screen is available for operation directly at the T-BLEND installation. The operator does not need to go to the central blow room control first. Since the lot data is stored in a formula memory, particular blends that have been processed once can always be reproduced, thus minimising operating errors. Lot changes can be performed in a very short time.

Quality control by means of lot reports

Quality evidence is more important than ever today. The BLENDCONTROL lot report proves to the customer at any time that the blending ratio has been in full compliance with his requirements.



The visualisation of the installation shows the current operating condition of all machines at a glance.



BLENDCONTROL simplifies operation due to a formula library.

Technical data

Tuft blending

Tuft blending installations		Frame width mm	Total width mm	Total length mm	Total height [1] mm	Max. continuous power kW	Average power consumption kW	Production up to approx. kg/h	Noise level db (A)
	**BL-BO**	1,600	2,464	7,010	3,000	5.2	2.6	1,000	74
	**BL-HF**	1,600	2,064	1,900	4,500 5,000	5.8	2.9	800	< 70
	**BL-PF**	1,600	2,064	1,900	4,500 5,000	5.9	3.0	200	< 70
	**BL-WP**	1,600	2,000	1,320	1,900	–	–	1,000	< 70
	**BL-TO**	1,200	1,664	2,275	1,000	6.4	4.4	2,000	< 70
	**BL-TC**	1,200	1,664	7,750 [2]	1000	0.3 [3]	0.15 [3]	2,000	< 70
	**BO-R**	1,000	1,464	5,265	2,250	2.8	1.9	100	72

1) Without trunk feeding
2) With 3,500 mm centre distance and 2 feedings. For every additional feeding (up to 6), 3,500 mm additional length
3) With 2 feedings. For every additional feeding (up to 6) +0.14 kW installed power, +0.09 kW consumed power

SERIES/OPTION	BALE OPENER BL-BO
○	Automatic material supply is made possible with a Feeding Unit BR-FU.
○	The feed table can be extended with one to three Feed Table Extensions BR-TE by 2 m, 4 m or 6 m.
○	Maintenance platform.

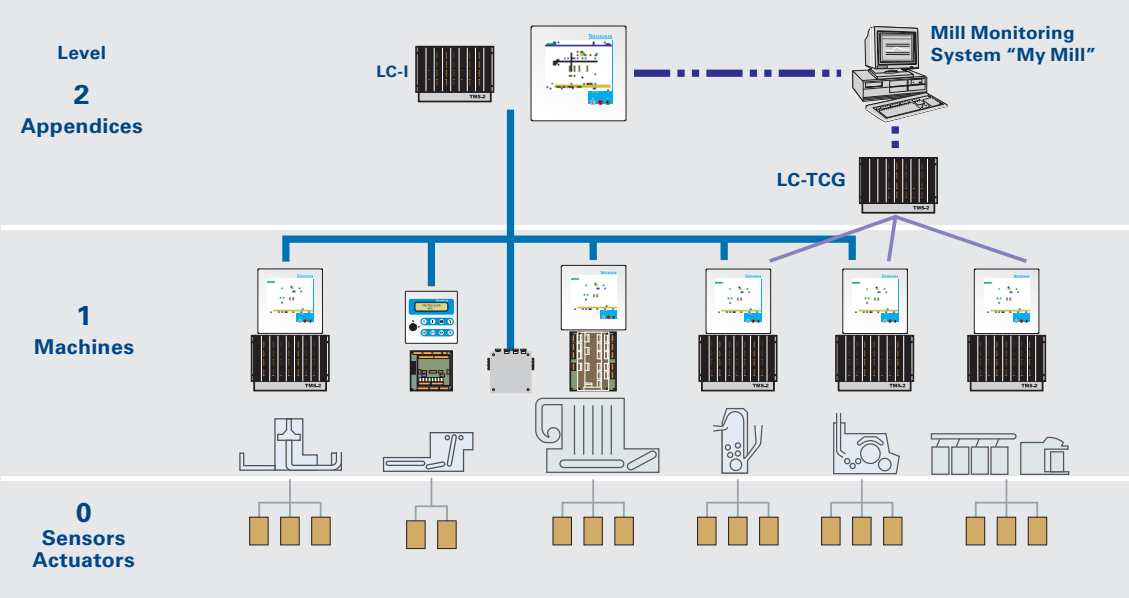
● = Series ○ = Option


BL-PF TRÜTZSCHLER

Installation controls and machine controls

Simple operation and optimal data flow

Truetzschler control hierarchy and communication



Truetzschler installation and machine controls distinguish themselves in various ways during the harsh daily production:

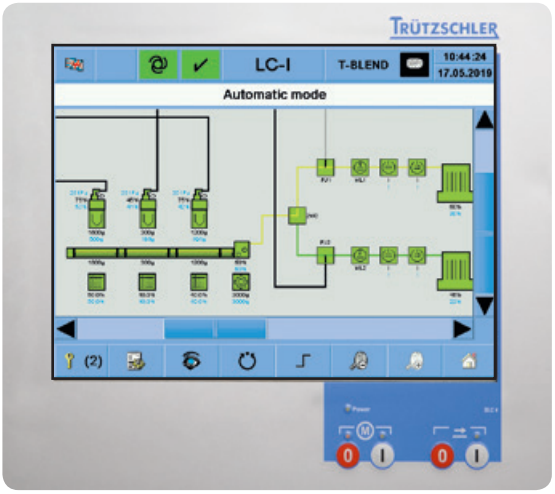
- Flexible adjustment to individual customer requirements
- Reliable, even under extreme conditions
- Network capability
- Worldwide online availability via Mill Monitoring System "My Mill"
- User friendliness

These criteria are only met by the Truetzschler installation and control technology developed and produced in-house. The electronic system of the Installation Control LC-I is resistant to dusty air, humidity and high temperatures – conditions common in spinning mills throughout the world.

Installation Control LINECONTROL LC-I

The LINECONTROL LC-I coordinates the functions of the individual machines and thus fully automatically controls the material transport of the total installation. Malfunctions in the installation or in individual machines are graphically displayed, thus allowing quick and specific reactions. All safety-relevant functions such as emergency stop and door safeties are hardware-wired, ensuring a particularly high level of fail-safe performance.

Installation Control LC-I – operating unit with colour screen



The Electronic Installation Control LC-I is optimally suited for coordinating individual machine controls. It uses modern intelligent network technology and offers maximum functional safety and reliability:

- Simple commissioning
- Easy operation on colour touch screen
- High amount of display information
- Use of international standards
- Open system
- Minimum cabling
- Same spare parts as machine controls

Monitoring and display of machine conditions

All Truetzschler controls ensure constant data exchange between the machines and the installations. Thus it is possible, for instance, to control and monitor the whole installation regarding production and material flow from a central point with the Installation Control LC-I. Access to individual machines is possible at any time.

At the same time, a number of machines are equipped with an individual control, which offers many advantages:

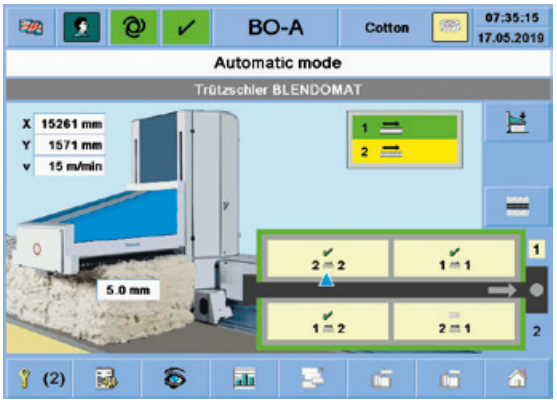
- Operation directly on the machine
- Significantly lower cabling outlay
- Simple planning
- Closed and tested functional units

Convenient operation of all blow room machines

All machines of the cleaner and opener lines with their independent machine controls are also connected to the central installation control via the network. Since the machine controls feature the same assembly groups as the cards and draw frames, spare part costs can be reduced.

The operating terminal of the Portal Bale Opener BO-P visualises the most important data.

A special software automatically localises possible errors and shows them on the display. All production processes as well as possible malfunctions can be viewed on displays in numerous languages. Simple symbols and functional keys facilitate operation.



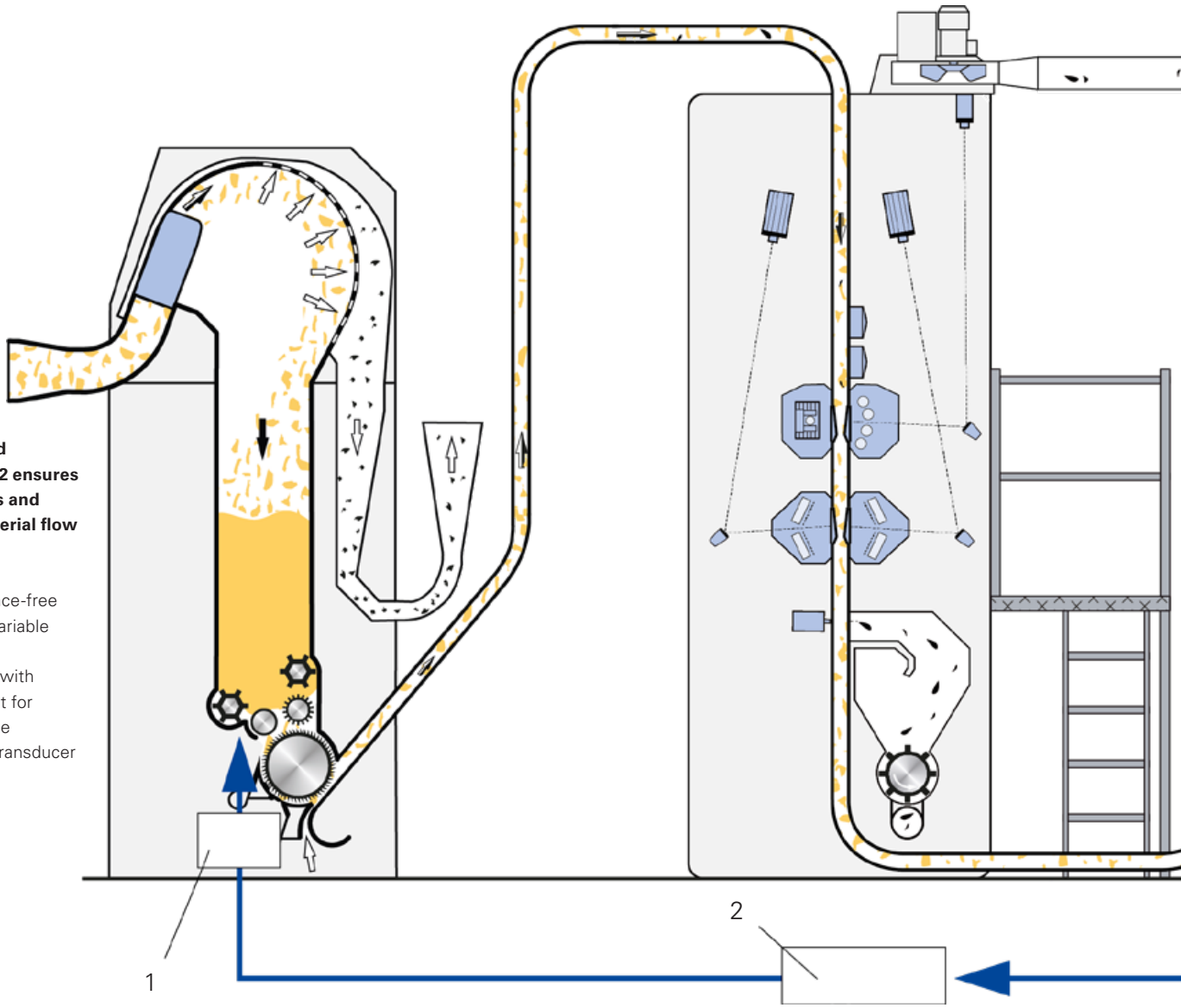
Example of a display for the control of a Bale Opener BLENDOMAT BO-A

Continuous material flow with CONTIFEED 2

Optimal cleaning and uniform card feeding

Conventional installations operate on a stop-and-go basis: The material transport is frequently switched on and off due to production fluctuations. Result: uneconomical production and increased quality risks.

To ensure continuous operation from the cleaners to the cards, Truetzschler has been using the Modular Control System CONTIFEED for decades. It is integrated into the installation control and optimally tunes the production rates of the individual machines. The advantages of this are a greater cleaning efficiency or a higher production at same cleaning efficiency. When processing man-made fibers, CONTIFEED ensures that the degree of opening and therefore the tuft size remains constant. ➔



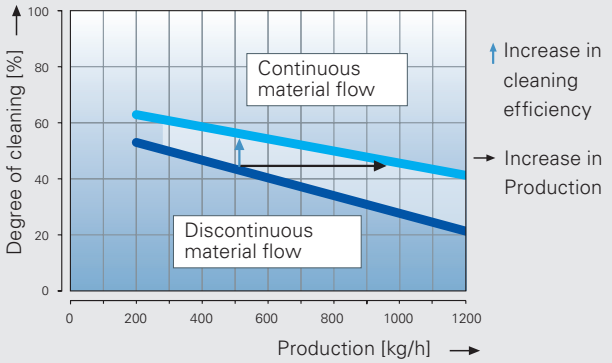
The standard CONTIFEED 2 ensures a continuous and uniform material flow to the card

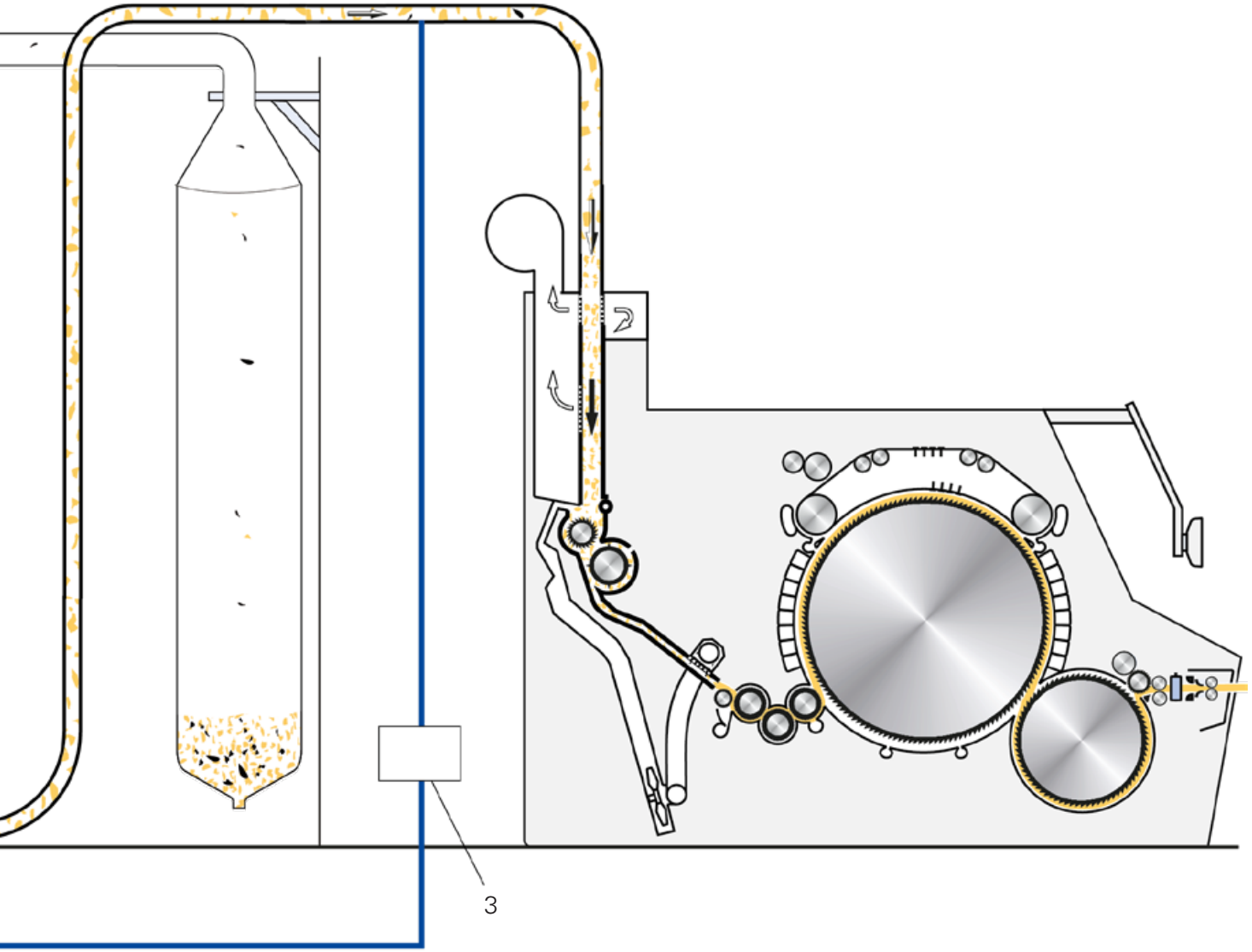
1 Maintenance-free infinitely variable motor
2 Controller with adjustment for target value
3 Pressure transducer

Production and quality increase due to CONTIFEED 2

Full utilisation of the potential of a cleaner or opener line is only possible with CONTIFEED 2.

Thus, for instance, greater cleaning efficiency can be achieved in CLEANOMAT cleaners even at higher productions.





Modular Control System CONTIFEED 2

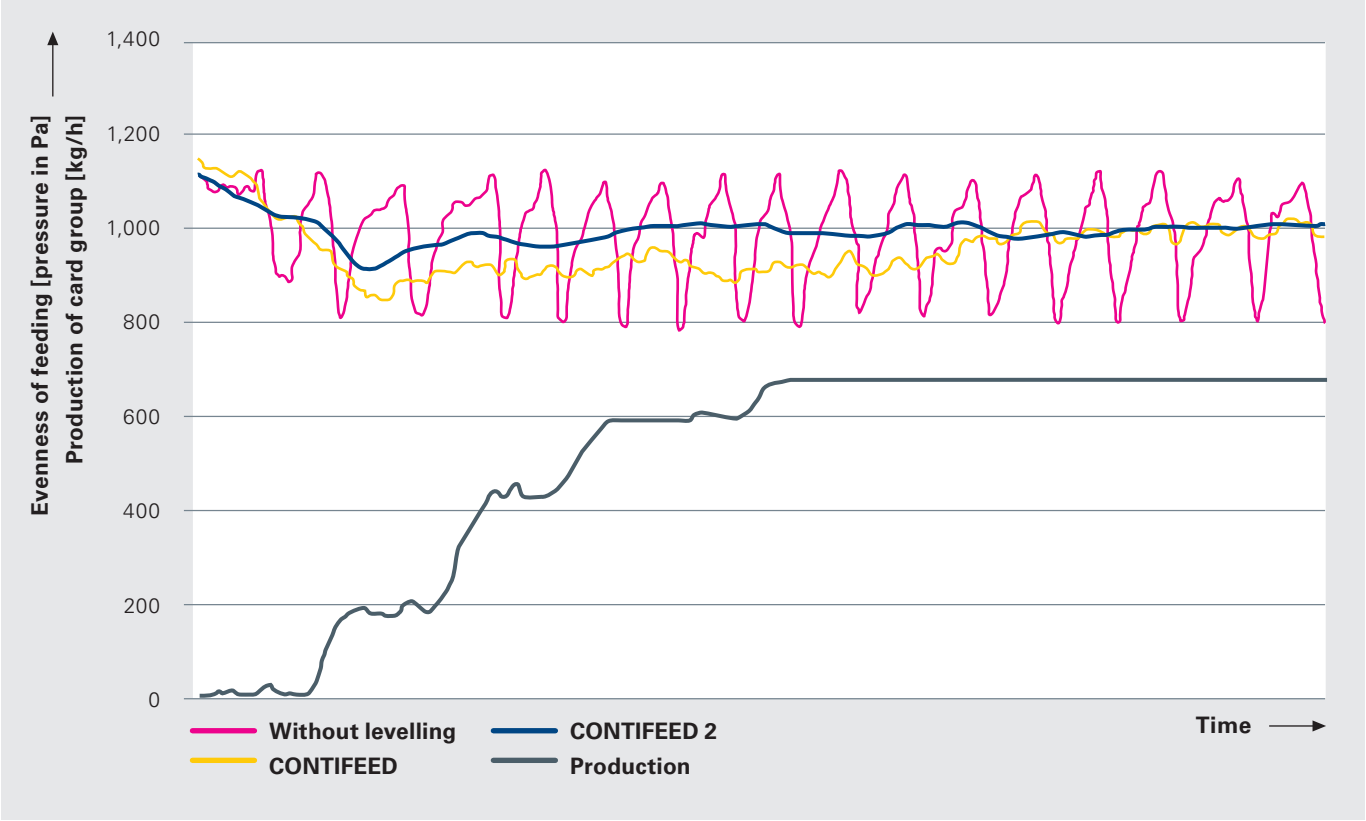
Self-optimisation relieves the operator

The new modular control system CONTIFEED 2 offers increased performance in many respects. In addition to uniform material flow during production, it also automatically finds the optimal setting when commissioning an installation.

After a one-time learning phase of several minutes duration, a fully-automatic transition occurs to the production phase.

The improvements of CONTIFEED 2 are obvious:

- Uniform card feeding
- Automatic adjustment during can change or sliver break
- Simplified and reduced commissioning
- No manual interference required when material properties change
- Continuous calculation of production
- Compensation of temporary material shortage

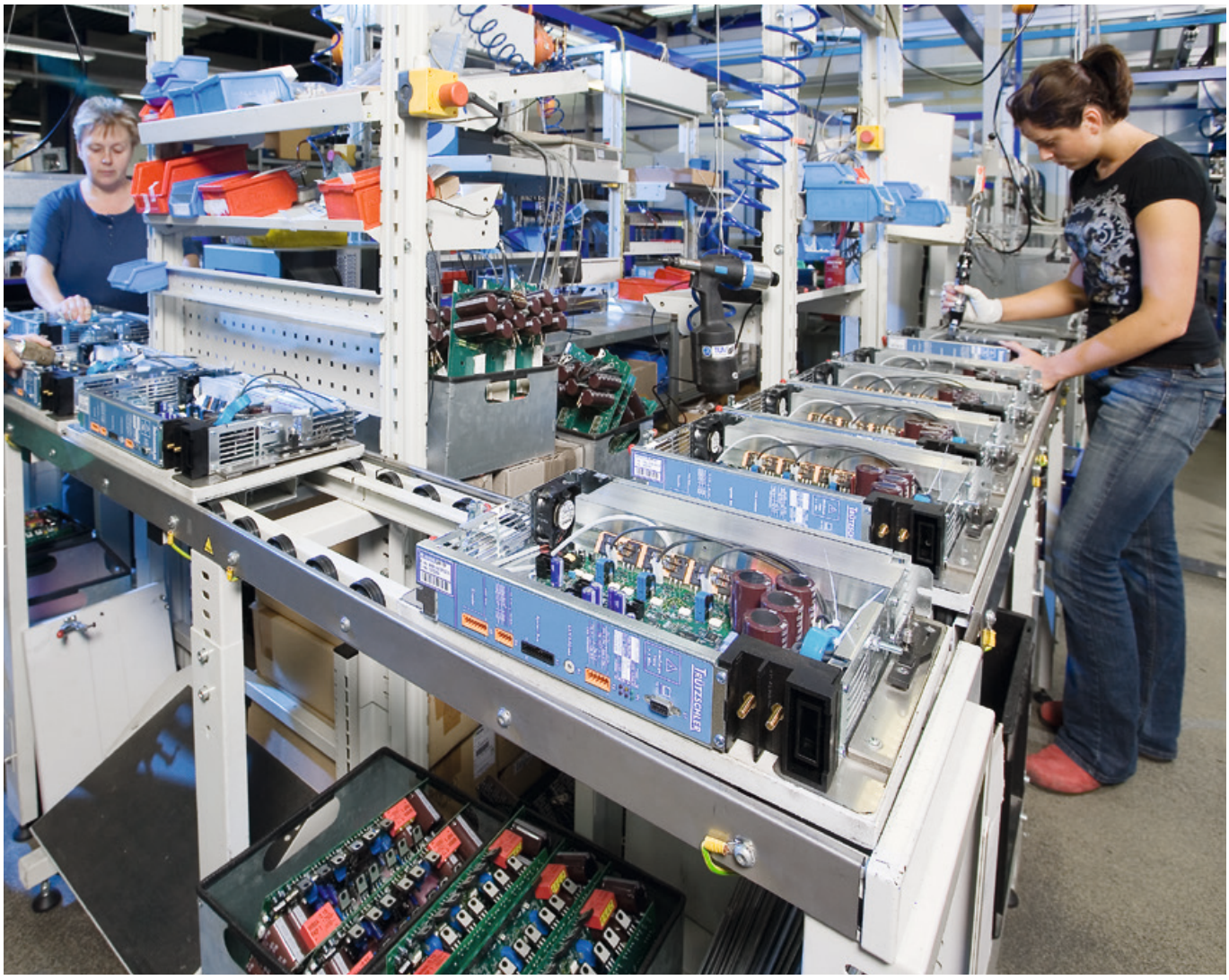


Compared to the reliable CONTIFEED system, the new CONTIFEED 2 features self-optimisation during a short learning phase.
With CONTIFEED 2, the operator does not need any special know-how and is not required to intervene at any time.

Uniform feeding for uniform sliver

A typical CONTIFEED 2 application is the control of a cleaner of the CLEANOMAT system. In this case the material transport from cleaner to card is controlled by evaluating the pressure in the card feed pipes and the overall production of the card line as signal.

Based on these data, the control can provide precise, uniform feeding of the tuft feeders upstream of the cards. This results in better card sliver evenness than in stop-and-go operation.



Assembly of digital controls at Truetzschler headquarters in Mönchengladbach, Germany

Technical data

Special controls for a wide range of applications

Truetzschler offers a series of controls and special components in the control field for planning customised installations in this area as well:

INSTALLATION CONTROLS

LC-I	LINECONTROL	Control for every Truetzschler installation
LC-CU	Conversion of control	Conversion of existing controls
LC-BC	BLENDCONTROL	For tuft blending installations as integrated feature in LC-I

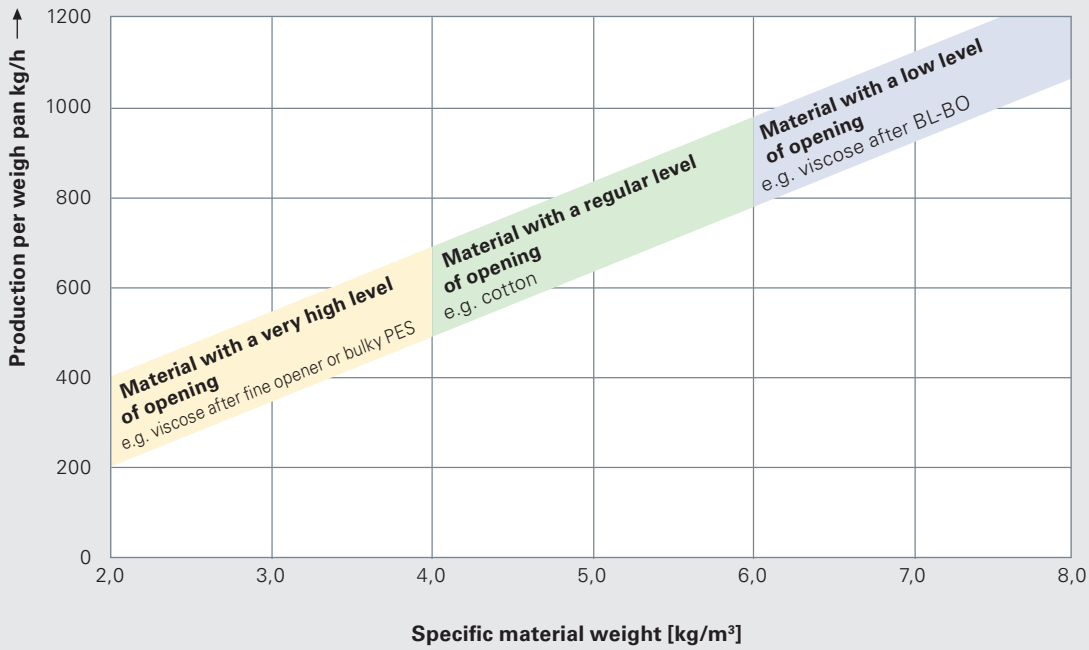
SUBDISTRIBUTIONS

LC-DC	Subdistribution for cards
LC-DD	Subdistribution for draw frames
LC-DCO	Subdistribution for combers

MACHINE-SPECIFIC

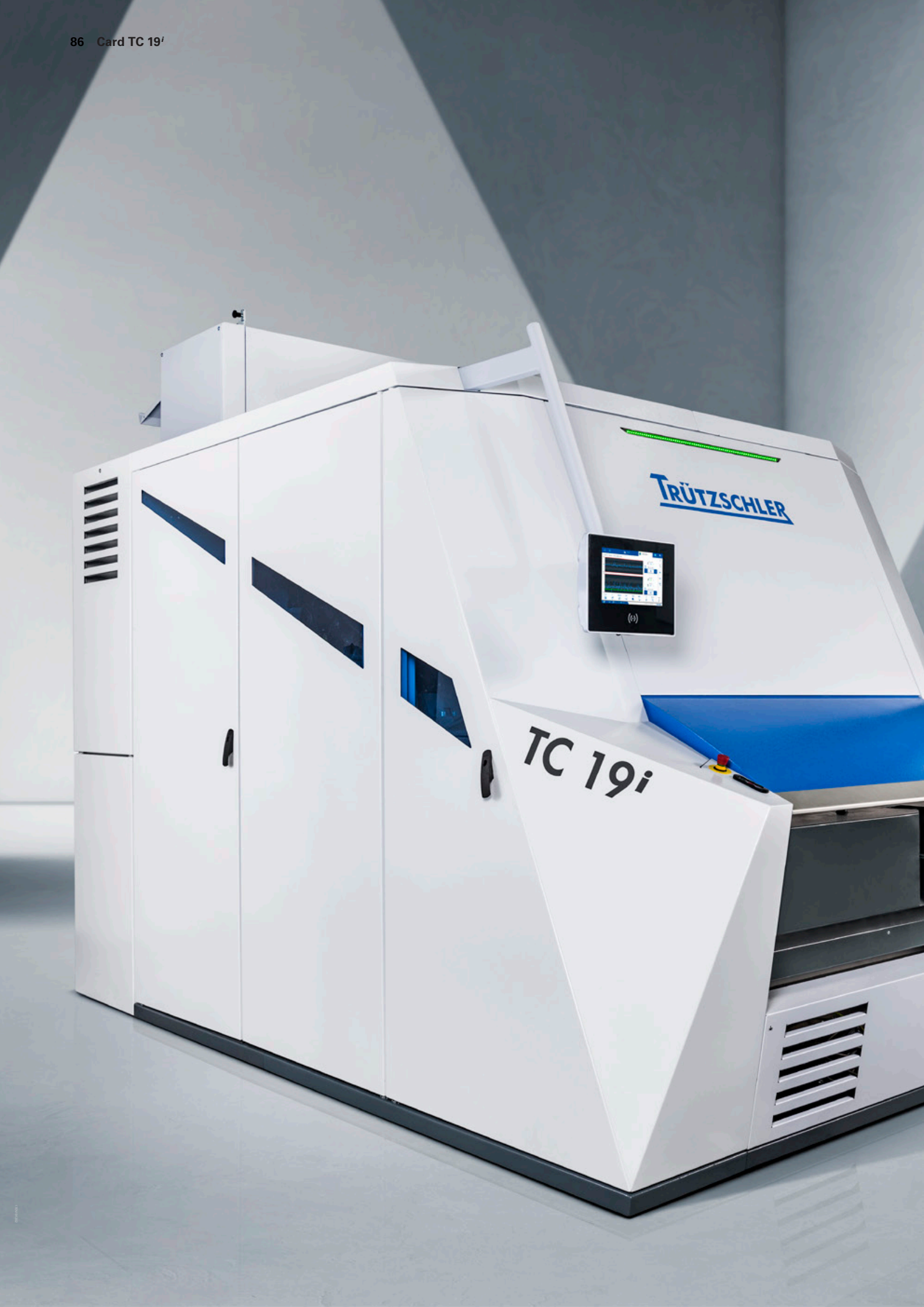
LC-CF2	Conversion to CONTIFEED 2	Continuous material flow control for existing Truetzschler machines
LC-IK	Connection set	Connection and installation set for the cards for installation in Nep Sensor TC-NCT

Data for T-BLEND power calculation



Production depends to a large extent on the degree of opening of the material.


TRÜTZSCHLER
TRÜTZSCHLER


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)

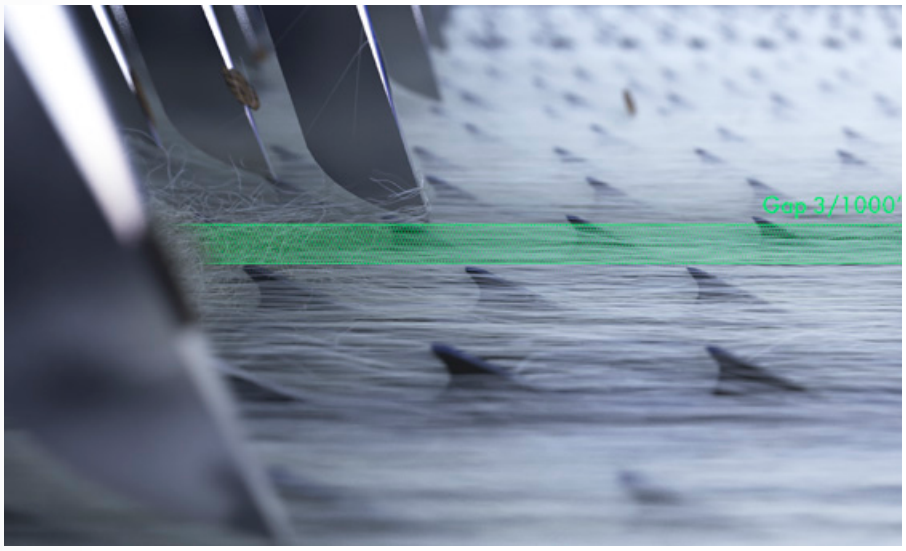
The size of the optimal carding cap of Card TC 19^{i} is 3/1000". Not even a sheet of paper would fit through.

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.



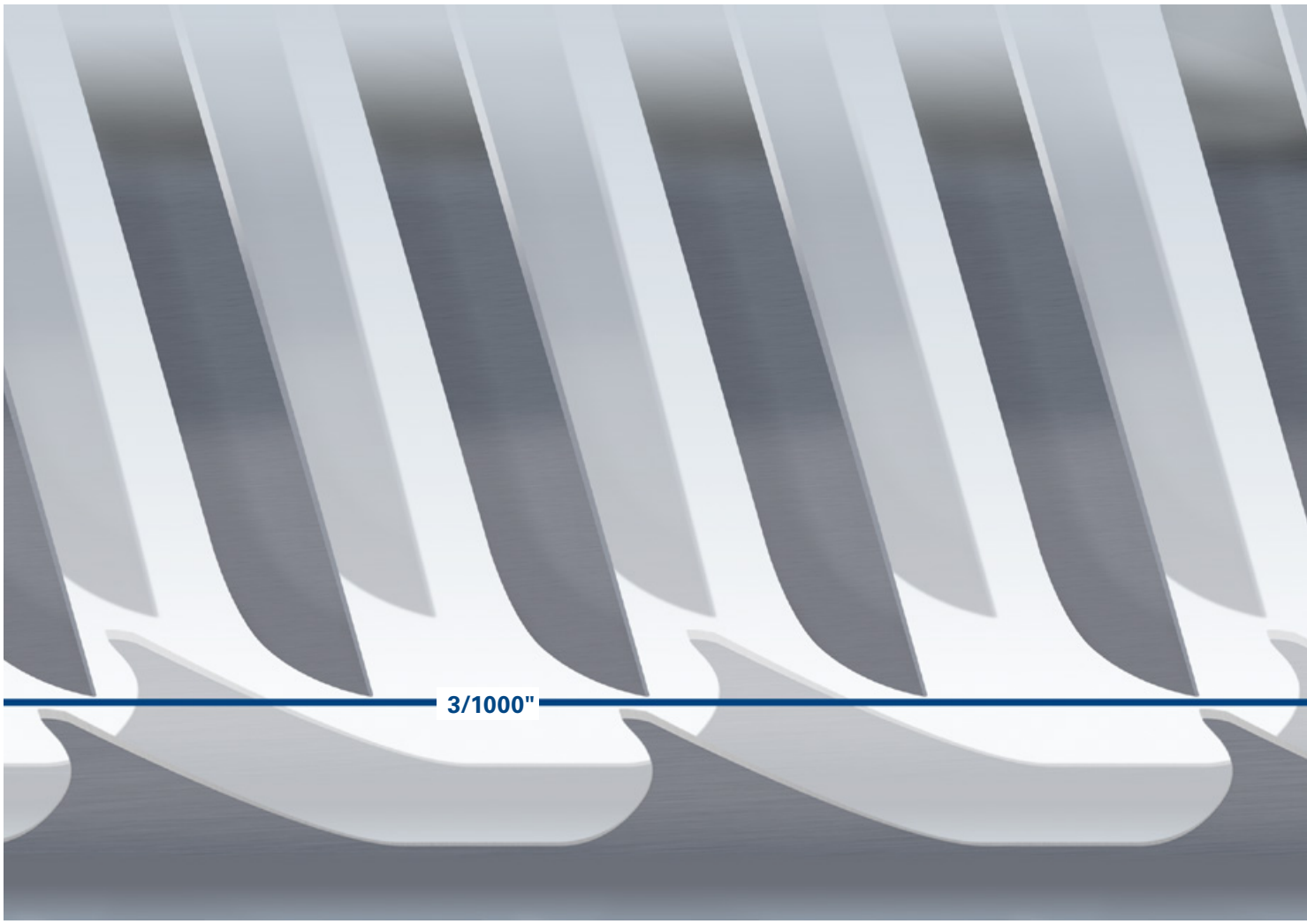
T-GO ensures a constant minimum carding gap of 3/1000" even under changing production conditions.

NEW

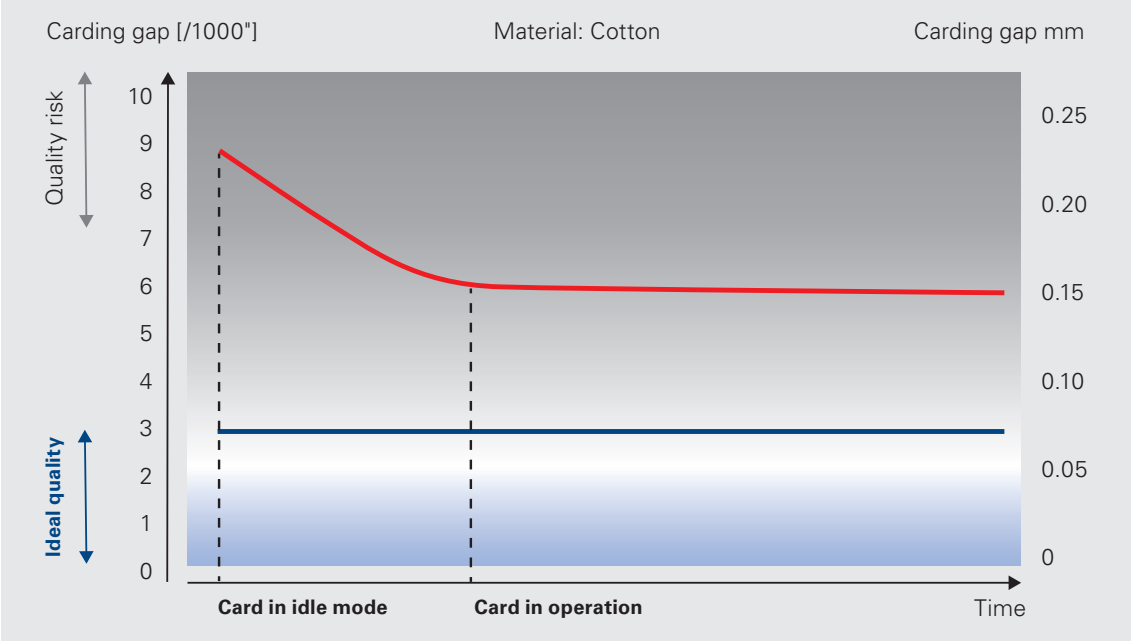
Gap Optimizer T-GO

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.

