TRÜTZSCHLER SPINNING

draw frame

CONTENT

The true way to your yarn quality

On the way to yarn quality and economic efficiency, spinning mills are facing increasing challenges: shortage of specialists, high flexibility in production, optimal application of resources, etc.

Since the foundation of our company we have been using our values to offer you what is of importance: "The true way to your yarn quality". We are continuously developing new technological solutions that allow you to address the rapid market changes, thus ensuring the success of your business.

To support you in pursuing "The true way to your yarn quality", we are providing practical innovations and self-optimising functions here and now as well.

The creation of true yarn quality involves the entire process

- Optimal drafting system geometry for perfect CV values
- The quality always in view via the remote display T-LED
- Spectrogram analyses with gearing diagram for quick elimination of sliver variations
- DISC LEVELLER with minimum deflection and maximum accuracy of measurement for best sliver quality
- SERVO DRAFT with digital drives and separate drive for the creel relieves the motor and thus increases levelling dynamics

Key positions where resources are conserved:

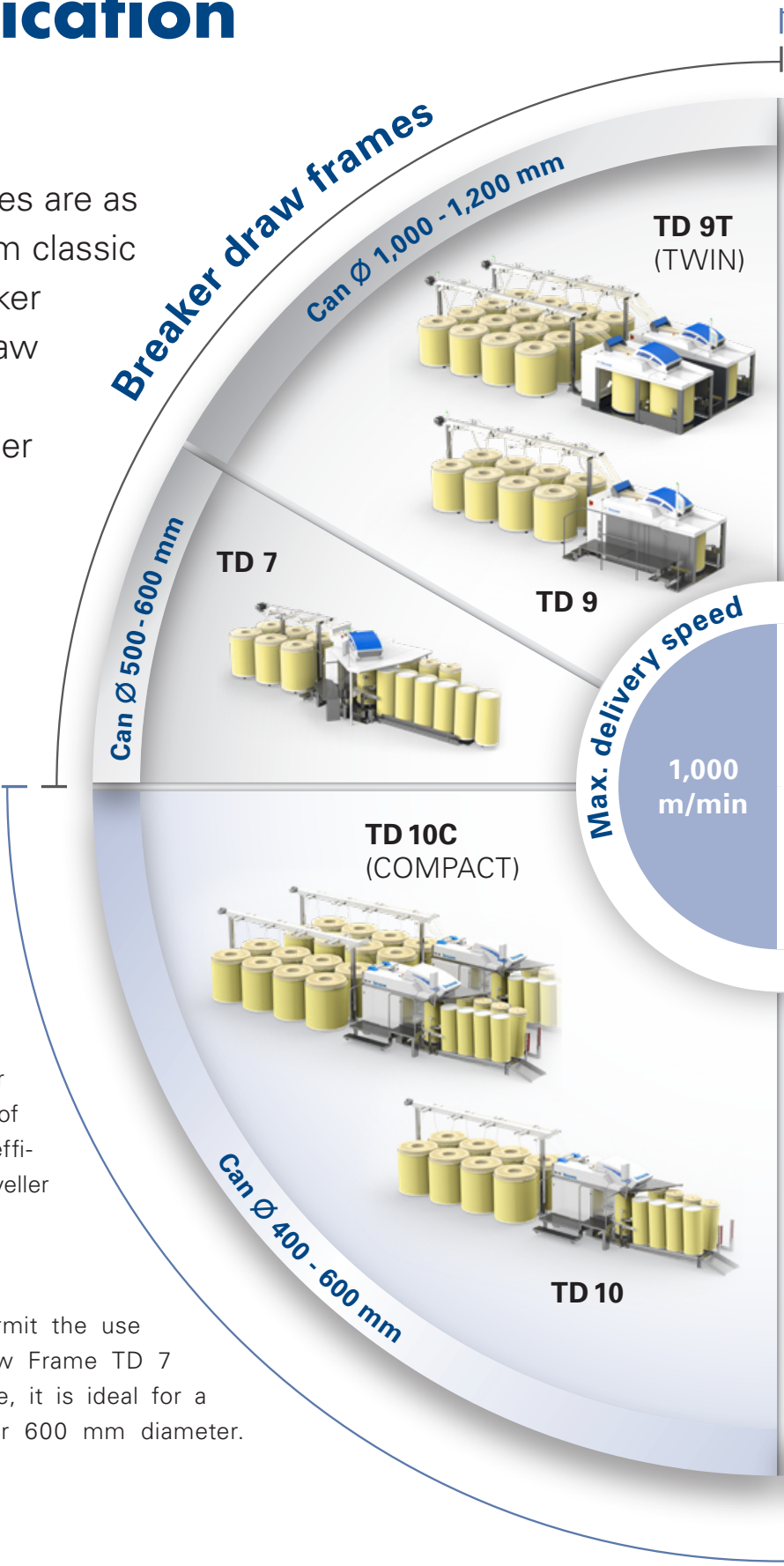
- Optimal temperature control of the top roller bearings – gentle to coatings and long service life
- 24 h cleaning intervals thanks to 6 times larger filter box
- 53 % savings potential for energy costs of the central filter system
- High component uniformity between all draw frame types
- 20 % less floor space of TD 10
- High level of efficiency due to the TWIN-but-independent concept of the breaker draw frames.
- Optimised temperature behaviour of electronic power components

Innovative, self-optimising technology

- Self-adjusting lap monitoring of top rollers for reliable detection of fiber laps
- OPTI SET – perfect main drafting point due to self-optimisation
- AUTO DRAFT – automatic detection of the perfect break draft

The right draw frame for every application

The Truetzschler draw frame types are as diverse as their applications. From classic ring yarn processes using a breaker draw frame and a autoleveller draw frame to process shortenings exclusively possible at Truetzschler with the Integrated Draw Frame IDF 2 for airjet and rotor spinning.



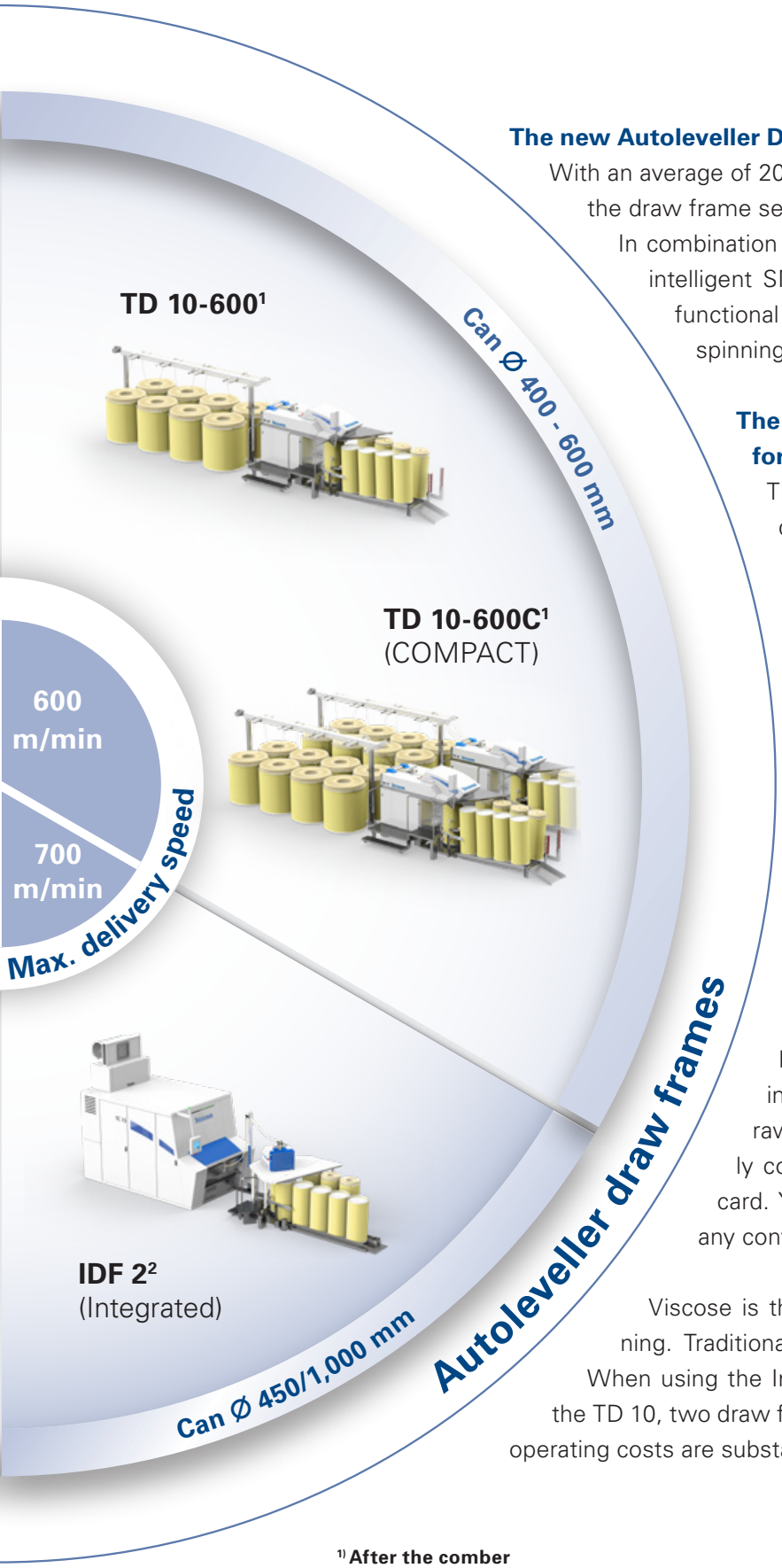
The Breaker Draw Frame TD 9T

The Truetzschler Draw Frame TD 9T is a double head draw frame with focus on saving space and economical, reliable production. If required, it is also available as single TD 9 version. Thus, each even and uneven number of drafting heads is implementable.

For the first time, the new JUMBO CAN format with 1,200 mm diameter was introduced for short staple spinning. This reduces the number of can transports and significantly improves the efficiency of the downstream Superlap or autoleveller draw frame.

The reliable Breaker Draw Frame TD 7

If the operational organisation does not permit the use of large cans, the reliable Truetzschler Draw Frame TD 7 is employed. Featuring a large can magazine, it is ideal for a space saving solution for cans with 500 or 600 mm diameter.



The new Autoleveller Draw Frame TD 10

With an average of 20 % less space requirement than the competition, the draw frame sets a new benchmark for compactness.

In combination with the Truetzschler remote display T-LED, the intelligent SMART CREEL offers an unprecedented level of functional reliability and more comfort for the operator and spinning mill manager.

The special Autoleveller Draw Frame TD 10-600 for combing

This version of the TD 10 was developed for use downstream from the comber. Optimisation of the control algorithms to the typical application range of 450 - 550 m/min improves sliver quality. Selecting drives for a delivery speed of maximum 600 m/min reduces power consumption.

Autoleveller Draw Frame TD 10C

The COMPACT autoleveller draw frame is the solution for minimum space requirement. This installation concept allows us to provide a minimum centre distance between the individual draw frames and maximum efficiency.

The Integrated Draw Frame IDF 2 for rotor and airjet spinning

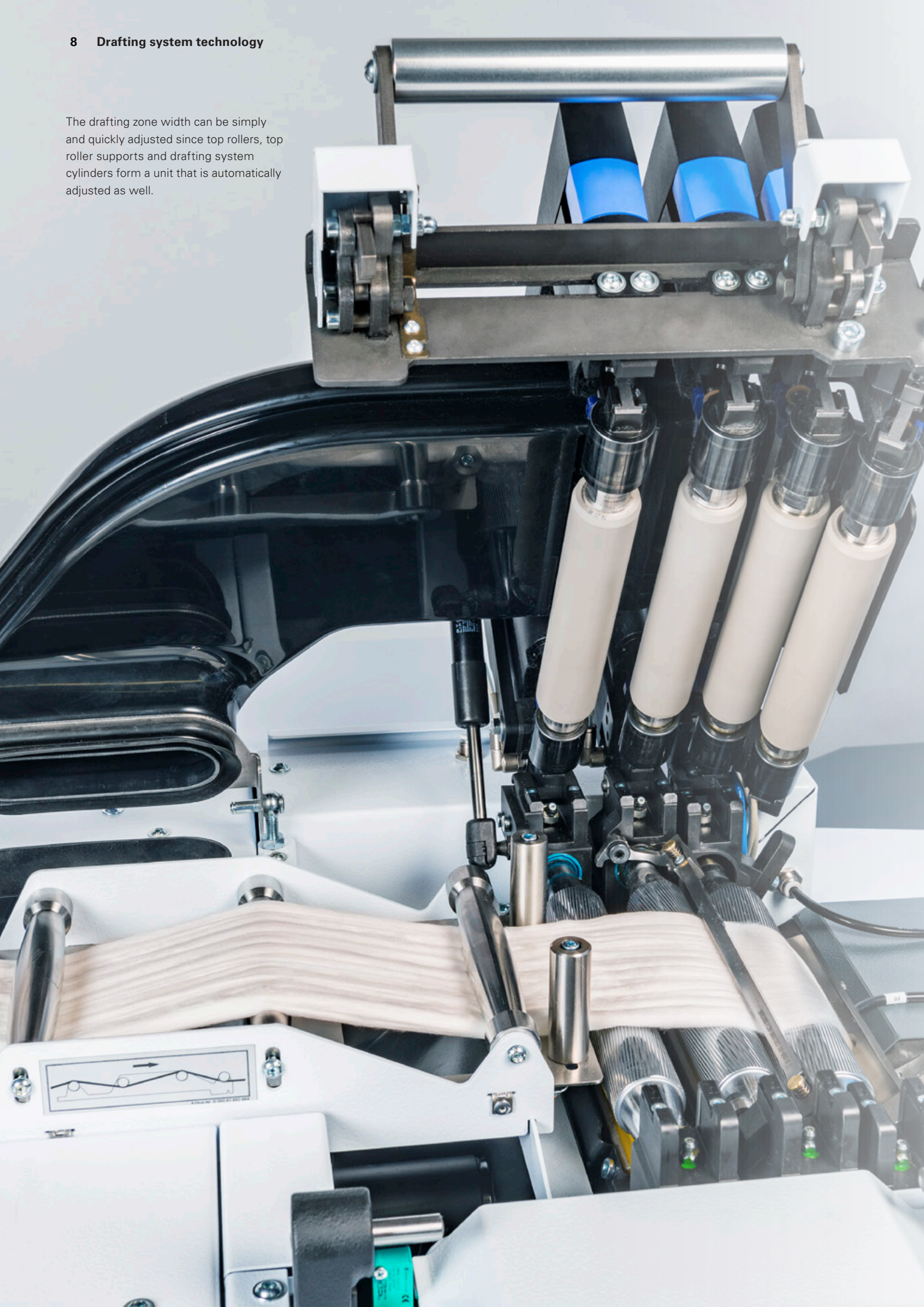
For rotor spinning, especially for cotton processing as well as any form of waste and secondary raw materials, there is no better solution than directly coupling the Integrated Draw Frame IDF 2 to the card. Yarn quality and economic efficiency outperform any conventional process.

Viscose is the most widely used raw material in airjet spinning. Traditionally, three draw frame passages are used here. When using the Integrated Draw Frame IDF 2 in connection with the TD 10, two draw frame passages can be eliminated. The savings in operating costs are substantial.