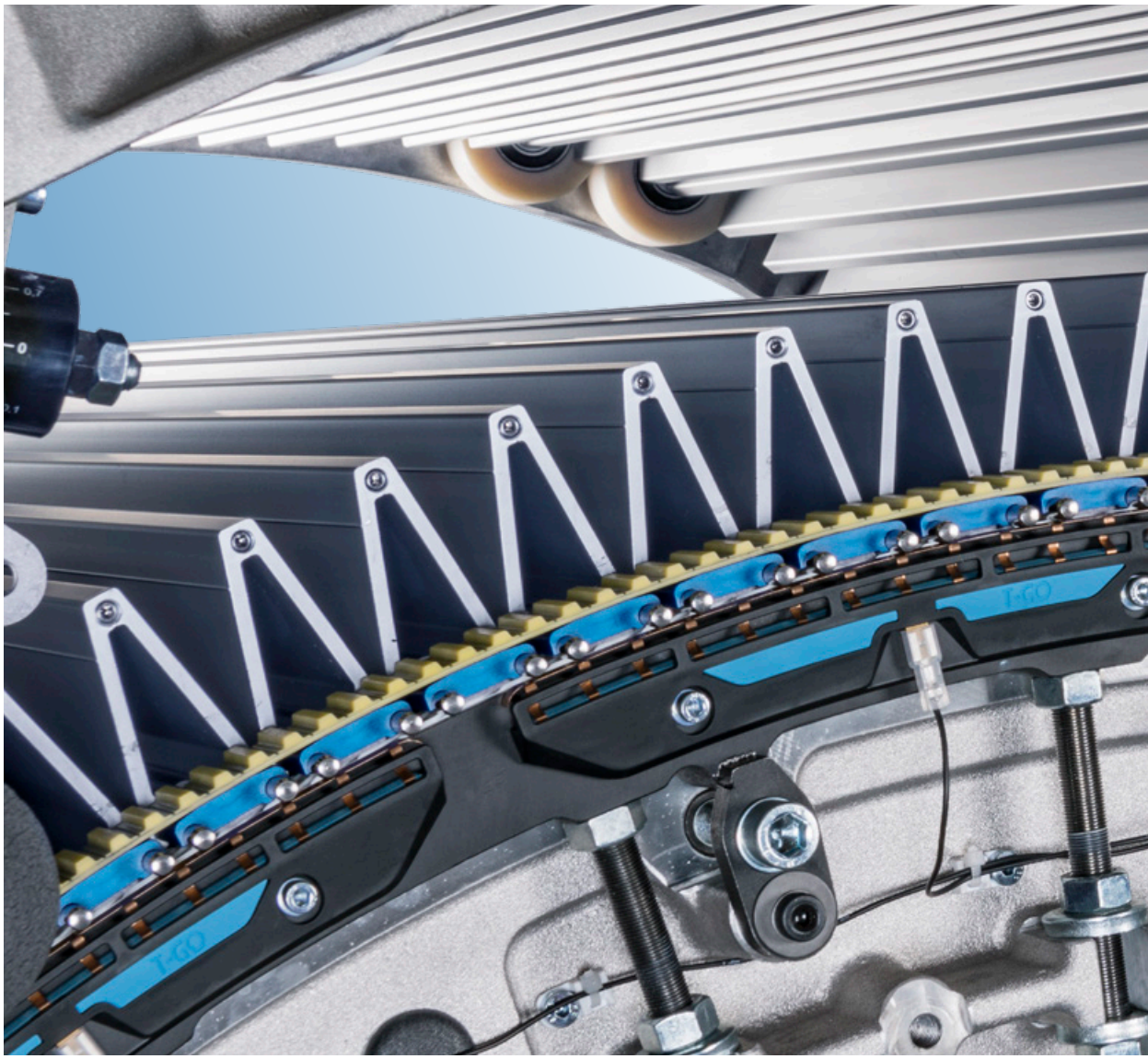
This line is 3/1000" wide →

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

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

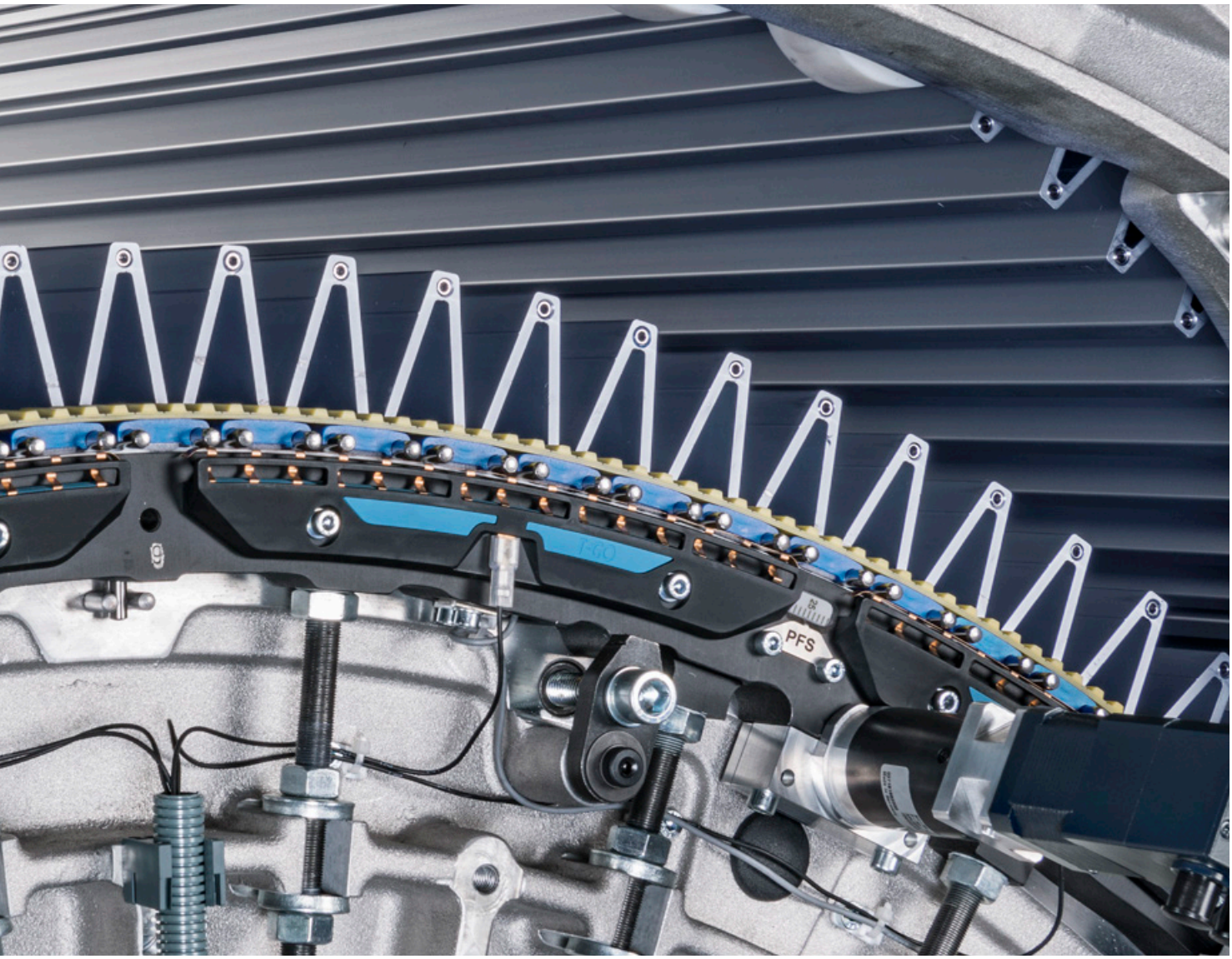
Gap Optimizer T-GO

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

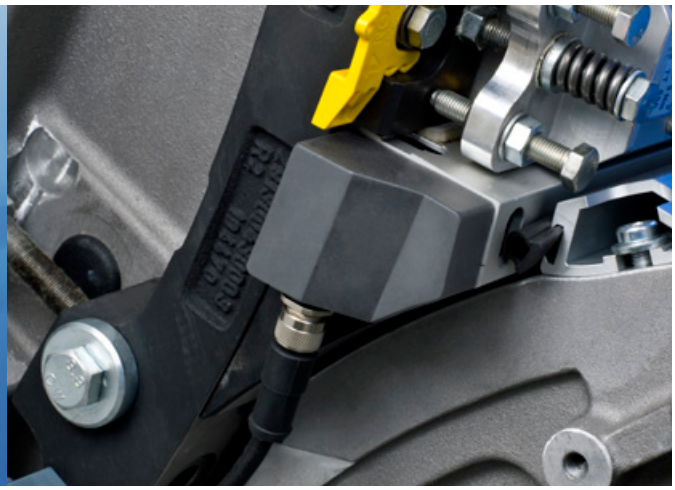
Adapted T-CON 3

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.

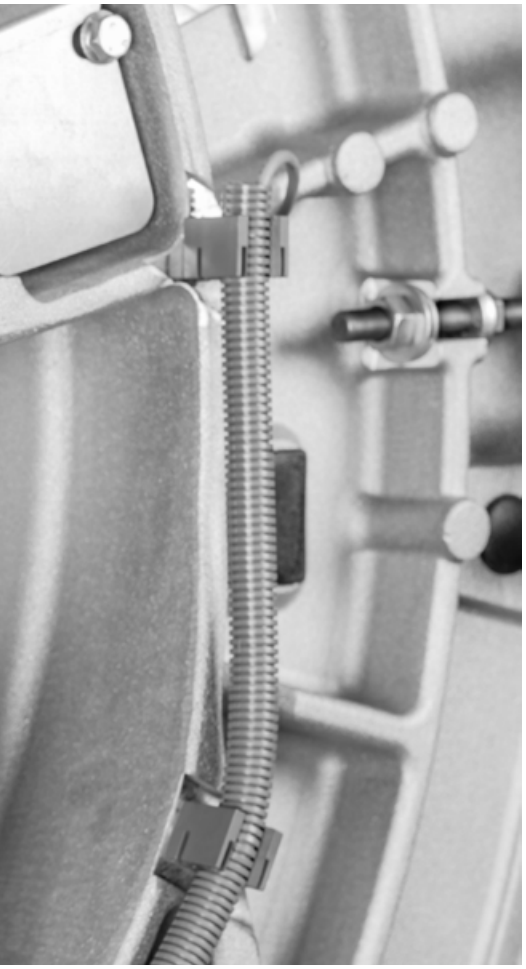
The T-CON 3 spacers are available in different thicknesses.



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.

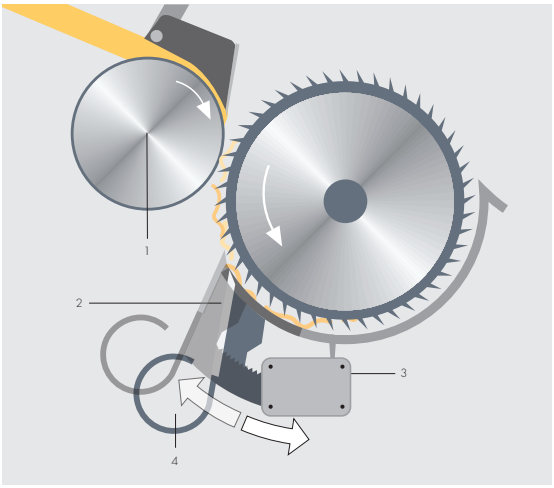


The T-COn 3 spacers can easily be replaced in just a few simple steps and thus allow a reproducible setting of the carding segments.

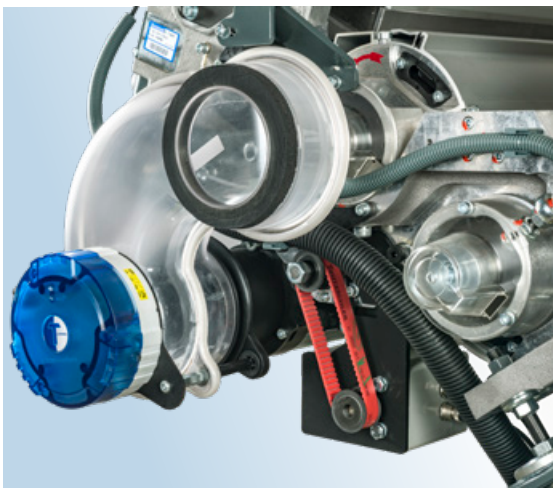
NEW Intelligent waste optimization with WASTECONTROL TC-WTC

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.

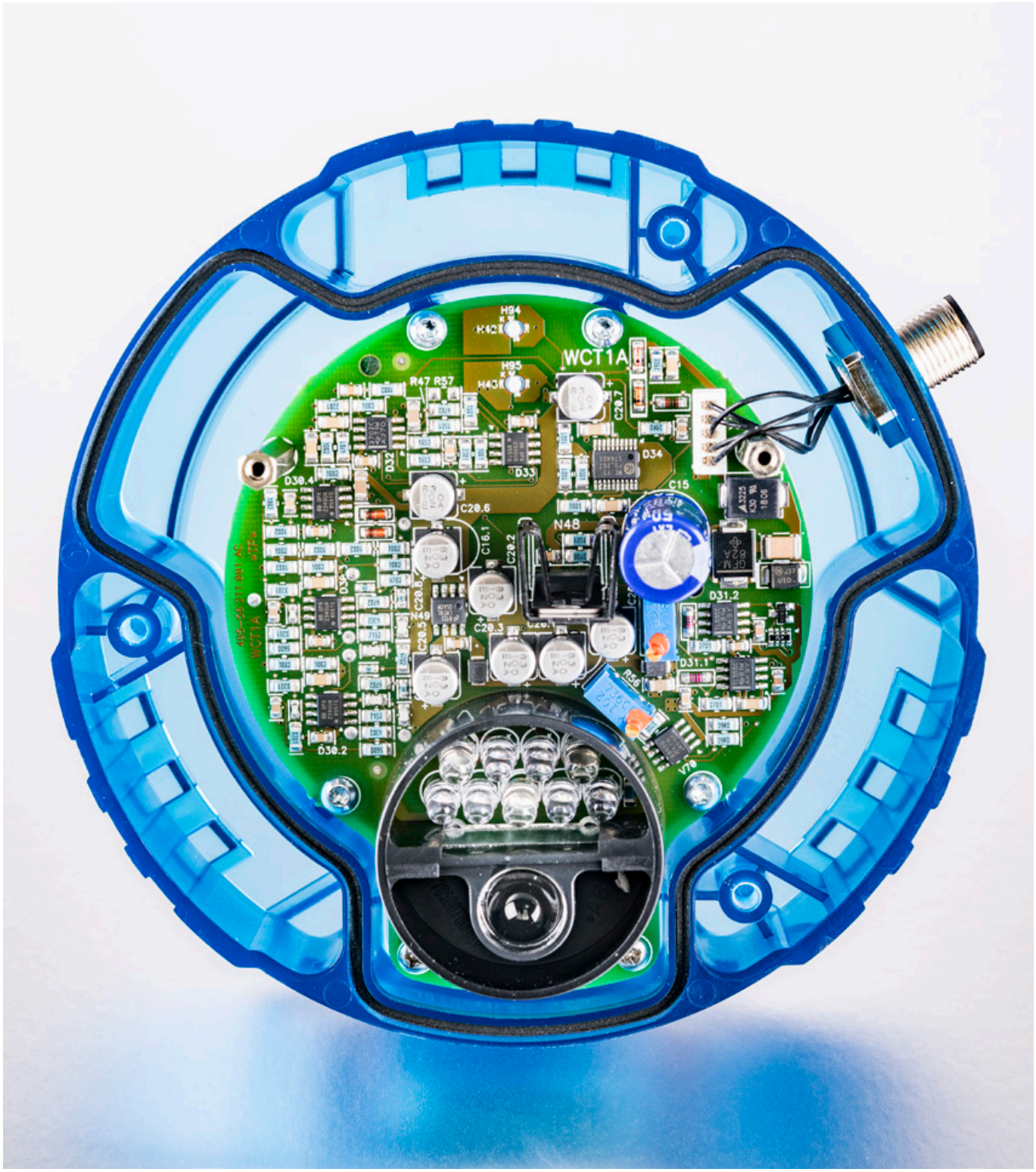


1 Feed roll
2 The adjusting slide moves with the knife in a circular path around the centre of the needle roll.
3 The motor regulates the amount of waste.
4 The permanent suction keeps the card clean in this area as well.



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

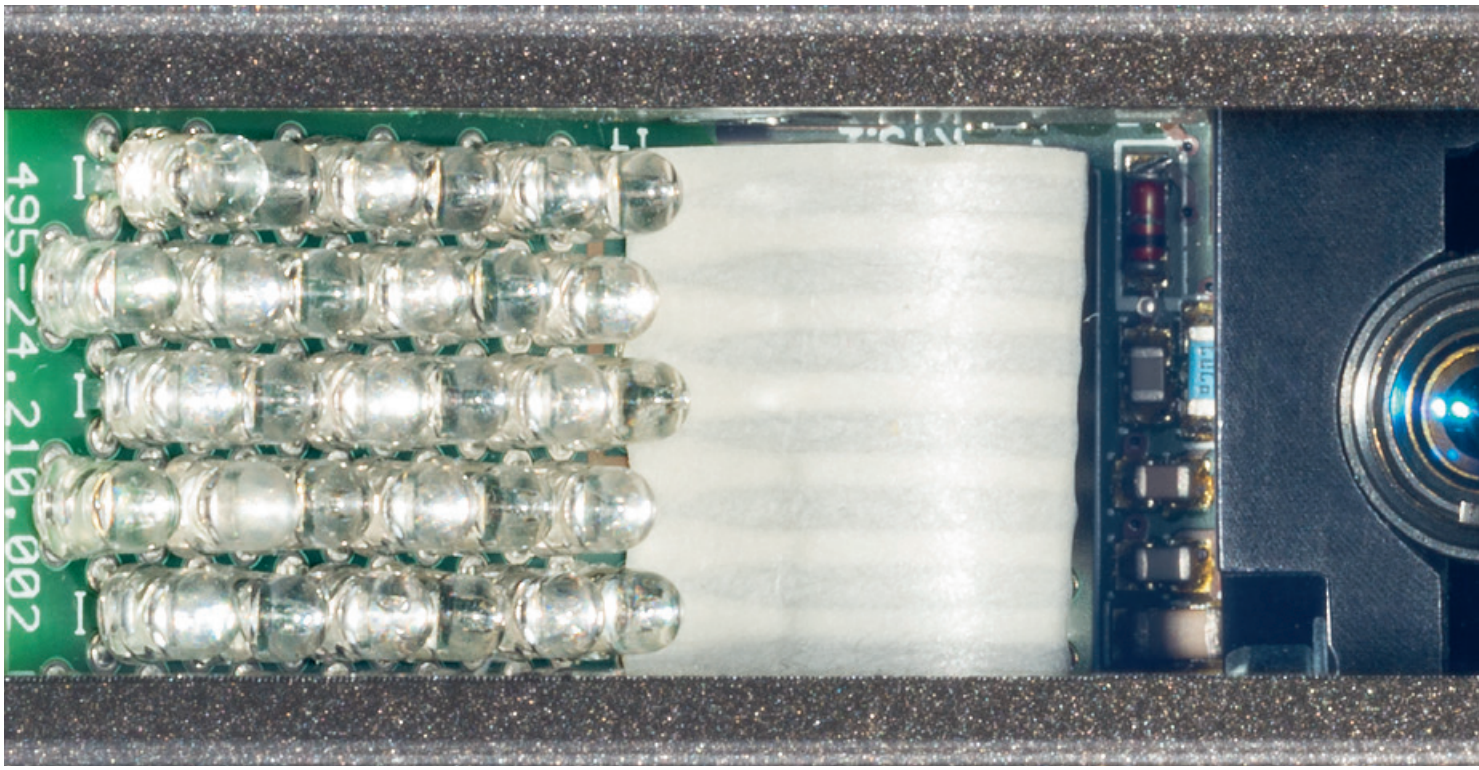
Nep reduction is the most important quality criterion during carding. For this reason, the nep level in the card sliver should be permanently monitored. Deviations from quality are detected immediately, not hours or days later during laboratory tests.

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

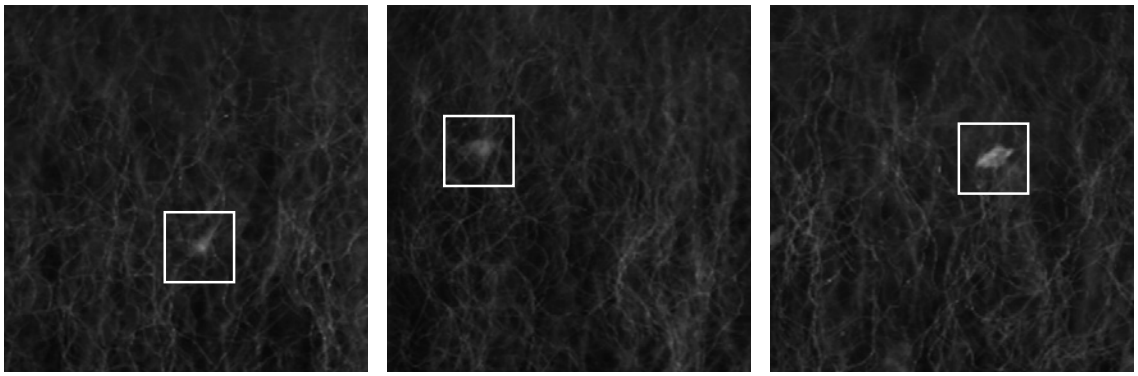
Focus on nep level

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.

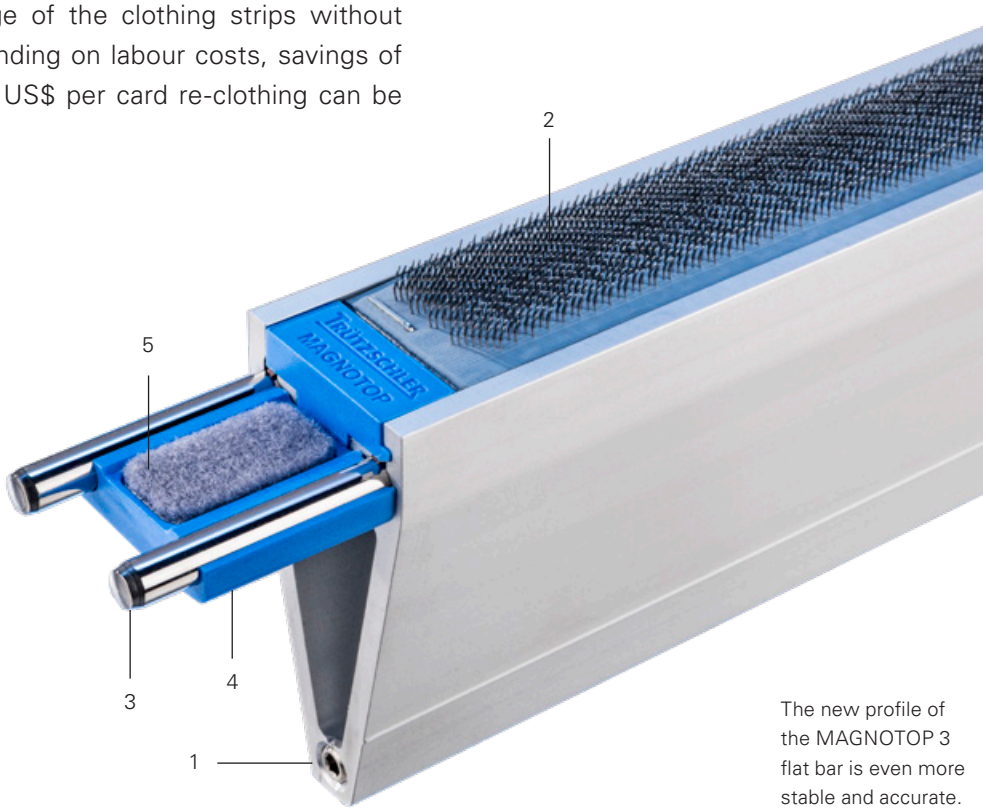
Investments of 170,000 - 210,000 US$ in a flats workshop are completely eliminated

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 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.

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

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.

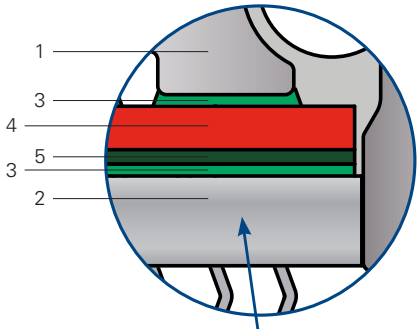
The flat bars can be inserted into the cams of the toothed belt easily without tools.

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.

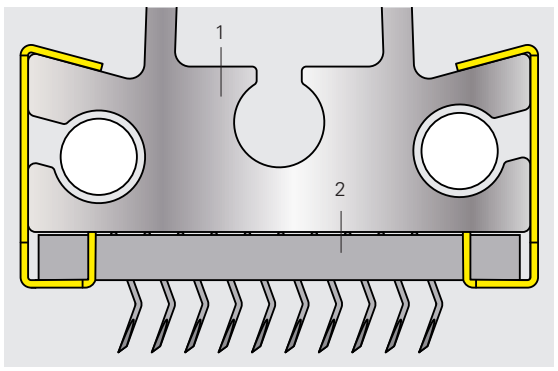
Overview of MAGNOTOP 3 advantages:

- 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

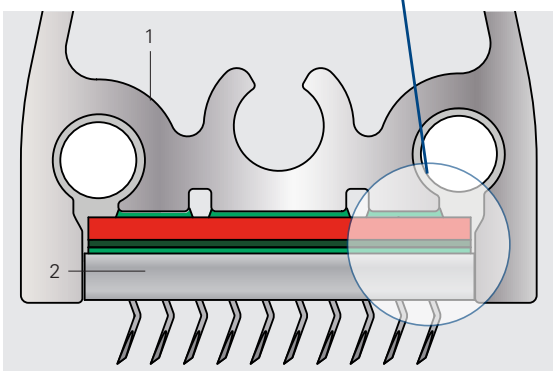


The adhesive layers (3) compensate even the smallest tolerances.

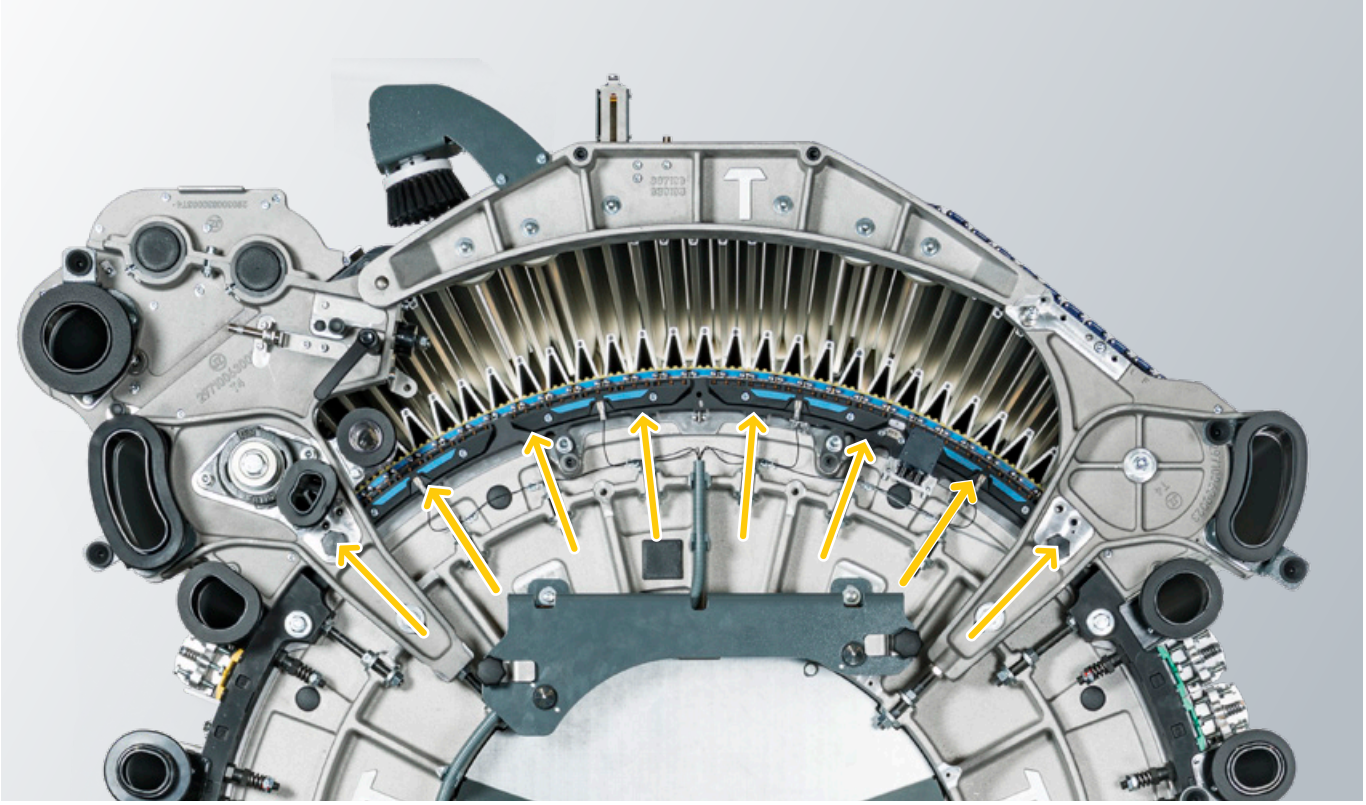
1 Aluminium flat bar
2 Clothing strip
3 Adhesive and compensation layer
4 Neodymium magnet
5 Thin metal support



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.

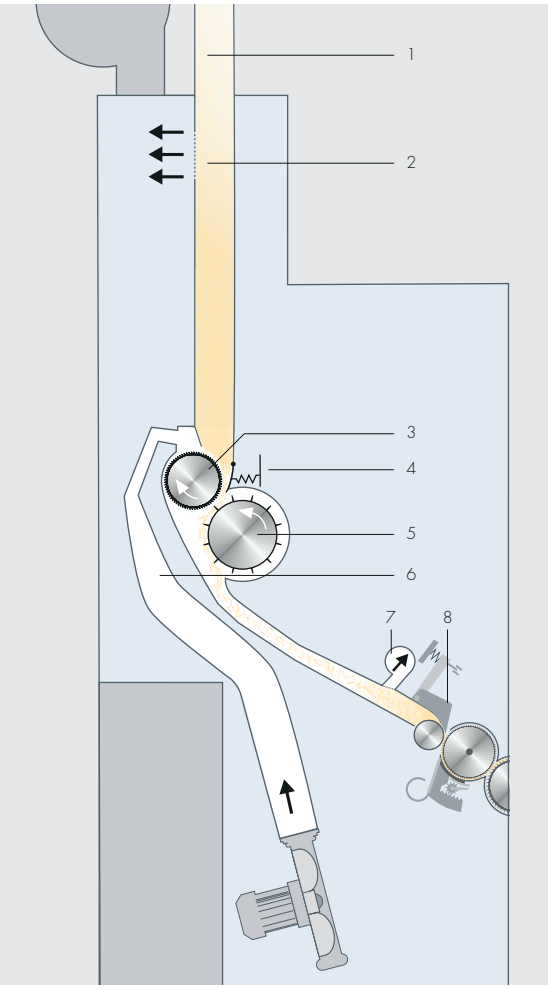
This basic setting is carried out by Truetzschler specialists and never requires readjustment afterwards. The large setting range of 40/1000" is also sufficient for regrinding or clothing change.

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

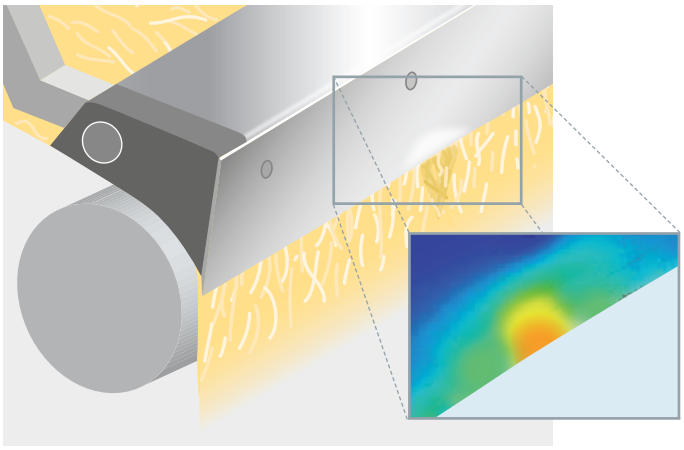
1 New high-volume upper trunk
2 Integrated air-volume separator
3 Electric feed roller, coupled to the feed roll of the card
4 Segmented tray for secure clamping
5 Opening roll with gentle needling
6 Closed air circuit with integrated fan
7 Self cleaning air outlet comb
8 Flexible Feed Tray SENSOFEED+

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

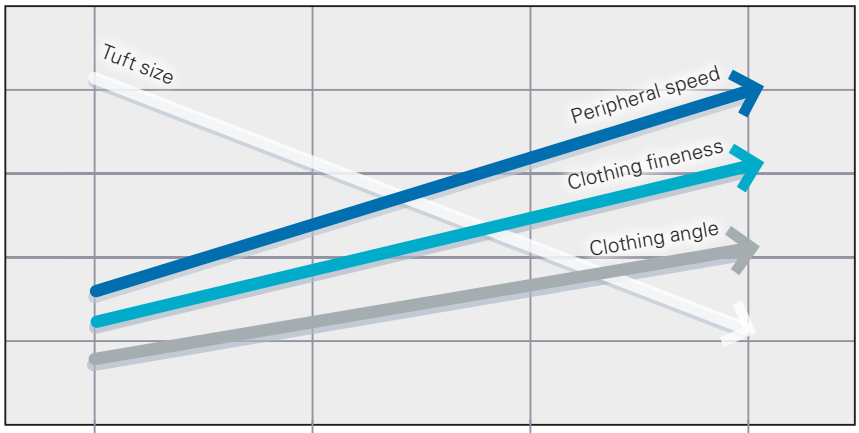
Gentle and efficient tuft opening

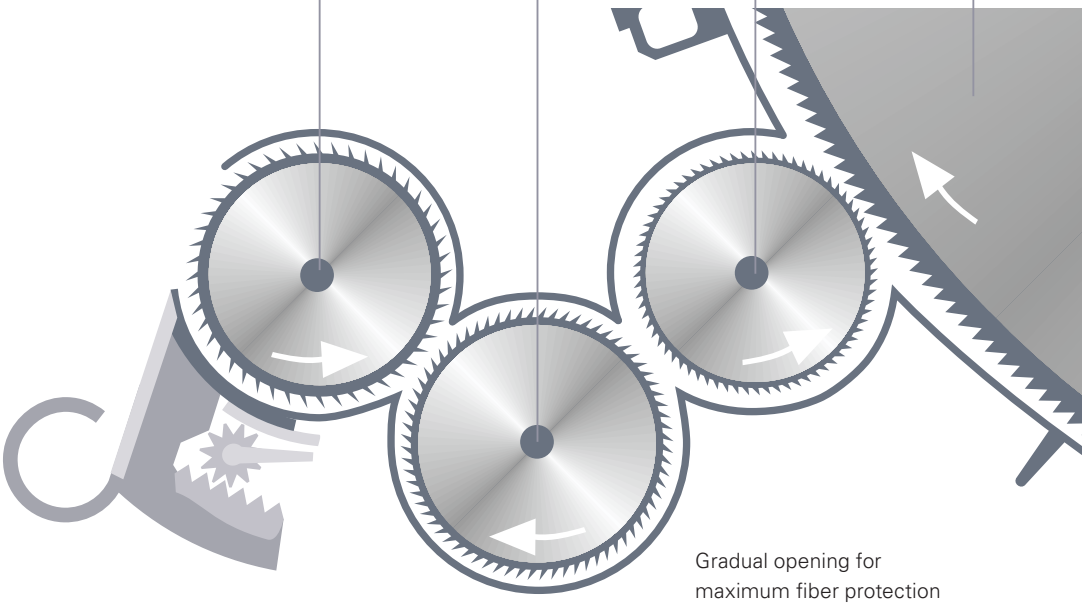
Compared to conventional licker-ins, the WEBFEED system with one large or three smaller opening rolls connected in series ensures gentle tuft opening, resulting in an even and fine web. This fiber pre-opening is of decisive importance to the carding process.

Various arrangements are available:

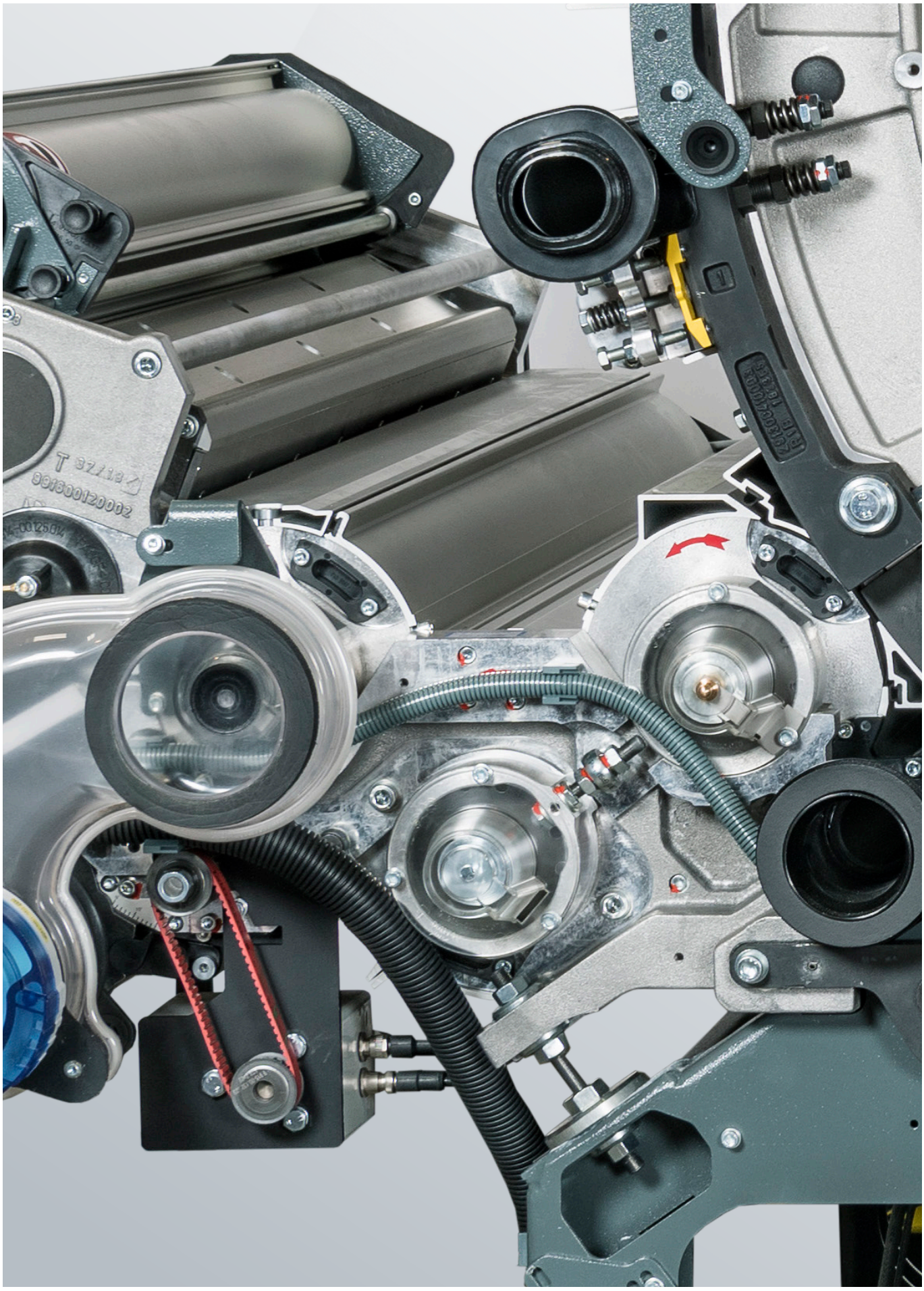
- **3 rolls – first roll: Needling**
  e.g. cotton at high production rates
- **3 rolls – first roll: Metallic wires**
  e.g. cotton / man-made fiber blend yarns
- **1 large roll: Needling**
  e.g. man-made fibers + ELS cotton

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.

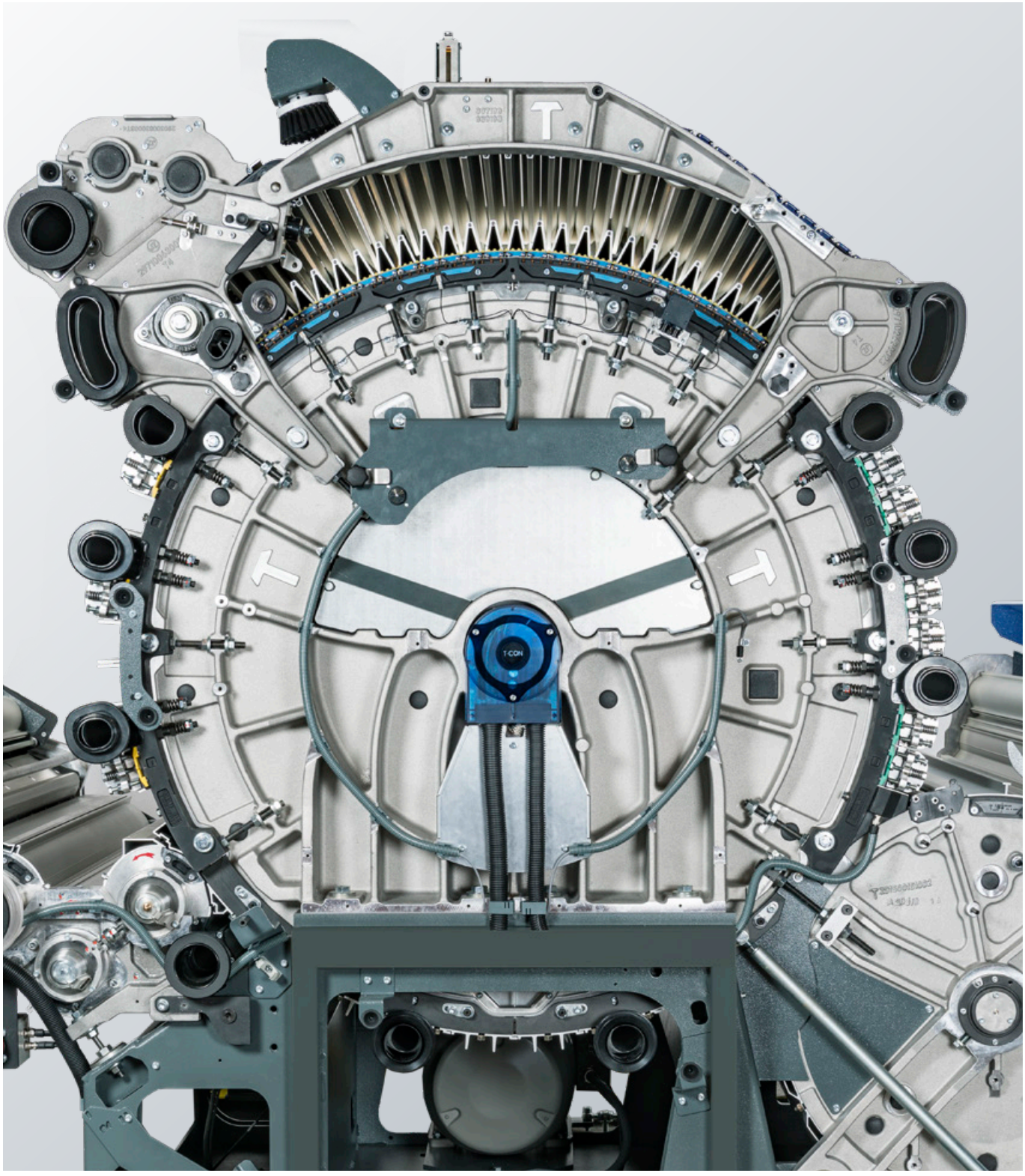
Economically convincing

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.

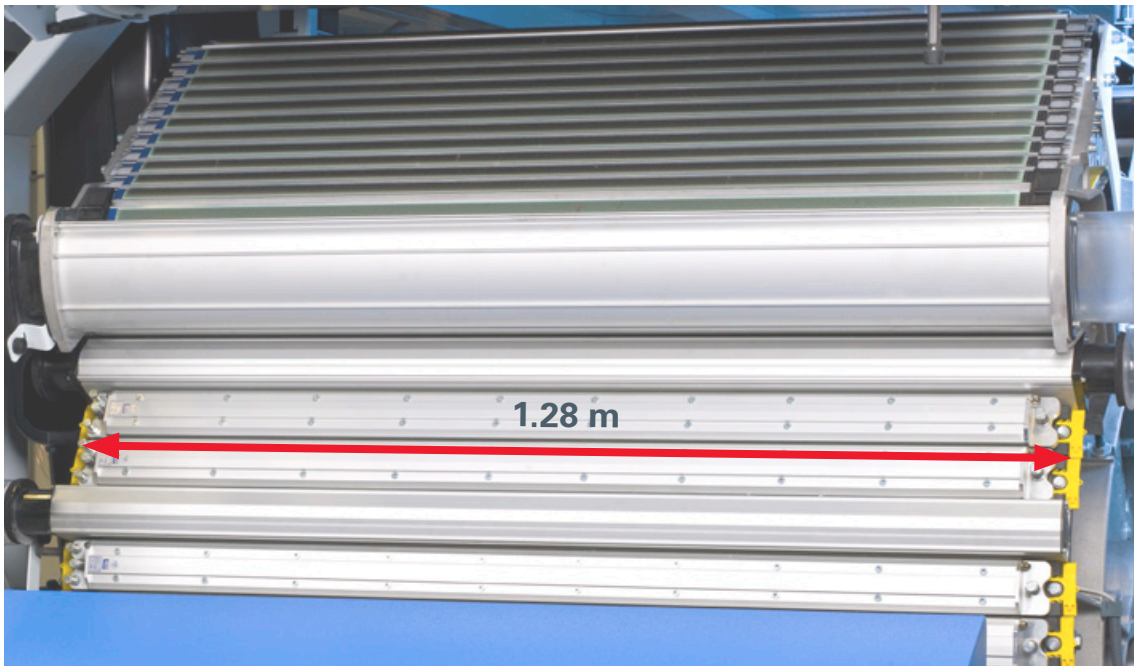
The diagram shows that the best performance to price ratio is reached in the range between 1.25-1.30 m. With a working width of 1.28 m, the TC 19^{i} is precisely in this range.



Low investment costs
Minimal operating costs

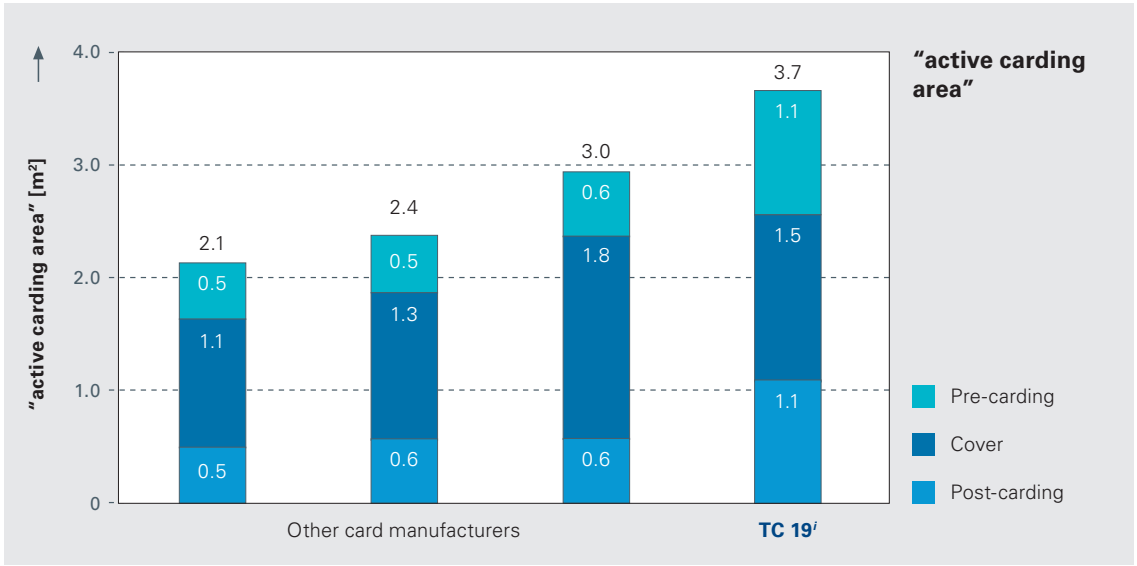
Maximum productivity

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



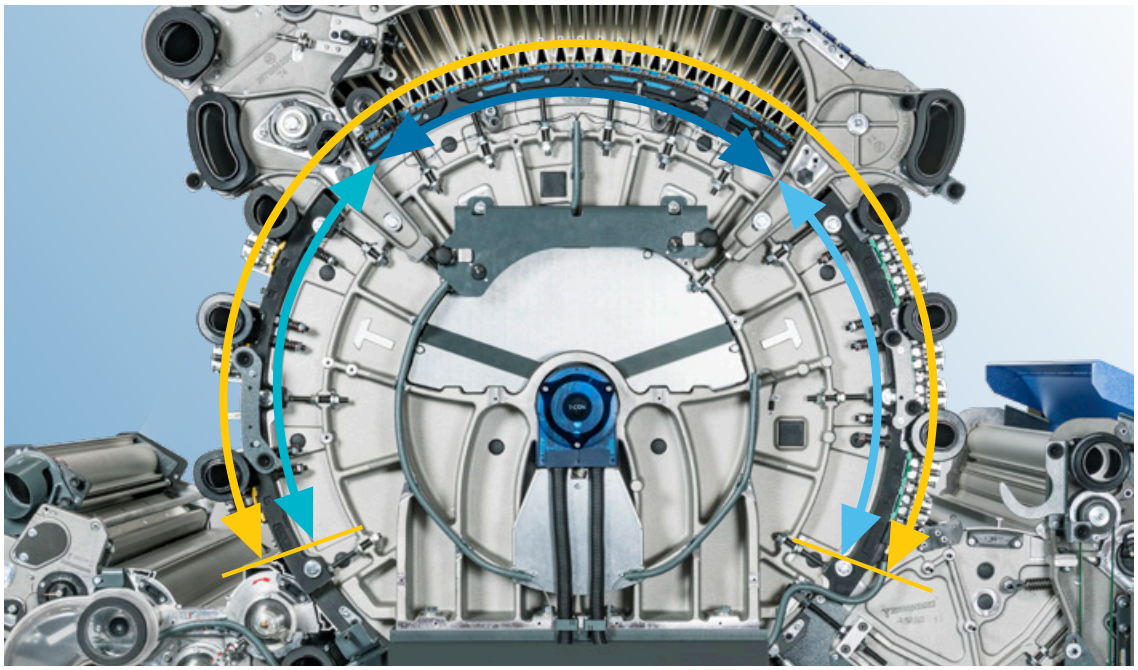
The 1.28 m width of the Truetzschler cards is the result of an intensive development process. Using the current design and production methods, an even larger width would no longer be economical. The masses to be controlled would result in losses in precision and thus in sliver quality. On the other hand,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

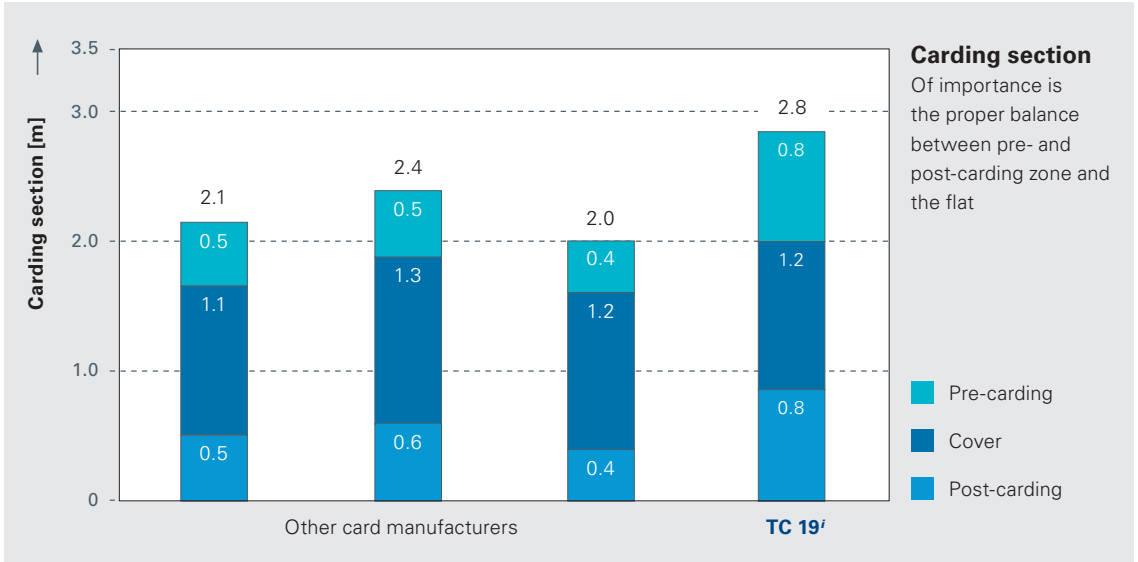
The longest carding section of 2.8 m



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.

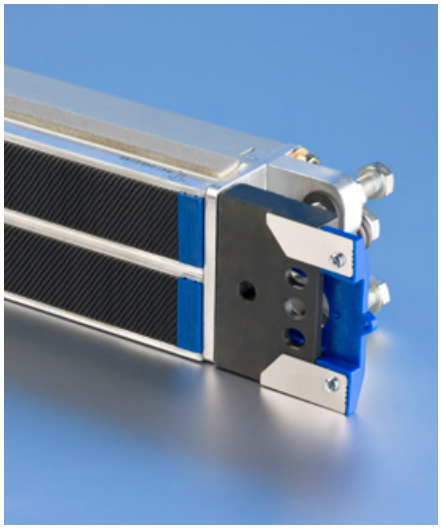


MULTI WEBCLEAN

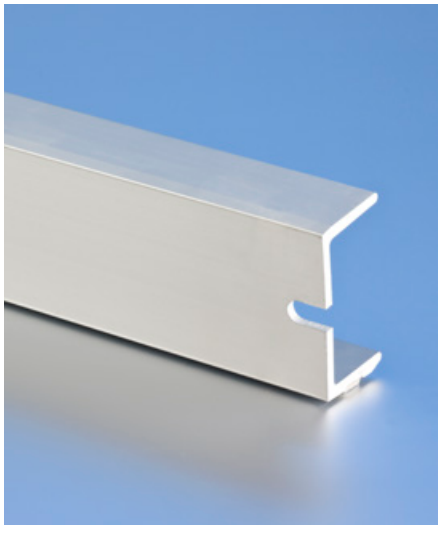
Flexible adjustment of carding conditions

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.

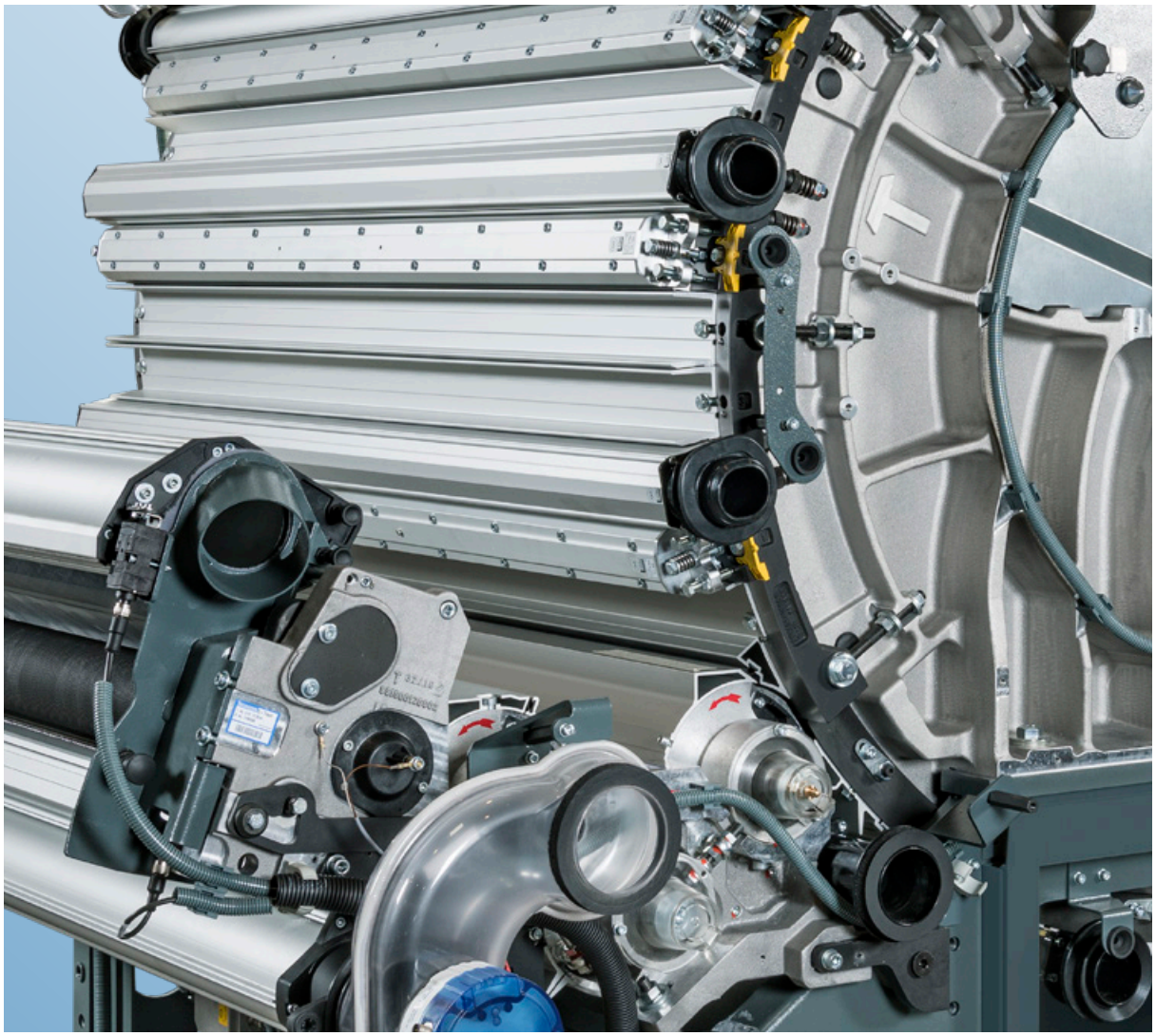


Carding element
The carding element consists of two clothing strips in a support (TWIN TOP), which can be equipped with a number of different clothing types and finenesses, depending on position and fibers.



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

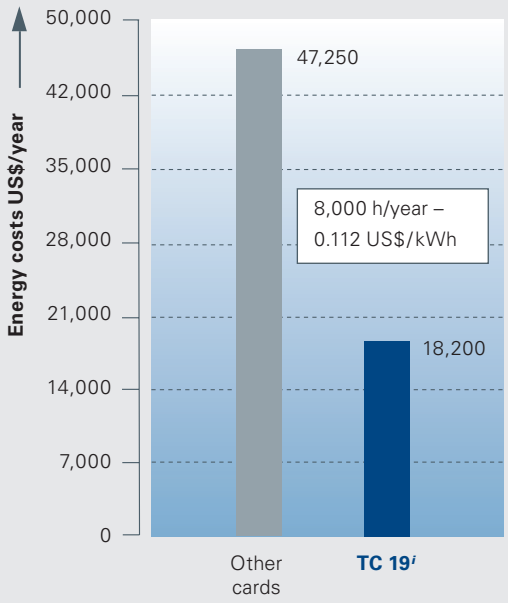
Once the elements are precisely adjusted, they can be immediately put into operation again even after removal, without the need for readjustment. Specially developed fixing elements secure the original setting. In principle, any element can be mounted to each of the 16 positions. The card is delivered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

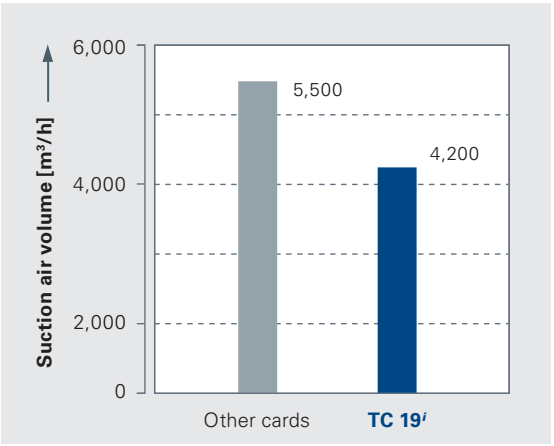


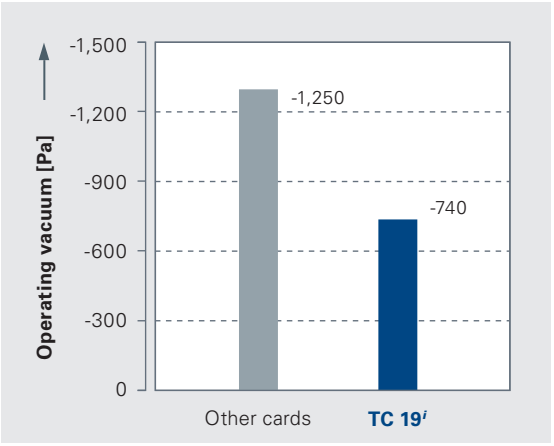
In comparison:

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





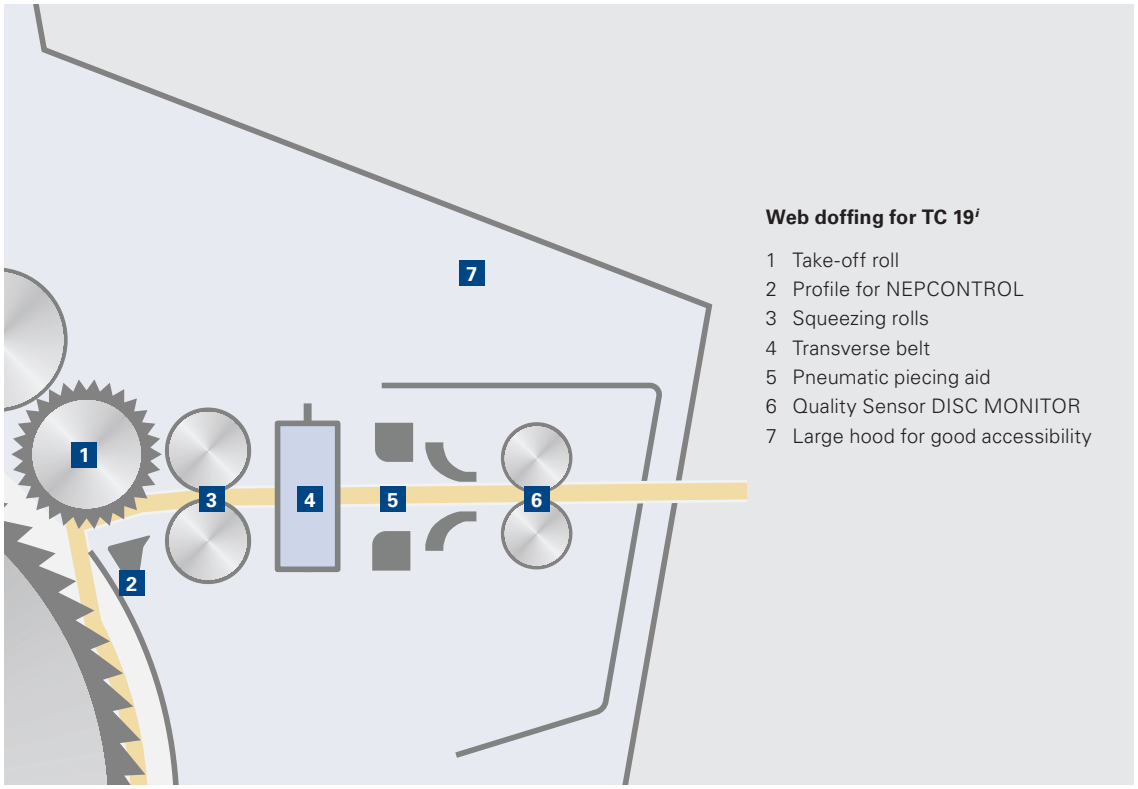
Low exhaust air volumes and operating vacuums reduce the operating costs considerably.

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^{i}

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

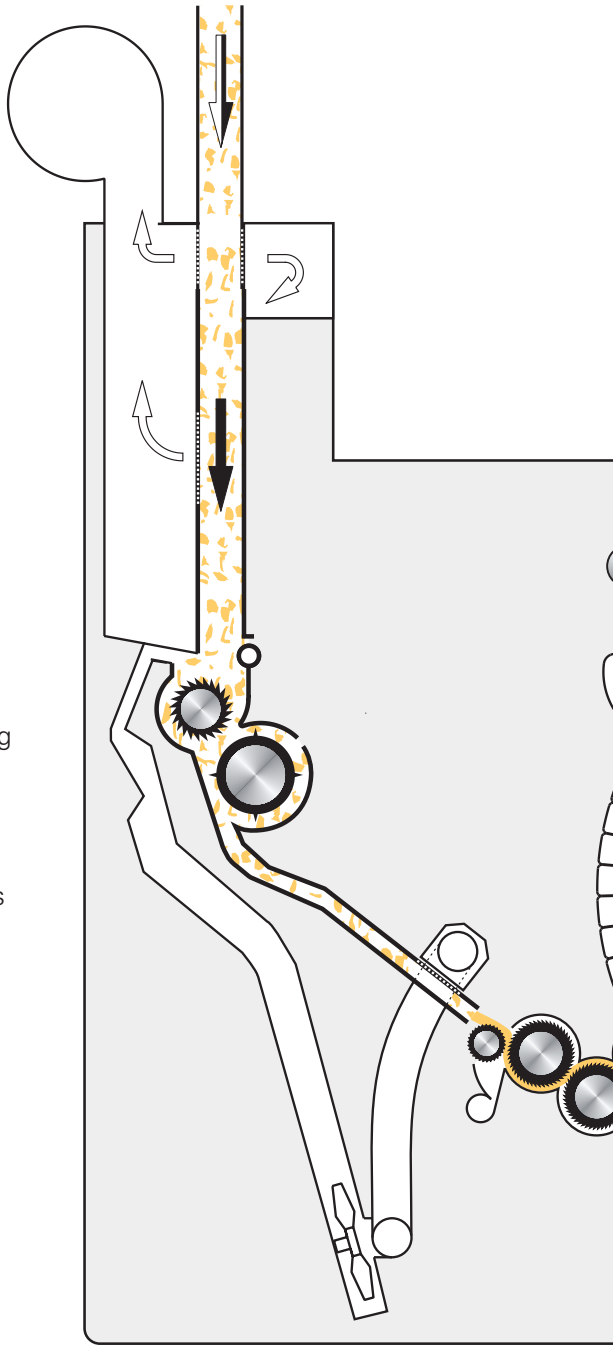
The tried and tested sliver sensor DISC MONITOR, known from the Truetzschler autoleveller draw frames, is integrated into web doffing. It measures every metre of card sliver in a reproducible and precise manner before it is coiled into the can.

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":

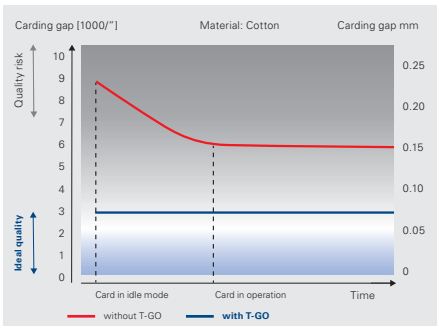


- General control of the card and the Tuft Feeder DIRECTFEED
- Control of the sliver coiling systems such as T-MOVE 2 or the Integrated Draw Frame IDF 2
- Communication with the blowroom, especially with CONTIFEED 2
- Control, monitoring and coordination of levelling systems
- Monitoring of the vacuum 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

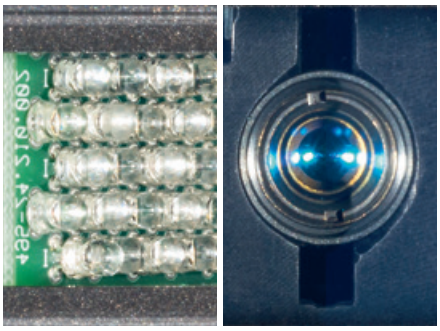
NEW

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.

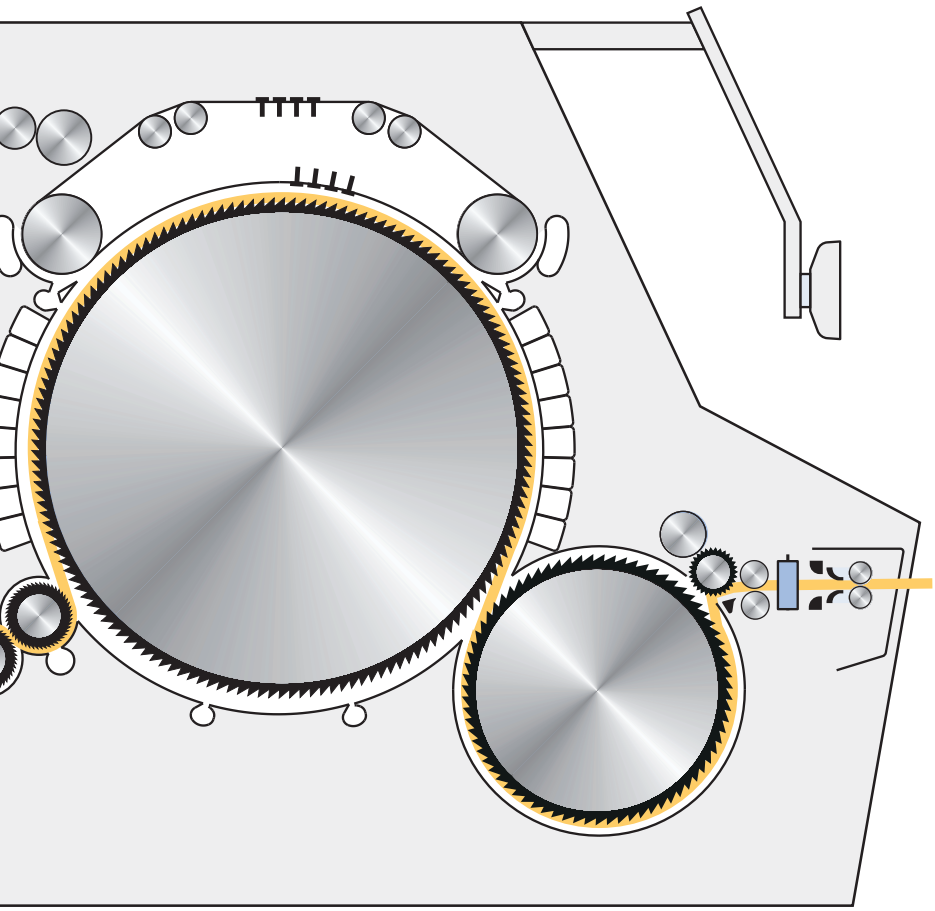


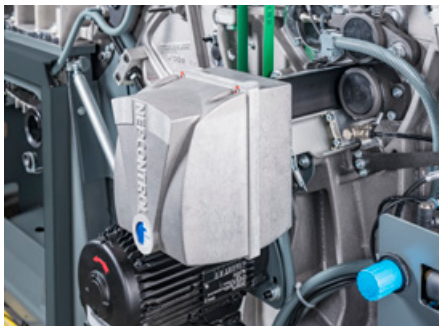
Ideal carding gap setting with the Gap Optimizer T-GO



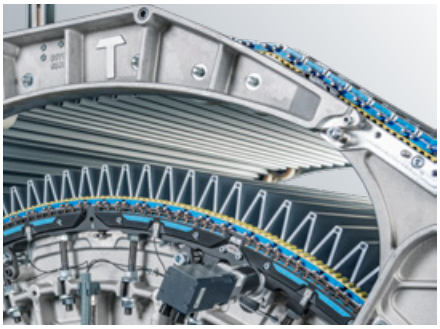
Flash and camera of the Nep Sensor NEPCONTROL LC-NCT

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.

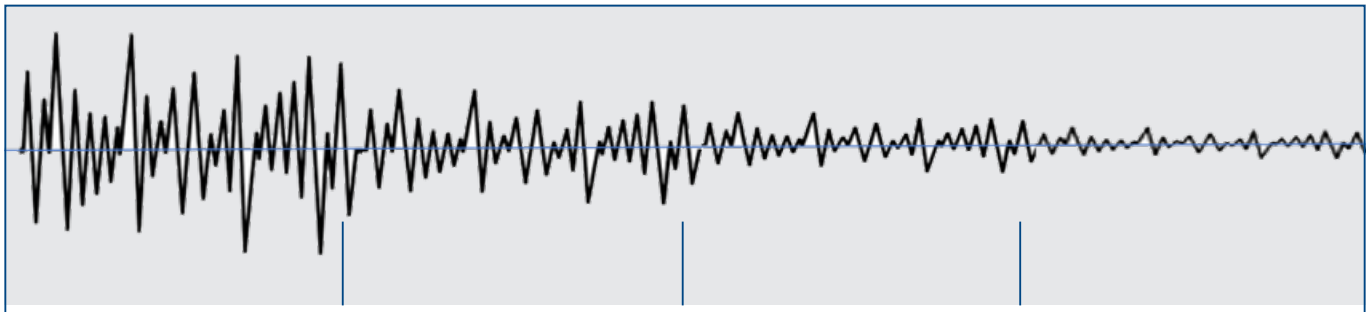
Communication with CONTIFEED

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

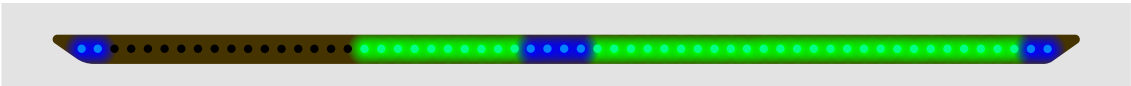
The operator can read the operating status of the machines at a glance from the T-LED remote display over large distances.

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

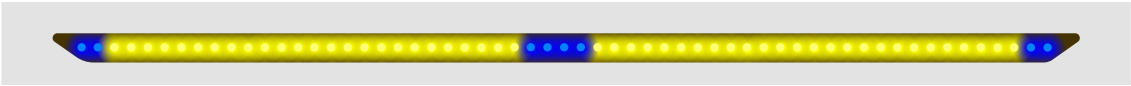
Automatic mode: Green

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.

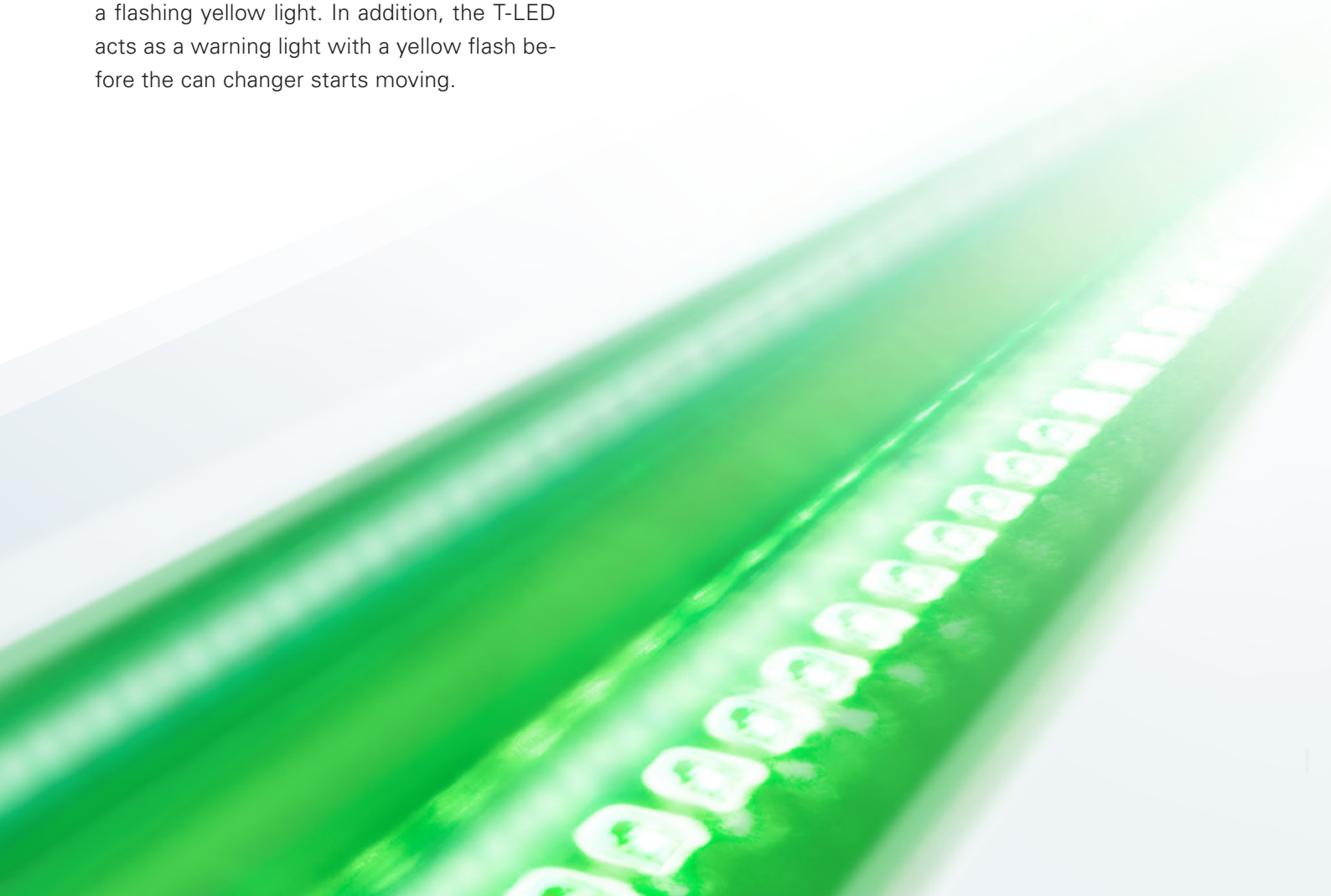
A malfunction is indicated.

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

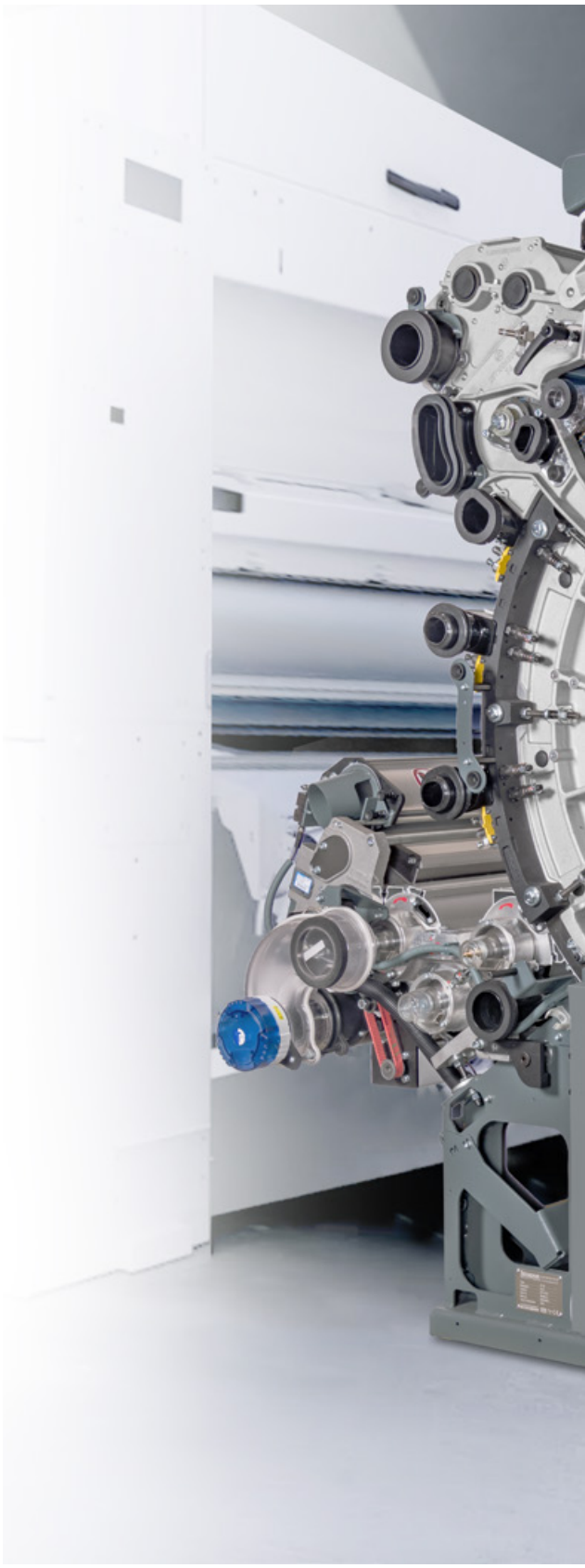
The Card TC 19^{i} also sets standards for maintenance friendliness:

- 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.

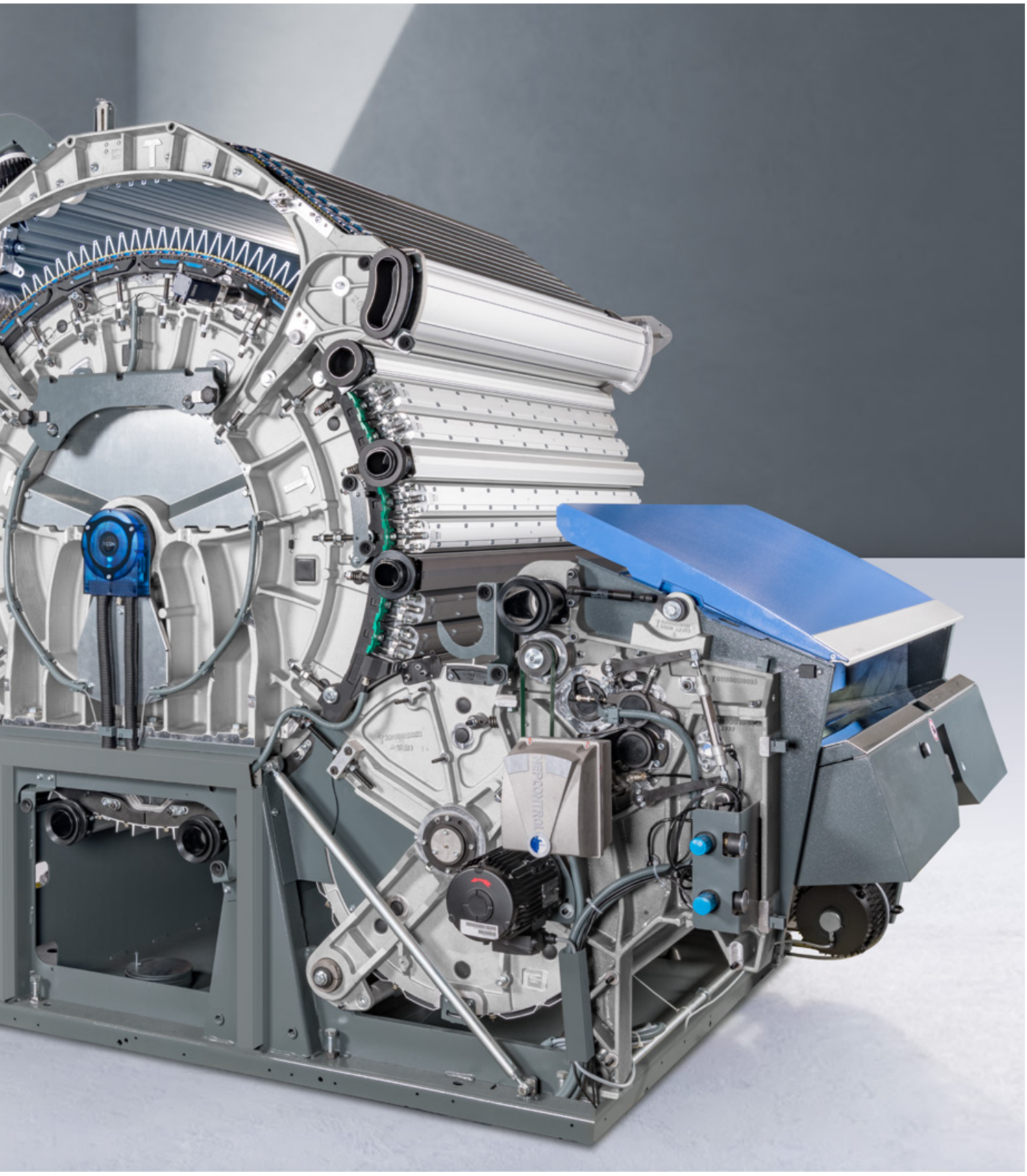
Targeted maintenance management

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

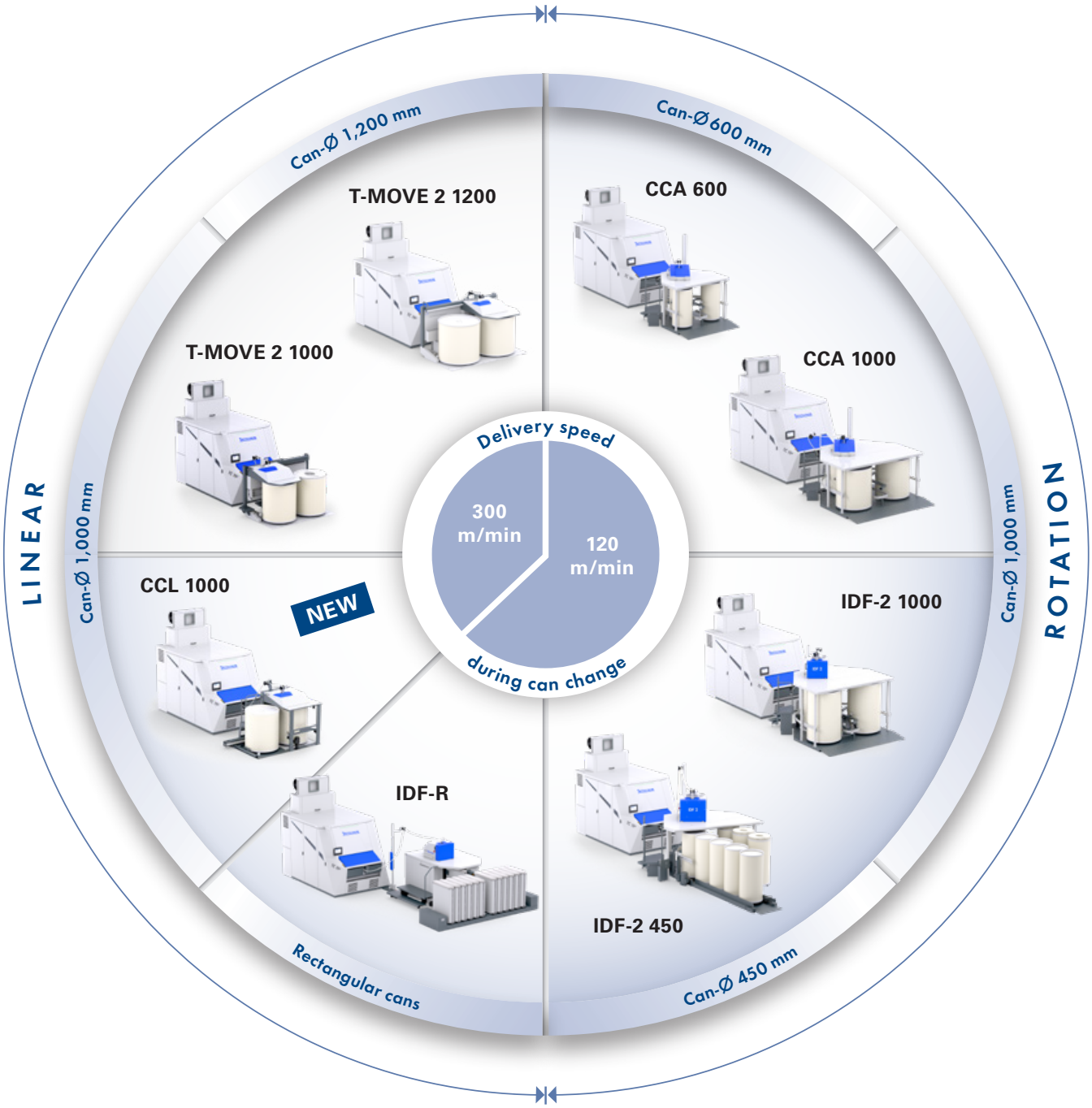
Truetzschler can changer

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.