[1] After the comber

[2] Rotor spinning, airjet spinning

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



Drafting system technology

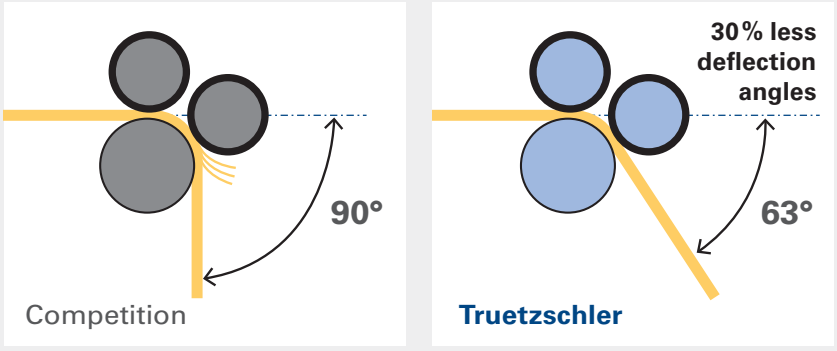
All Truetzschler draw frame types TD 7, TD 9T and TD 10 as well as the Comber TCO 12 are equipped with the same reliable 4-over-3 drafting system.

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 airjet 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 rollers 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 rollers** to protect the roller coatings

Patented top roller bearing system

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

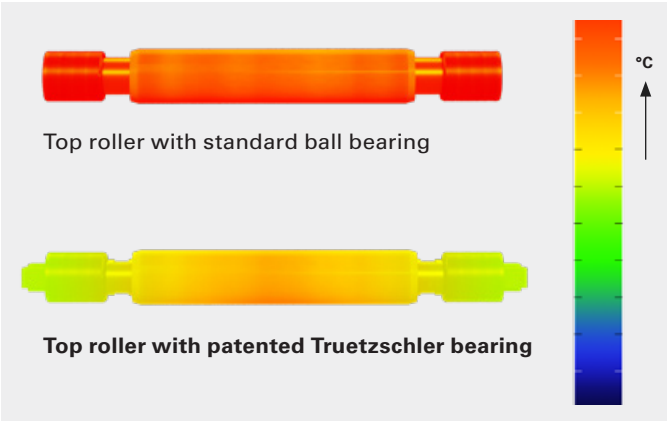
The picture foreground shows Truetzschler's patented top roller bearing system with self-centring fastening system.
In contrast to standard fastening (picture background), there is no wear of the top roller shafts or top roller bearings during mounting or removing.

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

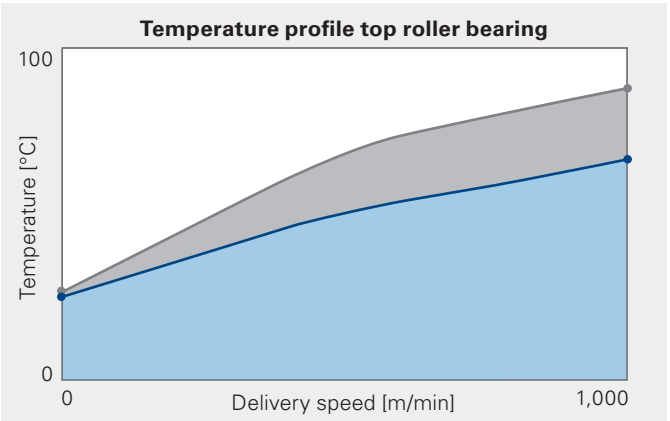
- High accuracy of fit and optimum centering for an error-free drafting process
- High process safety, less downtime
- Simple handling
- Low temperature development and thus gentle to the coatings
- Extremely long service life
- Reliable wear-free connection technology used in toolmaking

Dissipation of process heat into frame

Thanks to the unique bearing technology, the top roller 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 roller 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 roller bearing system is clearly noticeable.

Pneumatic top roller load

Optimal individual and infinitely variable top roller load settings – adapted to various applications – are possible same as before. The TD 10 allows exact pressure settings via the display directly on the drafting system. Software limits prevent incorrect settings and thus improve the lap behaviour.
This, in addition to the automatic relief of the top rollers during standstill, preserves the coatings and extends the service life.

The simple reproducible settings result in demonstrably improved draw frame sliver quality.

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 layer pattern.

Optimisation of sliver coiling

Thanks to the separate can plate drive, the coiling pattern can be adjusted conveniently and continously 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.

SMART CREEL

The new perfection with intelligent individual sliver detection

Individual sliver sensor in SMART CREEL

The new individual sliver sensors in the creel reliably detect sliver breaks, as a distinction can be made between motionless sliver, no sliver and running sliver.

In contrast to contact roller detection, the optical Truetzschler sensors protect against operating errors, as they function even when the pressure rollers are not used. The desired doubling is simply entered via the software. This is particularly useful in ensuring the correct blend, as no sliver can be omitted.

The SMART CREEL is of course also equipped with a single servo drive. Thanks to this unique Truetzschler feature there is no need for the leveller motor to further accelerate the slower creel; this results in a high levelling dynamics.

	Intelligent individual sliver detection	Servo drive	Light barrier
SERVO CREEL	–	**X**	**X**
SMART CREEL	**X**	**X**	–

One idea makes the difference:
separate drive with convincing advantages.

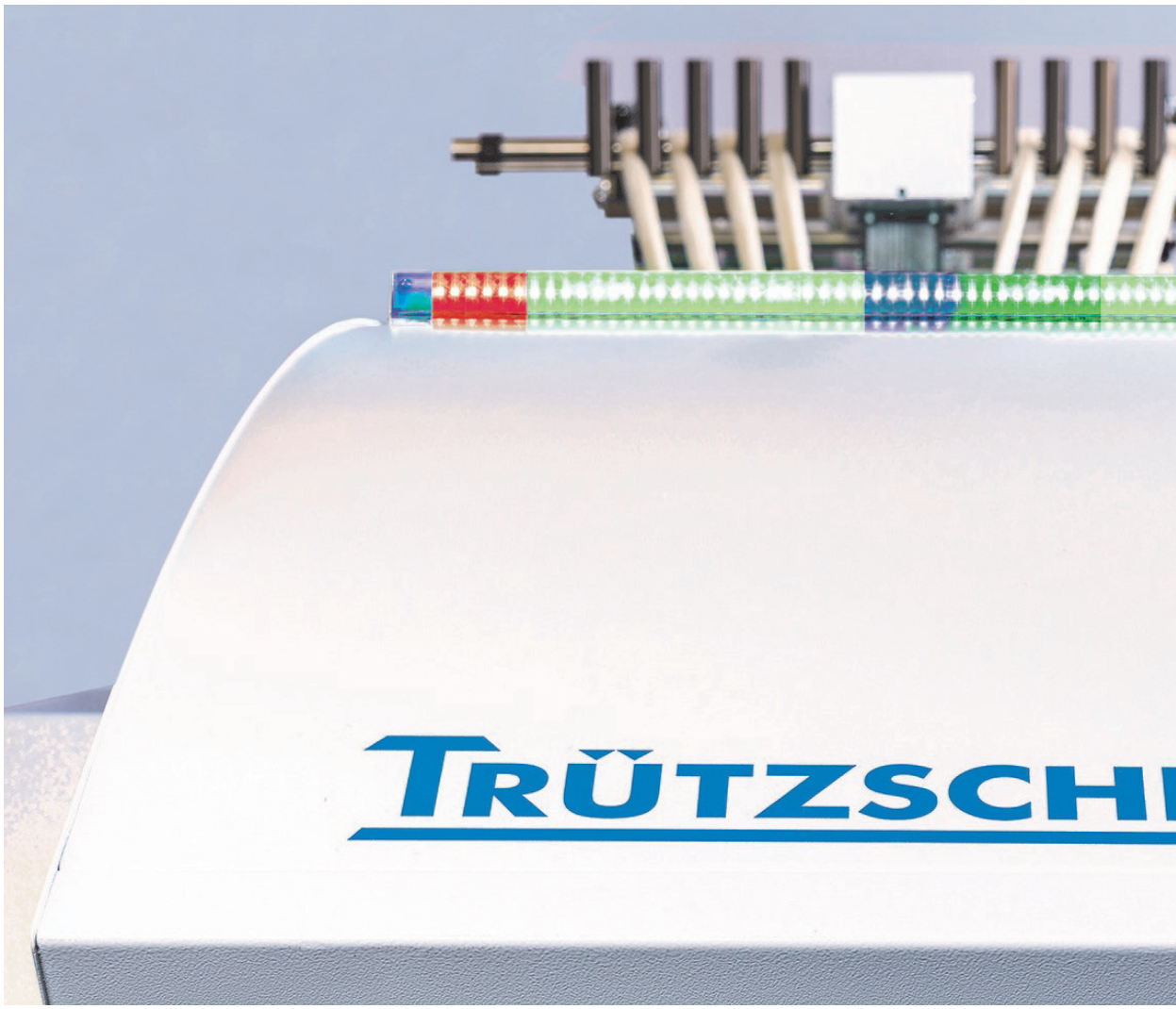
SMART CREEL

In connection with the new Truetzschler remote display, it is possible to remedy sliver breaks effectively and quickly. In case of a sliver break, the T-LED automatically switches over and indicates the position of the sliver break in the creel.

Truetzschler remote display T-LED

Intuitive and efficient machine operation

With the Truetzschler remote display T-LED, the quality is always in view. Here you can see the visualisation of the sliver count variation A % with freely selectable quality limits.



T-LED makes machine statuses visible throughout the spinning mill. Thanks to the multicoloured LEDs, various operating statuses can be indicated. The LED bar, which can be seen from both sides, allows visualisation in front and behind the machine.

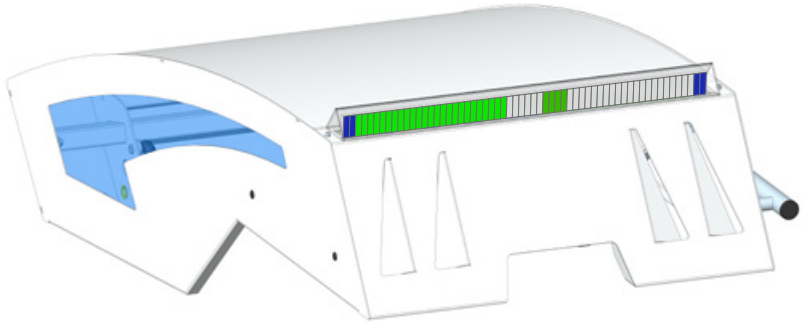
In automatic mode, specific information on certain parameters are clearly visible during regular production of the machine.

Selectable display modes are:

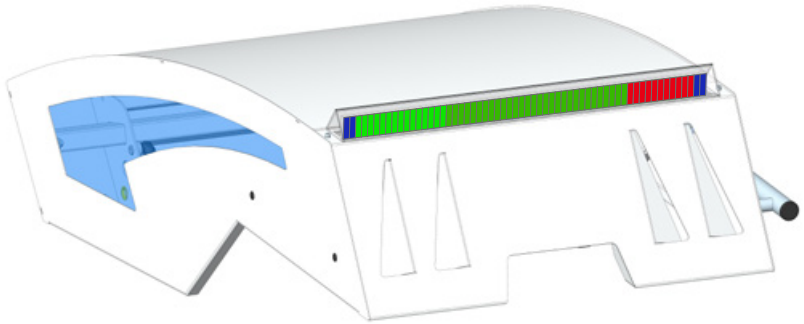
- A % sliver count variation
- Can filling
- CV % value

If there is a warning for a possible machine stop or a machine malfunction at short notice, the machine automatically switches to the corresponding status displays.
In the process, T-LED can point out specific causes, e.g.:

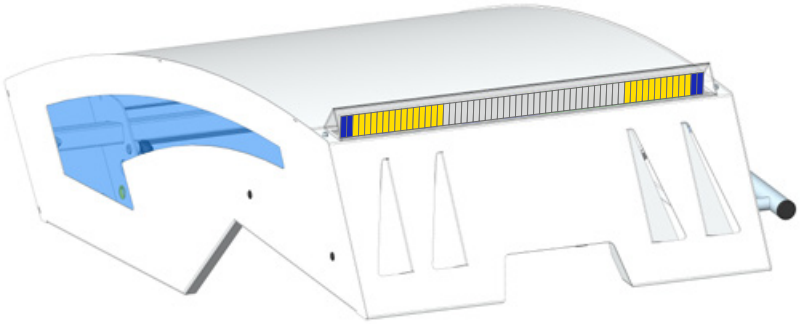
- Sliver break in the creel with position display
- Empty can magazine



If, for instance, the progress of the can filling is displayed, the operator can see at one glance which draw frame requires a new empty can first.



Display of CV values to detect sliver count variations from a distance, here also with freely selectable quality limits.



If the machine needs new empty cans, yellow running lights appear. The operator can then directly bring new empty cans and does not have to read the fault message on the display first.

Automatic can changer

Five options for every application

The automatic can changer has been designed for use on the TD 10, the IDF 2 as well as on Draw Frame TD 7 without levelling.
This rotational can changer is very flexible and meets all requirements for various can formats:

- Under-floor and above-floor variants
- Passive and active empty can feeding with CAN TRACK and SERVO TRACK
- Delivery of full can onto floor, delivery track or can carriage

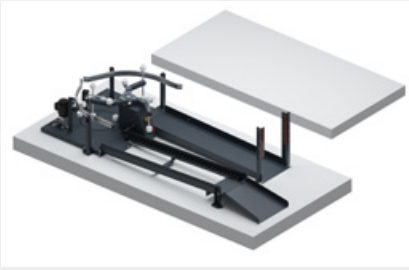
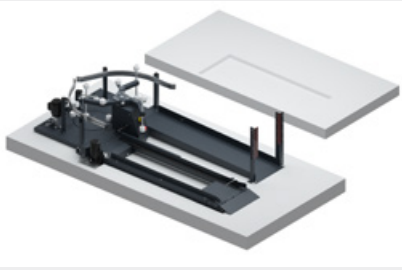
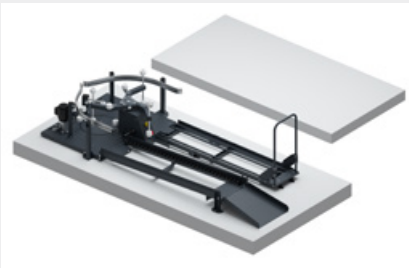
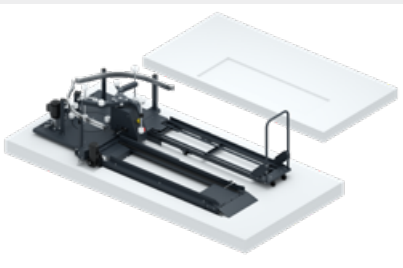
Applicable can formats:

- Cans with and without rolls
- Cans with ∅ 400, 450, 500 or 600 mm
- Can height from 900 to 1,500 mm

CAN TRACK or SERVO TRACK?

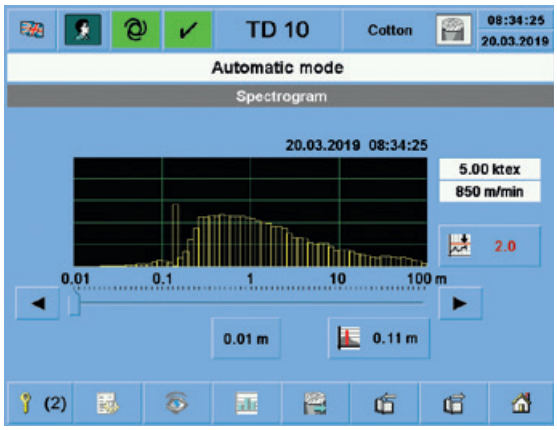
Truetzschler offers two versions of empty can feeding. With CAN TRACK, the cans slide by gravitational force on an inclined roller track into the change position. When using the SERVO TRACK version, the transport of the empty cans is handled by driven belts. This comfort gain is only practical under floor, to provide the operator with ground-level feeding of empty cans.

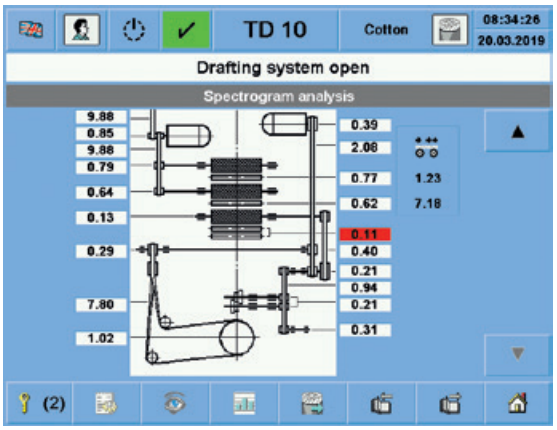
Flexibility for each application

	CAN TRACK passive feeding of empty cans	**SERVO TRACK** driven can feeding
Can ramp		
Can carriage		
Delivery onto floor		

Intuitive operating panels

Intelligent detail to monitor quality



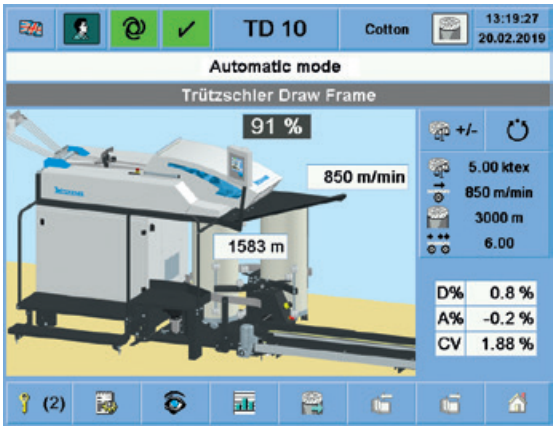


The spectrogram shows a peak at 11 cm, the software analyses possible problem areas in real time and indicates them in the gearing diagram. This results in efficient troubleshooting with shortest downtimes.

Standard spectrogram monitoring

Spectrogram analyses are an important tool to monitor quality, specifically for draw frames. Smallest top roller damages or, for example, incorrectly set pressures, can result in periodic imperfections in the sliver and thus also in the yarn.

For efficient and quick detection of these errors, Truetzschler offers spectrogram monitoring as standard in all draw frames. In case of an error, an intelligent algorithm immediately shows possible components that can be the cause for the periodic fault.



All important parameters are clearly displayed with numbers and symbols on the main screen.

Convenient overview

All Truetzschler draw frame types feature generously dimensioned machine displays with touchscreen. Operation of the respective machine is conveniently performed largely via language-independent symbols or graphics.

The freely rotatable display is mounted on the machine at an easily accessible height.

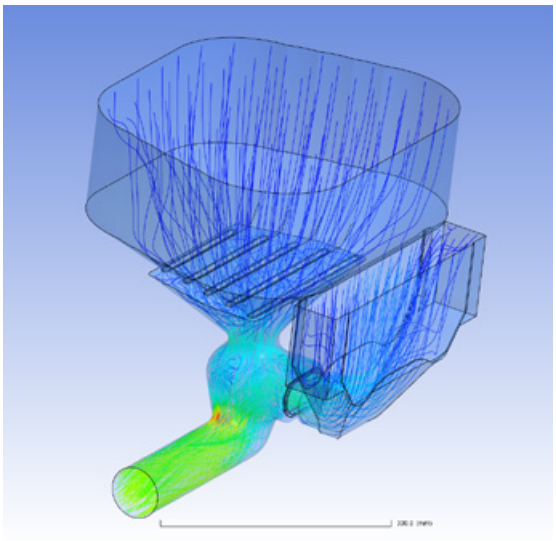
If the display is turned backwards, it can also be viewed from the creel.

The operator receives all important information via the screen to reduce downtimes to a minimum.

The world's most energy efficient suction system

The effectiveness of the suction depends largely on an optimised geometry of the flow mechanism. For this reason, our specialists have further enhanced the flow behaviour of all draw frame types. Thus, an excellent dedusting of the sliver is ensured even at low suction pressure.

The suction elements are individually simulated to optimise flow and are made of robust plastic.



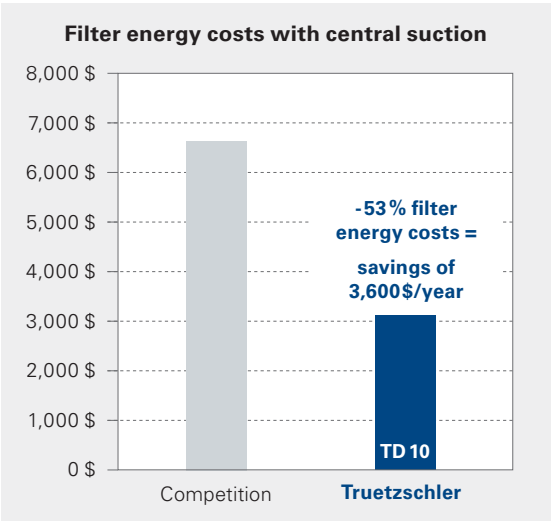
Large savings potential with central suction

If the draw frames are connected to a central filter system, enormous savings potentials can be realised here as well.

Due to the flow-optimised suction ducts, the TD 10 requires only a volume flow of 840 m³/h at a pressure of merely -430 Pa.

This results in a significantly reduced filter load and thus in significantly lower energy costs.

Savings can also be realised to the same extent on the breaker draw frames.

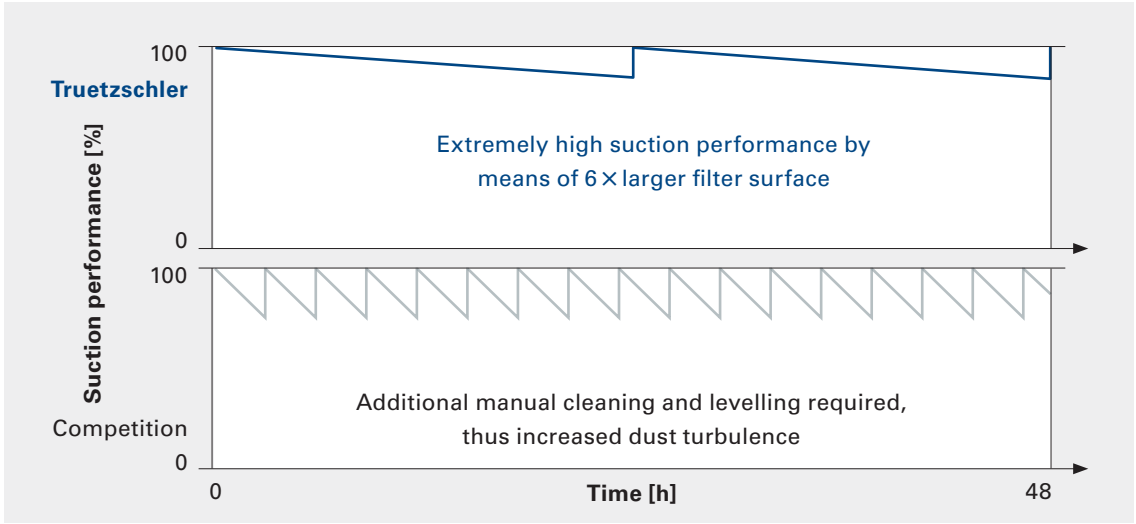


Economic efficiency calculation
1,000 kg/h per draw frame set, energy costs 0.13 $/kWh

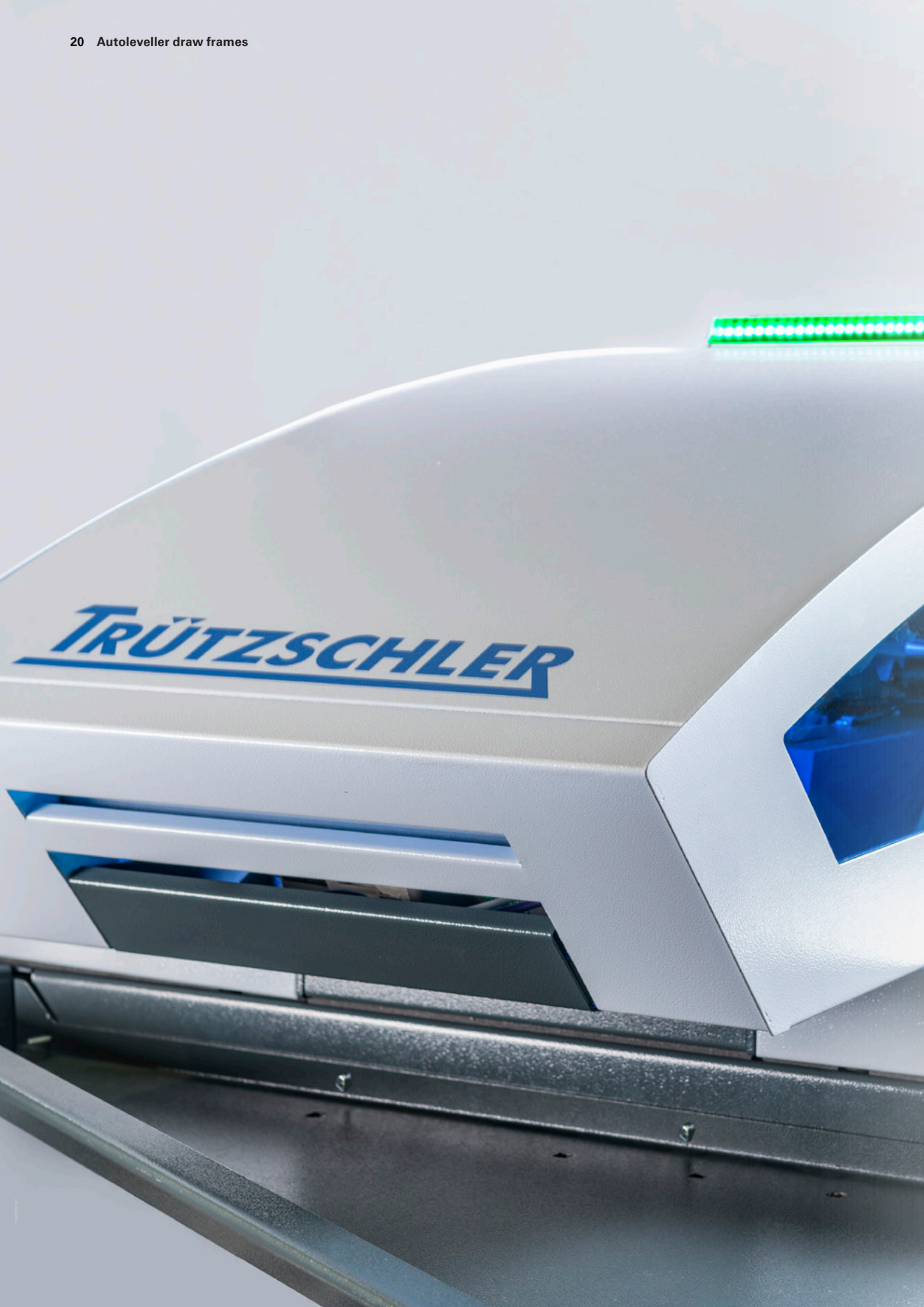
The large-volume filter on the TD 10

6 times larger filter surface than the competition

By featuring the largest filter surface, the TD 10 sets a new standard. Additional mechanical cleaning elements and special controls are not required. This eliminates additional maintenance costs and unnecessary sources of interference. Due to the enormous filter surface of the TD 10, a constant suction pressure is reached for hours. This is achieved with a power consumption of only 0.4 kW/h of the filter fan. During the test, 24 h cleaning intervals were perfectly sufficient. Furthermore, continuous dedusting results in continuous dust turbulence. The filter cake of the TD 10 acts as fine dust filter against this.



Consistently high suction pressure for hours due to the enormously large filter surface of the TD 10