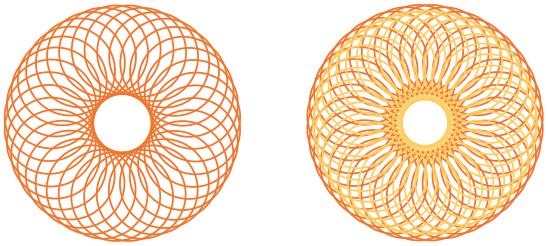
Save space with large cans in the smallest space

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.

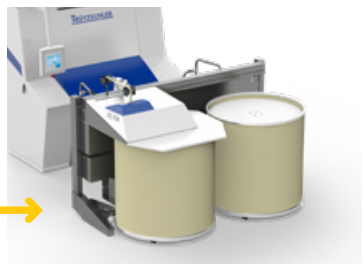
Can Filling Station T-MOVE 2

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.

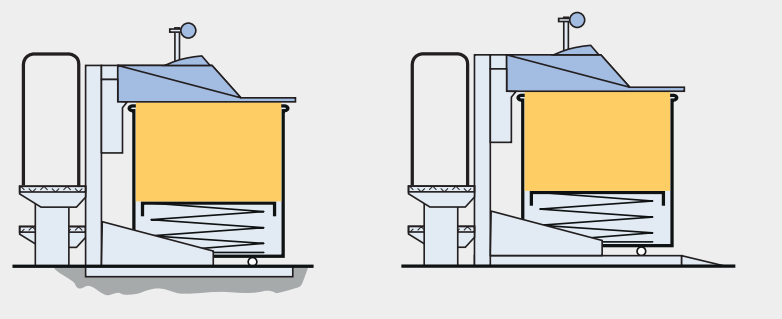
Moving head fills can on left.
Can on right ready to be replaced by empty can.



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

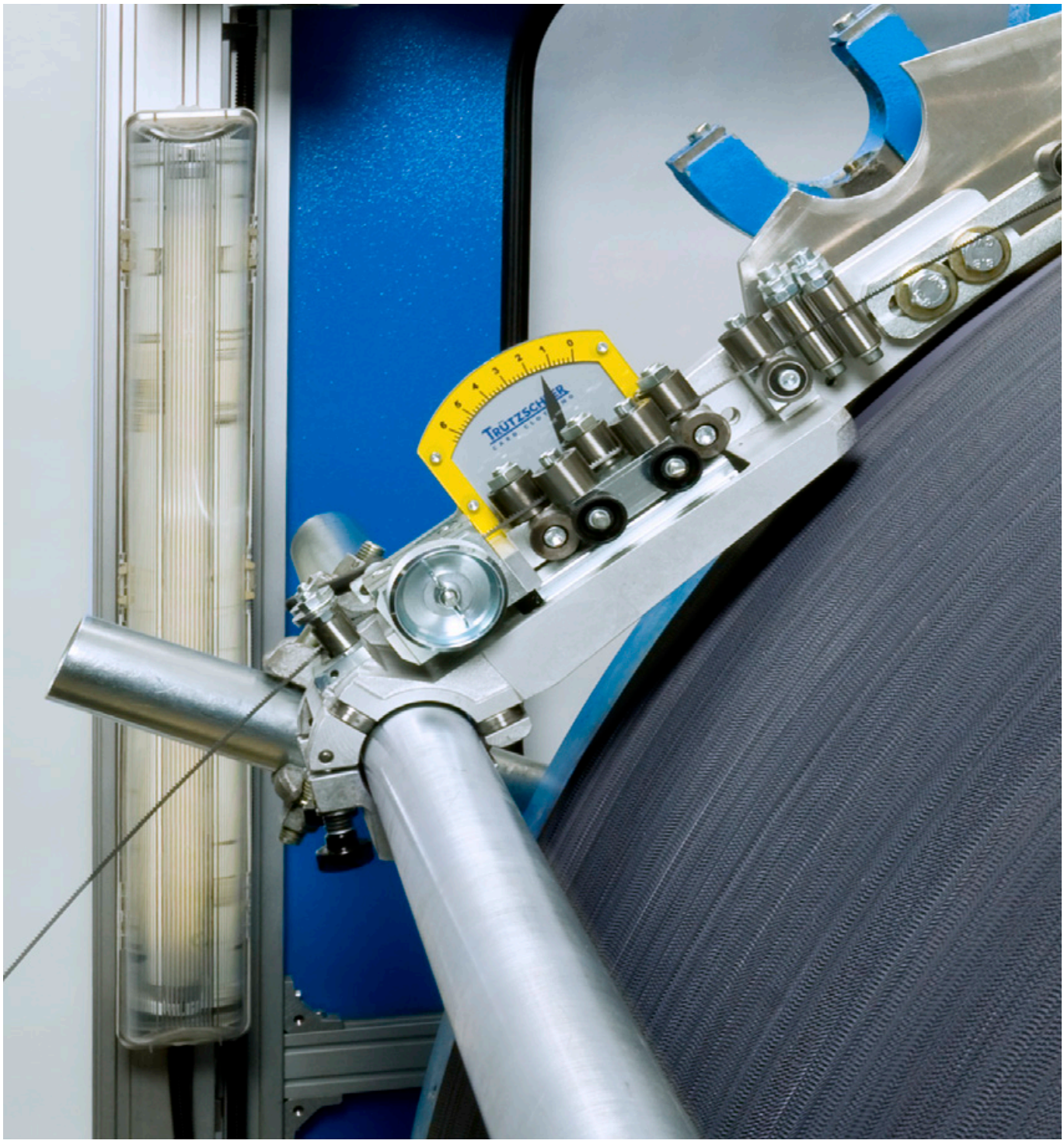
With the comprehensive Truetzschler Wire Mounting Equipment TC-ME, all cards are optimally prepared for clothing and re-clothing:

- 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

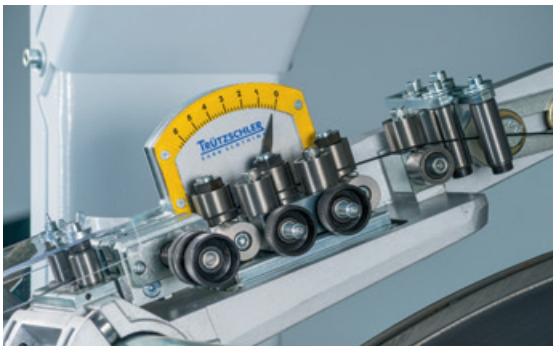
The tool set for applying clothing can be used for all Truetzschler cards. It is easy to install and operate, thus ensuring short downtimes. The corresponding T-Winder allows uniform mounting of any clothing type and thickness. Ceramic guide elements in combination with a traveller guide allow a constant 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.



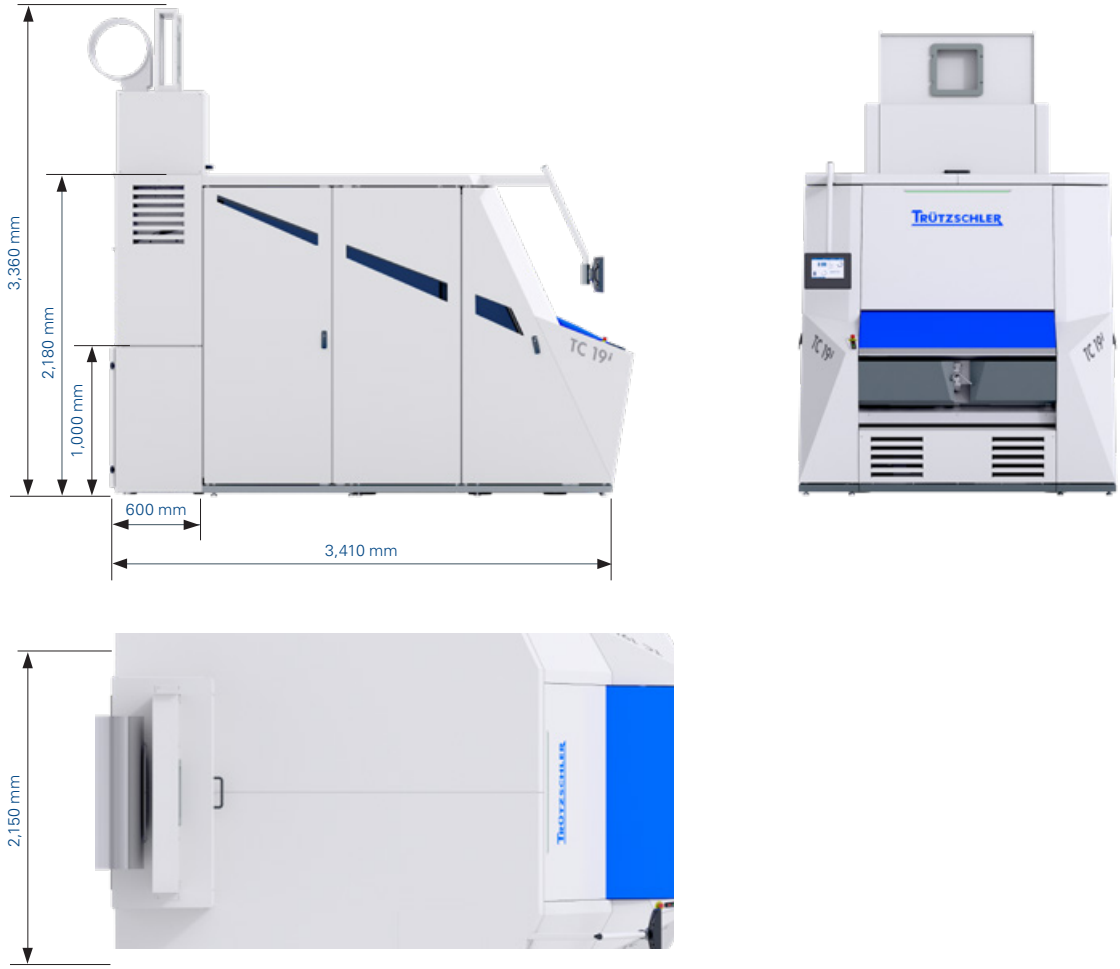
The traversing Grinding Device TC-GD improves carding results for cylinder and doffer.



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

Card TC 19^{i}

Technical data



TC 19^{i}

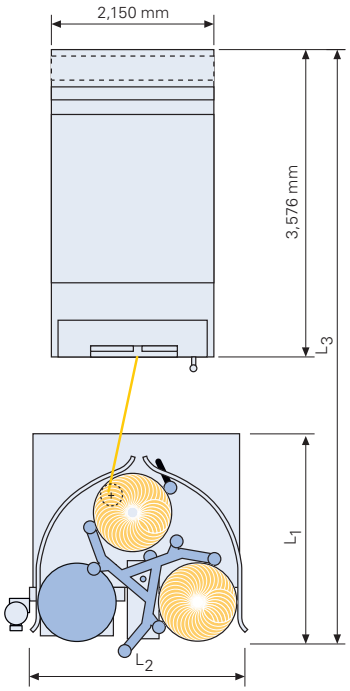
Floor load:	approx. 22,540 N/m²
Max. surface pressure per base plate:	approx. 57 N/m²
Production:	max. 260 kg/h
Suction (continuous):	4,200 m³/h (-740 Pa)
Net weight:	approx. 6,700 kg incl. can changer
Sound pressure level:	67 dB(A) at 100 m/min 73 dB(A) at 250 m/min 78 dB(A) at 500 m/min
Compressed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

T-MOVE 2

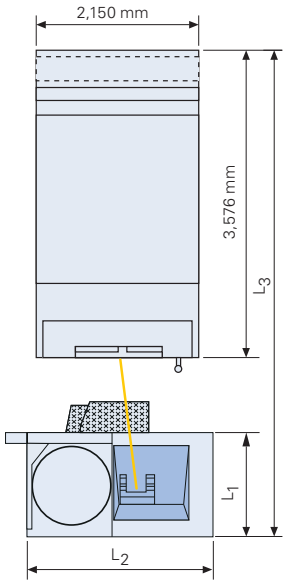
Installed power:	2.5 kW
Continuous power consumption:	1.0 kW
Exhaust air output:	200 m³/h
Negative suction pressure:	-250 Pa

NEW

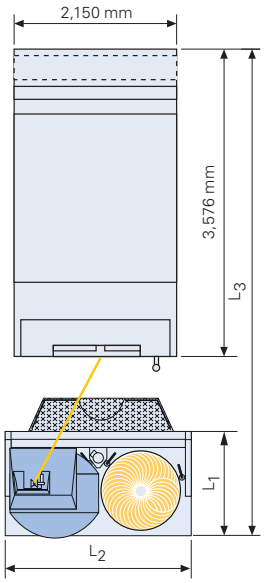
Rotary can changer



Linear can changer



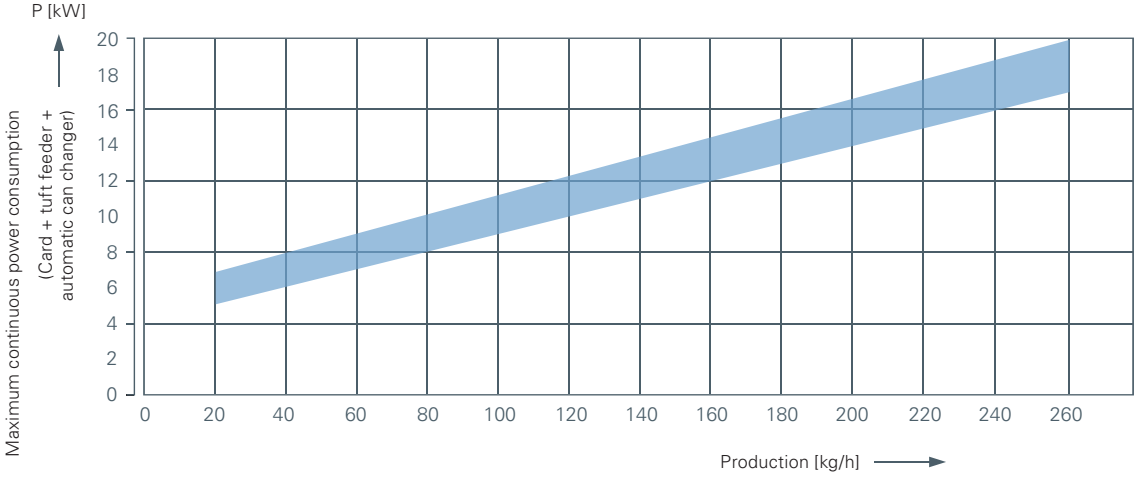
Can filling station



	Ø 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:



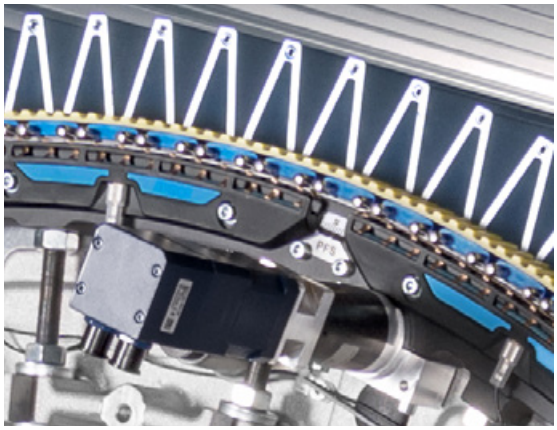
The energy consumption depends on the production output, but also on various settings and the material.

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

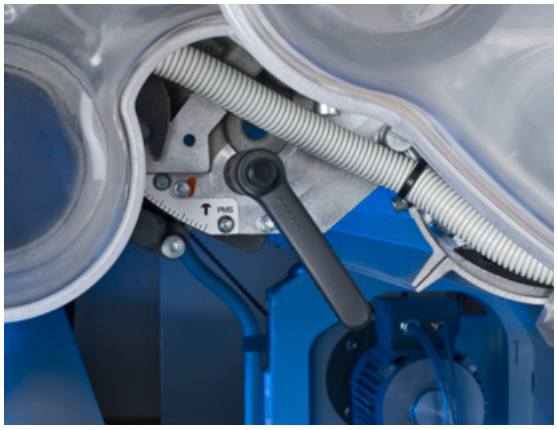


NEW

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.

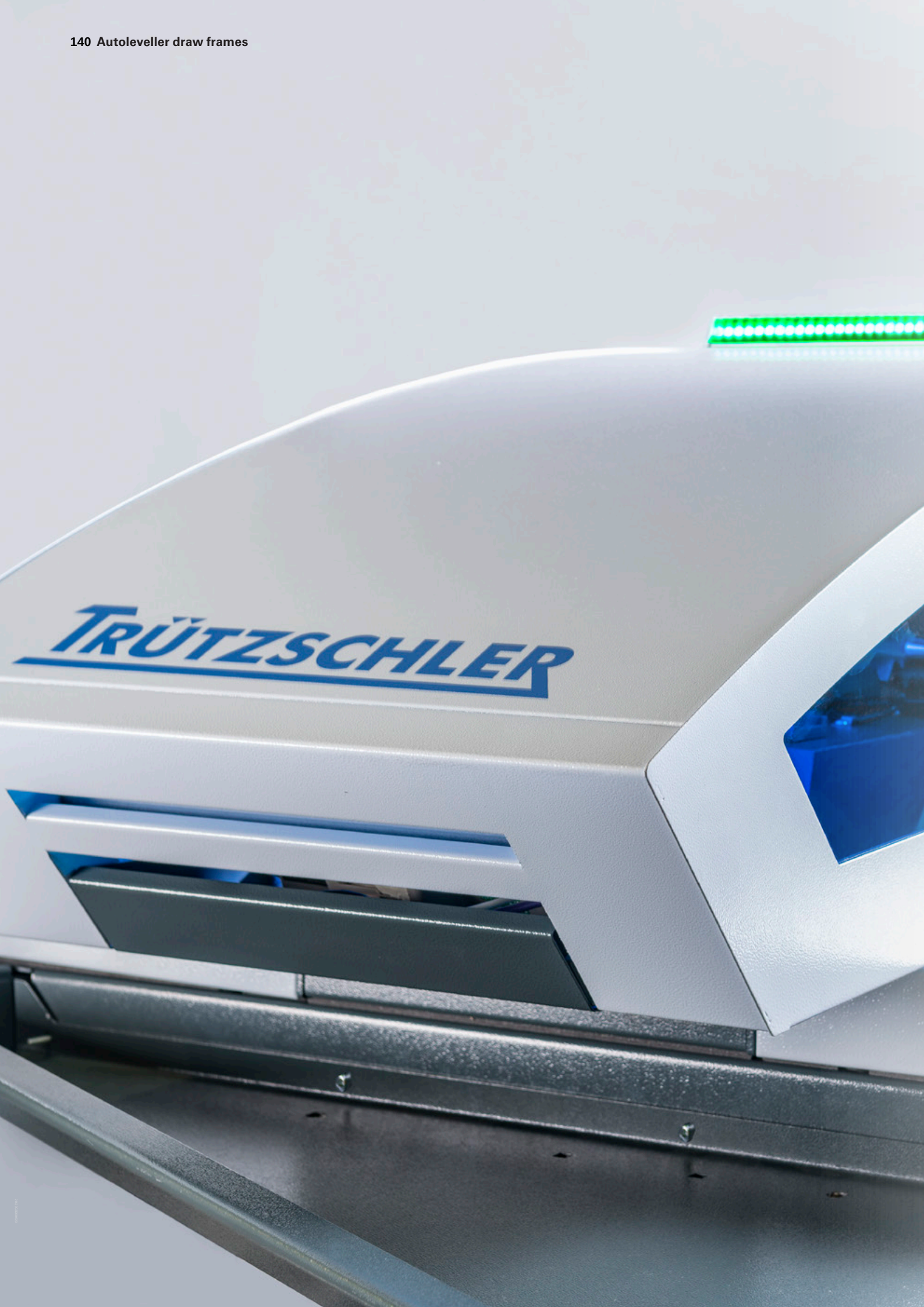


Precision knife adjusting system PMS

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.


TRÜTZSCHLER

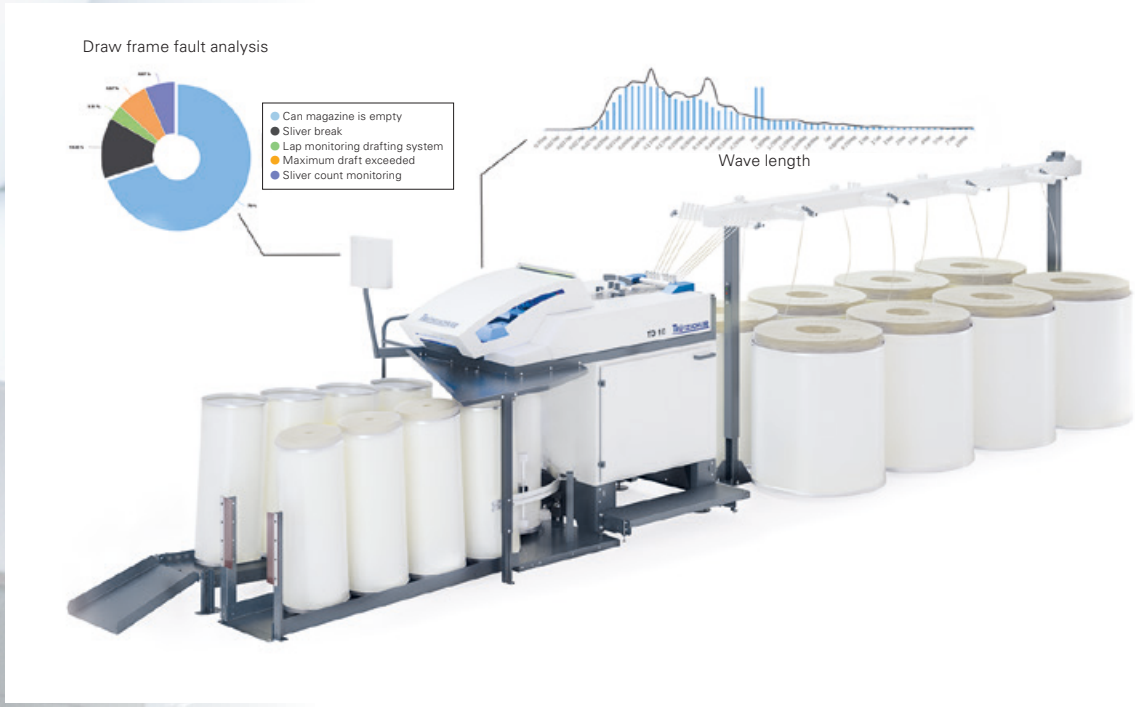
Autoleveller Draw Frame TD 10

a building block in the Smart Factory

Self-optimising features are the key in the world of tomorrow, where high operator fluctuation is already a reality, and with it a loss of important quality know-how.

In combination with the mill monitoring system "My Mill", the quality sensors DISC MONITOR and DISC LEVELLER, which are checking every metre of draw frame sliver, are the building block of a Smart Factory.
Truetzschler engineers took the first steps towards digitalisation and self-adjustment already many years ago.
In 2003, the AUTO DRAFT option was developed – a self-optimisation function for the detection and adjustment of the perfect break draft.

The standard self-optimisation function OPTI SET was already launched on the market back in 2007. This function determines the main drafting point and thus the perfect timing to optimally compensate for defects in the drafting system.



Always in control with Truetzschler's new mill monitoring system "My Mill", the all-in-one platform for spinning.

The quality filter in the spinning mill

In the spinning mill, the draw frame has an important task: preventing errors in the sliver which inevitably lead to yarn defects. Because quality can no longer be improved after the draw frame.

The high-precision levelling of the draw frame sliver in the last draw frame passage is decisive for the quality of the subsequent yarn. For this reason, Truetzschler has further optimised levelling in the new draw frame model TD 10 and thus once again set a benchmark in draw frame technology.

The optimised DISC LEVELLER with new quick release fastener and drive technology SERVO DRAFT are the heart of the autoleveller draw frame.

→

A draw frame concept for all draw frame types

This results in component uniformity and reduced storage effort concerning spare parts:

- All drafting system components
- Wear parts: Top rollers, clearer strips, strippers, pneumatic springs, rolling bearings, belts
- Change wheels
- Web guides and sliver trumpets
- Delivery rolls
- Coiler plate
- Creel sensors
- Suction ducts in drafting system
- Throttle valve drafting system suction

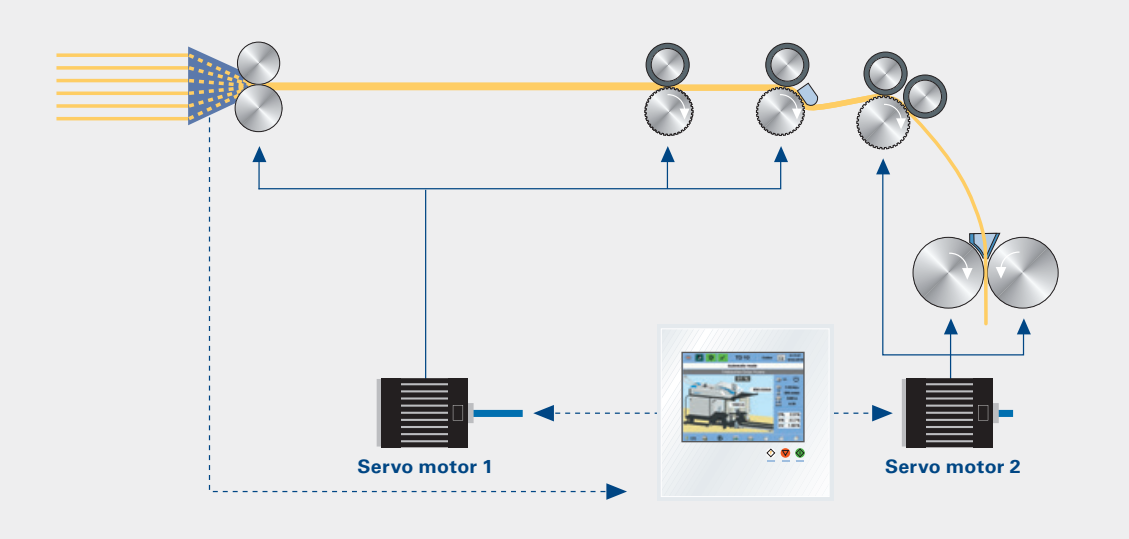
Optimal sliver quality

Thanks to high-precision levelling of the draw frame sliver with the dynamic Truetzschler electronics

SERVO DRAFT

Increased levelling dynamics thanks to the latest digital levelling technology

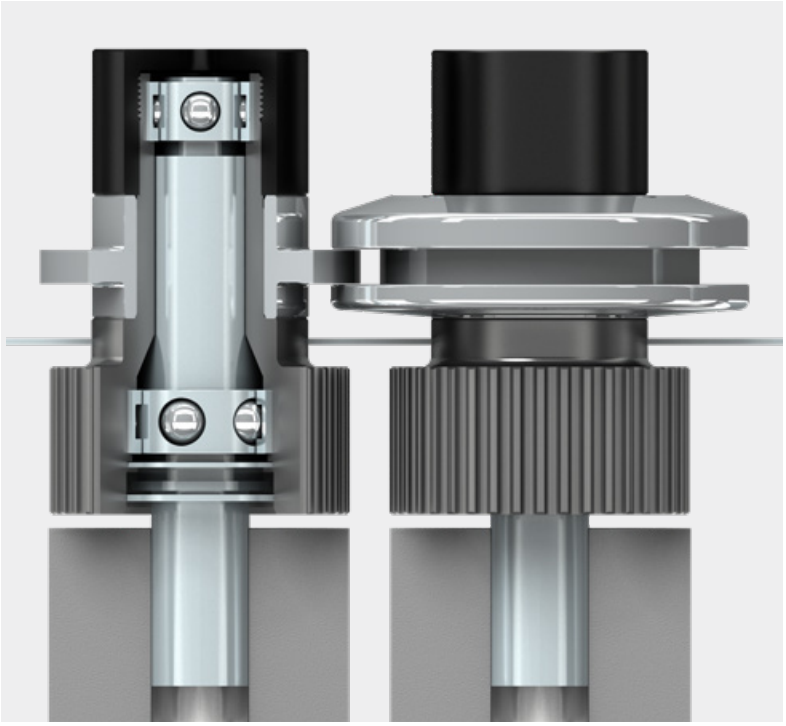
Levelling of TD 10



With the TD 10, an ultramodern autoleveller draw frame featuring the latest digital levelling technology comes to the market.
This leads to a significant increase in levelling dynamics and improvement of sliver quality.

DISC LEVELLER

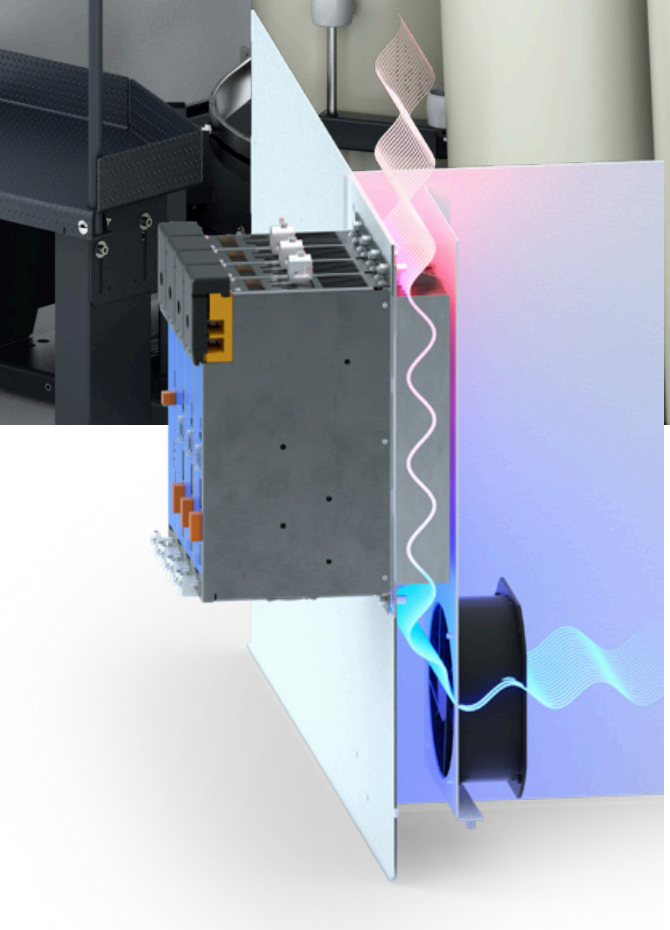
A thick or thin place passing the draw frame undetected can no longer be compensated in the downstream process. The groove and sensing roller unit DISC LEVELLER, already well known from the TD 8, ensures an optimal sliver quality at highest levelling dynamics. In combination with the SERVO DRAFT, it represents the heart of the draw frame. With the TD 10, we rely on the proven design with axles anchored in the frame, which were specifically designed for this high-precision measuring system.
This ensures minimum deflection and thus maximum accuracy of measurement – for best sliver quality!



The optimised DISC LEVELLER with new quick-release system – the heart of the draw frame

Extended service life

Reducing the operating temperature of electronic power components by 10 °C doubles the service life. Particularly spinning mills are often subject to extreme temperatures. Therefore, the electronic components of the TD 10 are equipped with cooling fins that are in direct contact with the cooling airflow. Thus we guarantee optimally levelled sliver with highest efficiency even in extreme situations.

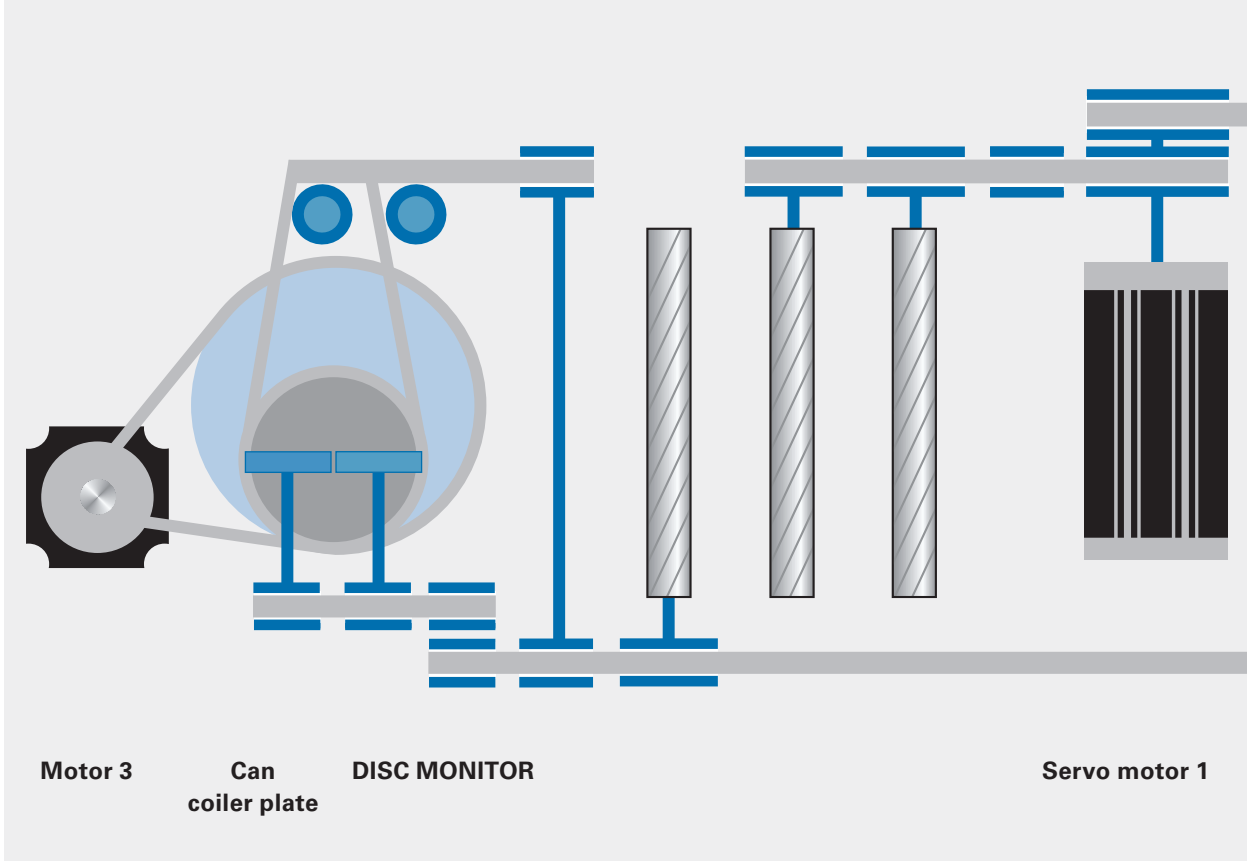


Due to the new cooling technology, an additional ventilation of the fan is no longer necessary.

Latest drive technology

Highly dynamic levelling and the fewest drive belts

The graph shows the optimised belt run of the TD 10 with the fewest drive belts. The drafting system cylinders are directly powered by digital servo drives.



The drafting system cylinders are directly powered by digital servo drives. Customised solutions for use in the field of spinning are only possible by applying Truetzschler in-house control electronics.

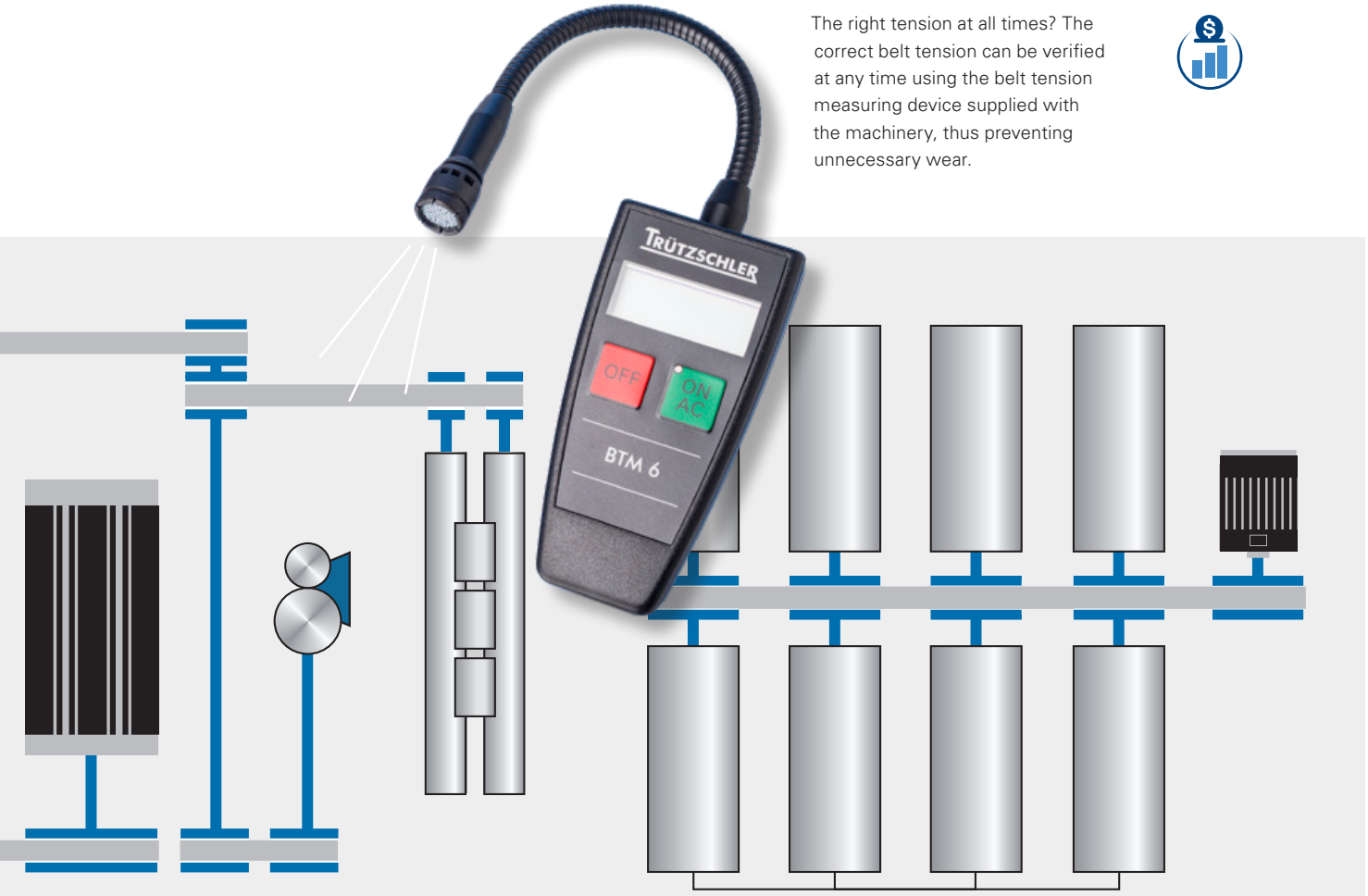
Reliable individual drives for creel and can rotation

With the TD 10, Truetzschler also relies on the proven separation of the drives for can rotation on the one hand and the creel on the other.

This unique feature supports the high levelling dynamics since there is no need for the leveller motor to further accelerate the slower creel.

The separate drive for the can rotation allows uncomplicated optimisation of sliver coiling for the respective application.

The right tension at all times? The correct belt tension can be verified at any time using the belt tension measuring device supplied with the machinery, thus preventing unnecessary wear.



In addition, the optional AUTO DRAFT drive for the automatic self-optimisation of the break draft allows simple break draft adjustment via the control, without change wheel replacement.

Revised drive concept

Thanks to the newly modified drive concept, the TD 10 has the smallest number of belts in the market. Maintenance points have been reduced to an absolute minimum. Only the bottom roller bearings in the drafting system require relubrication.

With the integrated Truetzschler energy measuring device, the machine provides information about the current power consumption as well as energy consumption at all times.

AUTO DRAFT

Perfection that optimises itself

Self adjustment at the touch of a button

The degree of the break draft significantly influences

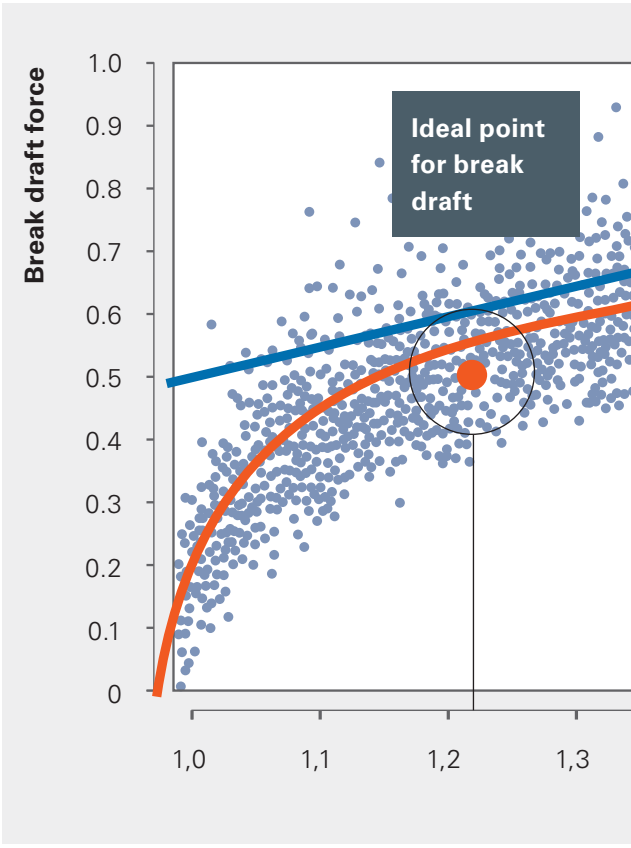
- The evenness of the yarn
- The strength of the yarn
- The number of imperfections
- The running properties of the spinning machine

At the touch of a button, the draft force is measured along the entire draft zone. As soon as the operator acknowledges the determined break draft on the screen, the optimisation is finished.

Infinitely variable setting of the break draft

Due to the separate drive of the middle roll, the break draft can be adjusted conveniently and infinitely variable on the display. Replacing change gears is no longer necessary.