TRÜTZSCHLER

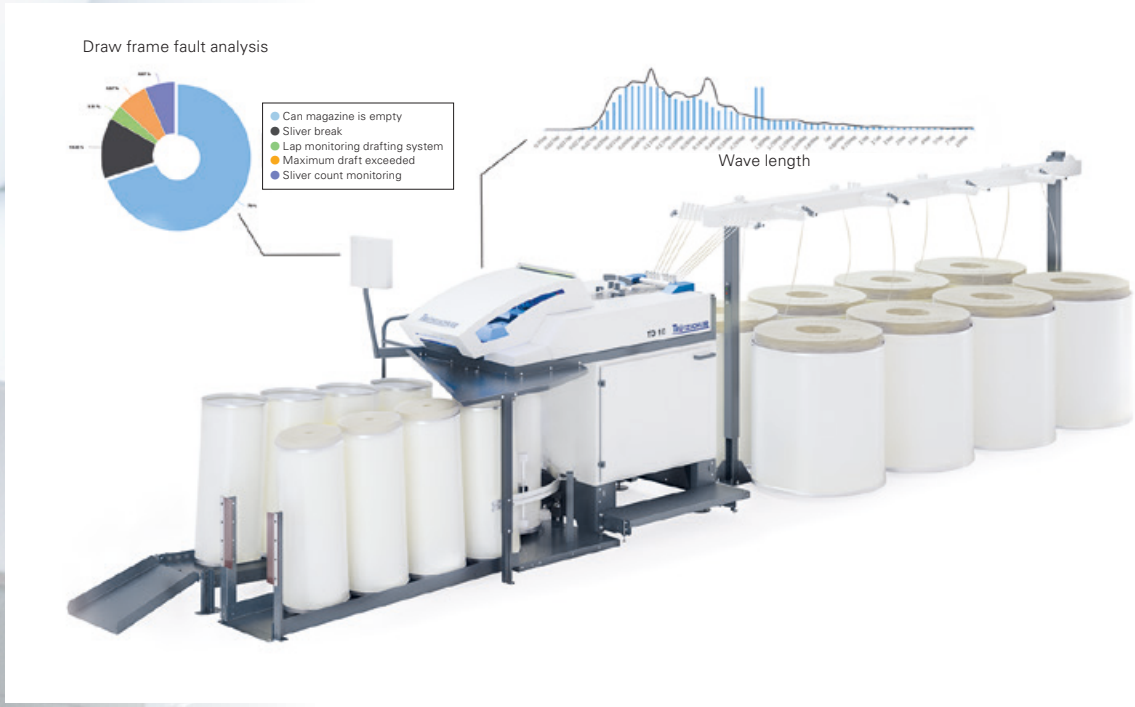
Autoleveller Draw Frame TD 10

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

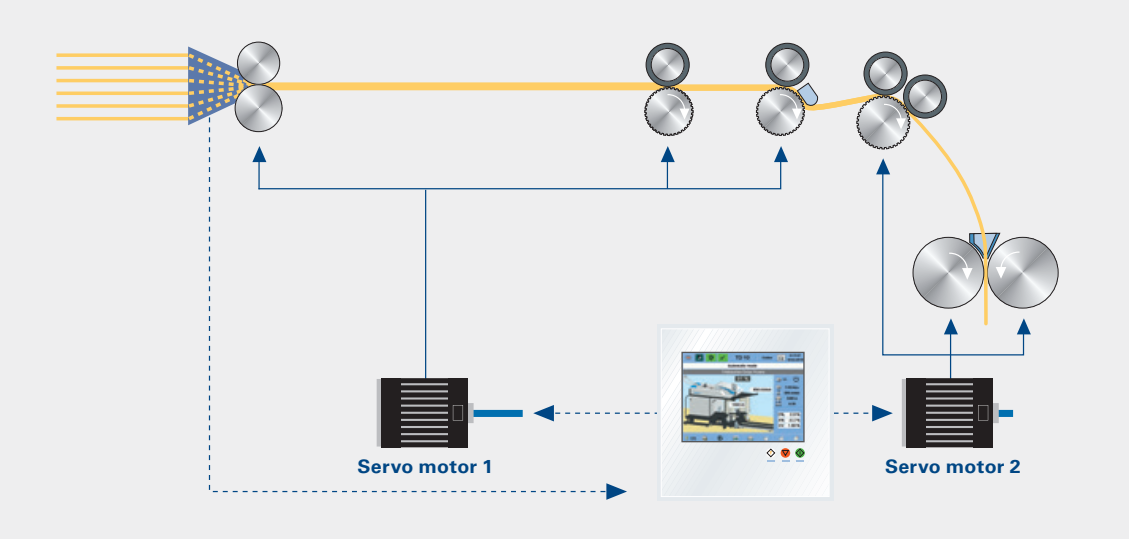
Optimal sliver quality

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

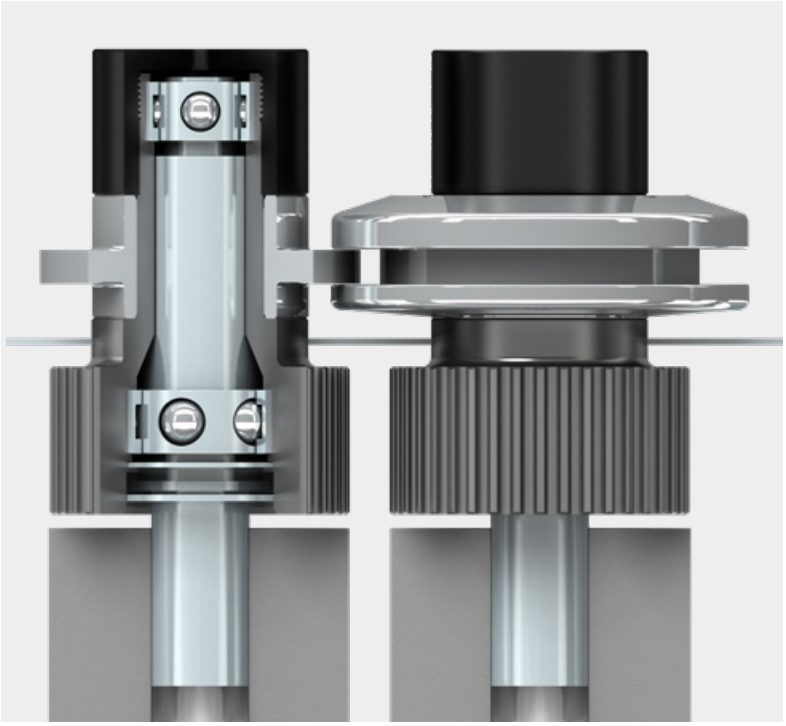
Levelling of TD 10



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

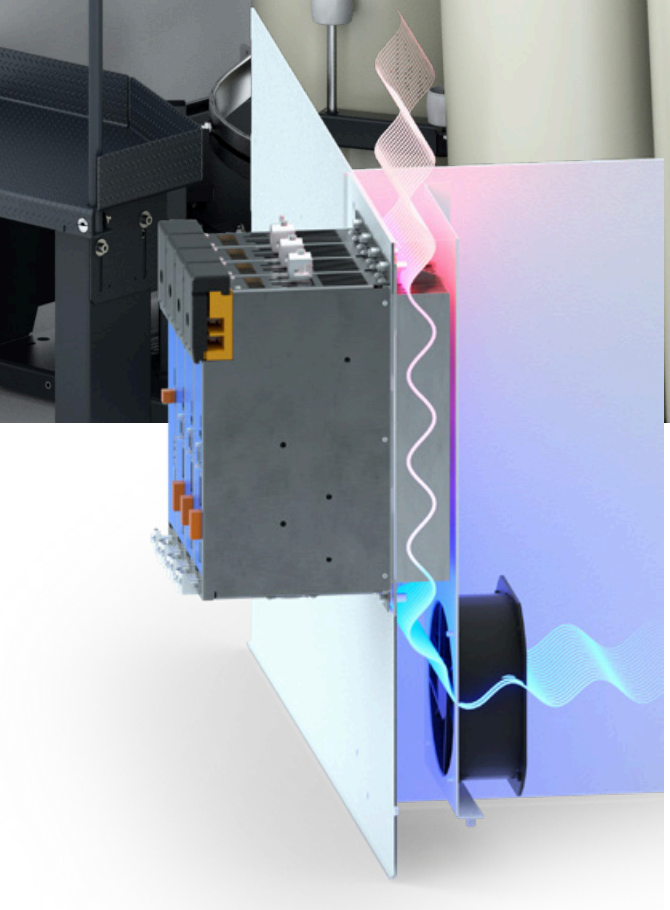
A thick or thin place passing the draw frame undetected can no longer be compensated in the downstream process. The groove and sensing roller unit DISC LEVELLER, already well known from the TD 8, ensures an optimal sliver quality at highest levelling dynamics. In combination with the SERVO DRAFT, it 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.

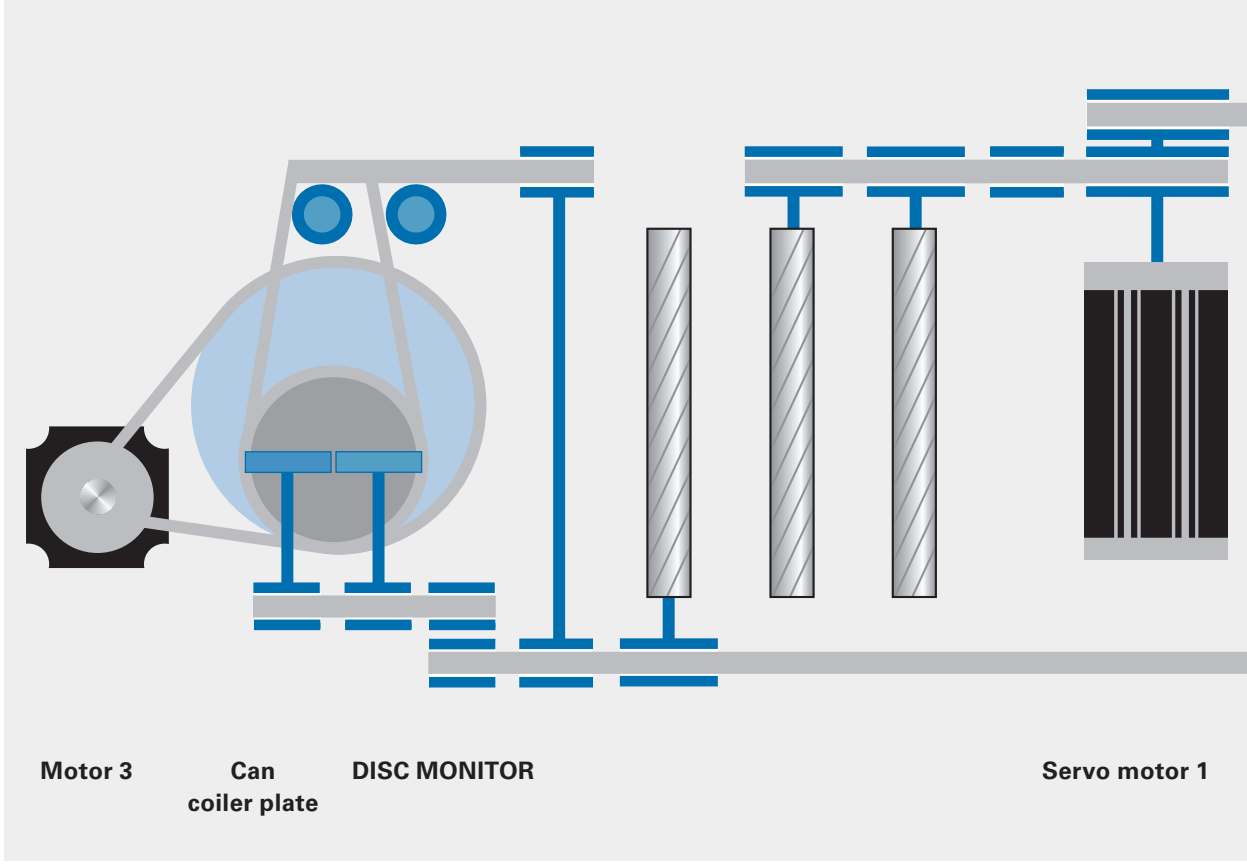


Due to the new cooling technology, an additional ventilation of the fan is no longer necessary.

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.

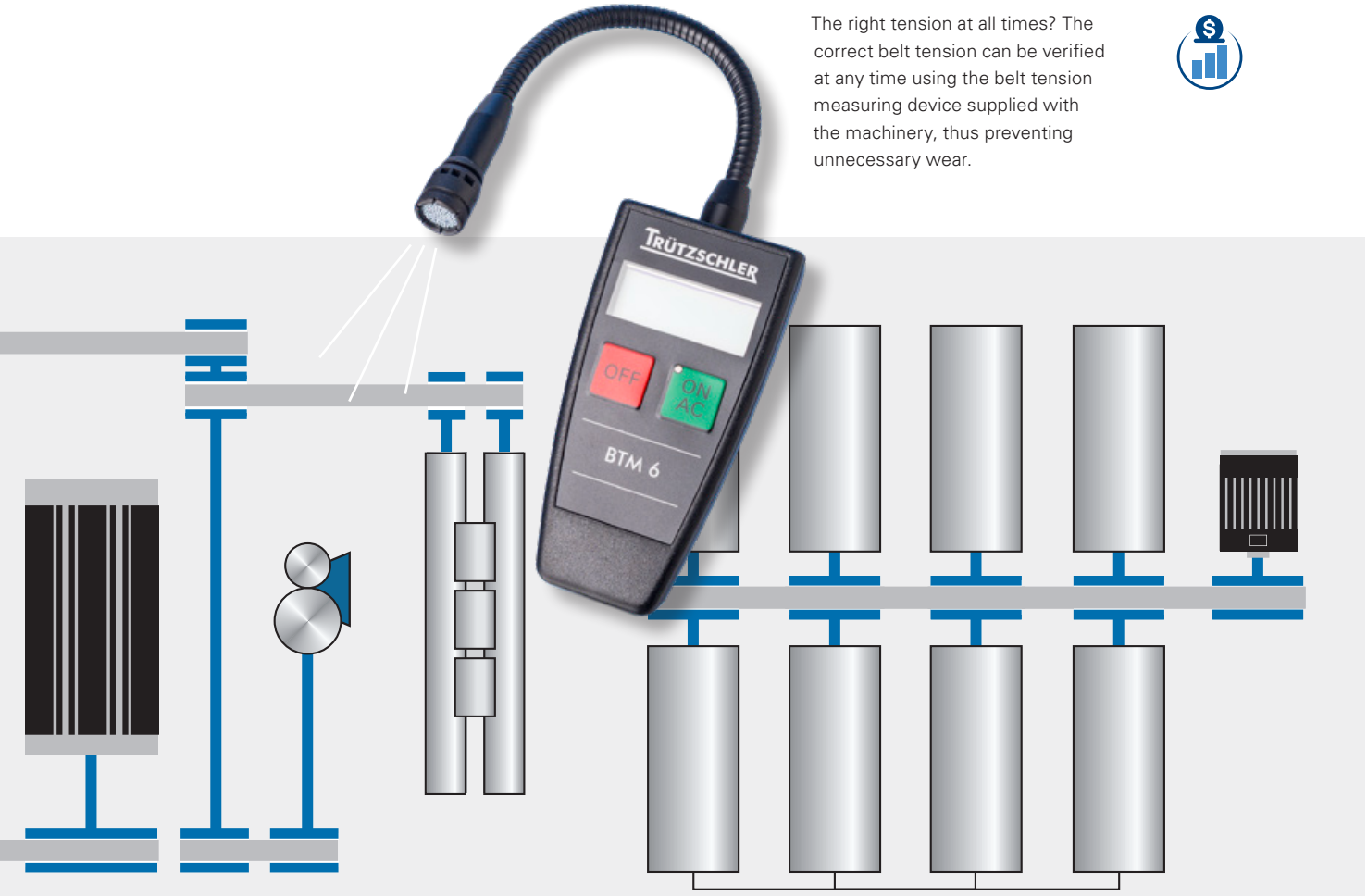
Reliable individual drives for creel and can rotation

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.



Servo motor 2 **DISC LEVELLER** **SMART CREEL** **Servo motor 4**

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

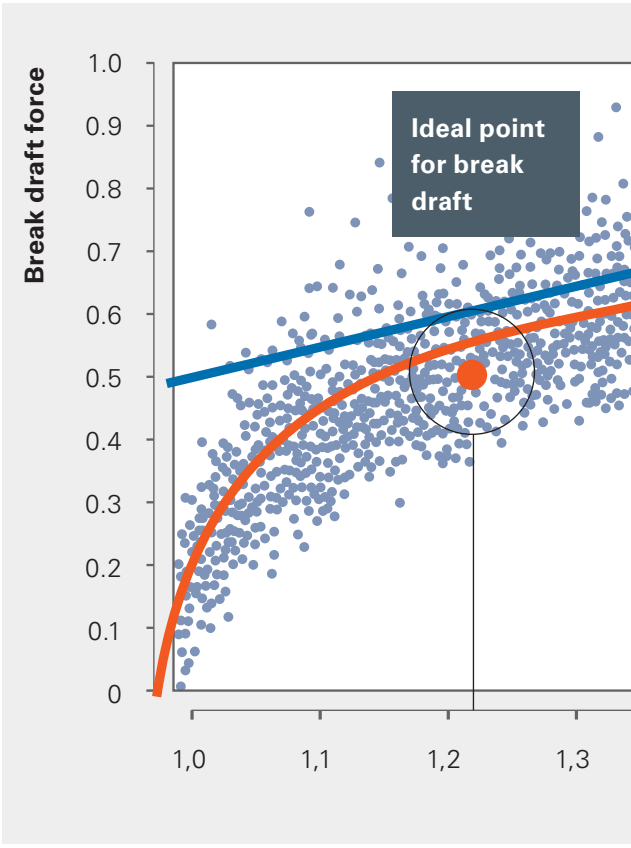
- The evenness of the yarn
- The strength of the yarn
- The number of imperfections
- The running properties of the spinning machine

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

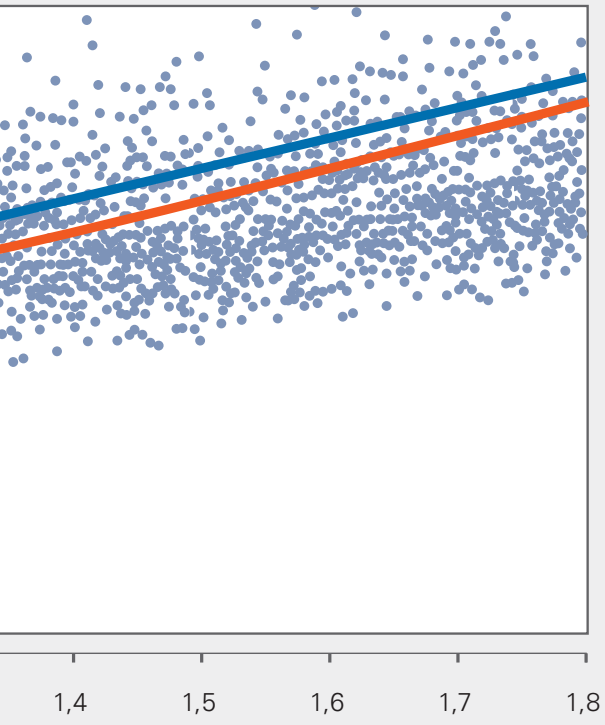
With the exception of combed material, AUTO DRAFT is basically suitable for all materials since it takes all major factors into account:

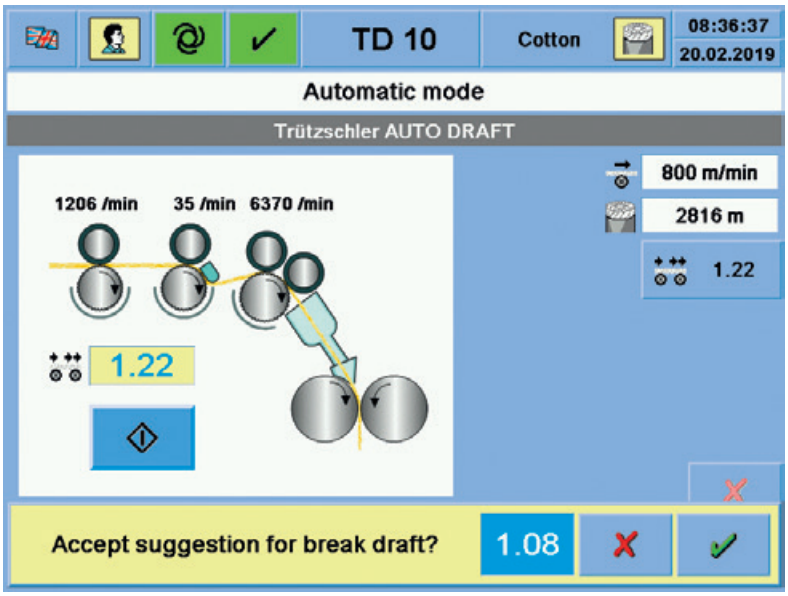
- Fed fiber mass
- Fiber characteristics (e.g. crimping)
- Fiber-fiber friction
- Fiber-metal friction
- Machine settings
- Ambient atmosphere, etc.

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

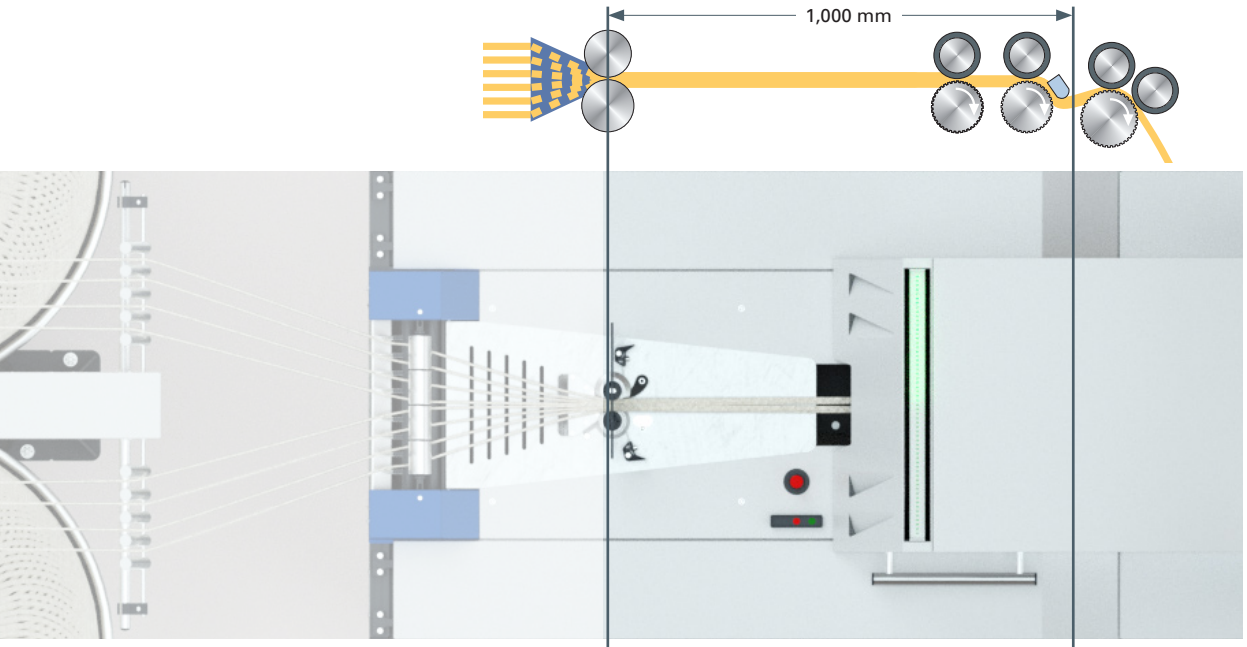
OPTI SET

Self-optimising to the perfect main drafting point

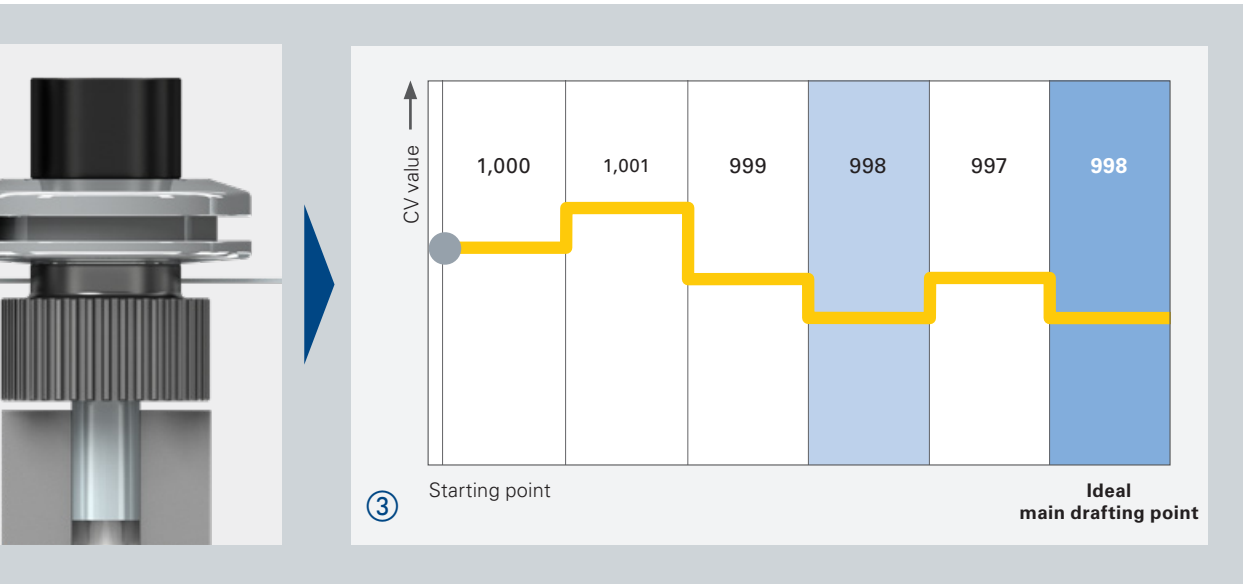
The time offset between measurement of the sliver thickness and levelling action determines the main drafting point. This has a decisive influence on the quality of the regulated sliver. Until now, this required lengthy series of tests with the slivers in the laboratory.
The Truetzschler Autoleveller 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:

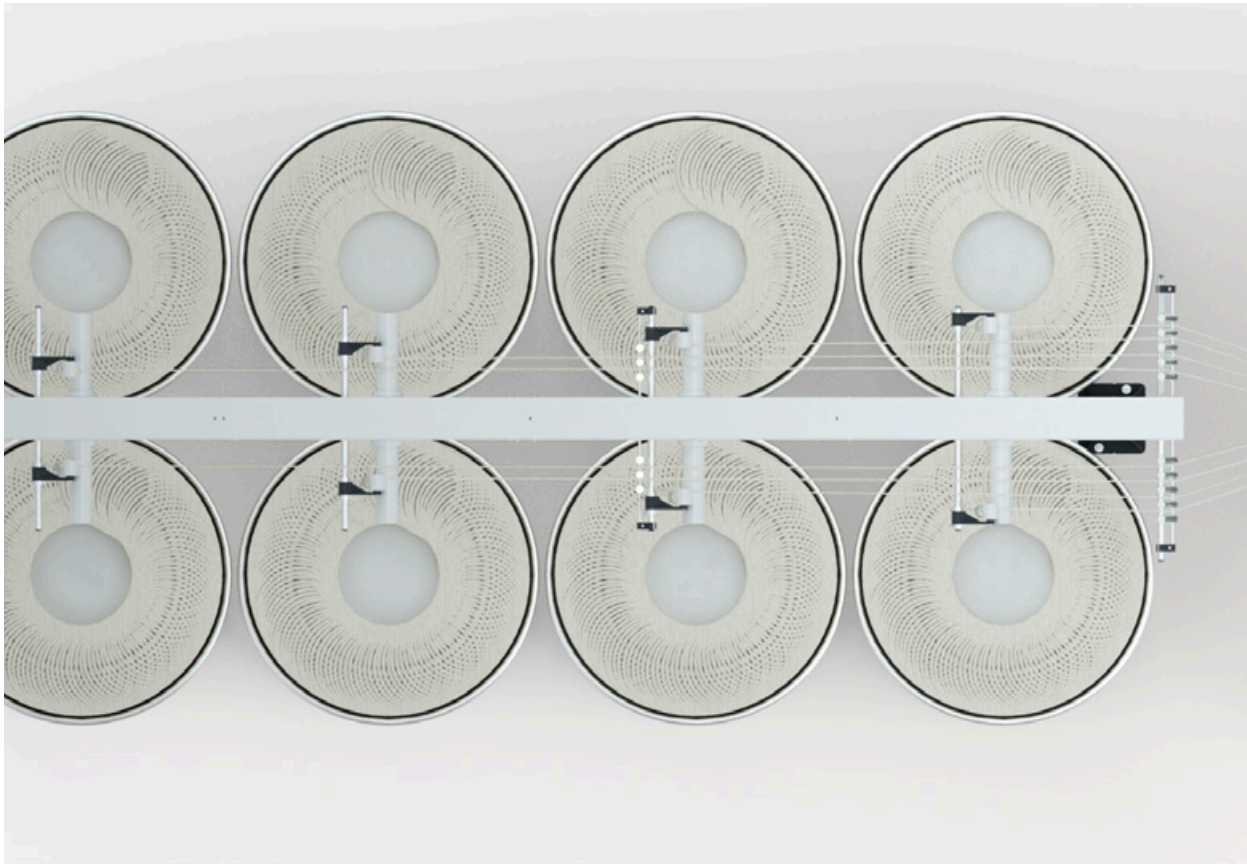
- Machine settings
- Material characteristics
- Ambient atmosphere

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.

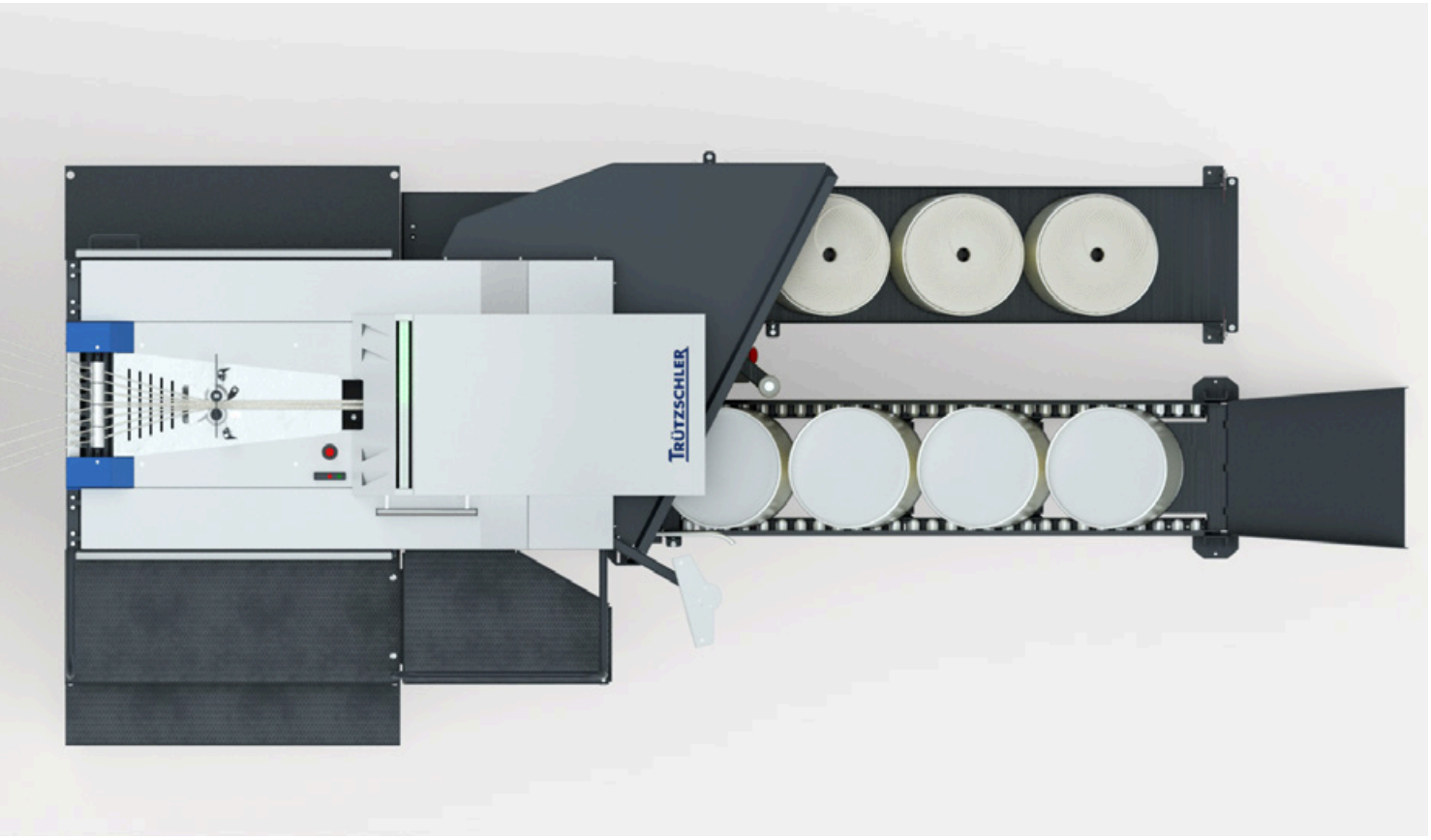
Enormous investment savings

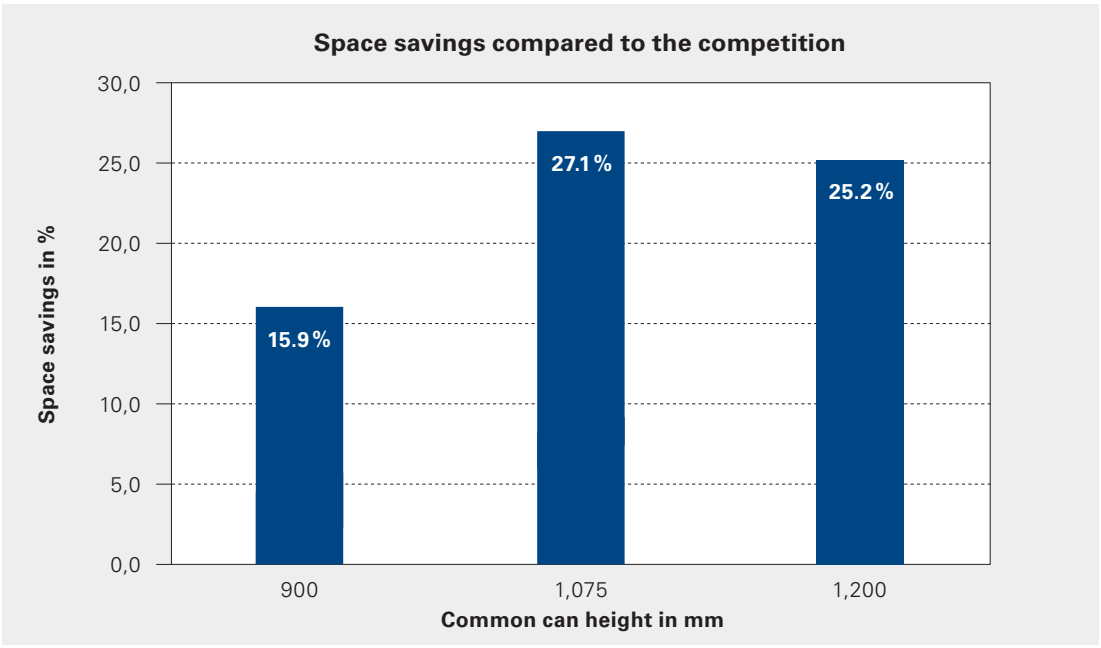
The can heights and thus the number of treads required have a decisive influence on the installation area of draw frames.