Start of the automatic break draft determination



Measurement of the break draft force over the entire draft zone

Suitable for all materials

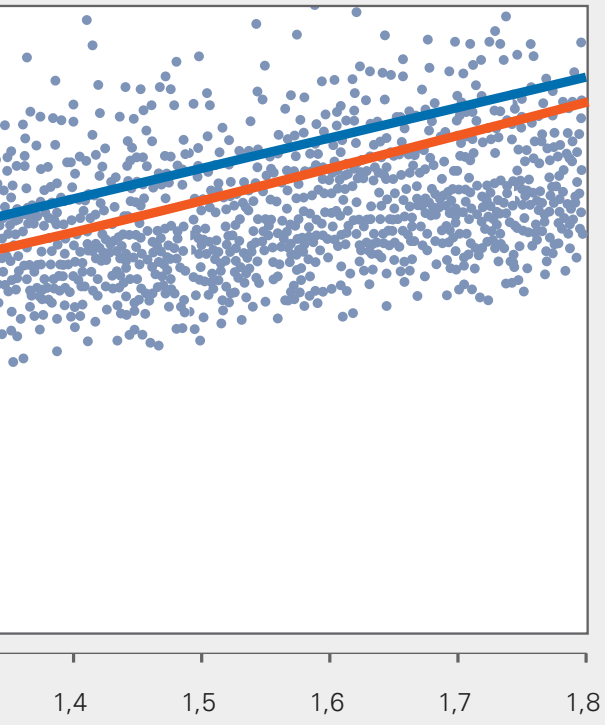
With the exception of combed material, AUTO DRAFT is basically suitable for all materials since it takes all major factors into account:

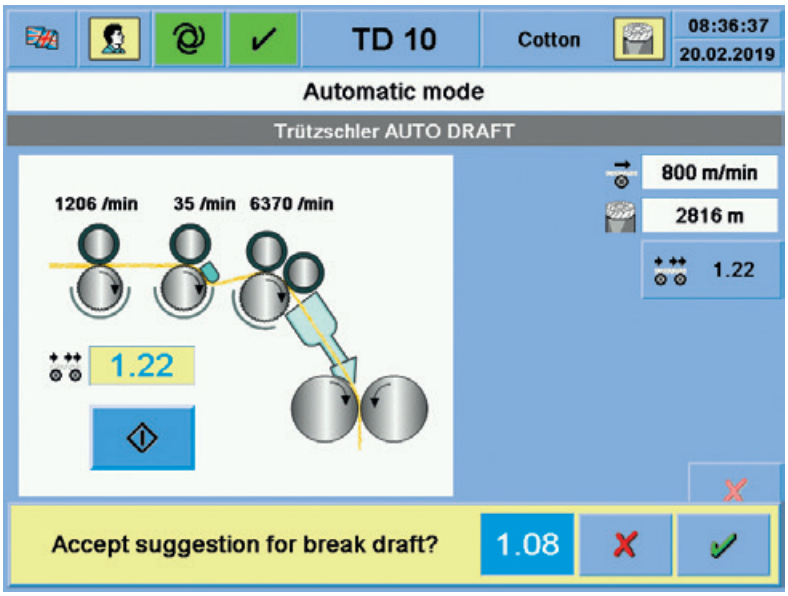
- Fed fiber mass
- Fiber characteristics (e.g. crimping)
- Fiber-fiber friction
- Fiber-metal friction
- Machine settings
- Ambient atmosphere, etc.

The optimisation potential of AUTO DRAFT is particularly high when drafting man-made fibers.

Trouble free lot change

When a spinning mill produces only one material it is sufficient to equip only one individual draw frame as "pilot machine" with AUTO DRAFT. This draw frame is used to determine the optimum break draft and to subsequently transfer it to the other machines. In highly flexible installations with different materials that are subject to frequent change it is practical to equip all draw frames with AUTO DRAFT.





Result of the automatic break draft determination

Duration of optimisation:
60 sec
Material supply:
600 m sliver length

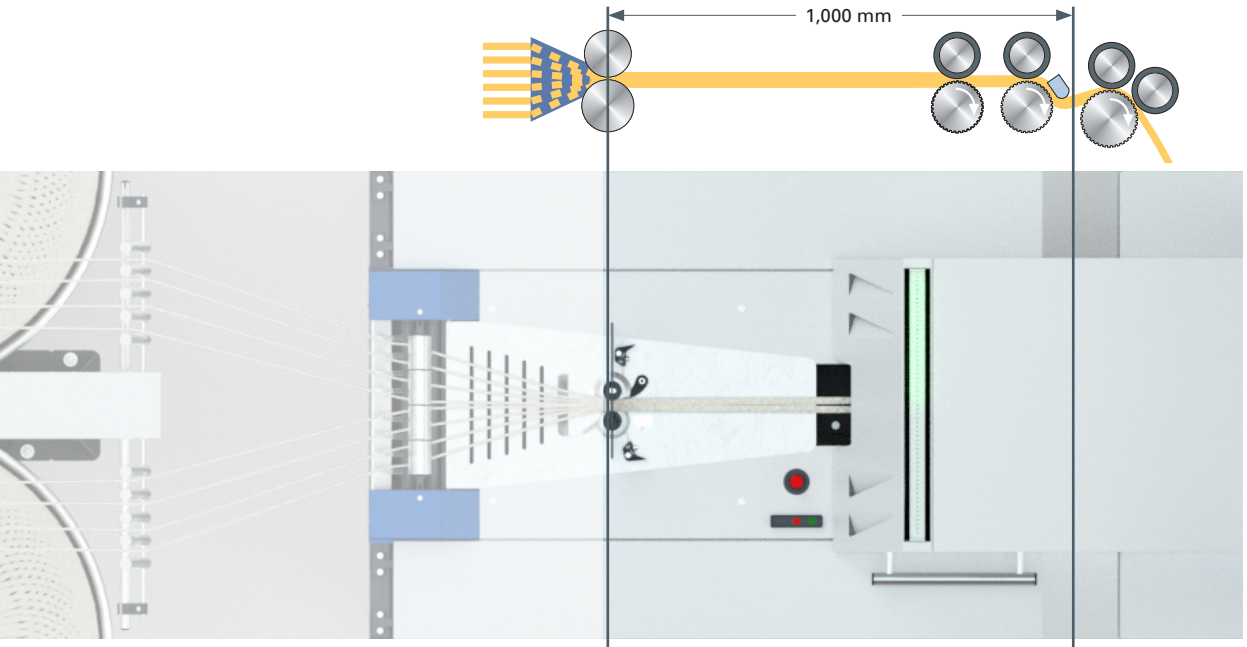
OPTI SET

Self-optimising to the perfect main drafting point

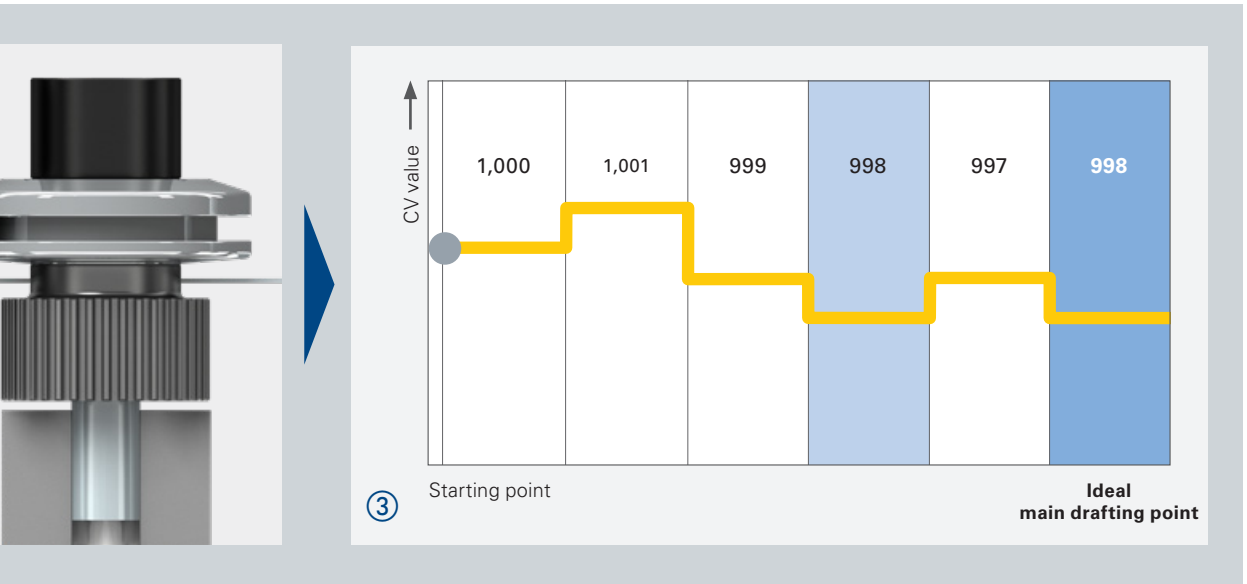
The time offset between measurement of the sliver thickness and levelling action determines the main drafting point. This has a decisive influence on the quality of the regulated sliver. Until now, this required lengthy series of tests with the slivers in the laboratory.
The Truetzschler Autoleveller Draw Frame TD 10 determines the optimum value using the self-optimisation function OPTI SET.

Principle of the OPTI SET self-optimising function

1. The draw frame starts after a standard value has been entered by the operator. It successively checks slightly deviating values for the main drafting point. Parallel to this process, the CV values of the fed slivers and of the delivered draw frame sliver are measured and compared.



The distance between DISC LEVELLER and main draft field specifies the time offset for the main drafting point.



2. The DISC LEVELLER scans the fed slivers and initiates a corresponding time-delayed levelling action as soon as the material has reached the main draft field.

The following parameters are taken into account:

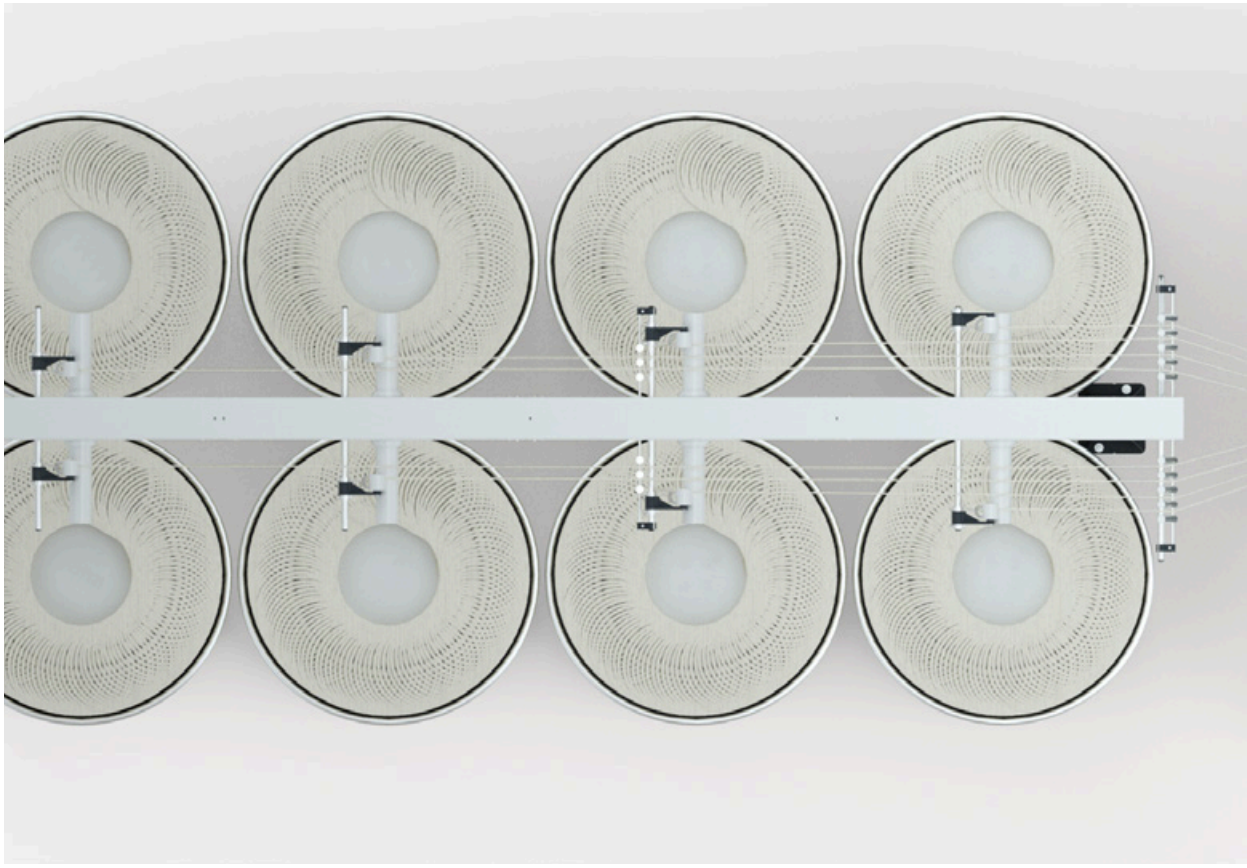
- Machine settings
- Material characteristics
- Ambient atmosphere

3. On this basis, OPTI SET suggests the optimum main drafting point to the operator, who only has to approve the recommendation. Common sliver tests and laboratory tests are no longer necessary.

The new compactness

Because length matters

The new TD 10 is 14.2 % shorter than the predecessor model TD 8.



The length of the draw frames is decisive for the length of the building and thus also for the investment and operating costs. This is why the TD 10 is optimised for compactness: The new design made it possible to shorten the machine by 335 mm.

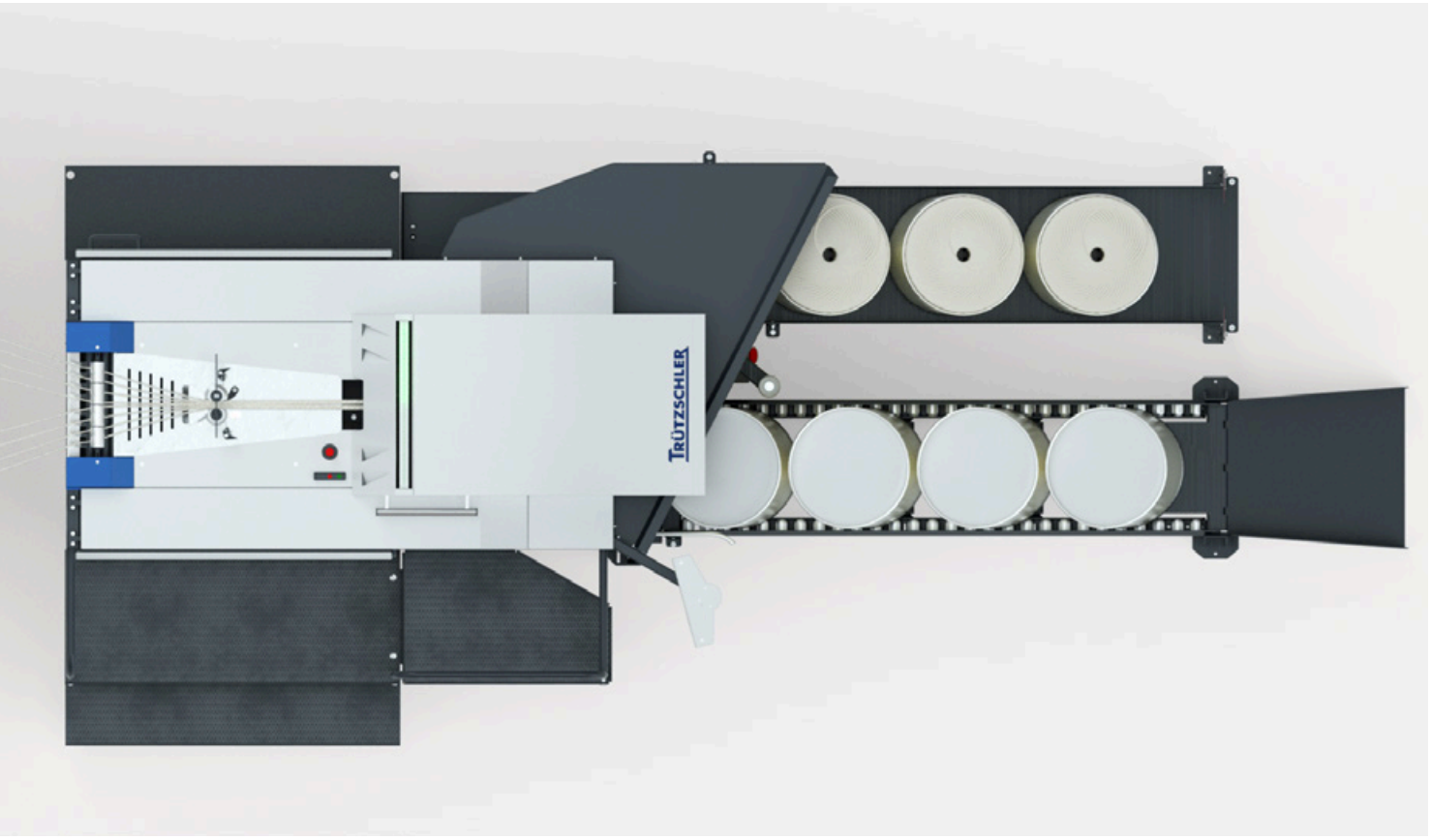
Enormous investment savings

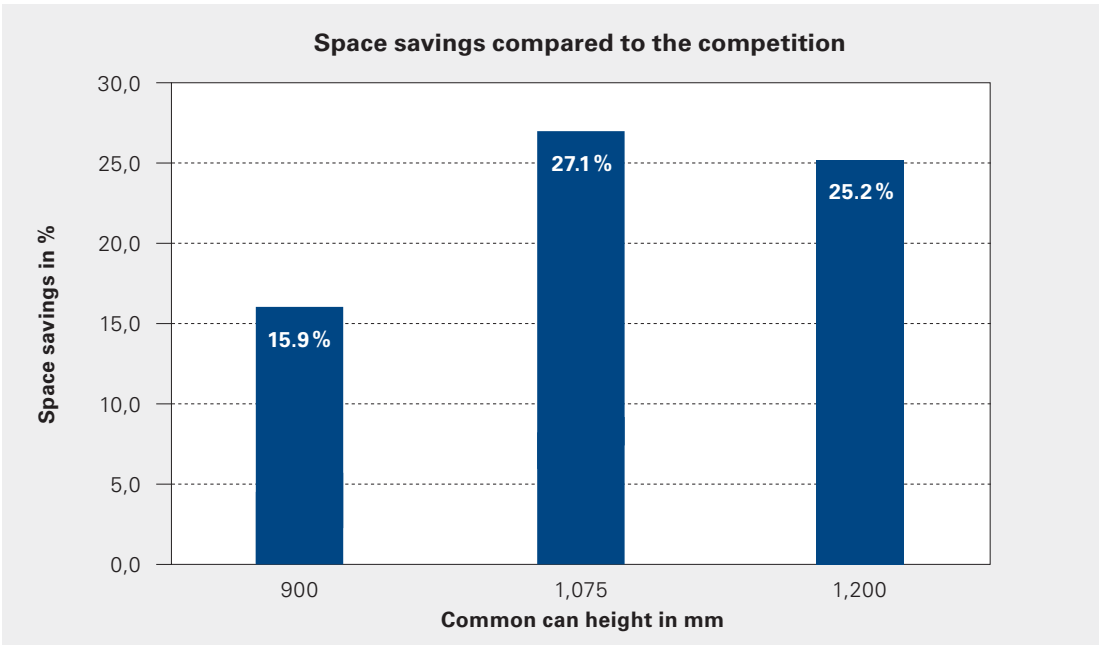
The can heights and thus the number of treads required have a decisive influence on the installation area of draw frames.

Compared to the competition, the space saved by the clever design of the TD 10, averaged over all can heights, is more than 20 %. This means that a spinning mill with a draw frame production of 1,000 kg/h can achieve savings in building investment of up to $ 14,500.

Space savings of more than 20 %

compared to the competition, averaged over all can heights.





The diagram shows the space savings compared to the competition.

Autoleveller Draw Frame “COMPACT” TD 10C

The Truetzschler double head concept stands for separate drives and maximum efficiency. For autoleveller draw frames there is therefore the COMPACT installation of the TD 10 with the advantages of a double head draw frame regarding space requirements and independence from individual machines in terms of production output.

The TD 10C is characterised by minimum centre distance. Any number of machines can be combined with full utilisation of the efficiency of the individual machines.

COMPACT yet fully flexible

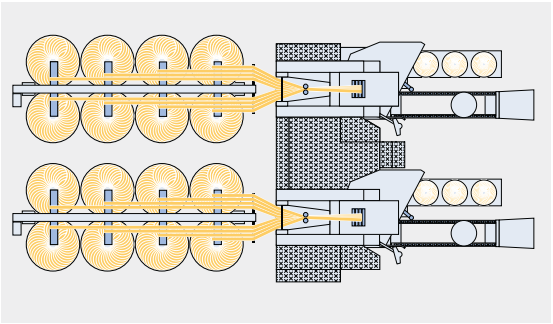
The COMPACT concept is available for all requirements of an autoleveller draw frame:

- Creel versions
  SMART CREEL or feed creel
- Creel installations
  in one or two rows
- Can formats
  from 600 mm to JUMBO CAN
- Can changer
  CAN TRACK or SERVO TRACK

And the best: It is also possible to install more than two COMPACT draw frames.

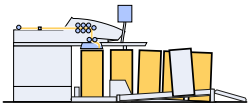
All advantages also available in combing

The COMPACT installation concept is of course also available for the special Draw Frame TD 10-600 behind the comber.



Operation of the machine is facilitated by a common operator platform.

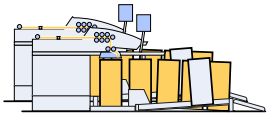
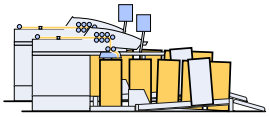
Technical data

			TD 10
			
Sliver coiling system	Maximum delivery speed	m/min	1,000
	Can diameter	mm	400 – 600
	Can height	mm	900 – 1,500
	Cans without ball castors		•
	Cans with ball castors		•
Energy	Air volume of suction	m³/h	840
	Negative pressure of suction	-Pa	430
	Installed draw frame power	kW	9.8
	Installed can changer power	kW	0.4
	Installed filter power	kW	0.4
	Installed power SMART CREEL	kW	0.6
	Installed power SERVO TRACK	kW	0.25
	Installed power AUTO DRAFT	kW	1.6
	Continuous power consumption electr.		
	Compressed air requirement	Nl/h	240
General	Material: Fibers up to 60 mm		•
	Material feed	ktex	12 – 50
	Draft	fold	4 – 11
	Noise level	dB(A)	84

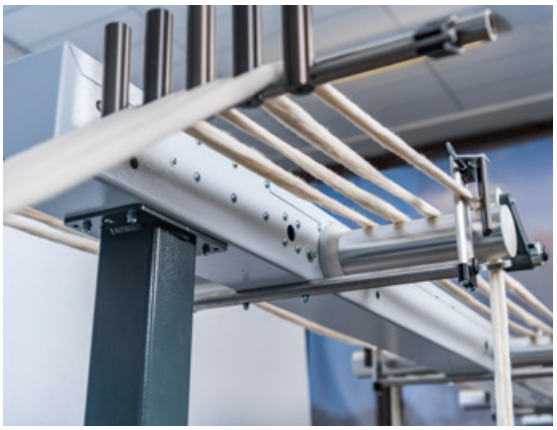
● = Series o = Option * Information per draw frame head

Colour touchscreen

DISC LEVELLER

TD 10-600	TD 10C*	TD 10-600C*
		
600	1,000	600
400 – 600	400 – 600	400 – 600
900 – 1,500	900 – 1,500	900 – 1,500
•	•	•
•	•	•
840	840	840
430	430	430
6.9	9.8	6.9
0.4	0.4	0.4
0.4	0.4	0.4
0.6	0.6	0.6
0.25	0.25	0.25
-	1.6	-
depending on application, approx. 0.020 –- 0.030 kWh/kg		
240	240	240
•	•	•
12 – 50	12 – 50	12 – 50
4 – 11	4 – 11	4 – 11
79	84	79

4-over-3 drafting system technology

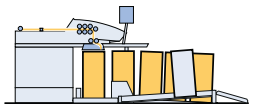
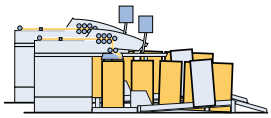
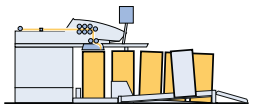
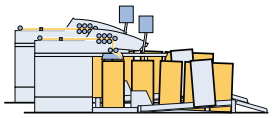


Individual sliver monitoring on SMART CREEL

Equipment and options

Coiling	Coiler plate with HYDRO POLISHED TUBE prevents deposits
	Automatic sliver separation unit during can changing
	Automatic rotary can changer
	Can magazine CAN TRACK for empty cans
	Can delivery onto delivery track
	Driven can magazine SERVO TRACK for empty cans (only under floor)
	Interface full can transfer onto can transport carriage
	Can transport carriage for can diameters ∅ 400, ∅ 450, ∅ 500
	Can delivery onto floor
General	Input sensor DISC LEVELLER with maximum accuracy of measurement and quick release fastener system
	Integrated quality monitoring DISC MONITOR (sliver count, sliver evenness, integrated spectrogram analysis)
	Minimum maintenance, lubrication of bottom roller bearings only
	Good access to all maintenance and cleaning points
	Central operator platform with access to creel
	Safety panels with central safety system
	Space-saving, compact machine installation for two or more drafting heads TD 10C
	Central, flow-optimised suction with negative pressure monitoring (above and below floor)
	OPTI SET – optimal main drafting point due to self-optimization
	Large, integrated TD-FB filter with negative pressure monitoring and cleaning intervals of up to 24h
Drives	Modern, energy-saving drives with robust Truetzschler electronics
	Individual drives for infinitely variable setting of sliver count, delivery speed and draft
	Individual can plate drive to optimise sliver coiling
	Optimization package TD-OS – Separately driven servo drive for middle drafting system cylinder – Software package AUTO DRAFT for self optimization of draf
	Digital servo drives for highly dynamic SERVO DRAFT levelling
Electronics	Large colour touchscreen for efficient operation, maintenance and service
	USB port
	Use of dynamic Truetzschler Computing Unit, only one update for all machine components
	Maintenance management via touchscreen
	Visualisation of differentiated machine states via T-LED remote display
	Energy measuring device for online energy monitoring
	Through hole technology to extend the service life of the electronic power components
	Interface for data transmission to mill monitoring system “My Mill”
Creel	Separately driven SMART CREEL TD-SC servo creel with intelligent individual sliver monitoring
	Single row creel installation SMART CREEL for TD 10 C
Drafting system	4-over-3 drafting system with pressure bar and sliver guide elements
	Gentle sliver deflection for process-safe sliver formation and reduced lap formation tendency
	Self-adjusting lap monitoring of top rolls
	Durable cleaning bar for top rollers for gentle cleaning
	Integrated, flow-optimised suction of the drafting system at top and bottom rolls
	Quick relief during standstill or lap formation
	Process-safe, pneumatic, automatic web threading
	Lifetime lubricated top roller bearing for low heat generation and reduced lap formation
	Individual, infinitely variable pneumatic loading of the top rollers via touchscreen

● = Series ○ = Option

TD 10	TD 10C	TD 10-600	TD 10-600C
			
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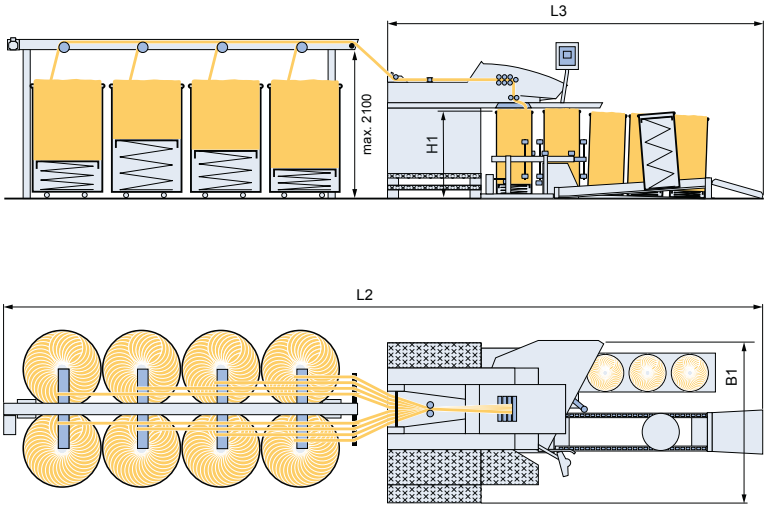
Autoleveller Draw Frames TD 10

	Creel cans	
	Ø 1,000 mm	**Ø 1,200 mm**
L2 mm	9,891*	10,689*
L3 mm	5,076*	

*Output can ∅ 600 mm

	Can height output mm	Creel cans	
		Ø 1,000 mm	**Ø 1,200 mm**
B1 mm	900 – 1,079	2,100	2,480
	1,080 – 1,270	2,325	2,505
	1,271 – 1,370	2,380	2,505
	1,371 – 1,525	2,610	2,735
H1 mm		900 – 1,525	

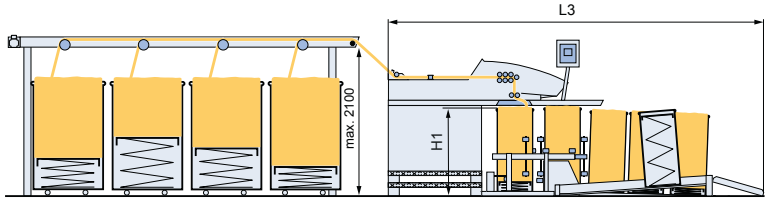


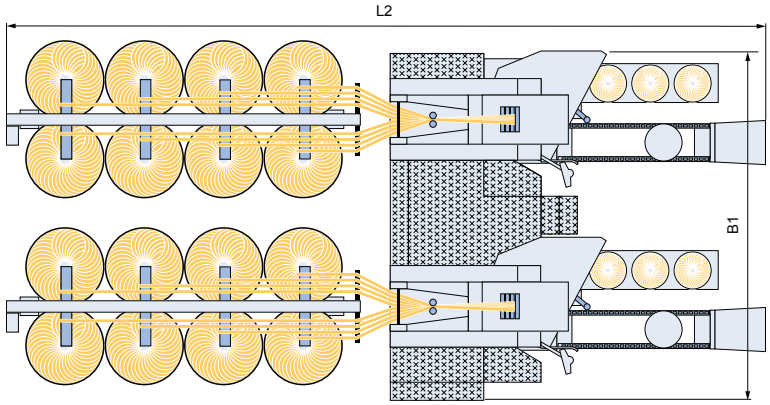
Autoleveller Draw Frames TD 10C and TD 10-600C

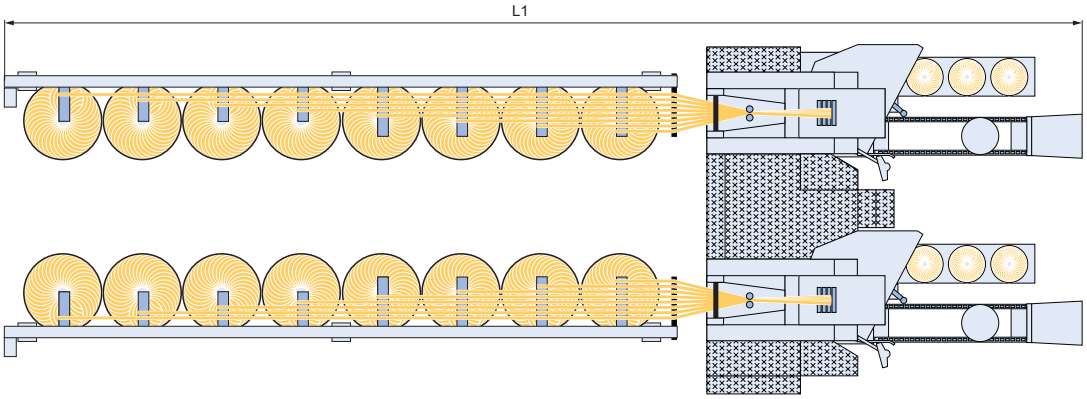
	Creel cans	
	Ø 1,000 mm	**Ø 1,200 mm**
L1 1-row mm	14,091*	15,691*
L2 2-rows mm	9,891*	10,689*
L3 mm	5,076*	

*Output can ∅ 600 mm

Can height output mm		Creel cans	
		Ø 1,000 mm	**Ø 1,200 mm**
B1 mm	900 – 1,270	4,620	5,400
	1,271 – 1,525	4,675	5,400
H1 mm		900 – 1,525	







Single efficiencies are fully maintained

TWIN Breaker Draw Frame TD 9T

“Think twice” for twice the benefit

The Truetzschler Breaker Draw Frame TD 9T is not a conventional double head draw frame; it is characterised by the fact that it is also available as a single version if required. Thus, each even and uneven number of drafting heads can be implemented. Furthermore, its intelligent operating concept makes it compact and space-saving.

Maximum efficiency with the TWIN concept

With conventional solutions, an error also stops production on the other side. Instead of a single efficiency of 85 %, in reality only 72 % is realised, because the single efficiencies have to be multiplied.

Efficiencies of over 90 % can only be achieved in practice with the Truetzschler TD 9T. Thus, depending on the size of the installation, 1-2 drafting heads can be eliminated.

99 % efficiency on each side. Reached at a customer in China.

Designed for different materials

The strict separation of the drives allows maximum flexibility: Two different materials or two different sliver counts can run side by side on one machine. Even different passages are possible.

Clever dual use

Only components without a negative influence on efficiency, such as control cabinet, control system, touchscreen and operator platform, are shared.

A draw frame concept for all draw frame types

This results in component uniformity and reduced storage effort concerning spare parts:

- All drafting system components
- Wear parts: Top rollers, clearer strips, strippers, pneumatic springs, roller bearings, belts
- Change wheels
- Web guides and sliver trumpets
- Delivery rolls
- Coiler plate
- Creel sensors
- Suction ducts in drafting system
- Throttle valve drafting system suction

Sophisticated operating concept

Effective machine operation

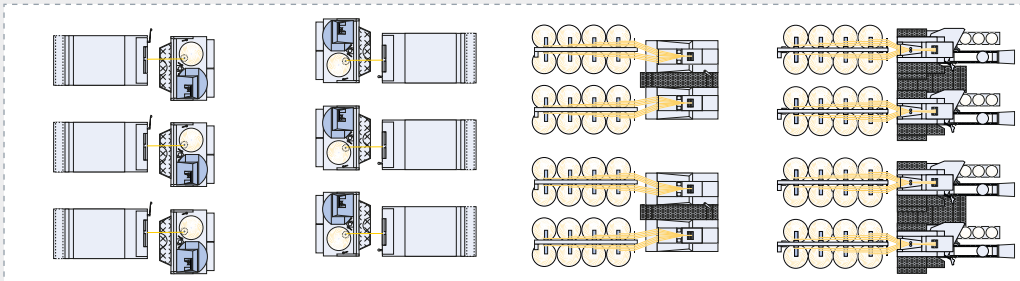
Sophisticated concepts from Truetzschler help to make everyday operation as efficient as possible.

Mirrored drafting systems

Efficiency plays an important role in the operation of breaker draw frames. For this reason, both drafting systems are operated from the centre. The central operating platform with direct passage from the can changer to the creel allows 50 % savings in operating paths.

Installation width of the new breaker draw frame using 1,000 mm can diameter ...

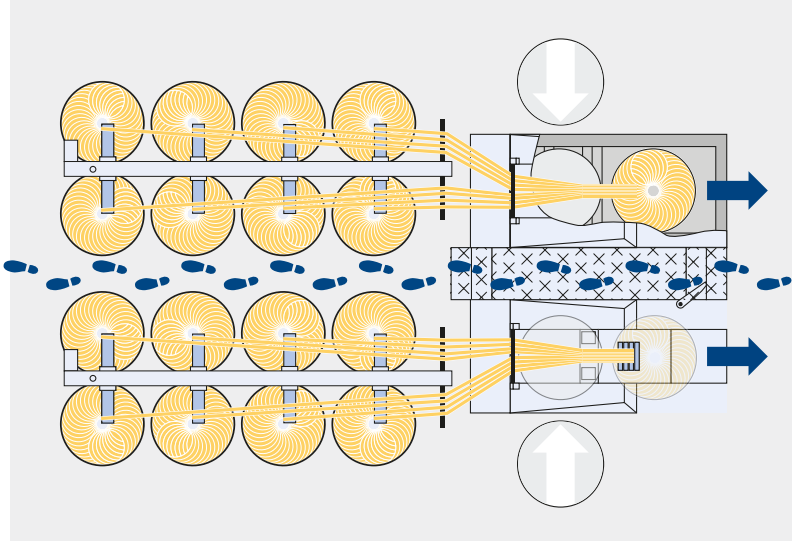
Installation width of Truetzschler draw frames...



Can diameter **1,000 mm** to autoleveller draw frame

Linear, space-saving can changer

To ensure that the space-saving TWIN-design can be used to its full potential, a linear can changer was developed. The space it requires is little more than for two cans.
In addition, the gentle linear can guidance is particularly useful when using 1,000 mm cans and JUMBO CANS.



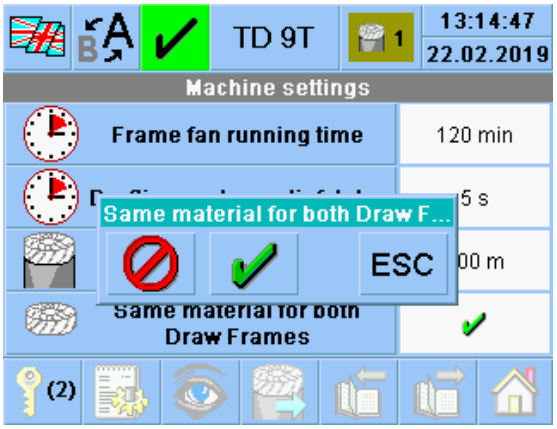
Can changing principle and operating paths

Can be operated even with multi-row can installation

Due to the small operating aisle in the creel, all creel installation variants can be operated.
For 4-row installation, a block change is recommended for smooth operation.
3-row variants, which make it impossible to repair a sliver break in the middle can, are not necessary.

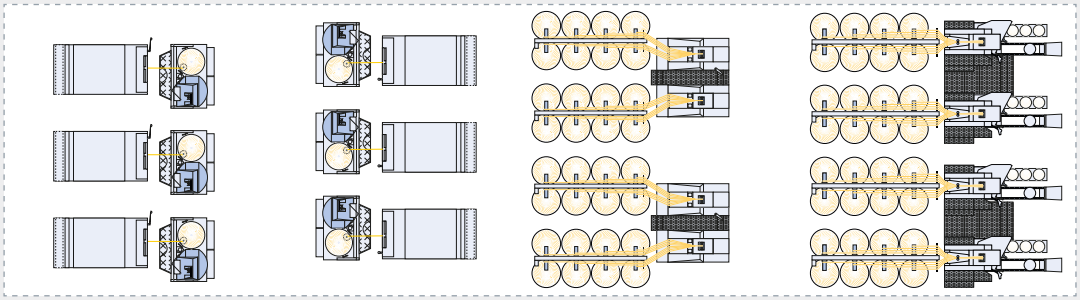
Working in synchronous mode

The synchronous mode enables effective machine handling. Duplicate entries of the settings in the lot data are thus avoided.



Synchronous operation eliminates the need for duplicate entries when using the same settings.

… for narrow, modern lines with high card production.



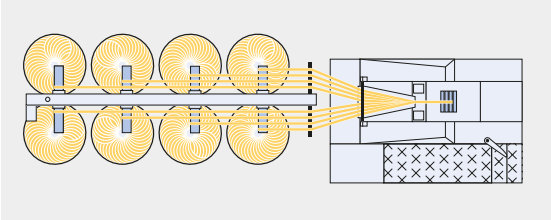
Can diameter **1,200 mm** to autoleveller draw frame

… Even with 1,200 mm diameter cans, the new draw frames do not need more installation width than the card group.

Ideal solutions for exceptional circumstances

Single Draw Frame TD 9

If an uneven number of drafting heads is required, a single draw frame can be added to the TWIN draw frames.
This reduces investment and operating costs compared to a conventionally required additional double head draw frame.



The space requirement of the Truetzschler breaker Draw Frame TD 9 is reduced to a minimum.

Breaker draw frames with the elements of a autoleveller draw frame

Truetzschler draw frames share many important elements with the Autoleveller Draw Frame TD 10.

- Infinitely variable delivery speed
- 4-over-3 high performance drafting system
- Individual sliver monitoring in the creel
- Coiler plate with HYDRO POLISHED TUBE
- Individually pneumatically loaded top rolls
- Pneumatic threading aid

Breaker Draw Frame TD 7

If the operational organisation does not allow the use of large cans, Truetzschler uses the proven breaker draw frame concept of the TD 7 with rotary can changer.
Featuring a large can magazine, it is ideally suited for a space saving solution for cans with 500 mm or 600 mm diameter.

The Truetzschler breaker draw frames are also equipped with SMART sensors for individual sliver monitoring.

These controllers allow easy and reproducible settings of the top roller loads. A special sensor monitors the pressure.

Truetzschler Breaker Draw Frame TD 9

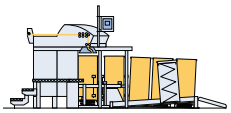
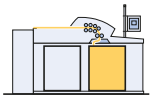
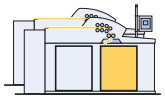
Technical data

Coiling	Maximum delivery speed	m/min
	Can diameter	mm
	Can height	mm
	Cans without ball castors	
	Cans with ball castors	
Energy	Air volume of suction	m³/h
	Negative pressure of suction	-Pa
	Installed draw frame power	kW
	Installed can changer power	kW
	Installed filter power	kW
	Installed power SMART CREEL	kW
	Installed power SERVO CREEL	kW
	Installed power SERVO TRACK	kW
	Continuous power consumption electr.	
	Compressed air requirement	Nl/h
General	Material: Fibers up to 60 mm	
	Material feed	ktex
	Draft	fold
	Noise level	dB(A)

● = Series ○ = Option

SMART sensors for individual sliver monitoring

Intelligent operator concept of Breaker Draw Frame TD 9T

TD 7	TD 9	TD 9T
		
1,000	1,000	1,000
600	1,000 + 1,200	1,000 + 1,200
1,050 – 1,500	1,075 – 1,500	1,075 – 1,500
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600	600	1,200
400	450	500
5.0	5.0	10
0.5	0.25	0.5
0.9	0.9	0.9
–	0.6	1.2
0.6	–	–
0.3	–	–
depending on application, approx. 0.020 –- 0.030 kWh/kg		
240	600	1,200
•	•	•
12 – 50	12 – 50	12 – 50
4 – 10	4 – 10	4 – 10
84	84	84

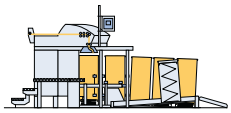
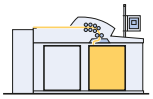
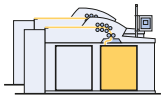
Operation via touchscreen

Truetzschler remote display T-LED

Equipment and options

Coiling	Coiler plate with HYDRO POLISHED TUBE prevents deposits
	Automatic sliver separation unit during can changing
	Automatic rotary can changer
	Can magazine CAN TRACK for empty cans
	Can delivery onto delivery track
	Driven can magazine SERVO TRACK for empty cans (only under floor)
	Can delivery onto floor
	Linear can changer for 1,000 mm diameter
	Linear can changer for 1,200 mm diameter
General	Minimum maintenance, lubrication of bottom roller bearings only
	Good access to all maintenance and cleaning points
	Central operator platform with access to creel
	Safety panels with central safety system
	Central, flow-optimised suction with negative pressure monitoring (above and below floor)
	TWIN version without efficiency coupling for highest production rates
	Large, integrated TD-FB filter with negative pressure monitoring and cleaning intervals of up to 24h
Drives	Modern, energy-saving drives with robust Truetzschler electronics
	Individual can plate drive to optimise sliver coiling
Electronics	Colour touchscreen for efficient operation, maintenance and service
	USB port
	Use of dynamic Truetzschler Computing Unit, only one update for all machine components
	Maintenance management via touchscreen
	Visualisation of differentiated machine states via T-LED remote display
	Energy measuring device for online energy monitoring
	Interface for data transmission to mill monitoring system "My Mill"
Creel	Two-row feed creel with intelligent individual sliver monitoring via SMART sensors
	One-row creel installation SMART CREEL
	Separately driven SMART CREEL TD-SC servo creel with intelligent individual sliver monitoring
Drafting system	4-over-3 drafting system with pressure bar and sliver guide elements
	Gentle sliver deflection for process-safe sliver formation and reduced lap formation tendency
	Self-adjusting lap monitoring of top rolls
	Durable cleaning bar for top rollers for gentle cleaning
	Integrated, flow-optimised suction of the drafting system at top and bottom rolls
	Quick relief during standstill or lap formation
	Process-safe, pneumatic, automatic web threading
	Lifetime lubricated top roller bearing for low heat generation and reduced lap formation
	Individual, infinitely variable pneumatic loading of the top rollers via touchscreen

● = Series ○ = Option

TD 7	TD 9	TD 9T
		
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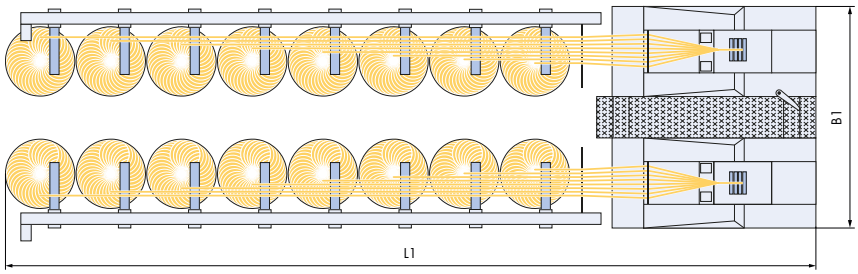
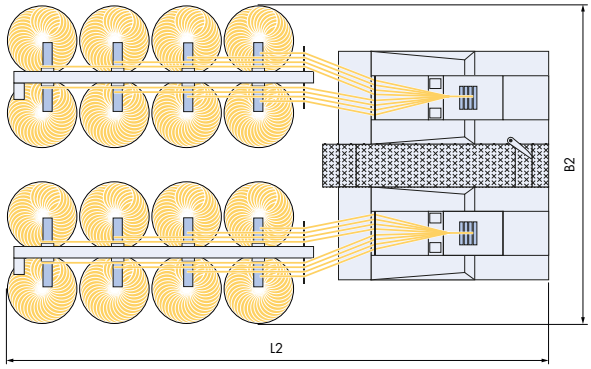
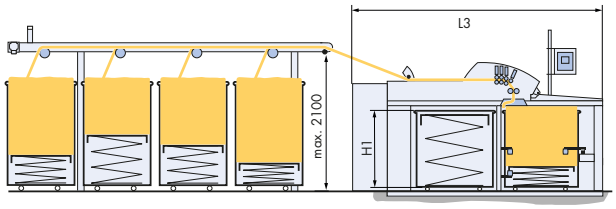
TWIN Draw Frame TD 9T

	Creel cans	
	Ø 1,000 mm	**Ø 1,200 mm**
L1 1-row mm	12,264	14,279
L2 2-rows mm	8,064	9,279

	Output cans	
	Ø 1,000 mm	**Ø 1,200 mm**
L3 mm	2,990	3,405
B1 mm	3,300	3,700
B2 mm	4,600	5,400
H1 mm	1,075 – 1,500	



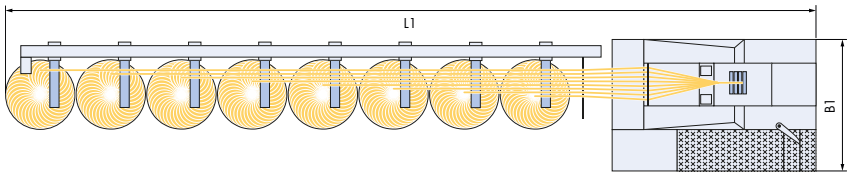


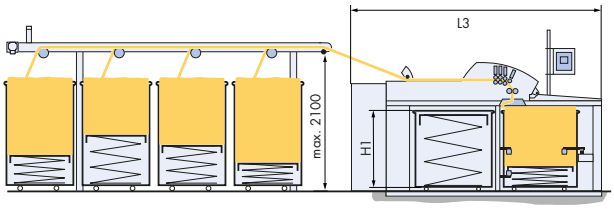


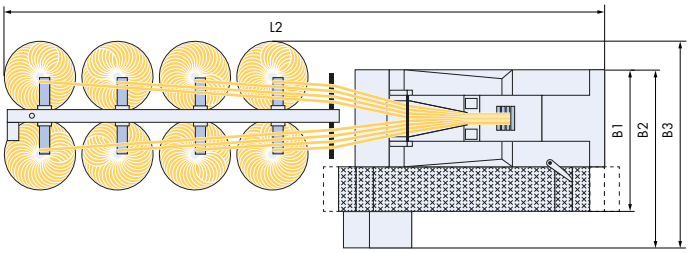
Breaker Draw Frame TD 9

	Creel cans	
	Ø 1,000 mm	**Ø 1,200 mm**
L1 1-row mm	12,264	14,279
L2 2-rows mm	8,064	9,279

	Output cans	
	Ø 1,000 mm	**Ø 1,200 mm**
L3 mm	2,990	3,405
B1 – Central suction mm	1,950	2,150
B2 – Filter box mm	2,455	2,655
B3 mm	2,820	3,020
H1 mm	1,075 – 1,500	



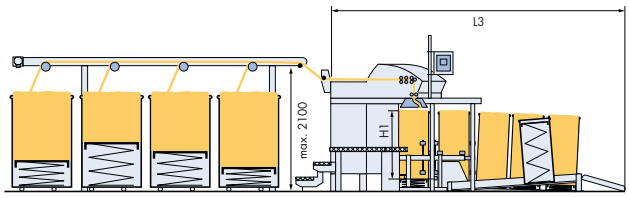


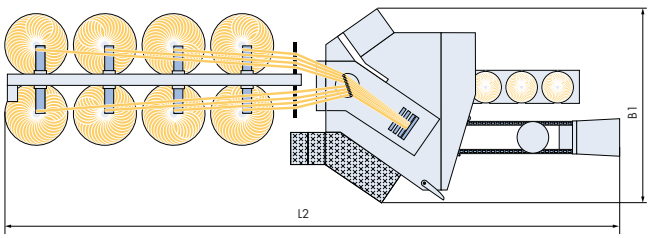


Breaker Draw Frame TD 7

	Creel cans
	Ø 600 mm
L2 2-rows mm	8,150
L3 mm	4,633

	Can delivery
	Ø 600 mm
B1 mm	3,100
H1 mm	1,050 – 1,500



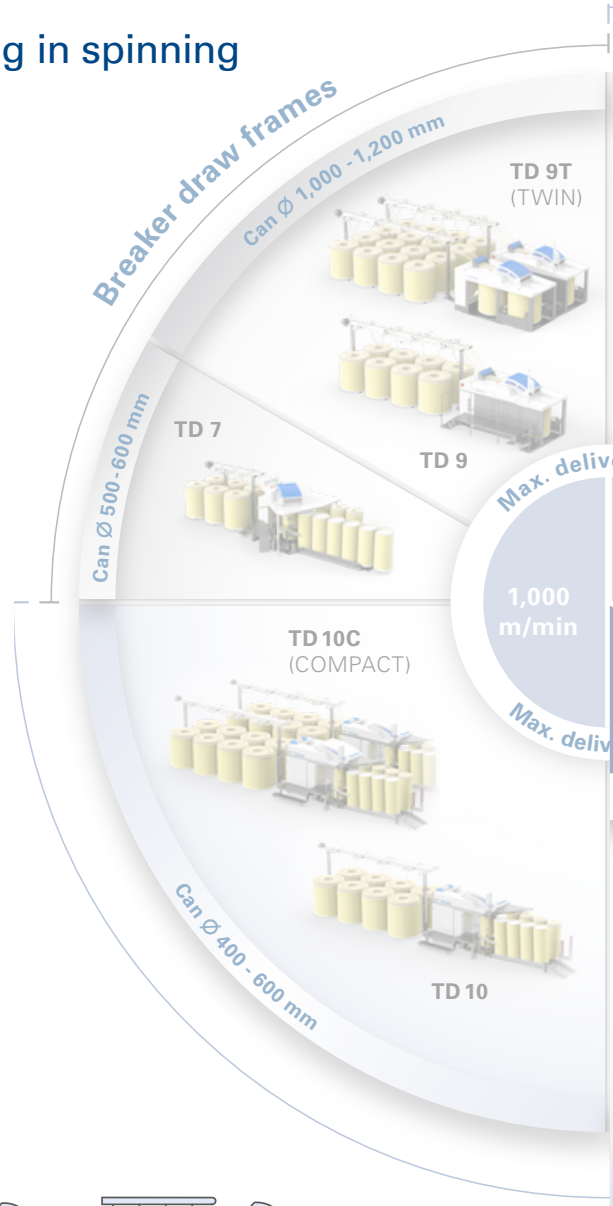


Integrated Draw Frame IDF 2

The solution for process shortening in spinning

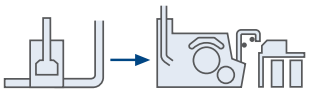
Particularly in the spinning mill with its numerous machines, reduced process stages quickly multiply to great economic advantages.

The Integrated Draw Frame IDF 2 makes this possible by the direct coupling to the Truetzschler cards and the resulting savings in draw frame passages.



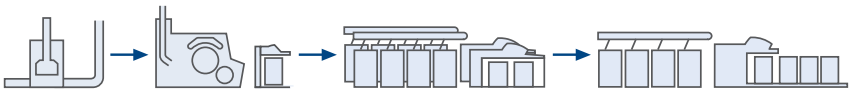
ROTOR SPINNING

Truetzschler DIRECT SPINNING



Opening, cleaning, mixing — TC 19^{i} with IDF 2

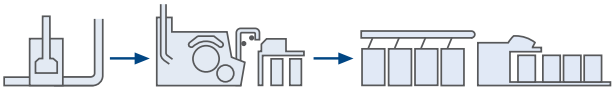
Conventional line



Opening, cleaning, mixing — Card — Breaker draw frame — Autoleveller draw frame

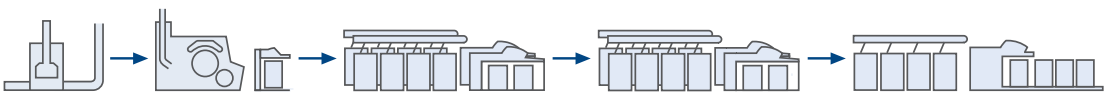
Airjet SPINNING

Truetzschler IDF VORTEX SPINNING

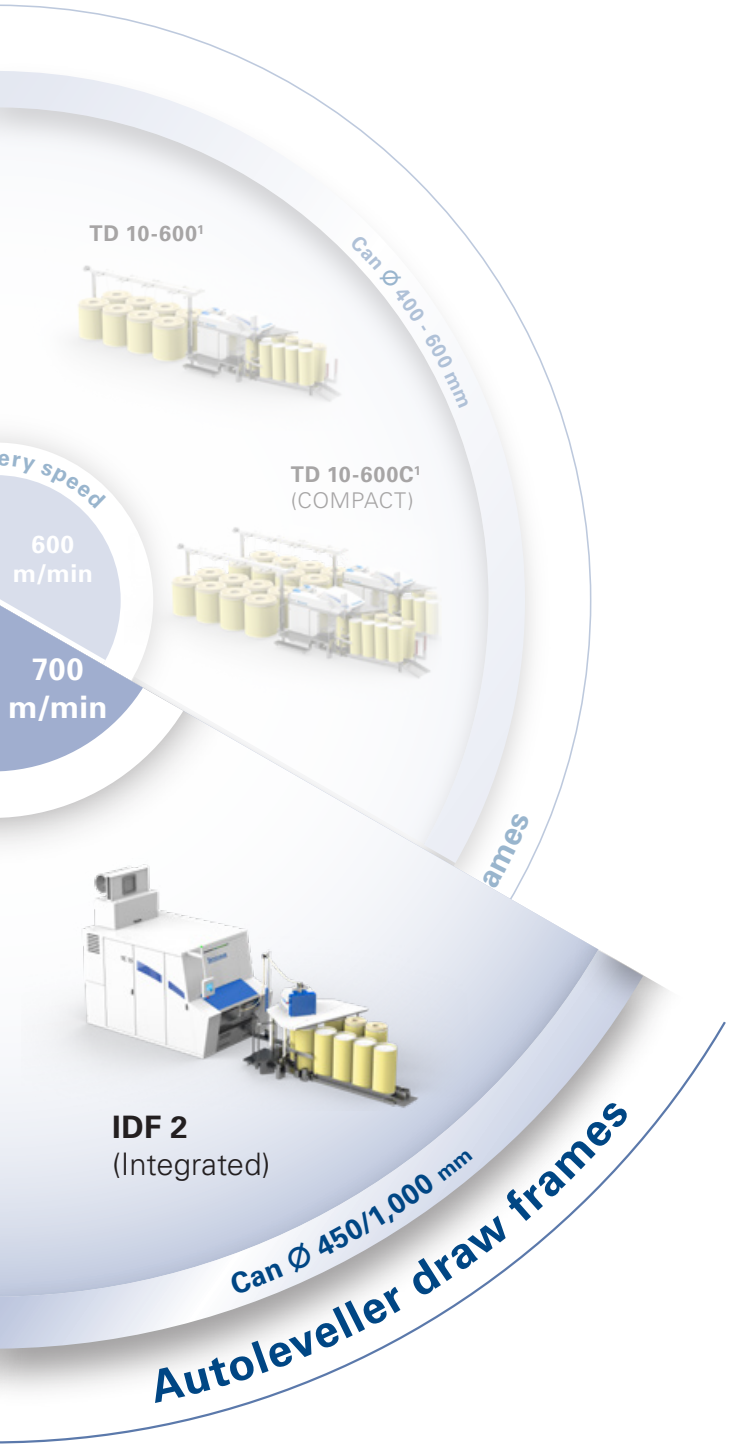


Opening, cleaning, mixing — TC 19^{i} with IDF 2 — TD 10

Conventional line



Opening, cleaning, mixing — Card — Breaker draw frame — Breaker draw frame — Autoleveller draw frame



Multidimensional advantages from fewer process steps:

- Reduction in investments
- Less tied up capital in the process
- Reduction of workload
- Minimisation of errors
- Space savings

The ideal solution for rotor spinning: IDF 2 with rectangular can changer

Perfect for airjet spinning with a subsequent autoleveller draw frame passage: the IDF 2 with 1,000 mm cans.

DIRECT SPINNING with IDF 2 saves up to three draw frame passages

Fewer process steps in rotor spinning

Draw frame technology of an autoleveller draw frame – the IDF 2

The creation of true yarn quality involves the entire process

Key points where resources are conserved

Innovative, self-optimising technology

Input sensor
for detection of the sliver count

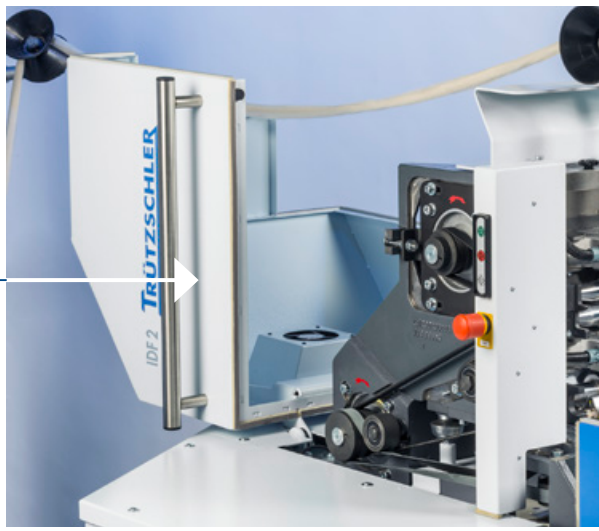
Precisely controlled
2-over-2-drafting system
for sliver quality like from
an autoleveller draw frame

Quality sensor
for detection of the produced
sliver quality

Delivery speeds
up to 700m/min possible

Single pneumatic load of
the top rolls for individual
and infinitely variable
pressure control

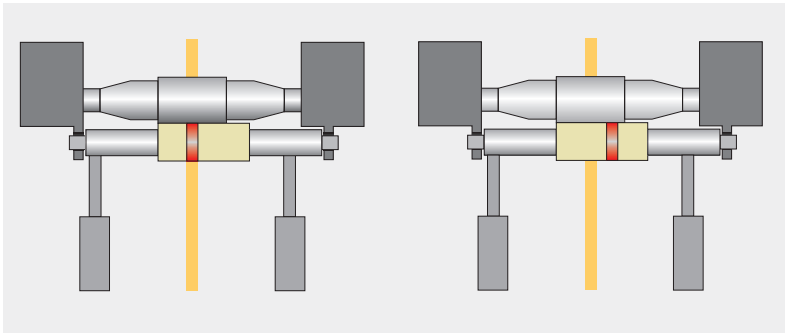
Easy and fast accessibility
of the drafting system
and the drive technology



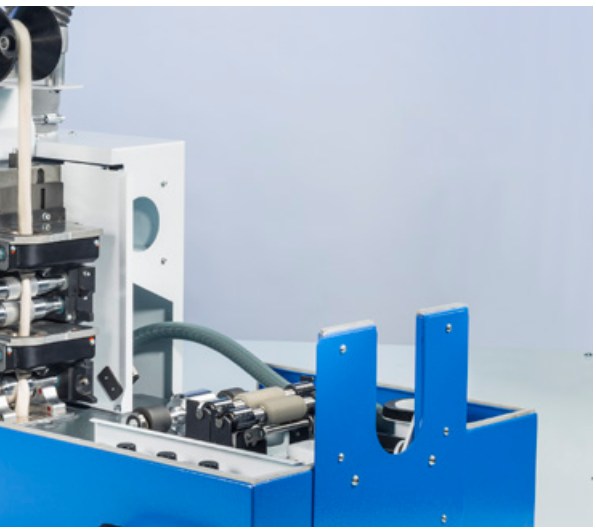
Levelling quality without compromises

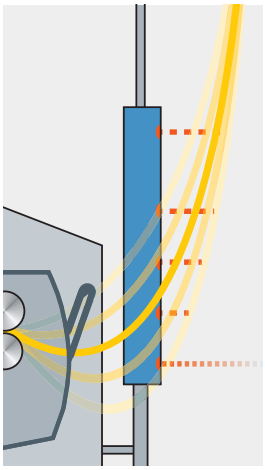
The close spatial proximity of the measuring point and drafting system and the low mass inertia allow a reliable levelling of the draft.
To ensure that every metre in the can has the desired quality, the sliver is permanently checked by the second sensor positioned immediately behind the drafting system.

Rotatable top rollers
for double the service life



The top rollers (beige) can be turned by 180° after wear of the top roller coatings (wear shown in red).



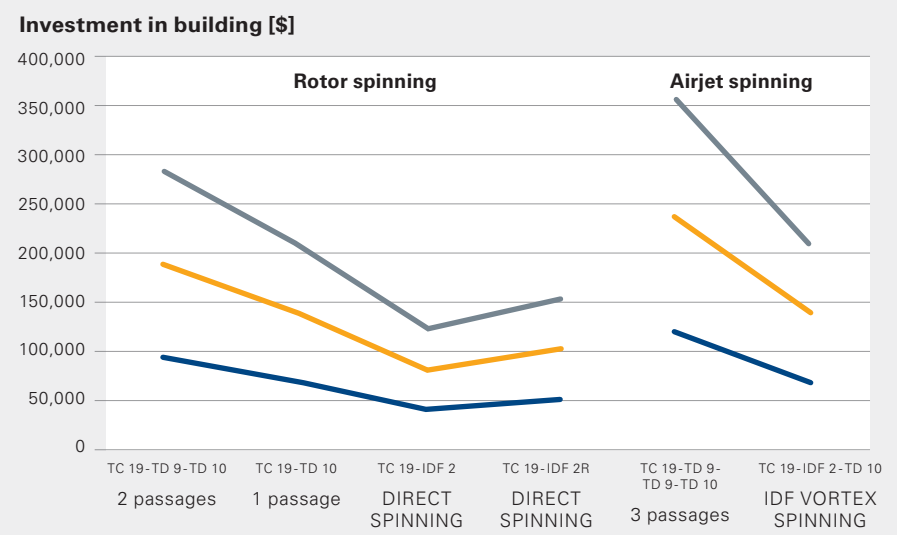


Fully automatic synchronisation of the delivery speed with the card by regulating the sliver sagging between the machines by means of light barriers.

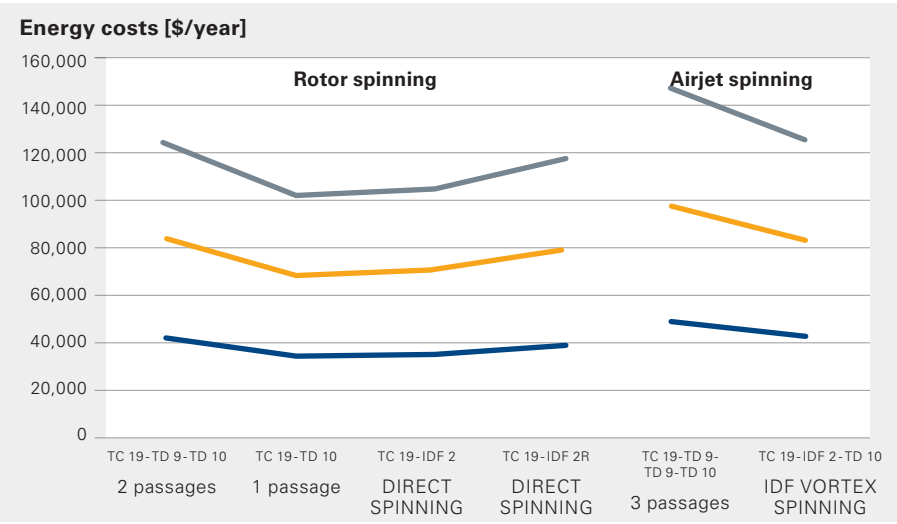
Permanent savings only with the Integrated Draw Frame IDF 2

IDF 2 reduces the investment and operating costs

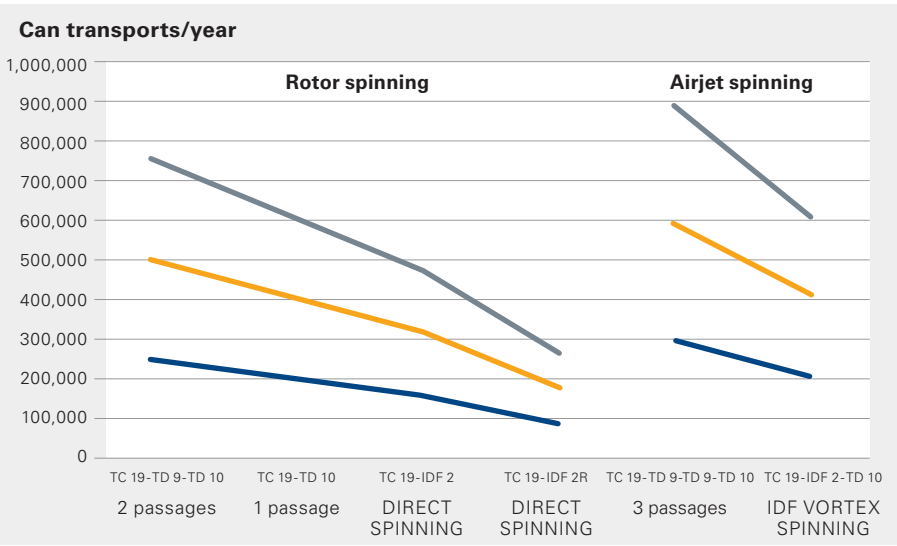
A process reduction always generates savings. In addition to the purchase costs, the operating costs as well as the service and maintenance costs are also eliminated.



Substantial savings start already with the building. A smaller area results in additional savings in lighting, air conditioning and maintenance.



The operating costs are not only reduced by a lower power consumption: 48 % less can transports and piecings at the spinning machine when using rectangular cans.
Less piecings also mean a reduction of yarn imperfections.



Assessment basis:

8,000 operating hours/year
500 $/m²
0.131 $/kWh

900 kg/h
600 kg/h
300 kg/h

IDF 2R – rectangular cans in rotor spinning

Round or rectangular cans?

The decision depends on several factors. A rectangular can with 450 diameter and 1200 mm height holds approx. 15 kg cotton sliver.

The capacity of a rectangular can is almost twice as high with 27 kg of cotton sliver. Another advantage of rectangular cans is the easier implementation of an automatic can transport system.

Type	Advantages	Disadvantages
Round cans 450 mm	Inexpensive cans Lower investment	Low can volume Many cans required Many can transports
Rectangular cans	Lower operating costs Larger can volume Fewer can transports Half the sliver piecings on the rotor spinning machine Fewer cans required Easier to automate	Higher investment Cans are more expensive

IDF 2R installation in rotor spinning

Integrated Draw Frame IDF 2 for rotor spinning

Improved quality and optimised economic efficiency

Today, draw frames are no longer required in rotor spinning. This applies to all materials and yarn counts. The applications range from processing of reclaimed fibers to fine yarns.

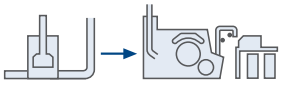
The Integrated Draw Frame IDF has established itself in rotor spinning

In the meantime, more than 2,500 Truetzschler IDF are operating in rotor spinning mills throughout the world. The combination of improved yarn quality coupled with significant savings is convincing.

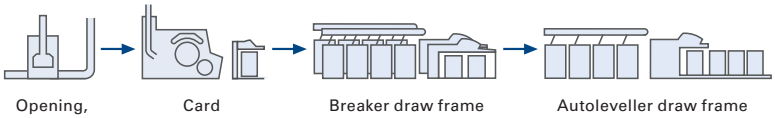
Here reclaimed fibers (recycled jeans) are carded for rotor spinning. The passage between cards and IDF 2 makes operation much easier for the staff.

ROTOR SPINNING

Truetzschler DIRECT SPINNING



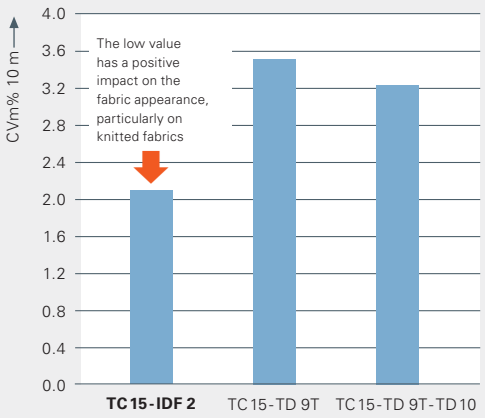
Conventional line



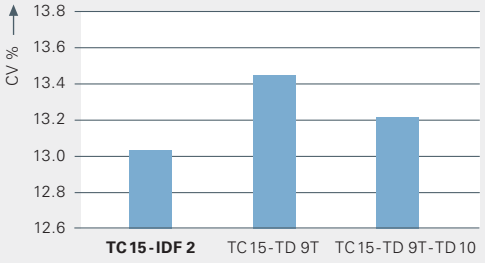
The Truetzschler line with IDF 2 saves three draw frame passages.

Comparisons of direct spinning IDF 2 with one and two draw frame passages for rotor yarn Ne 20 cotton

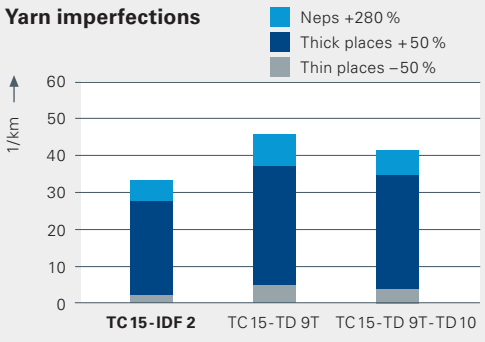
Yarn count variations



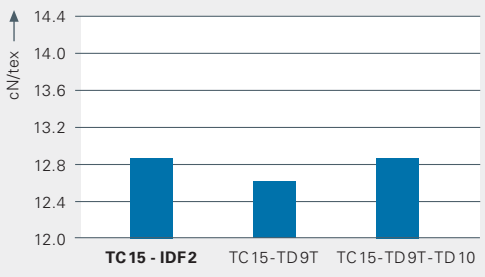
Yarn evenness



Yarn imperfections



Yarn strength



Integrated Draw Frame IDF 2 for airjet spinning

Only one draw frame passage – the success formula for VORTEX

TRÜTZSCHLER + Muratec

The two world market leaders – Truetzschler in the field of spinning preparation and Muratec in the field of airjet spinning machines – have developed a new, more economical preparation procedure together.

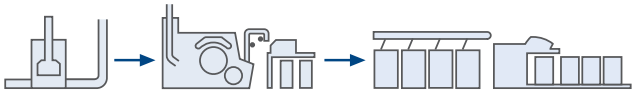
Optimum preparation for VORTEX by Truetzschler

For a high parallelisation in airjet spinning, three draw frame passages have been the only way to achieve good quality up to now. Today, the combination of the card with the Integrated Draw Frame IDF 2 allows a significant process reduction.

IDF 2 with short-wave levelling ensures a perfect feed for the downstream autoleveller draw frame. This process shortening by two complete process steps opens up an enormous savings potential.

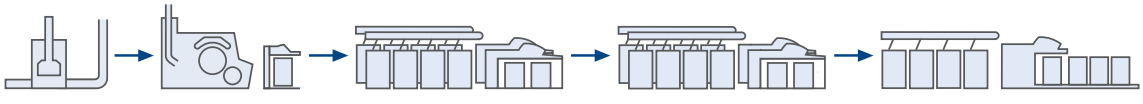
Airjet SPINNING

Truetzschler IDF VORTEX SPINNING



Opening, cleaning, mixing — TC 19ⁱ with IDF 2 — TD 10

Conventional line



Opening, cleaning, mixing — Card — Breaker draw frame — Breaker draw frame — Autoleveller draw frame

Shorter preparation procedure for airjet: only 1 passage instead of the usual 3 passages in the drafting process

= IDF +1 VORTEX

Fewer steps – higher yarn production

A higher profitability in spinning means a higher yarn production per day. Yarn clearer cuts have a great influence on the efficiency of a spinning machine. In spinning tests with viscose for Ne 30, yarn clearer cuts could be significantly reduced with the new IDF VORTEX SPINNING.

Process approval:

- 100 % viscose (rayon)
- 100 % polyester
- Yarn count: Ne 10 – Ne 40

Fully automatic synchronisation of the delivery speed with the card by regulating the sliver sagging between the machines by means of light barriers.

Reduction of steps = higher yarn production

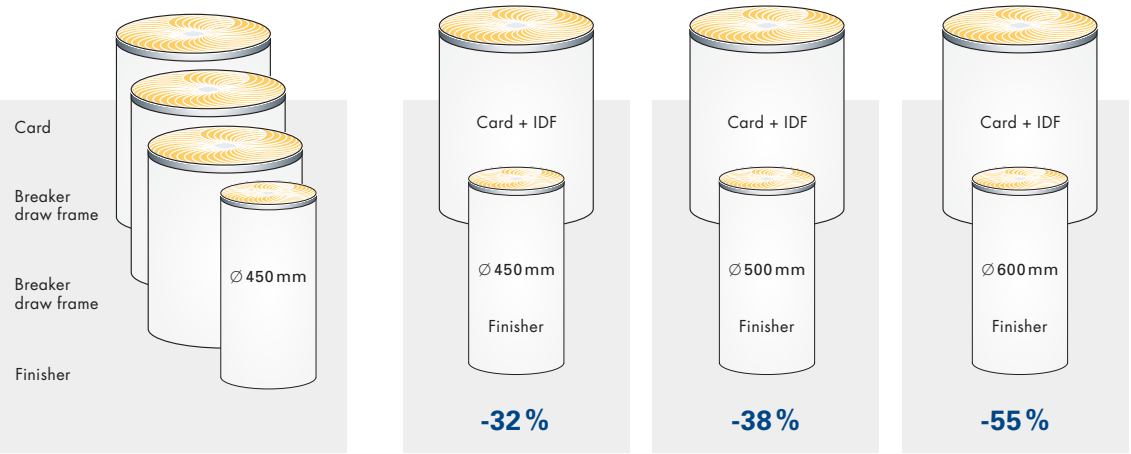
with Truetzschler IDF VORTEX SPINNING

Spinning preparation for VORTEX

Significantly reduced can movements and sliver piecings

Standard process:
3 passage draw frame

Truetzschler IDF VORTEX SPINNING:
only one passage draw frame



Reduced can movements and sliver piecings

Cutting can transports in half

Savings in can handling depend on the can diameter used between the cards and the draw frame passages. Even when using highly economical large cans with a 1,000 mm diameter, there is a significant reduction in can movements, the number of operators required and the number of cans required.

Improvement of quality

Fewer cans also means fewer sliver piecings. This is a very important quality aspect. Every sliver piecing is a potential yarn imperfection. A production of 21 tons of yarn results in a reduction of 900 sliver piecings per day.

Savings at a glance:

13 % less space requirement in spinning
4 % less energy consumption
9 % less exhaust air consumption
900 less sliver piecings per day

Total savings:

Operator: . . . . . 50,000 $ p.a.
Building: . . . . . .260,000 $
Installed power: . . . . . .14,900 $ p.a.
Exhaust air: . . . . . 5,250 $ p.a.

Basis: 850 kg/h · 0.13 $/kWh · 500 $/m²

Reduction of 900 sliver piecings per day

at a production of 21 t yarn/day


TRÜTZSCHLER
TRÜTZSCHLER

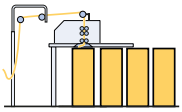
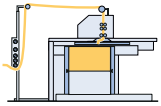
Technical data

Coiling	Maximum delivery speed	m/min
	Can diameter	mm
	Can height	mm
	Cans without ball castors	
	Cans with ball castors	
Energy	Air volume of suction	m³/h
	Negative pressure of suction	-Pa
	Installed draw frame power	kW
	Installed can changer power	kW
	Installed filter power	kW
	Installed power SMART CREEL	kW
	Installed power SERVO TRACK	kW
	Continuous power consumption	
	Compressed air requirement	Nl/h
General	Material: Fibers up to 60 mm	
	Material feed	ktex
	Draft	fold
	Noise level	dB(A)

● = Series

a) Cans 200 × 900 mm × 1,073 mm
Cans 215 × 900 mm × 1,200 mm

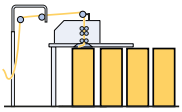
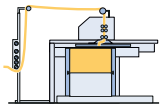
b) IDF VORTEX SPINNING up to 3.5-fold draft

IDF 2	IDF 2R
	
700	700
400 – 600, 1,000	a)
900 – 1,525	a)
•	•
•	•
350	350
450	450
4.0	4.0
0.5	3.5
–	–
–	–
0.3	0.3
approx. 0.01 kWh/kg	approx. 0.01 kWh/kg
2,800	2,800
•	•
6 – 10	6 – 10
1 – 2 b)	1 – 2 b)
79	79

Equipment and options

Coiling	Coiler plate with HYDRO POLISHED TUBE prevents deposits
	Automatic sliver separation unit during can changing
	Automatic rotary can changer
	Can magazine CAN TRACK for empty cans
	Can delivery onto delivery track
	Driven can magazine SERVO TRACK for empty cans (only under floor)
	Interface full can transfer onto can transport carriage
	Can transport carriage
	Can delivery onto floor
	Automatic rectangular can changer
General	Input sensor with maximum accuracy of measurement
	Integrated quality sensors (sliver count, sliver evenness, integrated spectrogram analysis)
	Minimum maintenance, lubrication of bottom roller bearings
	Good access to all maintenance and cleaning points
	Safety panels with central safety system
	Central, flow-optimised suction with negative pressure monitoring (above and below floor)
Drives	Modern, energy-saving drives with robust Truetzschler electronics
	Individual drives for infinitely variable setting of sliver count, delivery speed and draft
	Individual can plate drive to optimise sliver coiling
	Digital servo drives for highly dynamic levelling
Electronics	Intuitive multitouch screen with RFID technology via card
	USB-port via card
	Use of dynamic Truetzschler Computing Unit, only one update for all machine components
	Maintenance management via touchscreen
	Visualisation of differentiated machine states via T-LED remote display
	Interface for data transmission to mill monitoring system “My Mill”
Drafting system	2-Over-2 individual sliver levelling drafting system with sliver guide elements
	Durable cleaning bar for top rollers for gentle cleaning
	Integrated, flow-optimised suction of the drafting system at top and bottom rolls
	Quick relief during standstill or lap formation
	Lifetime lubricated top roller bearing for low heat generation and reduced lap formation
	Pneumatic load of top rollers individually, infinitely variable

• = Series ○ = Option

IDF 2	IDF 2R
	
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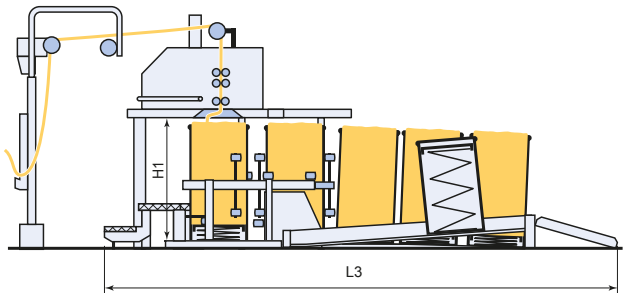
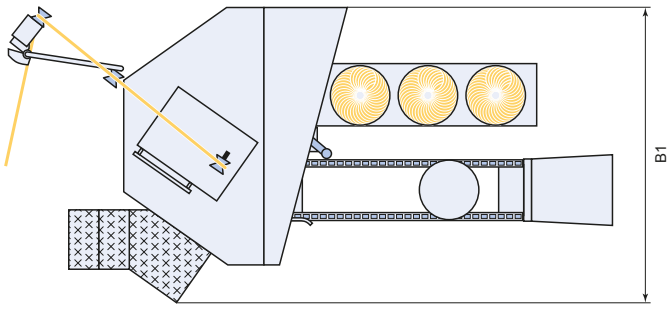
Integrated Draw Frame IDF 2

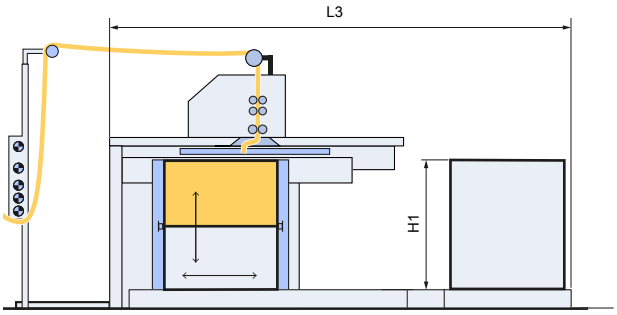
	Output cans	
	Ø 400 – 600 mm	**Ø 1,000 mm**
L3 mm	4,007 – 4,147	2,250
B1 mm	2,427	2,897
H1 mm	900 – 1,525	

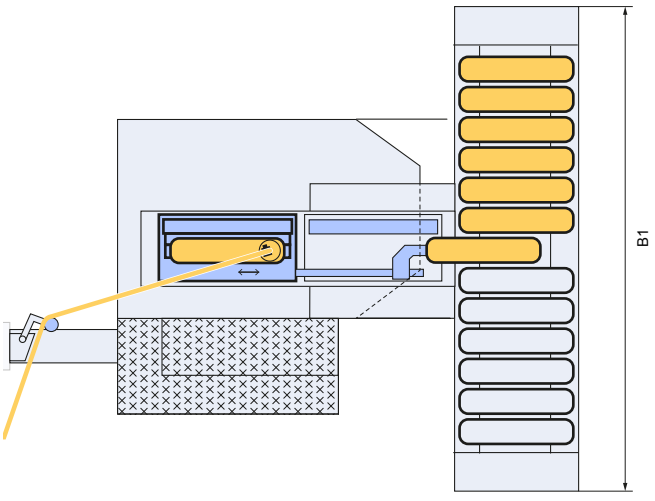




Integrated Draw Frame IDF 2R

	Output cans	
	Ø 1,000 mm	**Ø 1,200 mm**
L3 mm	3,685	3,685
B1 mm	3,843	4,163
H1 mm	1,073	1,200





Lap change time in 20 seconds

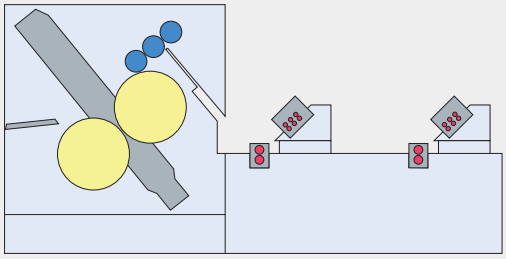
This means 15% higher productivity with the same settings

Truetzschler Superlap TSL 12

Multi-drive technology

The Superlap produces premium quality laps with its multi-drive technology, consisting of four individually controllable and maintenance-free direct drives.

Thanks to this technology, important process parameters such as drafts, tensions and lap pressure can be adjusted during lap build-up. Thus, the lap separation can be implemented directly by the drives; there is no need for complex mechanisms prone to failure.
This results in premium quality laps due to uniform lap hardness and thus in specifically good unwinding properties.

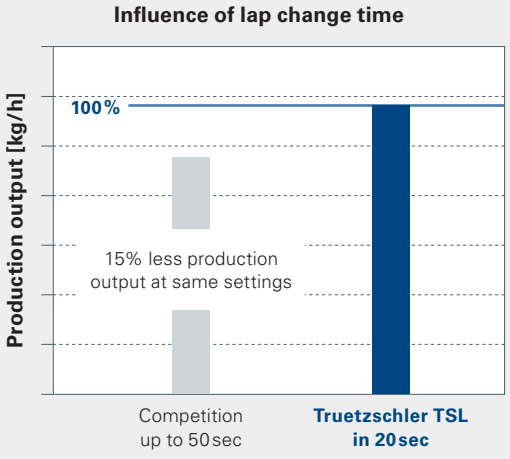


Individual drives make an optimization of the lap build-up possible.

- Pressure calender
- Lap calender
- Draw frame heads with table calenders

Fastest lap change time – Increased productivity

Lap changes in 20 seconds are only possible due to the individual drive technology and a clever tube change system. The empty tube on the TSL is inserted laterally at the same position where it is also wound shortly after.
With 400 lap changes per day, this results in a 15% increase in production. This means 60 more rolls produced per day.



The unique lap tube feeding device allows quick lap change

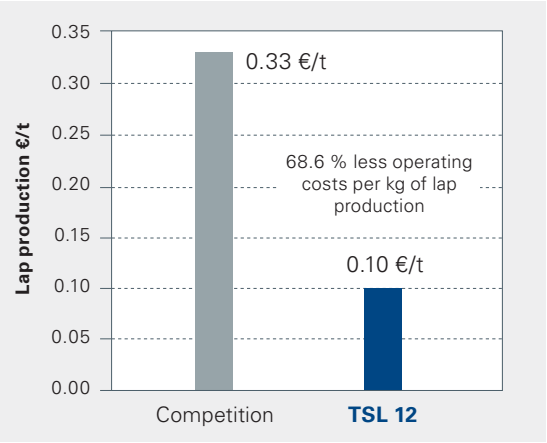
The empty tubes are fed from the side through an opening in the panel. This Truetzschler development reduces the time required for lap change, which has a significant influence on efficiency.