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

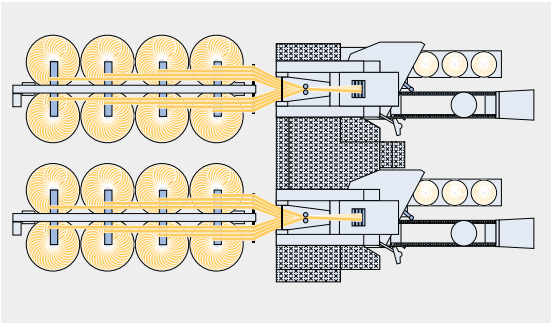
The COMPACT concept is available for all requirements of an autoleveller draw frame:

- 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.

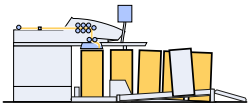
All advantages also available in combing

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.

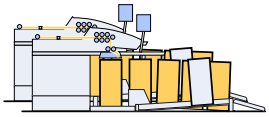
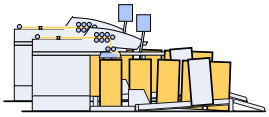
Technical data

			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

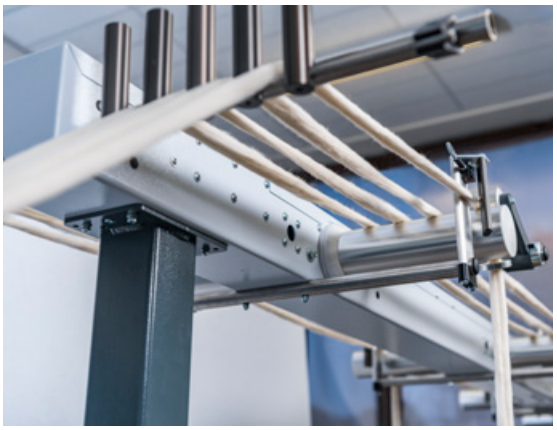
● = Series o = Option * Information per draw frame head

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

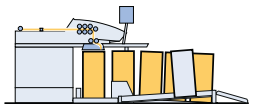
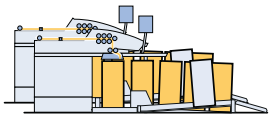
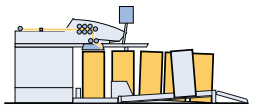
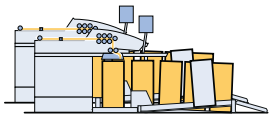


Individual sliver monitoring on SMART CREEL

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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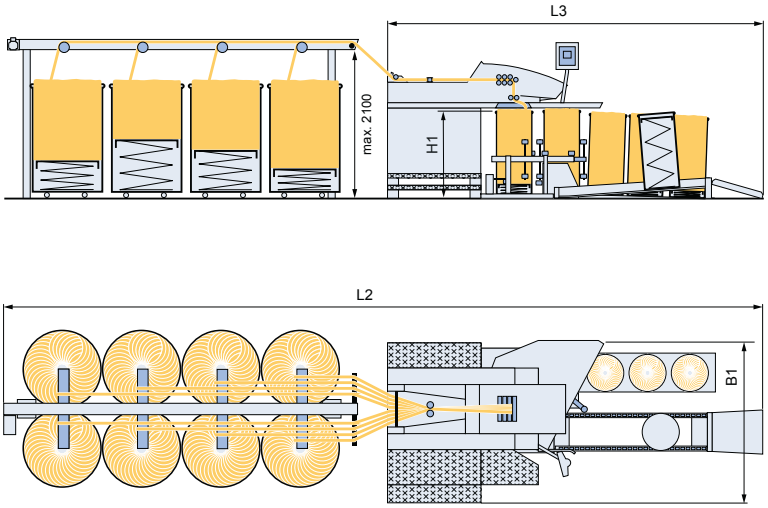
Autoleveller Draw Frames TD 10

	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	

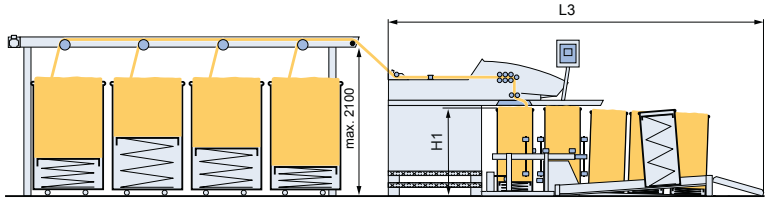


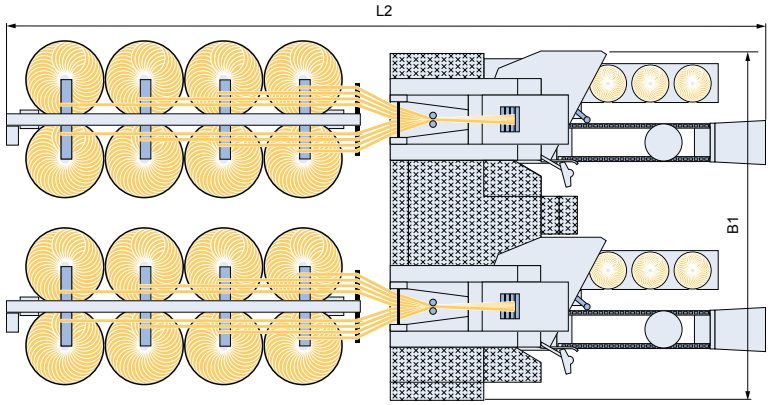
Autoleveller Draw Frames TD 10C and TD 10-600C

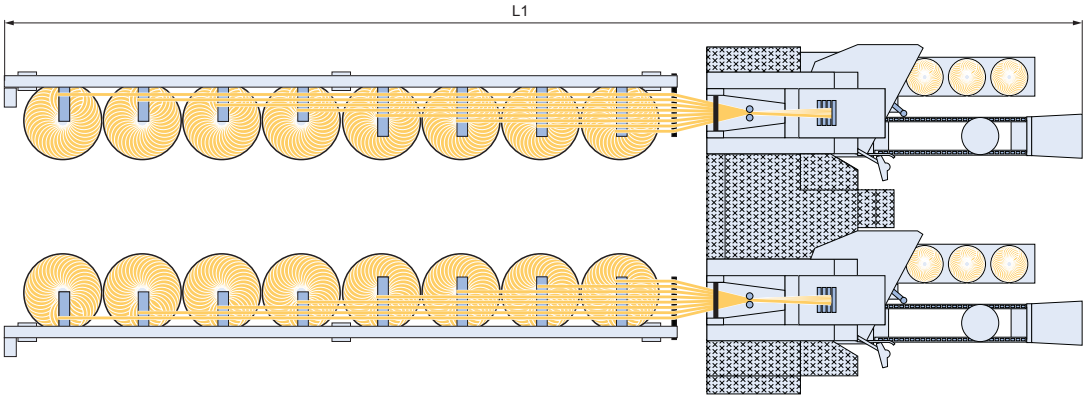
	Creel cans	
	Ø 1,000 mm	**Ø 1,200 mm**
L1 1-row mm	14,091*	15,691*
L2 2-rows mm	9,891*	10,689*
L3 mm	5,076*	

*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

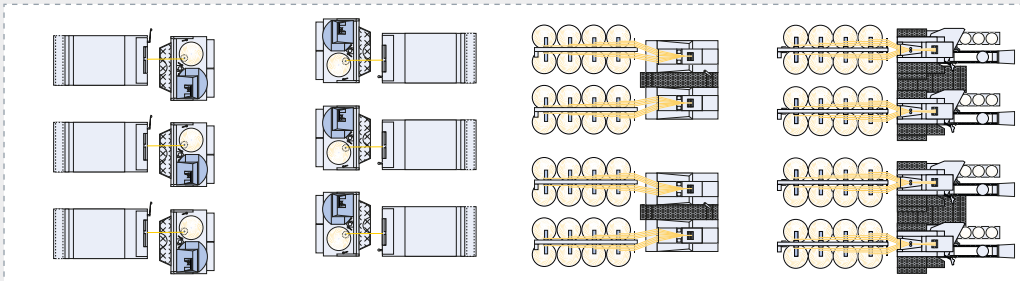
Sophisticated concepts from Truetzschler help to make everyday operation as efficient as possible.

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 ...

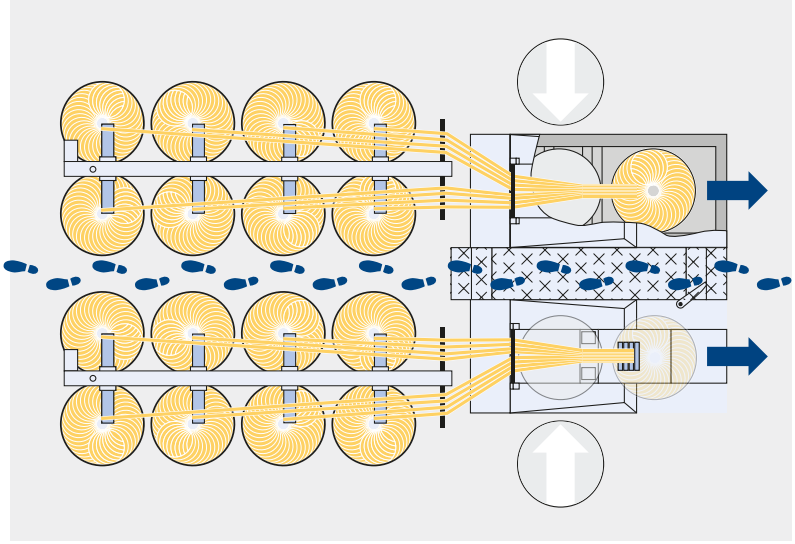
Installation width of Truetzschler draw frames...



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.



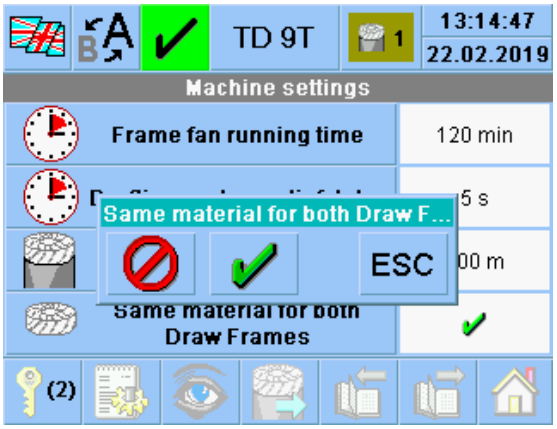
Can changing principle and operating paths

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.

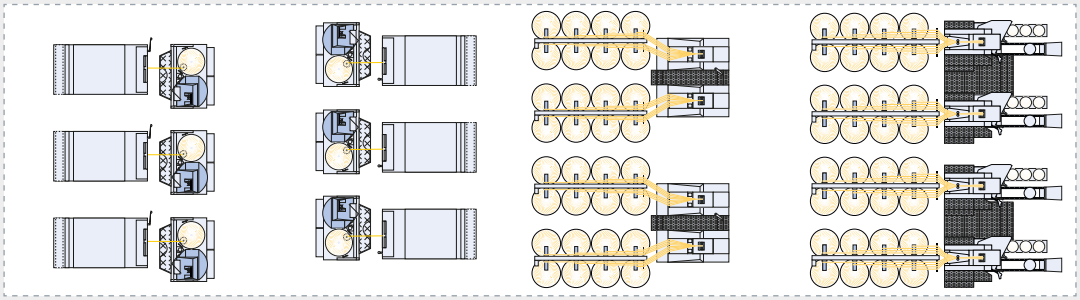
Working in synchronous mode

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.