Perfect calendering

Consistently high lap quality guaranteed

Laps must have the same properties from the first to the last metre.
On the one hand, this requires a uniform batt weight and on the other hand a perfect unwinding behaviour on the comber.
In order to meet both requirements, the multi-drive technology enables variable drafts during the winding process. Only with the TSL 12 is it possible to significantly influence the appearance of the laps via the tension between the two lap calenders.

Operating costs for suction and compressed air



The table calender units prepare the batt after each drafting system.

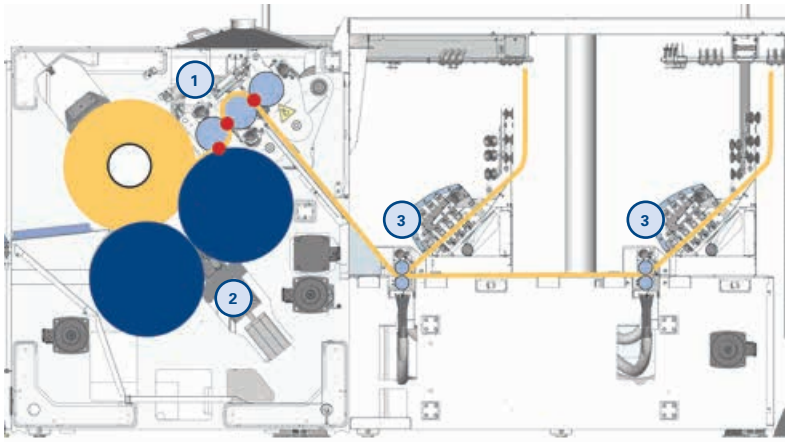
Independent guidance of new batt

The concept with only 3 pressure calenders also makes piecing of the new batt after cleaning the machine super easy. Complex threading tools are no longer necessary, as the batt finds its way by itself.

Energy-efficient compressed air system

The lap calender technology leads to considerable reductions in compressed air consumption and thus offers attractive savings in running costs. This is clearly reflected in the price/kg: 0.33 €/kg at the competition compared to 0.10 €/kg at Truetzschler.

1 Pressure calender module:
Preparation of the batt by removal of air pockets
2 Lap calender module:
Winding of the batt onto the empty tube
3 Table calender units



Perfect calendering to ensure a good lap unwinding behaviour on the comber

The calender unit uses three pressure points (●). In addition to the pressure points between the pressure calender rolls, there is also a calendering point to a lap calender roll.

Electronics/Drive technology

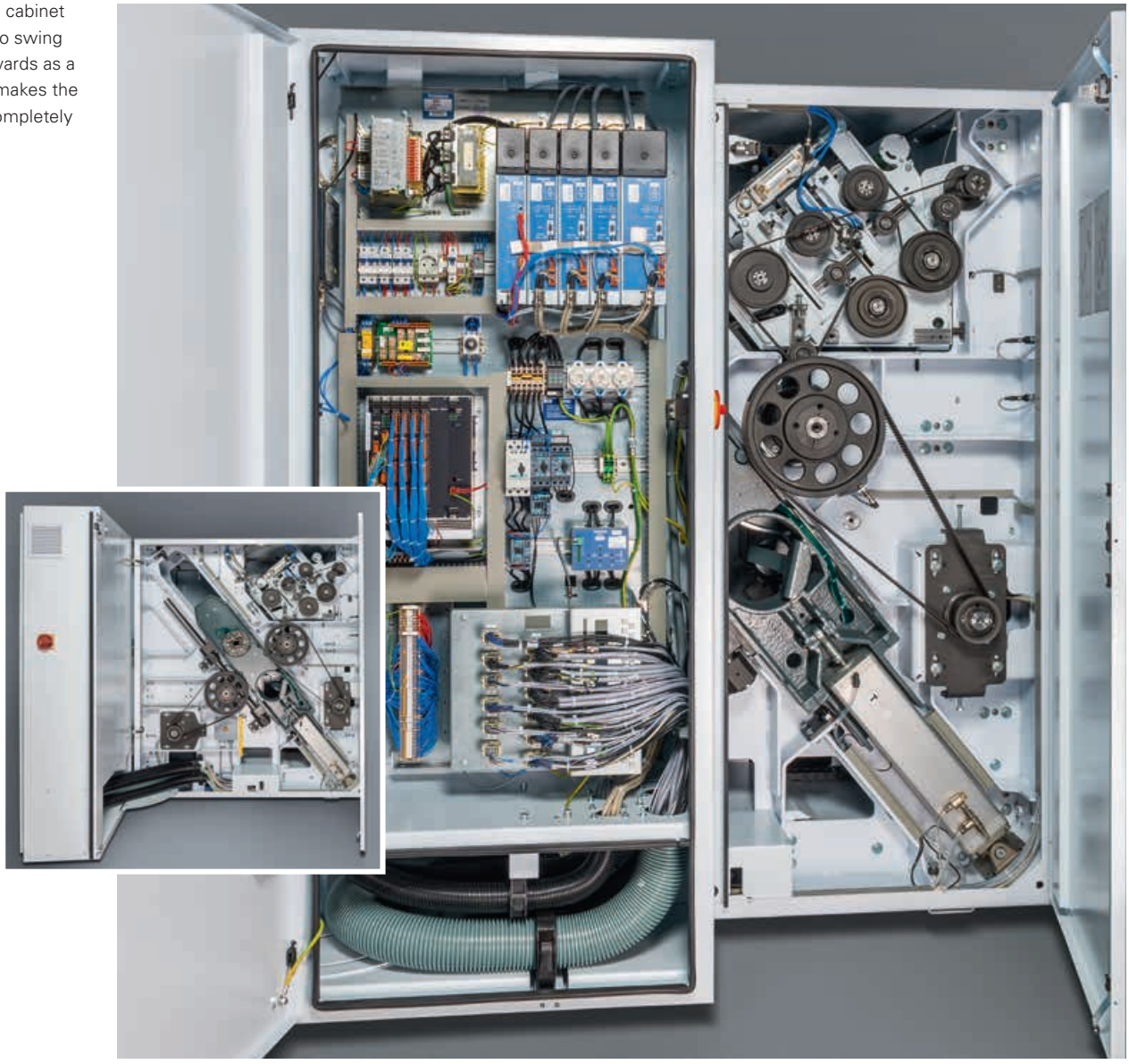
State-of-the-art control and convenient operation:

As a pioneer in the use of state-of-the-art drive technology in spinning preparation machines, it is our aim to ensure optimum quality and optimum handling with new innovative solutions at the lowest possible energy consumption.

Applying our own control electronics allows customized solutions for use in the field of spinning.

The control of the TSL is of course also based on the Truetzschler Computing Unit, the heart of the machine.

Thanks to the Truetzschler energy measuring device, the energy consumption can easily be called up via My Mill. This way you always have the energy in sight when something is out of the ordinary.



The control cabinet is as easy to swing open sidewards as a door. This makes the machine completely accessible.

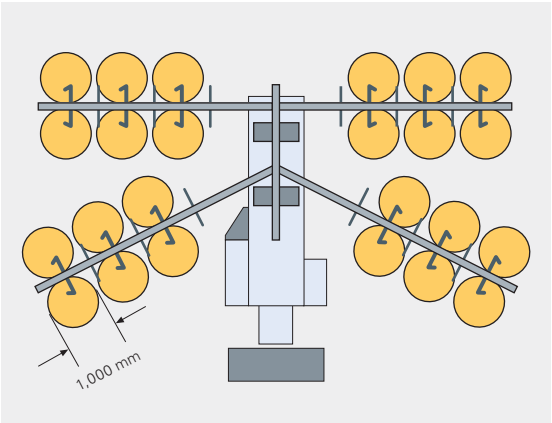
SMART sensors also for the Superlap

The new intelligent individual sliver sensors distinguish between

- Sliver is moving
- Sliver is available, but not moving
- Sliver is not available

This allows reliable detection of sliver breaks at every delivery position and eliminates errors in the batt weight due to missing slivers.

Individual sliver sensor in SMART CREEL



The butterfly shape of the creel allows good accessibility and requires only little space even when using large cans.

The top rolls of the 3-over-3 drafting system are opened with the upper part of the drafting system and can easily be removed.

User-friendly handles facilitate the transport of the lap carriage.

Equipment and options

Truetzschler Superlap TSL 12

General	Good access to all maintenance and cleaning points	●
	Safety panels with central safety system	●
	Central, flow-optimised suction with negative pressure monitoring (above and below floor)	●
	Individual adjustment of the lap pressure via the lap build-up	●
	3 pressure calender with individually adjustable pneumatic load	●
	Large-area filter TD-FB with negative pressure monitoring	○
Drives	Modern, energy-saving drives with robust Truetzschler electronics	●
	Individual drives for infinitely variable adjustment of lap count, main draft and lap tensions	●
Electronics	Colour touchscreen for efficient operation, maintenance and service	●
	USB port	●
	Use of dynamic Truetzschler Computing Unit, only one update for all machine components	●
	Maintenance management via touchscreen	●
	Energy measuring device for online energy monitoring	●
	Interface for data transmission to data acquisition systems My Mill and My Production	●
Creel	Two-row feed creel with intelligent individual sliver monitoring via SMART sensors (600 mm cans)	●
	Creel version for 1000 mm cans or JUMBO CANS	○
Drafting system	3-over-3 drafting system with monitoring device and sliver guide elements	●
	Self-adjusting lap monitoring of top rolls	●
	Durable cleaning bar for gentle cleaning of the top rolls	●
	Integrated, flow-optimized suction of the drafting system at top and bottom rolls	●
	Quick relief during standstill or lap formation	●
	Lifetime lubricated top roll bearing for low heat generation and reduced lap formation	●
	2 table calender units for preparation of the batt	●
	Pneumatic load of top rolls individually, infinitely variable	●

● = Series ○ = Option

Technical data

Truetzschler Superlap TSL 12

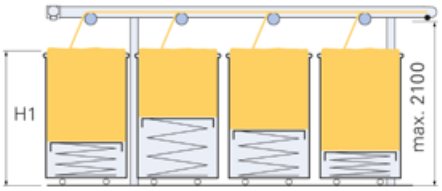
Sliver coiling system	Maximum delivery speed	m/min	180
	Can diameter	mm	600/1,000/1,200
	Can height	mm	1,075 - 1525
	Continuous production	kg/h	518
Energy	Air volume of suction	m³/h	2,800
	Negative pressure of suction	-Pa	-800
	Installed power of drafting system table	kW	3.45
	Installed power of lap head	kW	16.05
	Installed power of filter box	kW	2.5
	Average continuous electric power consumption	kW	7.3
	Compressed air requirement	Nl/h at 7 bar	4,200
General	Material: Fibers	mm	max. 60
	Draft	fold	1.2 – 3
Calender / Drafting system	Lap weight	kg/unit	25 (net)
	Material feed / lap count	ktex	60 – 80
	Sliver weight	ktex	4 - 5
	Lap width	mm	300
	Lap tube diameter	mm	200
	Lap length	m	300

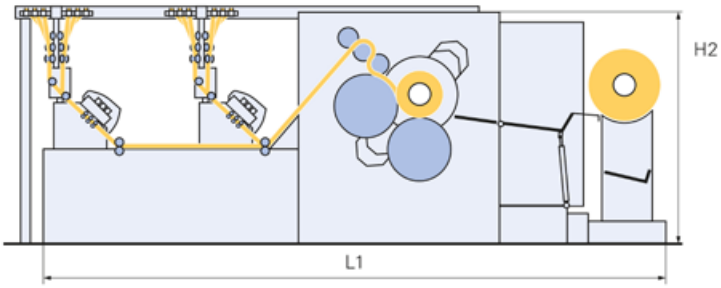
Technical data

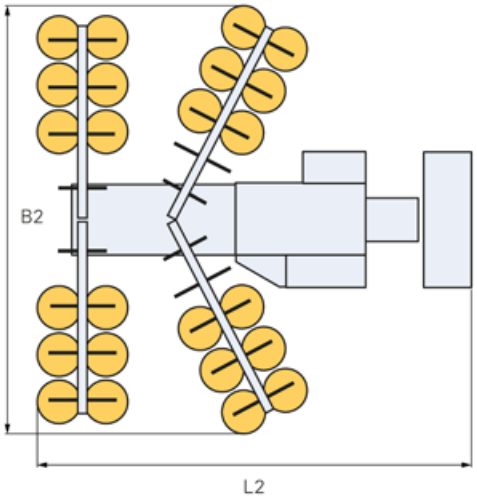
Truetzschler Superlap TSL 12

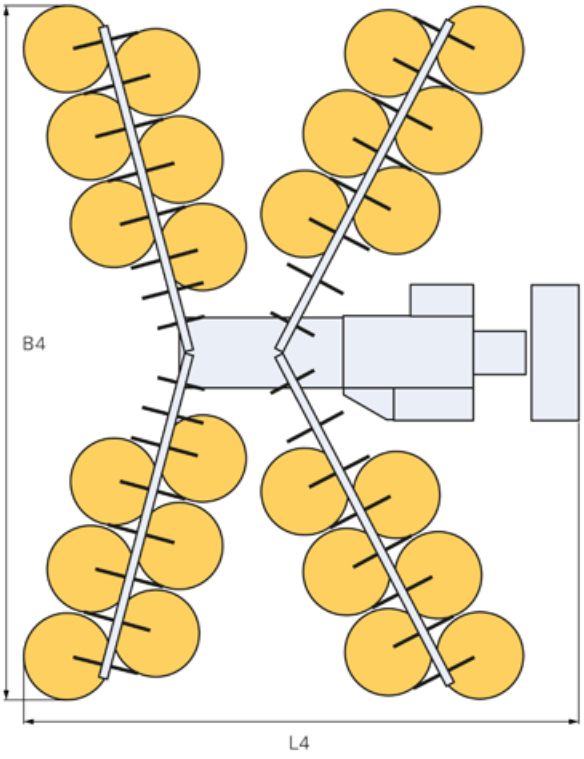
L1 mm	5,513
H1 mm	1,075 - 1,525
H2 mm	2,070

	Creel cans		
	Ø 600 mm	**Ø 1,000 mm**	**Ø 1,200 mm**
L2 / L4 mm	5,994	6,319	7,662
B2 / B4 mm	5,909	9,027	9,586







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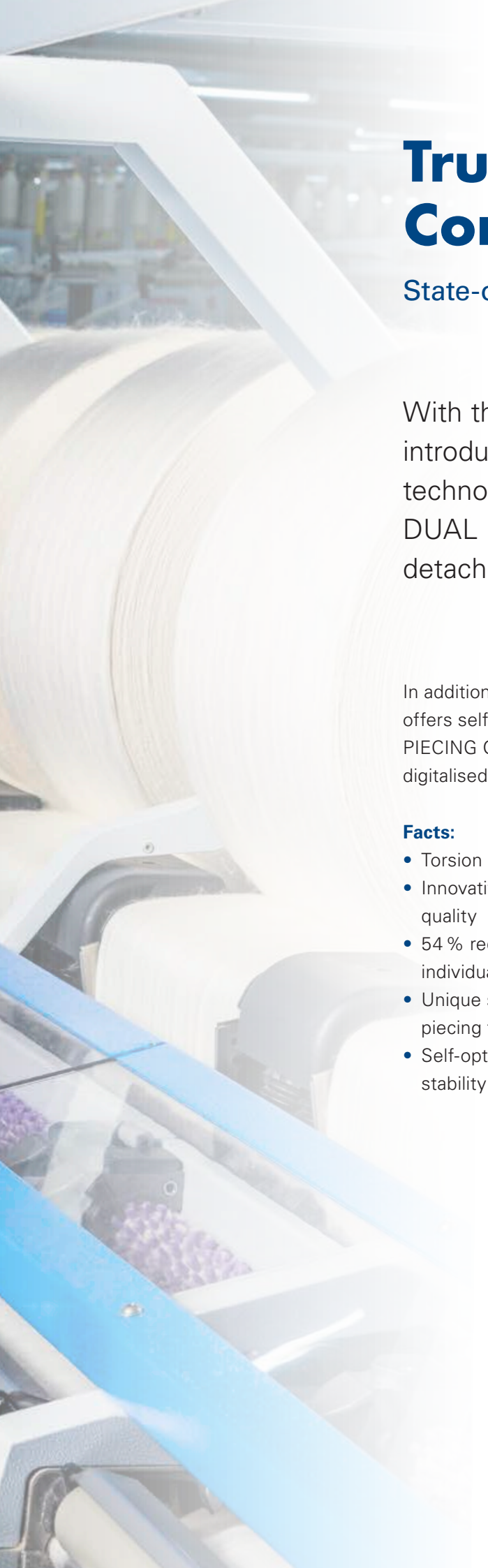


Truetzschler Comber TCO 12

State-of-the-art machine concept

With the TCO 12 we have successfully introduced a new generation of drive technology to combing. The focus is on the DUAL DRIVE concept and the innovative detaching roll drive 2-TWIN DRIVE.

In addition, the TCO 12 is the first comber on the market that offers self-optimization functions such as COUNT CONTROL and PIECING OPTIMIZER. These functions make the difference in a digitalised spinning mill of the future!

Facts:

- Torsion reduced by 75% and vibration reduced by 25%
- Innovative drive technology for less deviations in combing quality
- 54 % reduction of deviations between the sliver counts of the individual combing heads
- Unique self-optimization function PIECING OPTIMIZER to set piecing time and detaching curve
- Self-optimization function COUNT CONTROL for sliver count stability

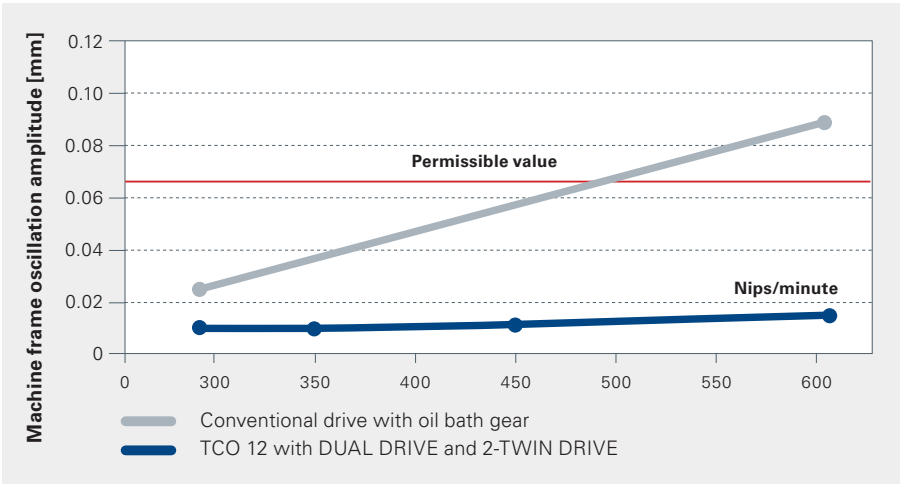
Reduction of torsion by 75%

via the Truetzschler 2-TWIN-DRIVE and DUAL DRIVE drive concept

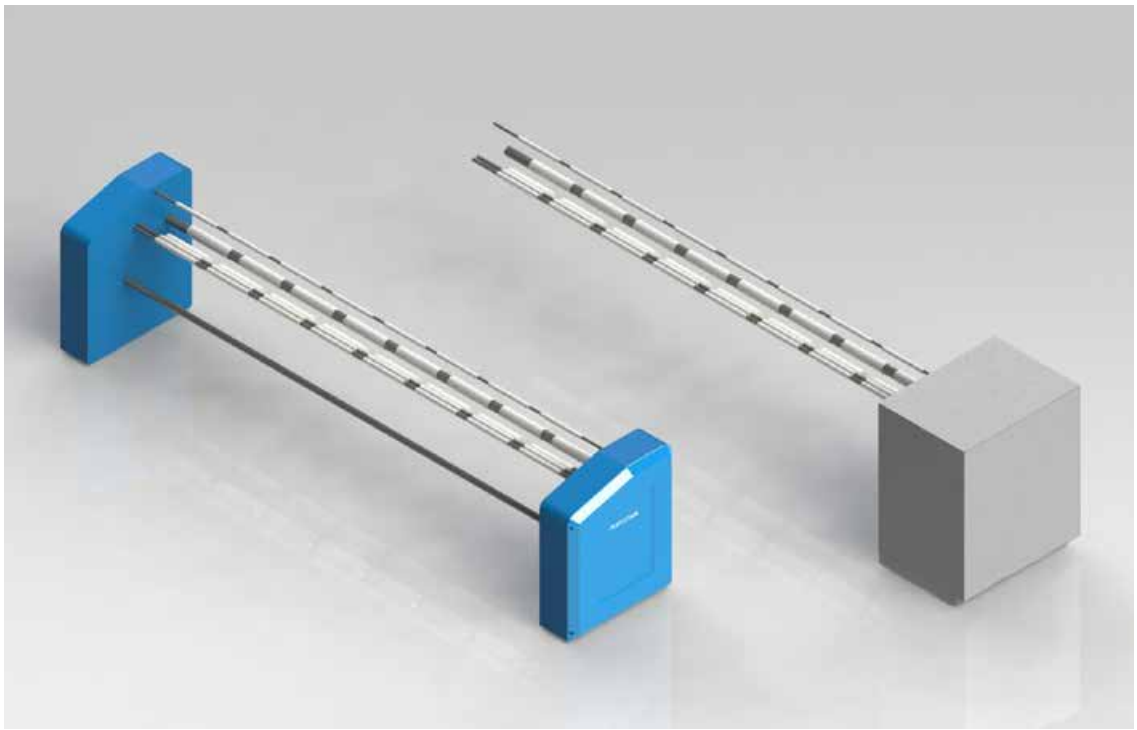
DUAL DRIVE

Only Truetzschler has drives on both sides

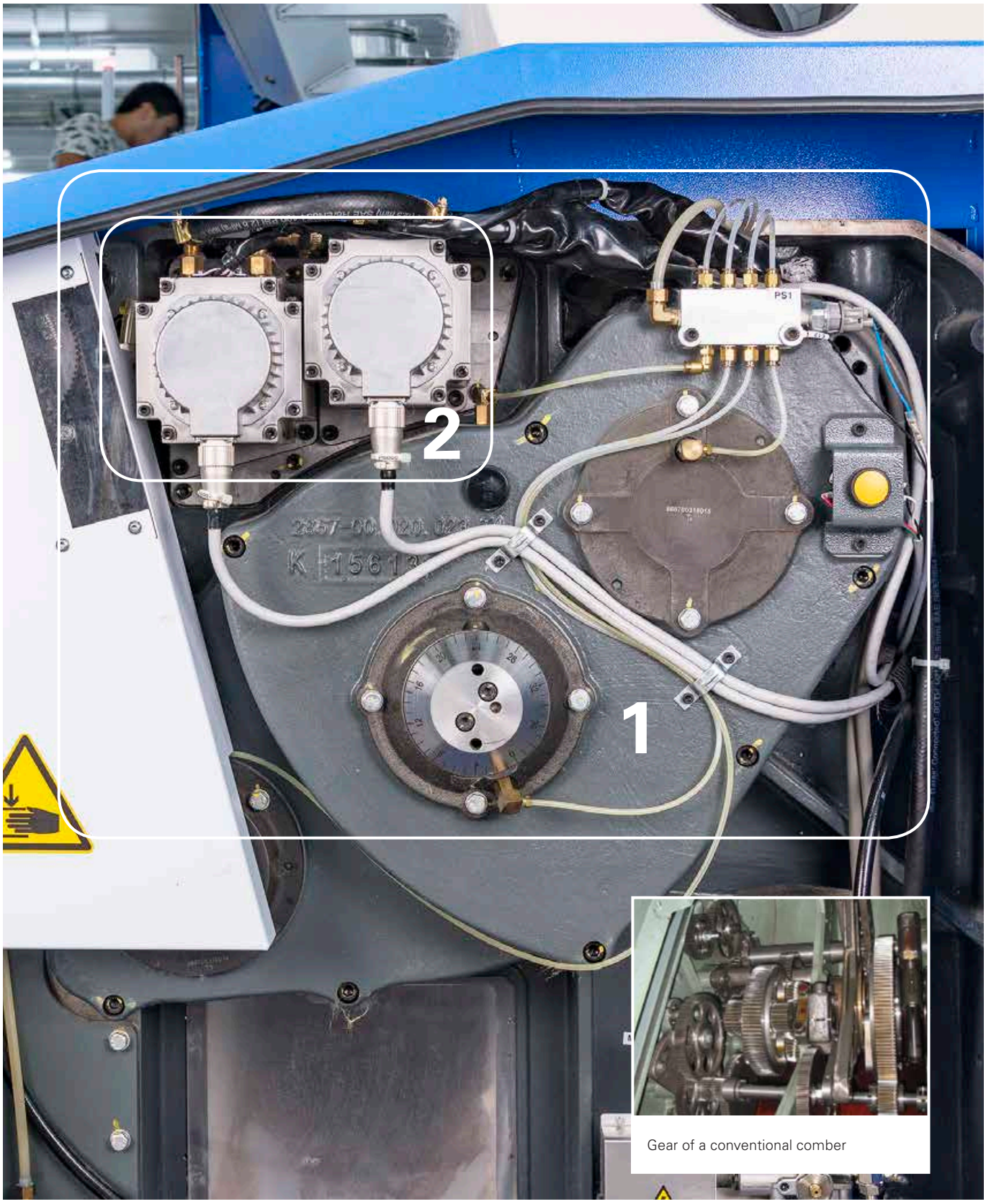
The conventional drive concept is based on a one-sided gear that drives the more than 4 m long shafts on one side. The control takes place via complex mechanical elements in an oil bath gear.
DUAL DRIVE, a two-sided drive concept, was first realised with the Truetzschler comber. It allows high nip rates because the usual mechanical limitations of a one-sided gear are eliminated by the direct drives.
All important elements such as nipper shaft and circular comb are driven from both sides.



Due to the Truetzschler drive concept, the frame vibrations are barely measurable, even at high nip rates.



The picture on the left shows the two-sided Truetzschler drive concept, the one on the right the conventional one-sided variant



Encapsulated, maintenance-free DUAL DRIVE gear unit (1) with decoupled servo drives for the detaching rolls 2-TWIN DRIVE (2)

2-TWIN-DRIVE

Decoupled motion sequences – maintenance-friendly technology

In conventional combers, the one-sided drive of the thin detaching rolls produces strong torsions. These are responsible for deviations in combing quality and noil volume between the combing heads. Due to this, the overall performance of the conventional comber is also limited.

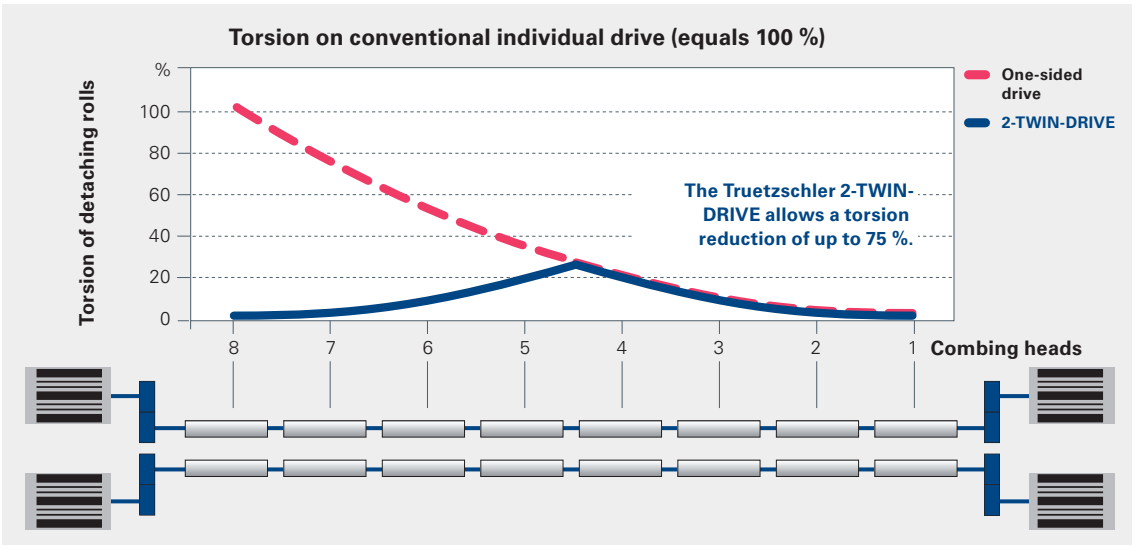
In the concept of the TCO 12, the detaching rolls are driven on both sides by two-times-two highly dynamic servo motors. This ensures completely synchronous running and fully identical movements on all combing heads.

For the first time, this innovative drive technology allows a decoupling of the highly dynamic movement sequence of the detaching rolls from the main shaft that controls the movement of the remaining combing components. This made application-oriented piecing optimization with the PIECING OPTIMIZER possible in the first place. For the first time, fully automated temporal optimization of the motion sequence in relation to other motion sequences is possible. Time-consuming laboratory tests are completely eliminated.

2-TWIN-DRIVE motors

Advantages of the 2-TWIN-DRIVE at a glance

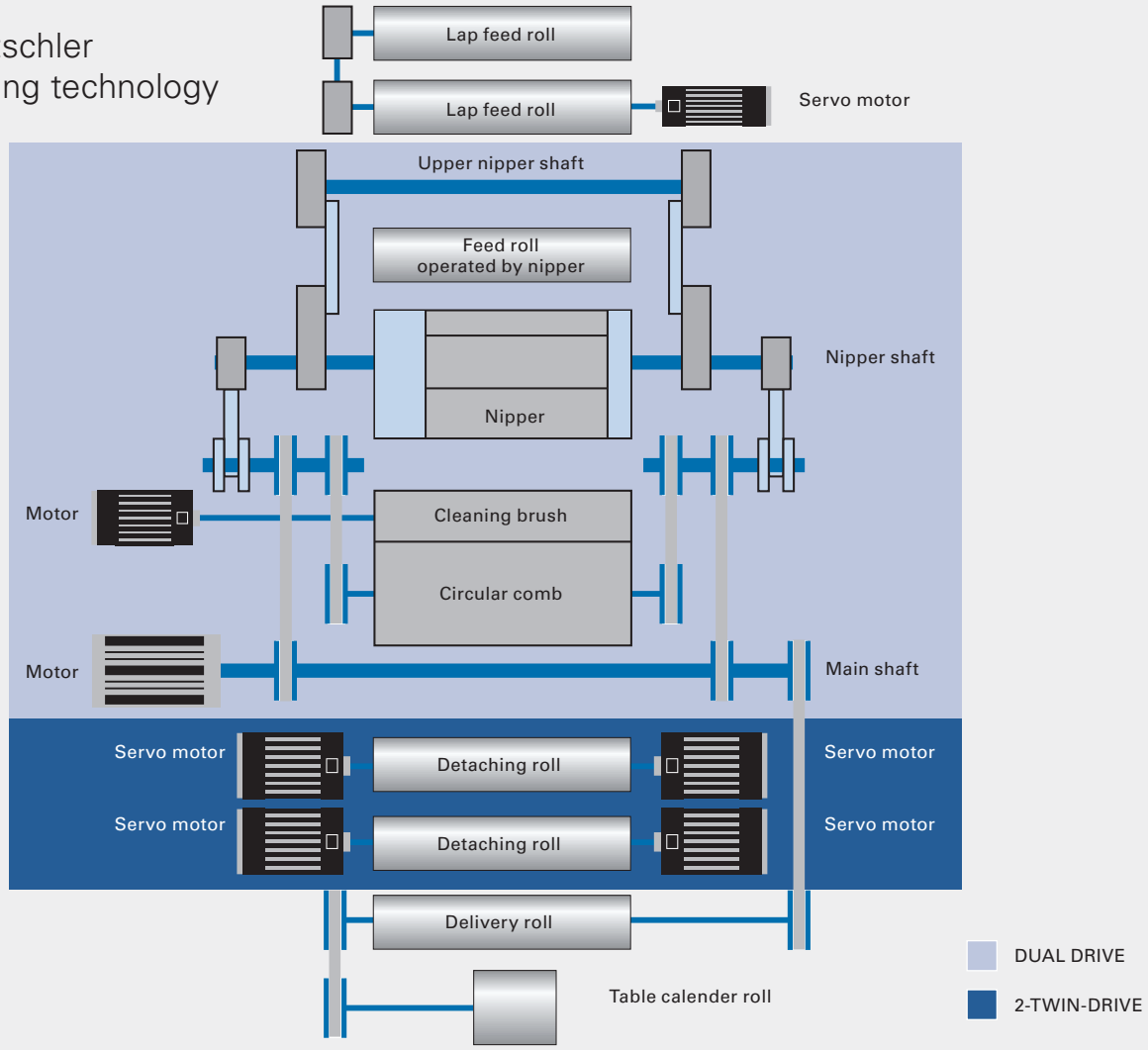
- Torsion reduction by 75 %
- Vibration reduction down to less than 25 %
- 54 % reduction of deviations between the sliver counts of the individual combing heads
- PIECING OPTIMIZER with timing and curve function



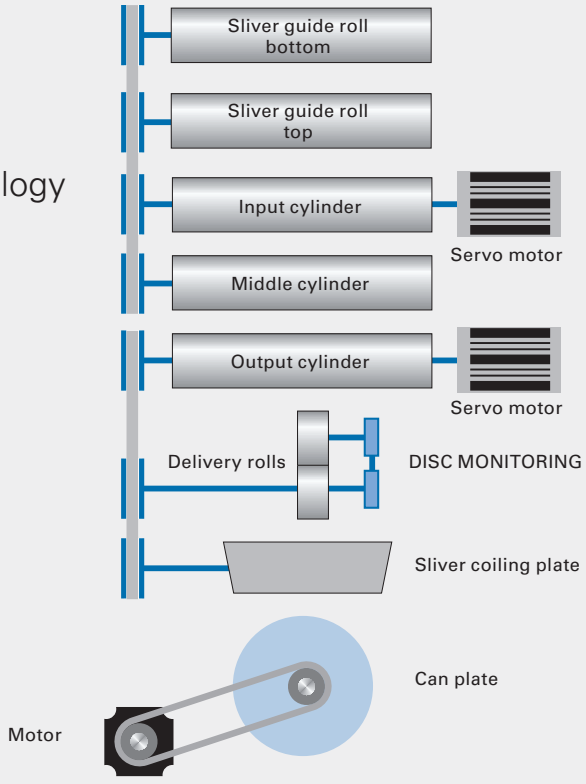
Comparison of detaching roll torsion of a conventional comber with Truetzschler 2-TWIN DRIVE drive concept

Truetzschler TCO 12 gearing diagram

Truetzschler
combing technology



Truetzschler
Draw frame technology



Reduced vibration and smoother running

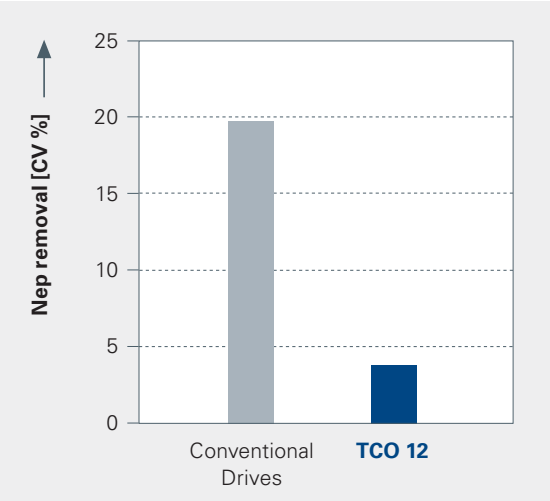
This is achieved by the new DUAL DRIVE and 2-TWIN-DRIVE drive concept. In combination with the solid machine frame, these aspects result in more uniform quality at a higher level.

New servo motor technology

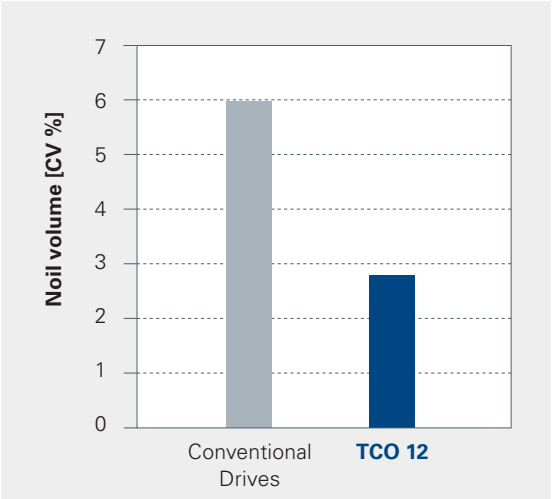
On the Comber TCO 12, specially designed servo motors perform the task of conventional gears. These highly dynamic motors for highly frequent reversal of rotation have proven themselves thousandfold in the application of Toyota weaving machines. The double-sided drive minimises deformations and opens up new perspectives in terms of economic efficiency and quality.

Now there are only slight variations of combing quality between the eight combing heads

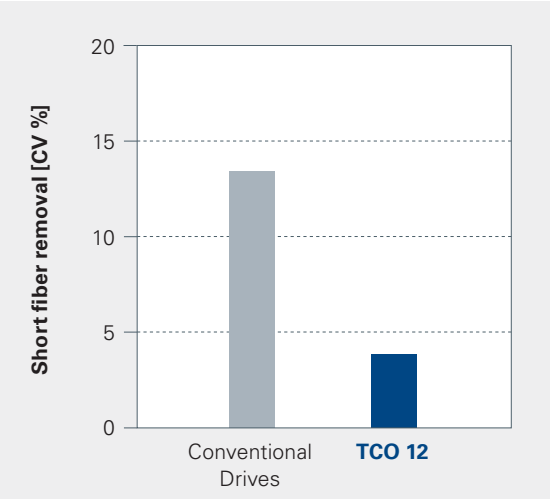
With a conventional one-sided drive, the detaching rolls do not follow the optimal motion sequence during each reversal of rotation due to the strong torsion. This results in different combing quality between the eight combing heads. The double-sided drive ensures uniform motion of the detaching rolls at all eight combing points. This reduces the process-related irregularities.



Up to 80% reduced variation coefficient during nep separation between the combing heads.



The variation coefficient of the noil volume between the combing heads is cut in half.



Up to 70% reduced variation coefficient during short fiber separation between the combing heads.

PIECING OPTIMIZER

Increased sliver quality due to automatic quality control

Truetzschler PIECING OPTIMIZER → Timing function → Optimized piecing time

Truetzschler PIECING OPTIMIZER → Curve function → Optimized detaching curve

PIECING OPTIMIZER

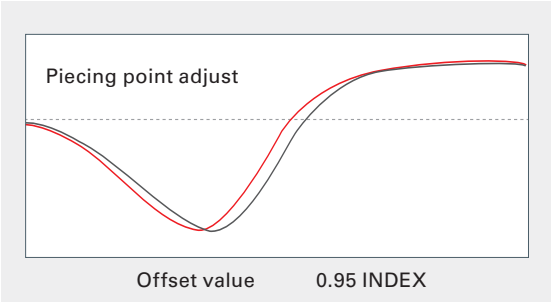
Easy input of piecing optimization on the screen is only possible with the Truetzschler 2-TWIN-DRIVE.

Two methods are used to carry out optimization. Firstly by adjusting the piecing time in the combing cycle (timing function). And secondly by changing the detaching curve shape (curve function).

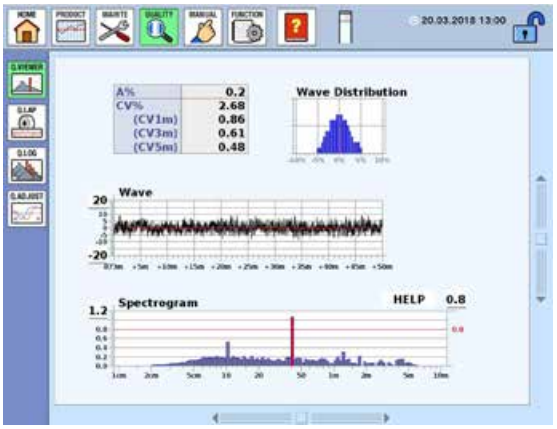
On a comber with conventional drive technology, the resetting of the detaching point (piecing time) is a very time-consuming task. This requires a large amount of trials with subsequent laboratory tests. On the TCO 12, resetting takes only a few minutes and is performed fully automatically at the push of a button. On a conventional comber it is not possible to change the detaching curve.

Timing function

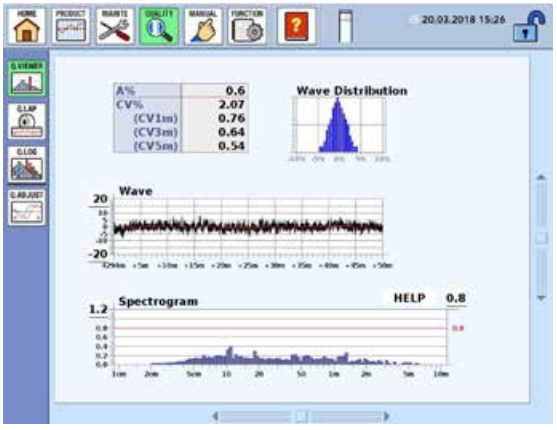
The timing function describes the possibility to shift the reversal point at which the actual piecing takes place to a later time. This is illustrated by the lateral offset of the curve. This ensures that the fiber fringes are optimally pieced together. An interference of the fiber sliver due to recurring piecings is avoided. The piecing time can be checked online using the spectrogram which is displayed on the screen. ➔



Timing function of the PIECING OPTIMIZER to shift the piecing time of the detaching rolls.



Before optimization by the timing function. Until now, the incorrect piecing time could only be determined in the laboratory. At Truetzschler, the spectrogram is monitored online on the machine with self-selected quality limits.



After optimization by the timing function

PIECING OPTIMIZER

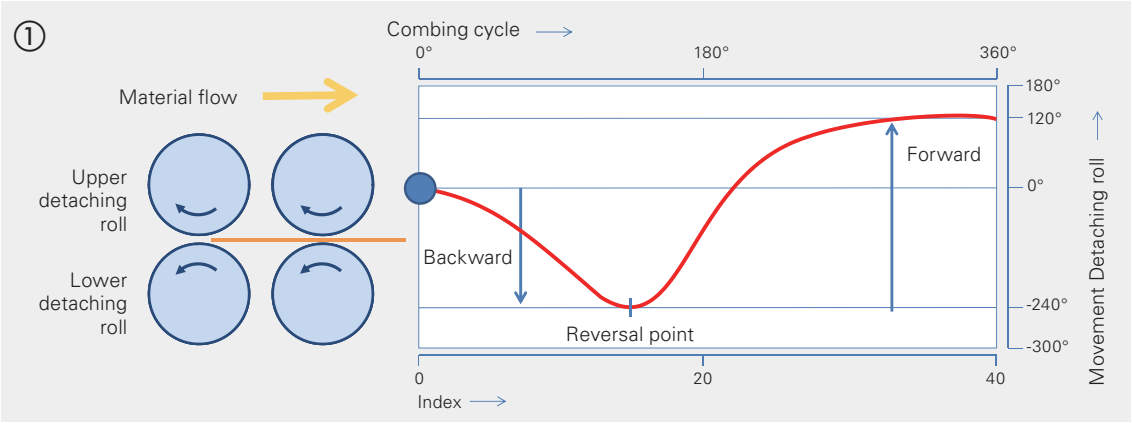
Curve function

For high nip rates, a detaching curve that is optimized for high performances can be selected on the TCO 12 via the machine control. This optimized curve stabilises the piecing process at high nip rates and thus improves the running properties of the comber. This curve also makes for reduced energy consumption.

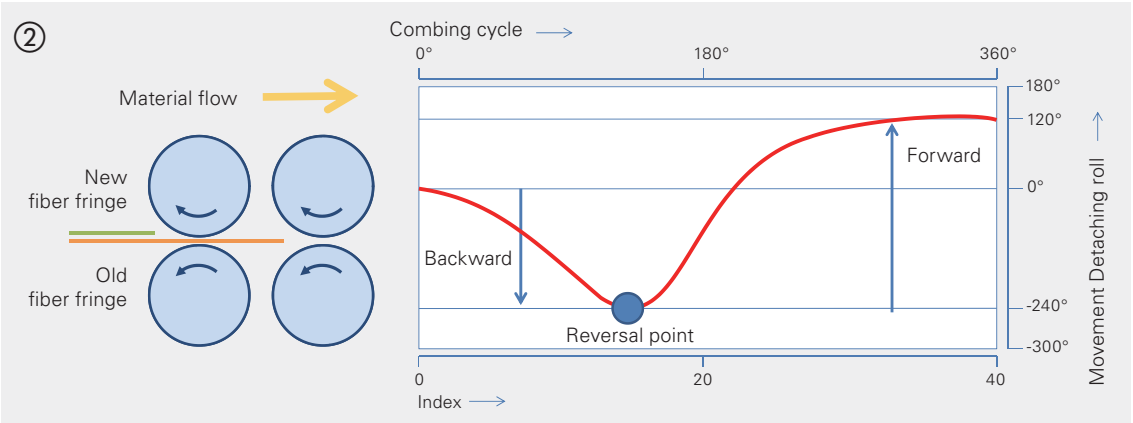
Movement sequence of the detaching rolls

The movement sequence of the detaching rolls is a complicated pilgering process, which enables the joining of the new and old fiber fringe.

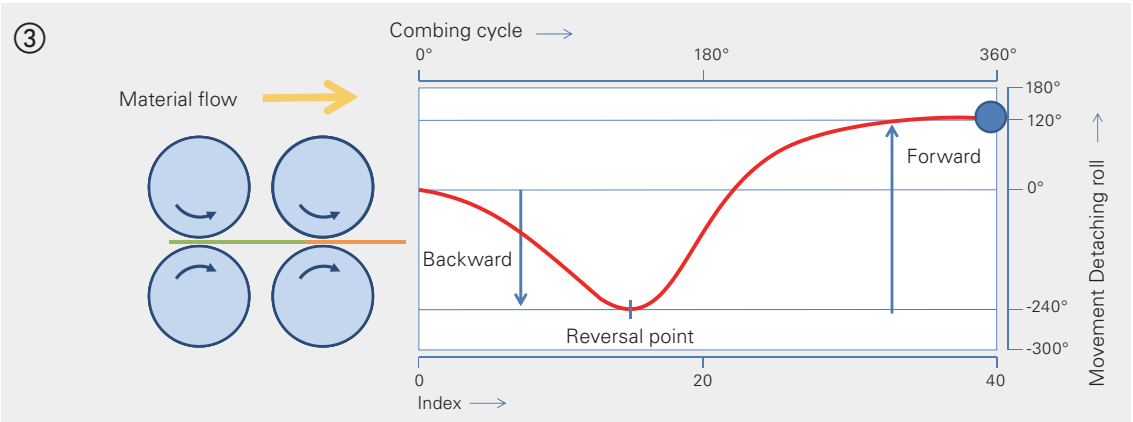
The movement sequence followed by the detaching rolls during the pilgering process in the diagram is called detaching curve.



Before the actual piecing, the detaching rolls return the old fiber fringe (orange).



In this way, they create the possibility to piece the new fiber fringe (green) onto the old one.



Now the fiber fringes adhering to each other must be conveyed in production direction.

Then a new piecing process begins.

COUNT CONTROL

The only comber with levelling

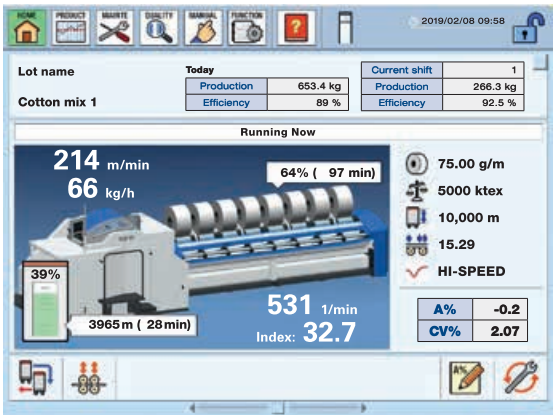
The batt weight of older lap winders can vary over the entire length of the batt. This usually results in sliver count deviations. On the Trutzschler Comber TCO 12, these deviations are compensated by the COUNT CONTROL levelling system. The DISC MONITOR quality sensor determines the sliver count and sends a signal to the control system to adapt the main draft accordingly. The result is a permanently consistent sliver count.

Permanent monitoring of quality data

In addition, DISC MONITOR ensures permanent sliver monitoring. Self-selected quality limits serve to secure your individual quality expectations. The data are shown online on the machine display. No other comber manufacturer offers this convenience.

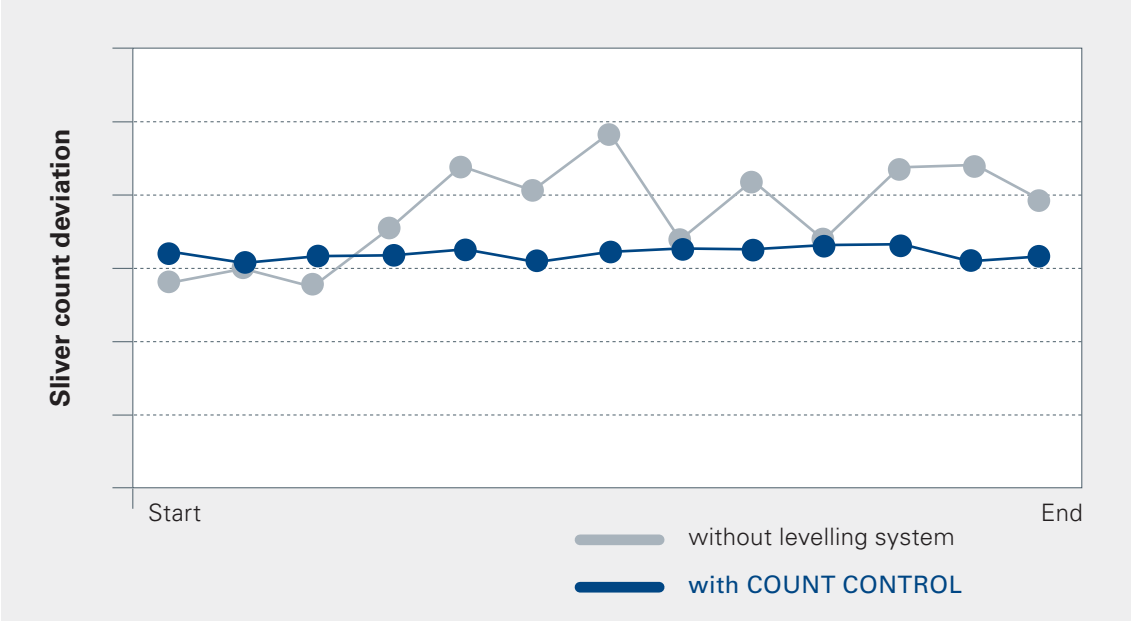
DISC MONITOR: Assurance for consistent sliver count

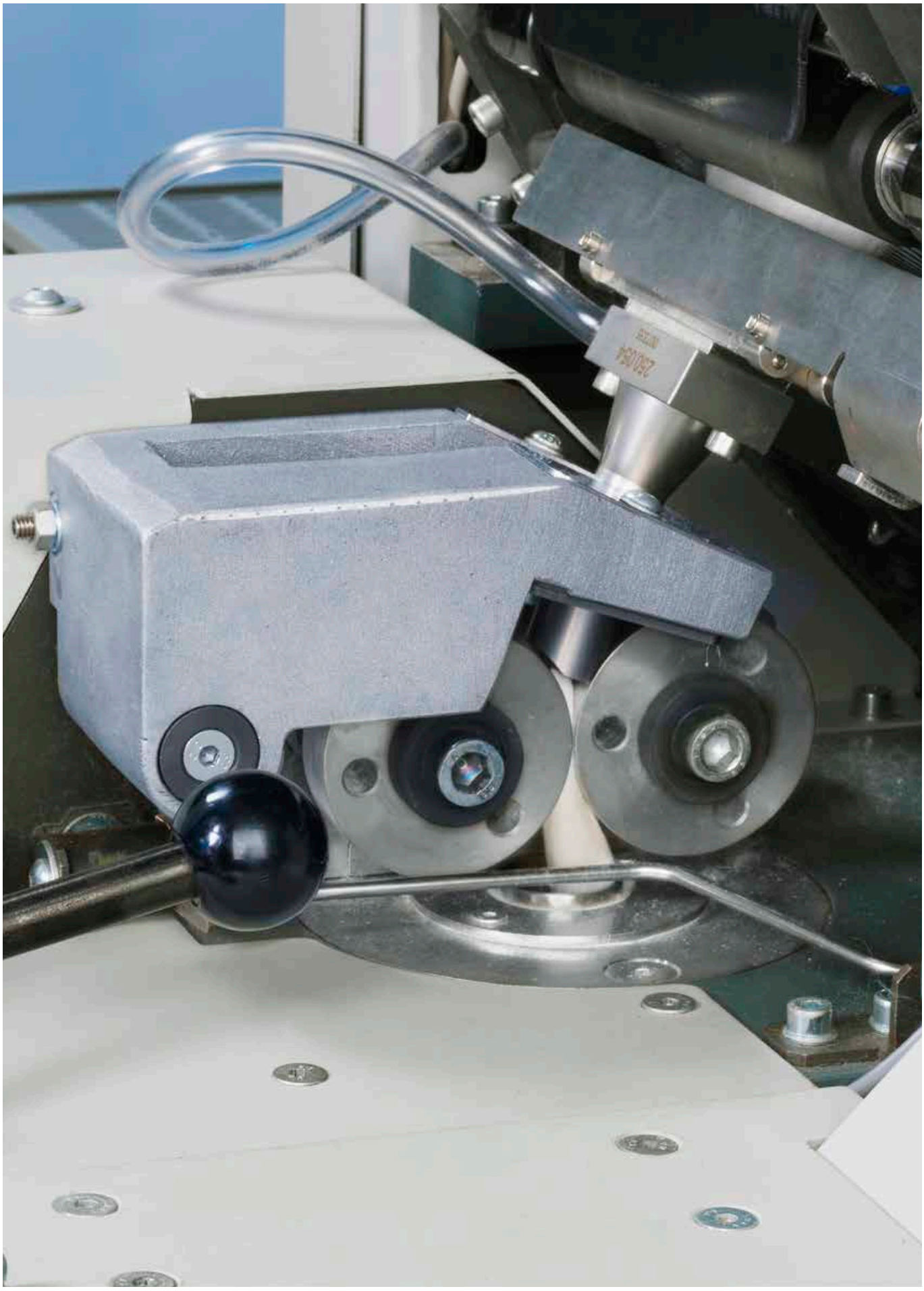
DISC MONITOR is a robust and reliable quality sensor that doesn't miss a thing. It continuously measures every inch of the produced sliver. In the event of irregular or faulty sliver, the DISC MONITOR sends a warning or stops the comber.

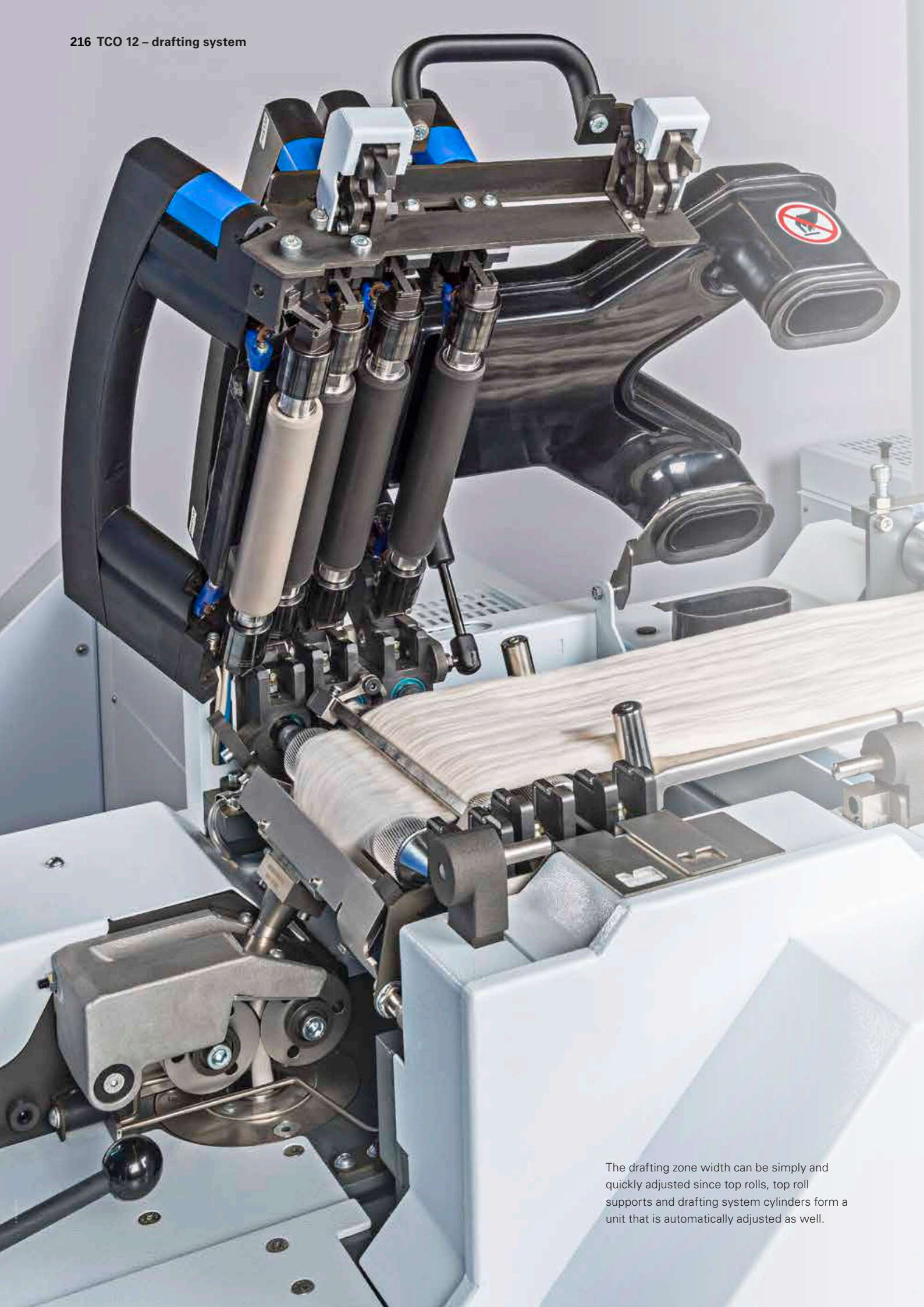


Permanent sliver control with DISC MONITOR. The data are shown online on the machine display.

Sliver count deviations measured over length of lap.







The drafting zone width can be simply and quickly adjusted since top rolls, top roll supports and drafting system cylinders form a unit that is automatically adjusted as well.

Drafting system technology

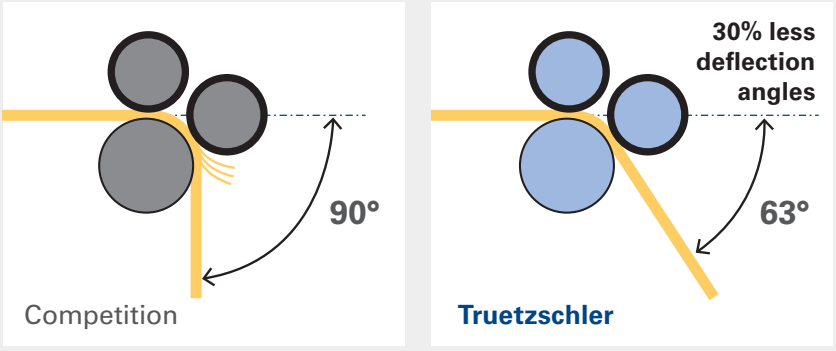
The Comber TCO 12 as well as all Truetzschler draw frame types TD 7, TD 9T and TD 10 are equipped with the same proven 4-over-3 drafting system.

Reliable drafting system components

- 4-over-3 drafting system with reduced deflection angle
- Adjustable pressure bar for controlled guidance of even short fibers
- Pneumatically loadable top rolls
- Self-adjusting lap monitoring
- Patented bearing technology for minimal heat development

The unique arrangement of the drafting system components with a 30 % smaller deflection angle results in optimal running behaviour even with very fine sliver weights and in particular highly parallelised fibers such as combed slivers or slivers for the air jet process.

To allow a complete edge fiber integration in the critical area of sliver formation in the web guide, gentle deflection is of particular importance. Fiber laps on the top rolls can thus be significantly reduced. ➔



Optimal drafting system geometry for gentle fiber guidance, best CV values and optimal running behaviour

- **Excellent fiber integration** mainly on the web edges
- **Reliable fiber guidance** at high speeds
- **Fewer laps on top rolls** to protect the roll coatings

Patented top roll bearing system

Our patented top roll bearing systems have been in use successfully for more than a decade.

The picture foreground shows Truetzschler's patented top roll bearing system with only one screw. In contrast to standard fastening (in the picture background), there is no wear of the top roll shafts or top roll bearings during mounting or removing.

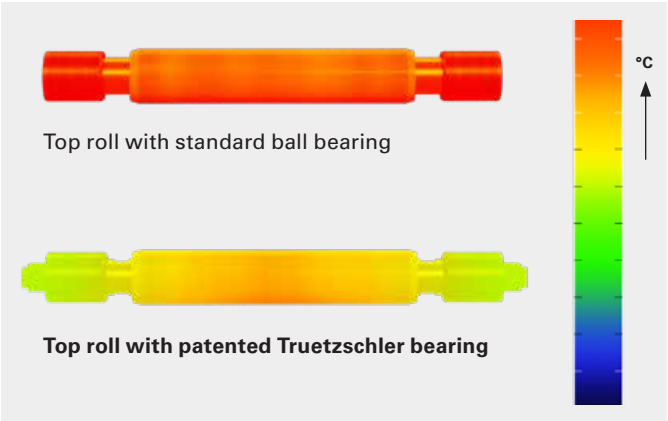
A typical Truetzschler development for the heart of every drafting system:

- High accuracy of fit and optimum centering for an error-free drafting process
- High process safety, less downtime
- Simple handling
- Low temperature development and thus gentle to the coatings
- Extremely long service life
- Reliable wear-free connection technology used in toolmaking

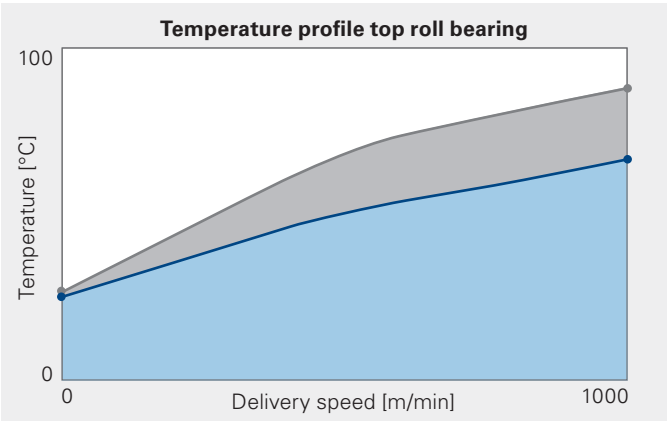
Dissipation of process heat into frame

Thanks to the unique bearing technology, the top roll bearings stay significantly cooler than the work area. Thus, it becomes possible to dissipate the heat generated during the drafting process into the machine frame via the bearings.

This results in clearly reduced roll and bearing temperature with positive effects on service life and wear.



To dissipate heat from the drafting process over the bearings into the machine frame is only possible via these special bearings with minimal heat development.



The significantly reduced process heat on the patented Truetzschler top roll bearing system is clearly noticeable.

Pneumatic top roll load

Optimal individual and infinitely variable top roll load settings – adapted to various applications – are possible same as before. Software limits prevent incorrect settings and thus improve the lap behaviour.

This, in addition to the automatic relief of the top rolls during standstill, preserves the coatings and extends the service life.

These controllers allow easy and reproducible settings of the top roll loads. A special sensor monitors the pressure.

Sliver coiling system

HYDRO POLISHED TUBE

The flexible coiler plate with optimal surface properties ensures perfect sliver coiling, regardless of the material. The special polish of the tubes results in virtually frictionless sliver coiling and thus reduced sliver load.

Hydro-polished coiler plate with tube

The simple setting by means of the individual can changer drive allows perfect setting of the coiling geometry.

Optimisation of sliver coiling

Thanks to the separate can plate drive, the coiling pattern can be adjusted conveniently and continuously via the display.

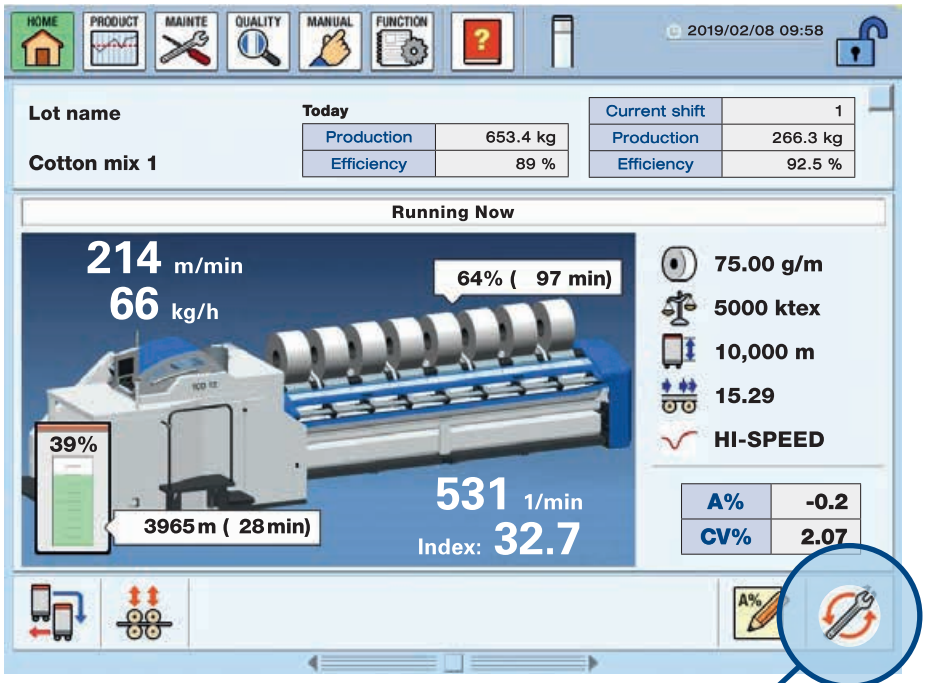
The coiling geometry is also designed in such a way that the slivers can be drawn from the can without any problems.

Quality and functionality in sight

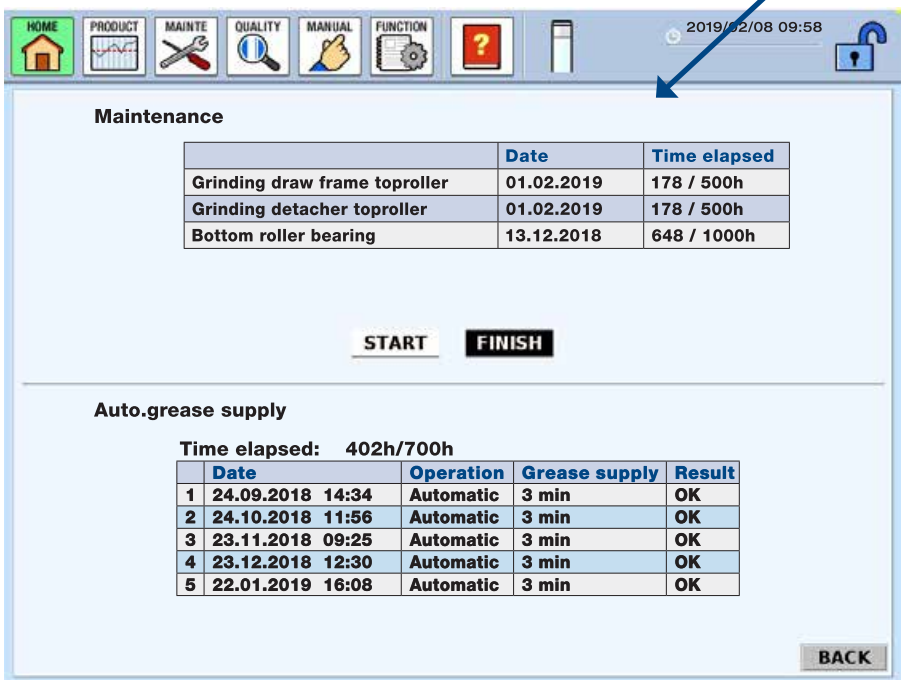
The maintenance management of the TCO 12

The regular and careful maintenance of the machines is important to maintain their functionality for a long time. To ensure that you keep the overview, the machine reminds you of upcoming maintenance and repair work.

The screen shots show the maintenance management of the TCO 12. Select the work you would like to be reminded of yourself – recommendations for maintenance can be found in the operating instructions.



Press a button on the maintenance symbol in the main menu ...



... to go to the screen with the corresponding maintenance information.

Online quality monitoring

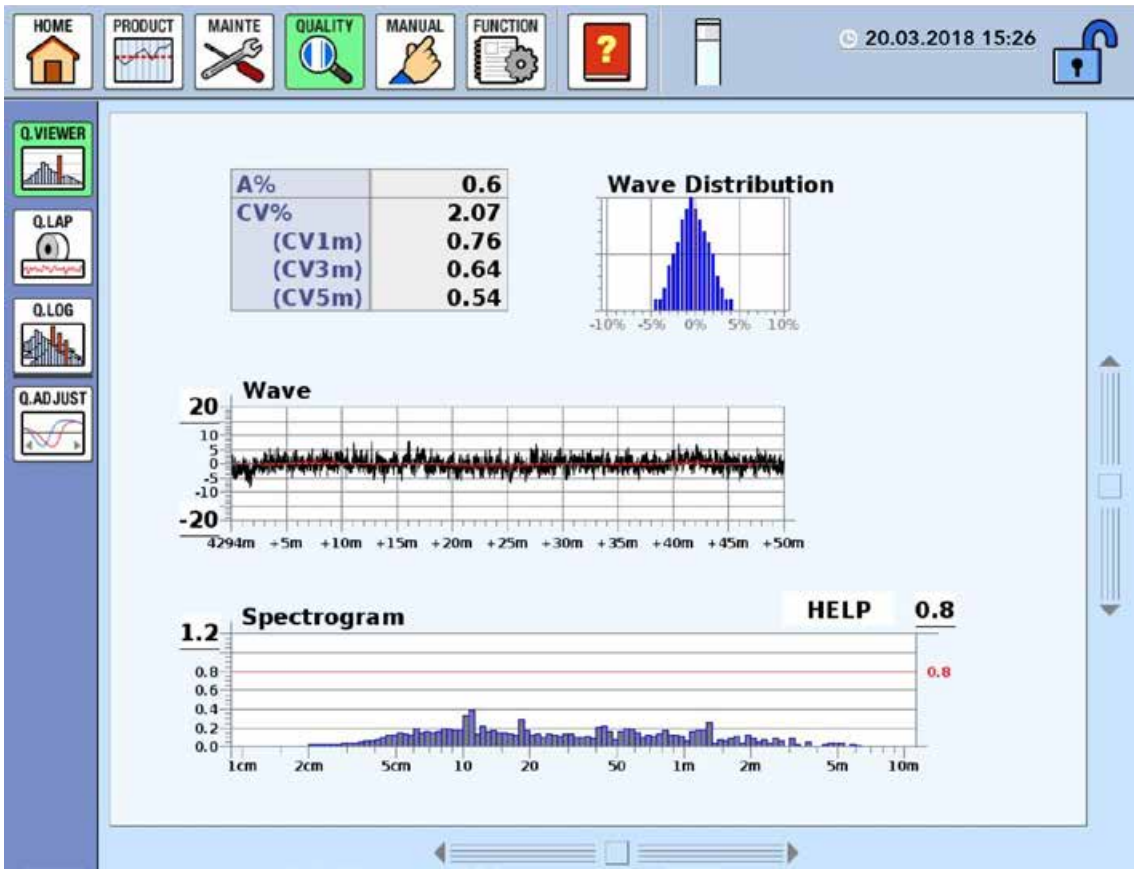
The Truetzschler TCO-DM quality sensors also record important online quality parameters in combing after the drafting system, such as CV value, sliver count variations A%, but also the spectrogram.

For these values, the customer can set his own quality limits, which are automatically monitored by the software.

Here, too, we want to ensure the quality of your end product as early as possible.

My Mill

If you would like to have an even better overview of your combing mill, simply summarise the quality data online. For this purpose, use My Mill, the all-in-one platform for spinning.

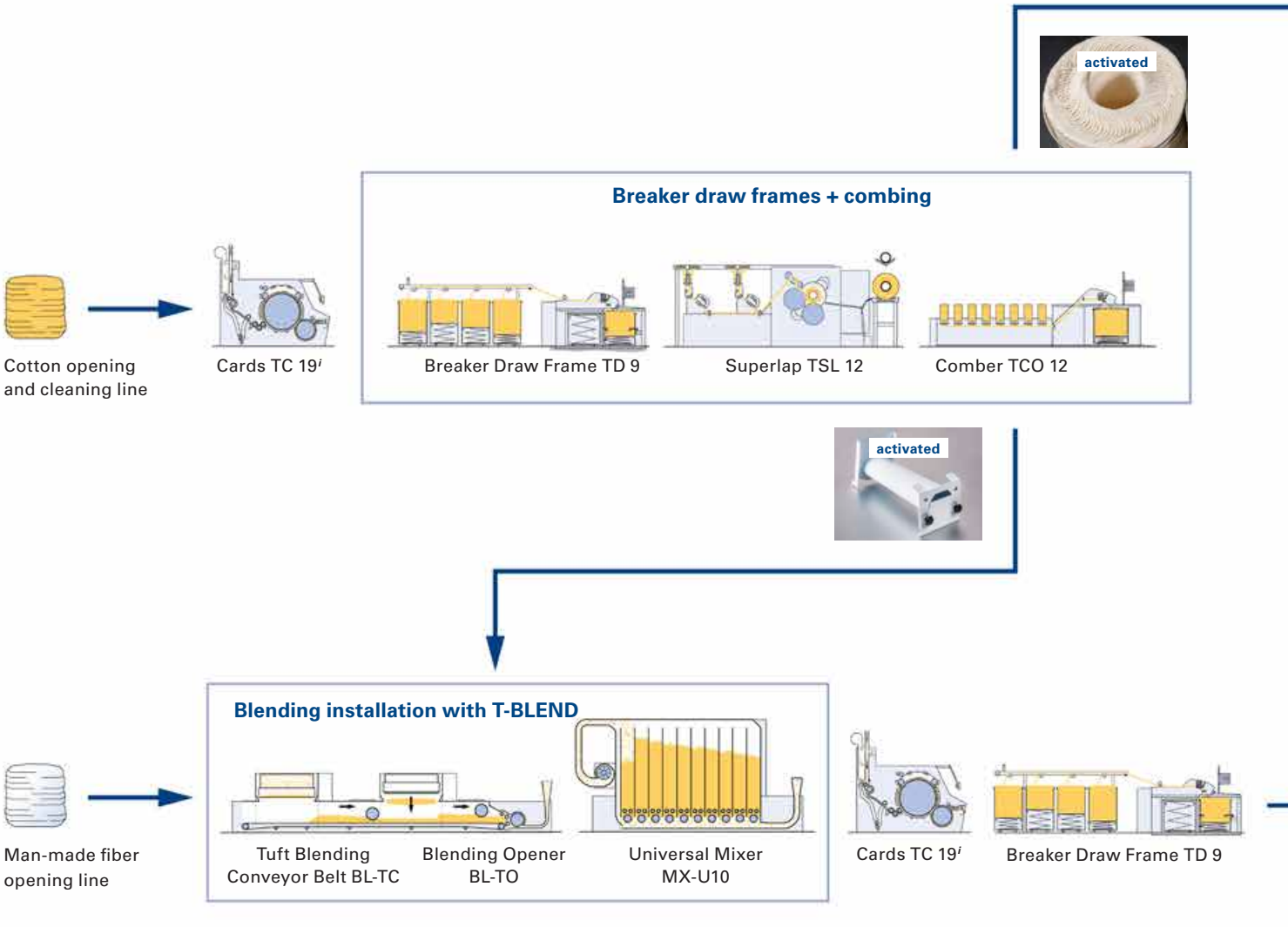


With online quality monitoring on the comber, you determine the quality limits for your combed sliver. Limits are monitored by the software and, if necessary, stop the machine before the material is further processed.

Combed cotton for tuft blends

A logical consequence of the annual growth in world fiber volume is the increasing use of blend yarns.
But even when using blends with cotton, the quality improvements of the combing process should not suffer.
With the sliver suction module of the TCO 12 it is possible to extract the combed fibers directly after the drafting system and then blend them on the Tuft Blending Installation T-BLEND.
Since the machines are generally designed to be flexible for normal can delivery and sliver suction, simple handling is a priority.

The suction nozzle can be attached underneath the drafting system with just a single movement. The straight combed sliver is then fed to a separate suction unit.
The necessary production of the machine is transmitted to the combing machines via material requirements of the blowroom. If there is no material requirement, the comber stops automatically to prevent problems in the blowroom.

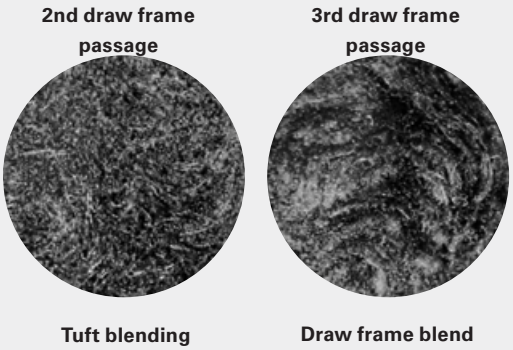


The picture shows the mounted suction nozzle for the sliver suction on the Comber TCO 12.

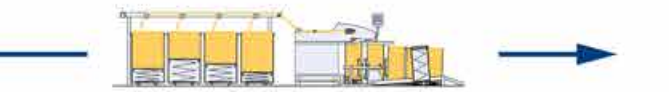
Autoleveller Draw Frame
TD 10-600C

Spinning process

The machine can easily be switched between sliver suction and can coiling.



The advantages of the tuft blend in comparison to the often common draw frame blend are easy to see.



Autoleveller Draw Frame
TD 10-600C

Spinning process

Equipment and options

Truetzschler Comber TCO 12

Coiling	Coiler plate with HYDRO POLISHED TUBE prevents deposits	●
	Automatic sliver separation unit during can changing	●
	Automatic rotary can changer	●
	Additional empty can position on can changer for 600 mm cans	●
	Above floor and below floor can changer for 1000 mm cans or JUMBO CANS	○
General	Integrated quality monitoring DISC MONITOR (sliver count, sliver evenness, integrated spectrogram analysis)	●
	Technology package standard	Alternative
	Technology package fine count	equipment
	Lap tubes TCO-LT	●
	Good access to all maintenance and cleaning points	●
	Safety panels with central safety system	●
	Central, flow-optimised suction with negative pressure monitoring (above and below floor)	●
Drives	Modern, energy-saving drives with robust Truetzschler electronics	●
	Individual drives for infinitely variable adjustment of sliver count, draft and nips (nips/min)	●
	Individual can plate drive for optimized sliver coiling	●
	Individual drives for feed and delivery roll of the drafting system, adjustment of the draft via control system	●
	DUAL DRIVE – double-sided drive concept for combing elements	●
	2-TWIN DRIVE – low torsion individual drive technology for the detaching rolls	●
Electronics	Large colour touchscreen for efficient operation, maintenance and service	●
	USB port	●
	Use of dynamic Truetzschler Computing Unit, only one update for all machine components	●
	Maintenance management via touchscreen	●
	Energy measuring device for online energy monitoring	●
	Interface for data transmission to data acquisition systems My Mill and My Production	●
Combing station	Reserve table TCO-RT for the lap transport carriage TCO-LC1	●
	Reserve table TCO-RT incl. empty tube storage for automatic lap transport system LTS	○
	Feeding for laps with 200 mm diameter and 300 mm width	●
	Round and fixed combs from Städtler und Uhl	●
	PIECING OPTIMIZER with timing and curve function for optimum tear-off curve and piecing time	●
	Equipment for forward and reverse feeding (feed amounts 4.3 / 4.7 / 5.2 / 5.5 / 5.9 mm)	●
	Semi-automatic lap feeder TCO-LF for the lap transport carriage TCO-LC2	○
	Automatic lubrication system TCO-AGA	○
	Round and fixed combs from Graf	○
Drafting system	4-over-3 drafting system with pressure bar and short sliver guidance in the can	●
	Gentle sliver deflection for process-safe sliver formation and reduced lap formation tendency	●
	Self-adjusting lap monitoring of top rolls	●
	Durable cleaning bar for top rolls for gentle cleaning	●
	Integrated, flow-optimized suction of the drafting system at top and bottom rolls	●
	Quick relief during standstill or lap formation	●
	Process-safe, pneumatic, automatic web threading	●
	Lifetime lubricated top roll bearing for low heat generation and reduced lap formation	●
	Pneumatic load of top rolls individually, infinitely variable	●
	COUNT CONTROL – Levelling system for perfect sliver count consistency	●

● = Series ○ = Option

Technical data

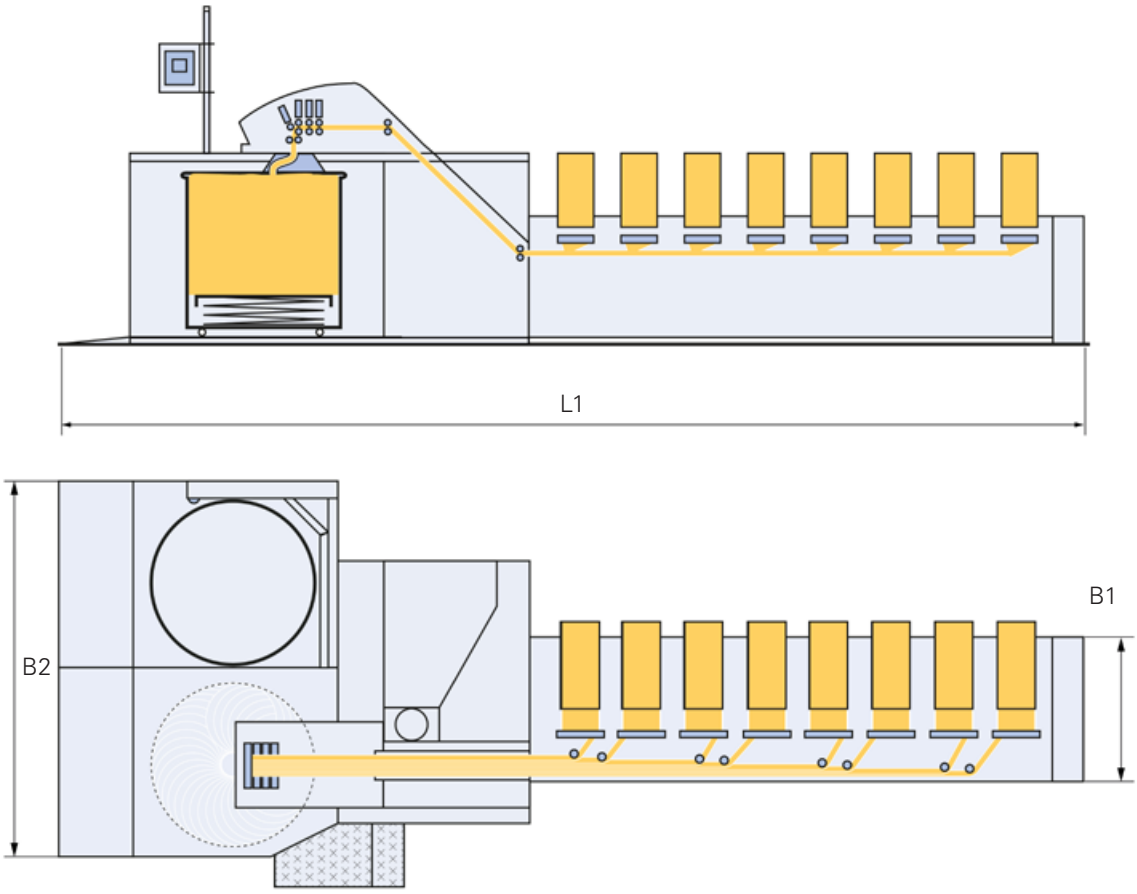
Truetzschler Comber TCO 12

Sliver coiling system	Maximum delivery speed	m/min	350
	Can diameter	mm	600/1,000/1,200
	Can height	mm	1,200
	Continuous production	kg/h	3 – 6 ktex
Energy	Air volume of suction	m³/h	2,800
	Negative pressure of suction	-Pa	- 430
	Average continuous electrical power consumption at 500 nips	kW	6 – 6.6
	Compressed air requirement	Nl/h at 7 bar	300/360/350
General	Material: Fibers	mm	max. 60
	Draft	fold	9 - 26
Combing station	Maximum nip rate	Nips/min	550
	Production	kg/h	90
	Lap weight	kg/unit	25 (net)
	Material feed / lap count	ktex	60 - 80
	Feeding		Forward/backward
	Ratch-wheel feeding	Teeth	16, 17, 18, 19, 20, 22
	Round combs		Staedler & Uhl: 9103, 9107, 9109, 9121 Graf: 8015, 9015, 9030
	Fixed combs		Staedler & Uhl: 26, 30 Graf: C26, C30
	Noil extraction	%	8 – 25

Technical data

Truetzschler Comber TCO 12

	Output cans		
	Ø 600 mm	**Ø 1,000 mm**	**Ø 1,200 mm**
L1 mm	6,149	7,045	7,220
B1 mm	1,075		
B2 mm	1,705	2,440	2,845



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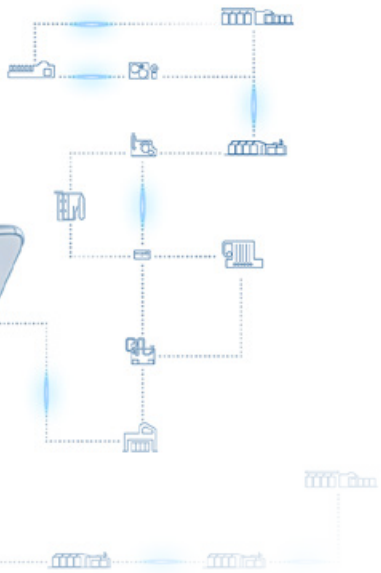

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Solutions: My Mill · My Production App · My Wires App

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