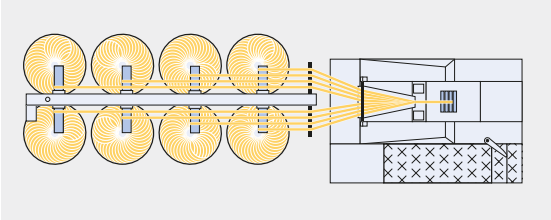
Can diameter **1,200 mm** to autoleveller draw frame

… 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

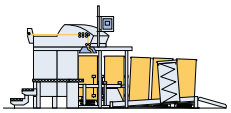
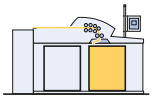
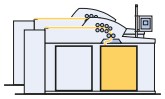
Technical data

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
•	–	–
•	•	•
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

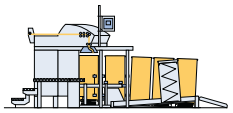
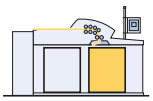
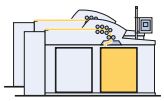
Operation via touchscreen

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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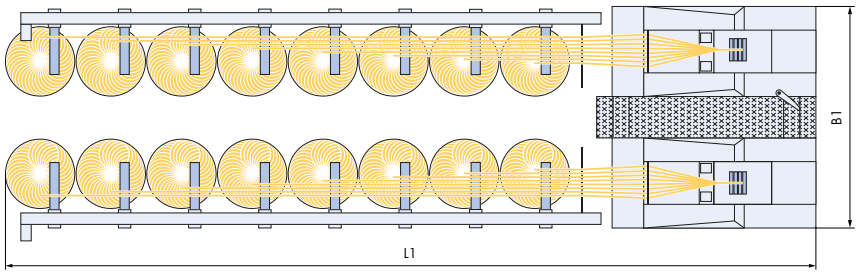
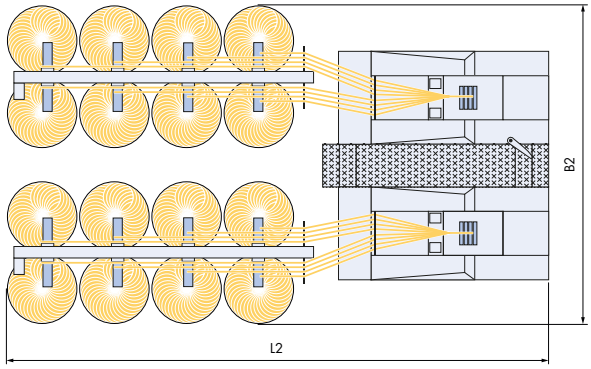
●	●	●
●	●	●

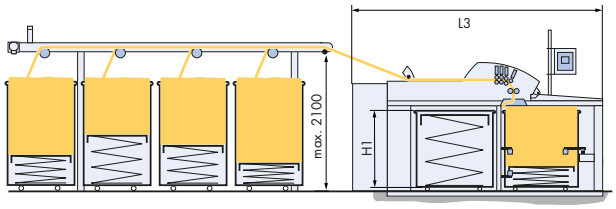
TWIN Draw Frame TD 9T

	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	



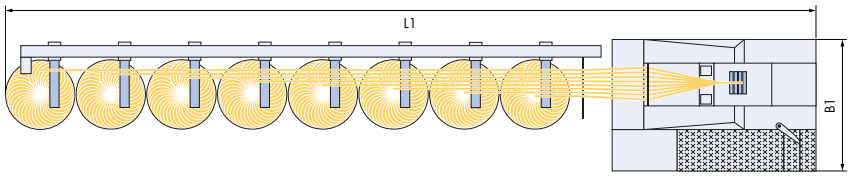


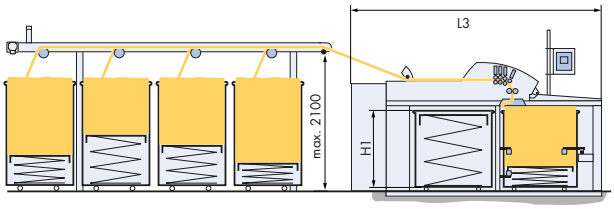


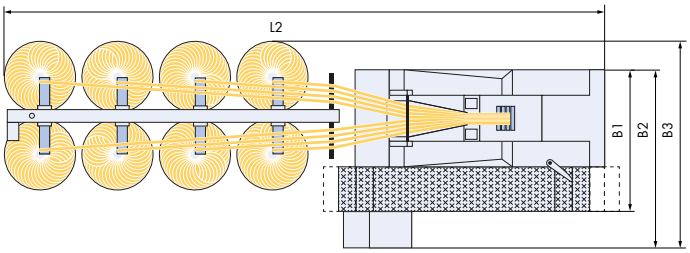
Breaker Draw Frame TD 9

	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	



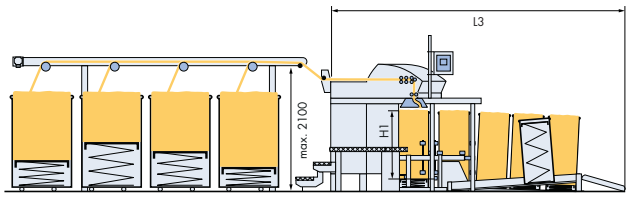


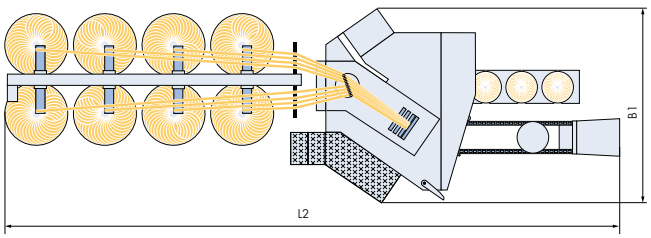


Breaker Draw Frame TD 7

	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



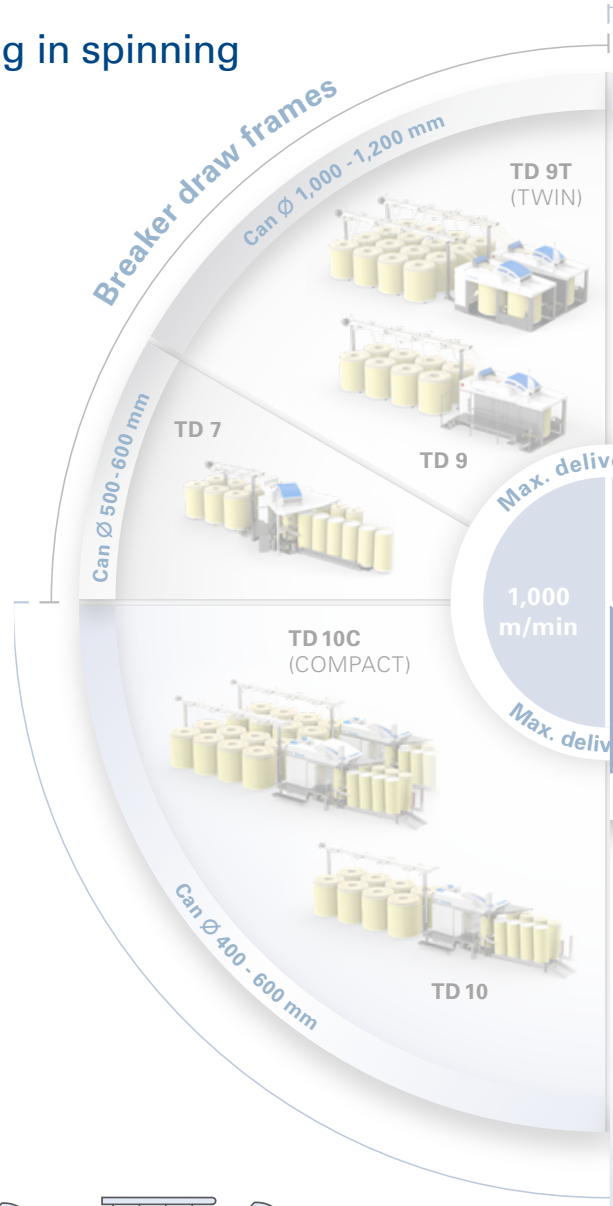


Integrated Draw Frame IDF 2

The solution for process shortening in spinning

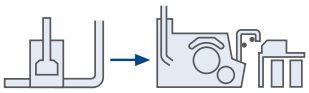
Particularly in the spinning mill with its numerous machines, reduced process stages quickly multiply to great economic advantages.

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.



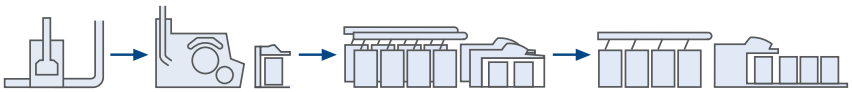
ROTOR SPINNING

Truetzschler DIRECT SPINNING



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

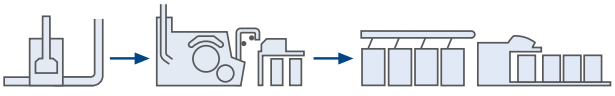
Conventional line



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

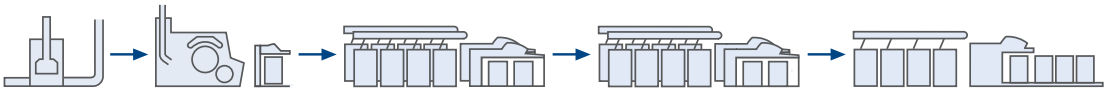
Airjet SPINNING

Truetzschler IDF VORTEX SPINNING

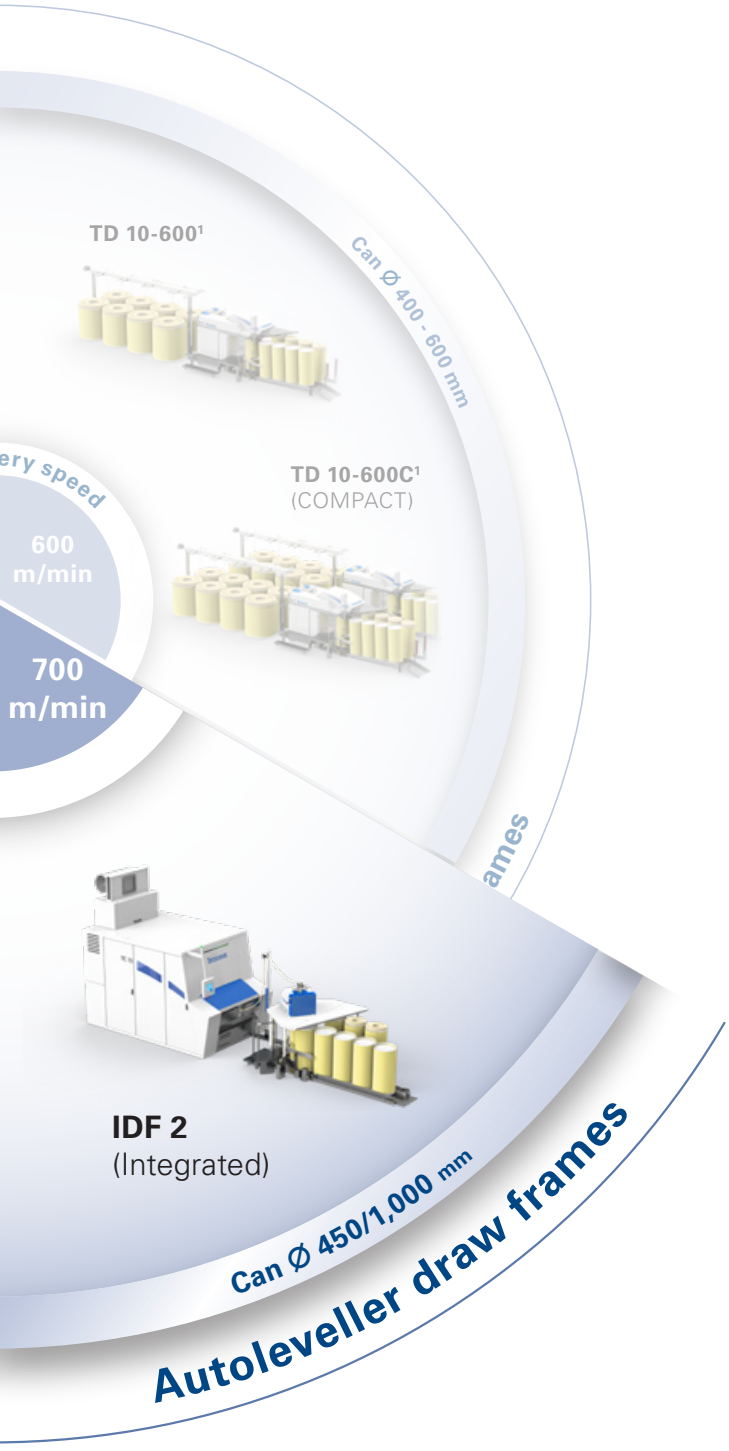


Opening, cleaning, mixing — TC 19^{i} with IDF 2 — TD 10

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

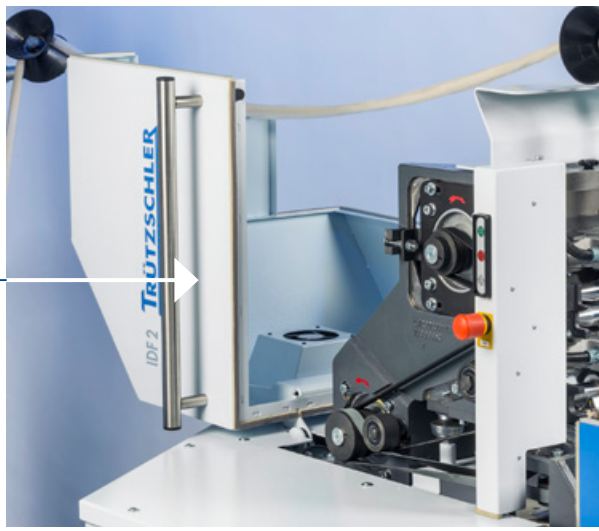
Precisely controlled
2-over-2-drafting system
for sliver quality like from
an autoleveller draw frame

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

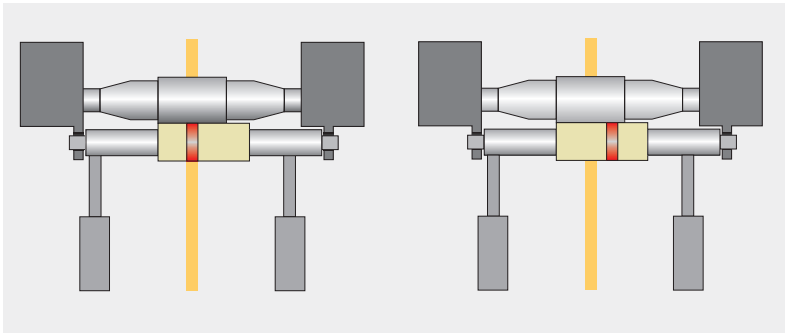
Easy and fast accessibility
of the drafting system
and the drive technology



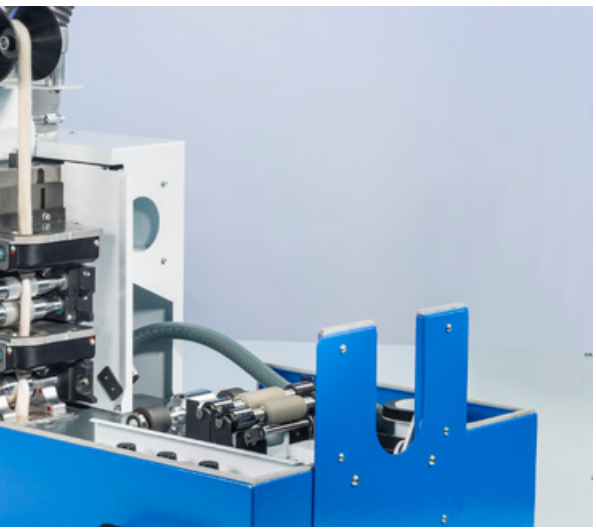
Levelling quality without compromises

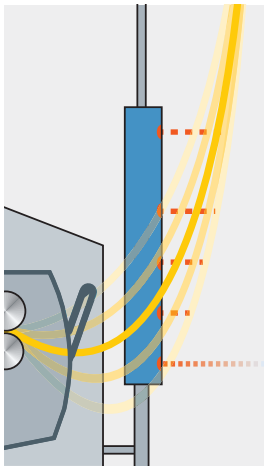
The close spatial proximity of the measuring point and drafting system and the low mass inertia allow a reliable levelling of the draft.
To ensure that every metre in the can has the desired quality, the sliver is permanently checked by the second sensor positioned immediately behind the drafting system.

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).



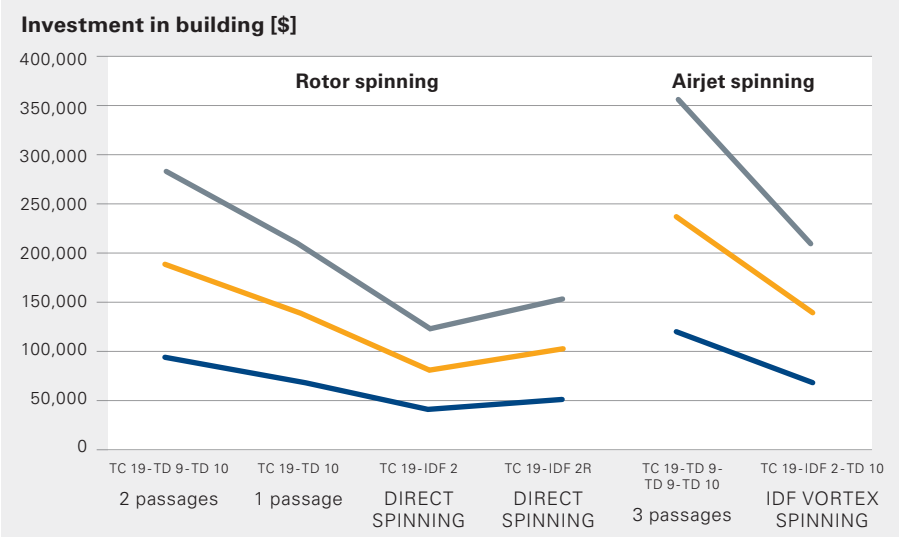


Fully automatic synchronisation of the delivery speed with the card by regulating the sliver sagging between the machines by means of light barriers.

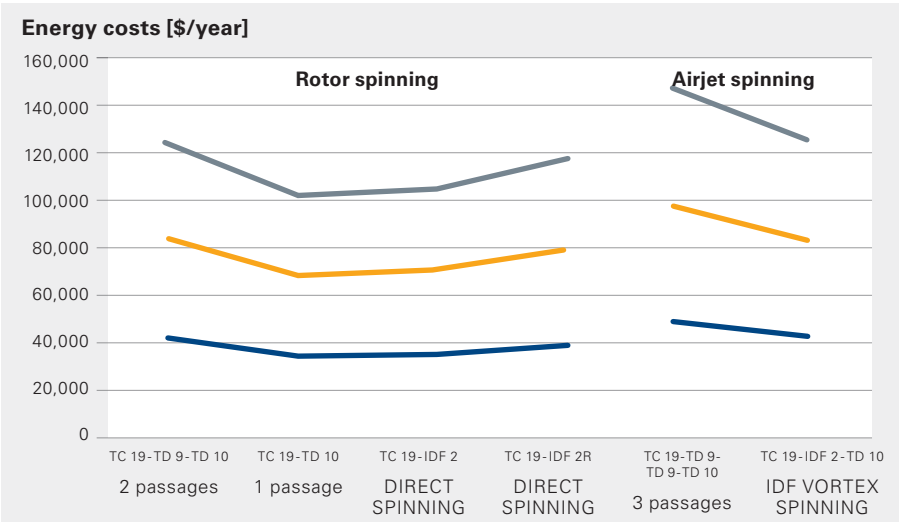
Permanent savings only with the Integrated Draw Frame IDF 2

IDF 2 reduces the investment and operating costs

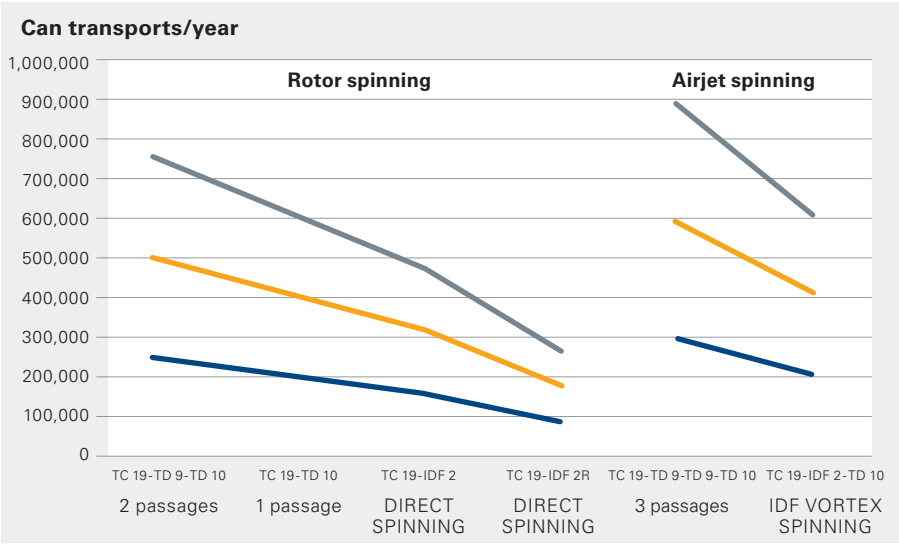
A process reduction always generates savings. In addition to the purchase costs, the operating costs as well as the service and maintenance costs are also eliminated.



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.

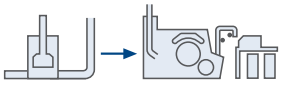
The Integrated Draw Frame IDF has established itself in rotor spinning

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.

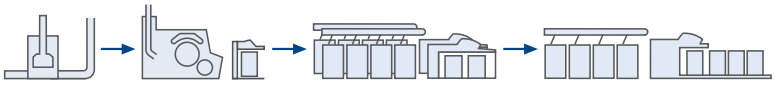
Here reclaimed fibers (recycled jeans) are carded for rotor spinning. The passage between cards and IDF 2 makes operation much easier for the staff.

ROTOR SPINNING

Truetzschler DIRECT SPINNING



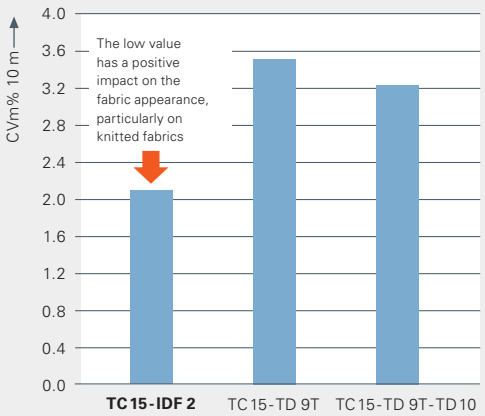
Conventional line



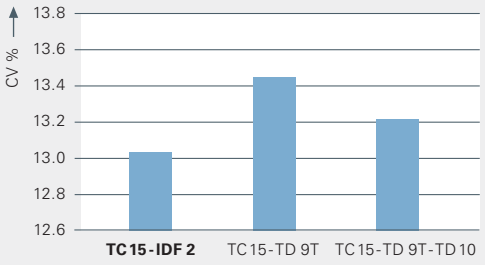
The Truetzschler line with IDF 2 saves three draw frame passages.

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

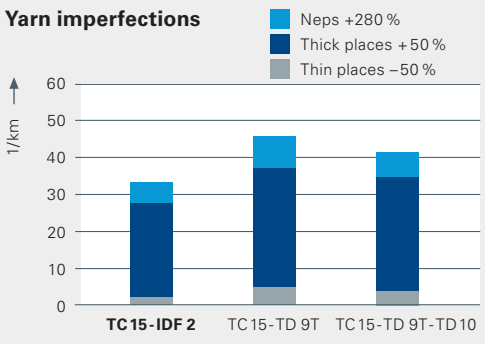
Yarn count variations



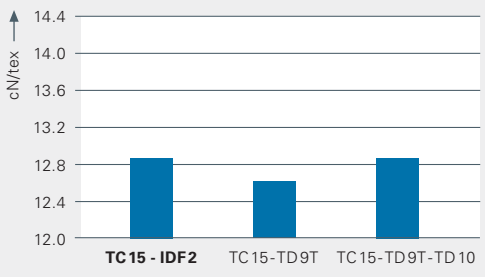
Yarn evenness



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.

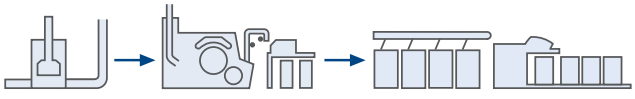
Optimum preparation for VORTEX by Truetzschler

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.

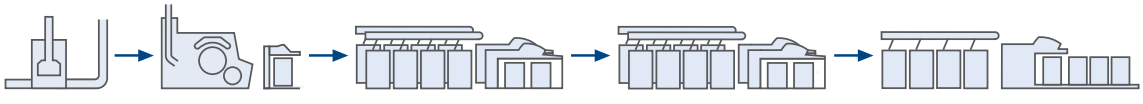
Airjet SPINNING

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

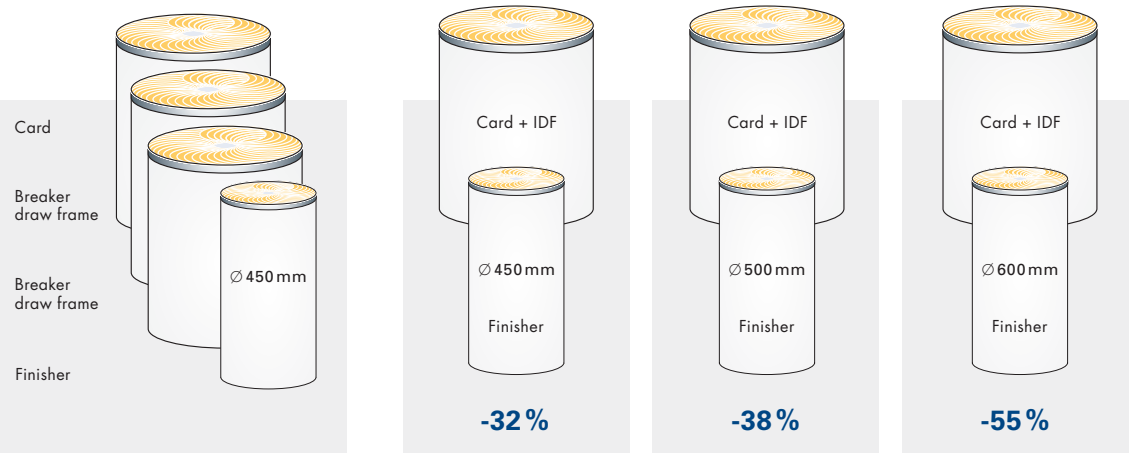
with Truetzschler IDF VORTEX SPINNING

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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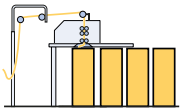
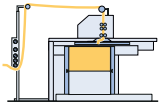
Technical data

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

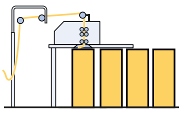
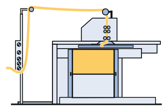
b) IDF VORTEX SPINNING up to 3.5-fold draft

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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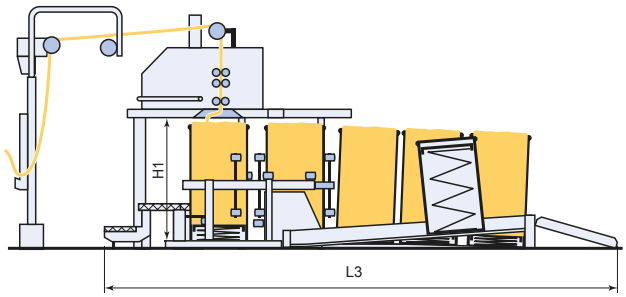
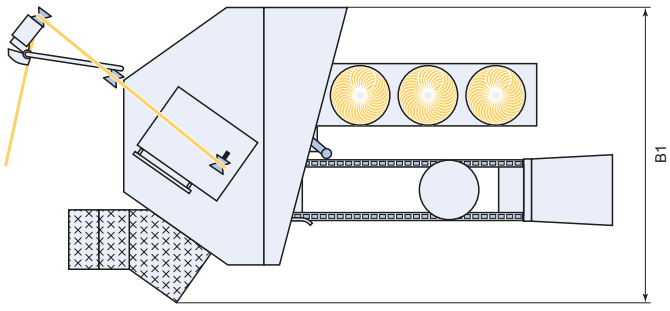
Integrated Draw Frame IDF 2

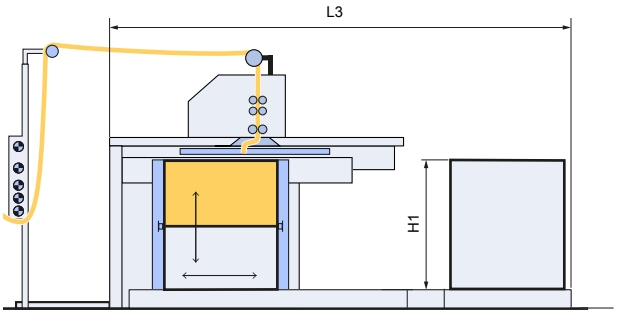
	Output cans	
	Ø 400 – 600 mm	**Ø 1,000 mm**
L3 mm	4,007 – 4,147	2,250
B1 mm	2,427	2,897
H1 mm	900 – 1,525	

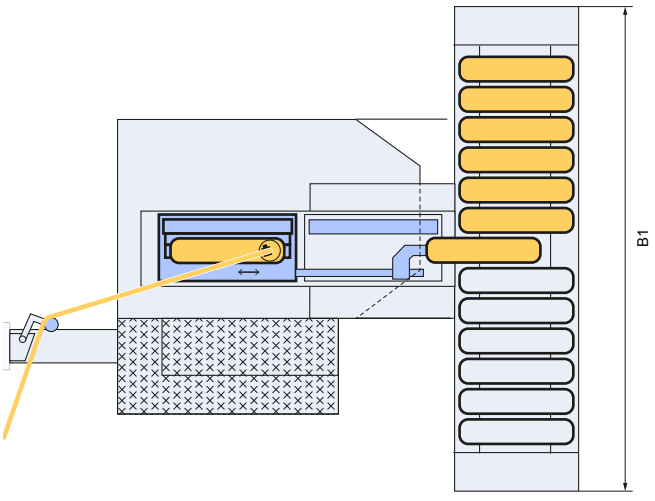




Integrated Draw Frame IDF 2R

	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





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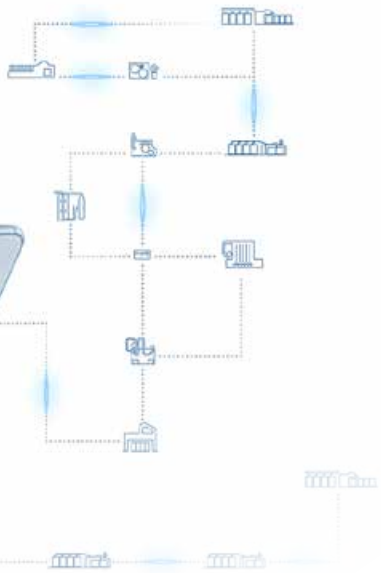
Trützschler Group SE
Postfach 410164 · 41241 Mönchengladbach, Germany · Duvenstr. 82-92 · 41199 Mönchengladbach, Germany
Telephone: +49 (0)2166 607-0 · Fax: +49 (0)2166 607-405 · e-mail: info@truetzschler.de · www.truetzschler.com



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TRÜTZSCHLER SPINNING

Fiber preparation installations: Bale openers · Mixers · Cleaners/ Openers · Foreign part separators · Dust separators · Tuft blenders Waste cleaners | Cards | Draw frames | Combing machines | Digital Solutions: My Mill · My Production App · My Wires App

TRÜTZSCHLER NONWOVENS

Bale openers/Mixers | Card feeders | Cards/Crosslappers Wet laying lines | Hydroentangling, needling, thermo- and chemical bonding lines | Finishing, drying, winding, slitting machinery

TRÜTZSCHLER MAN-MADE FIBERS

Filament lines: Carpet yarns (BCF) · Industrial yarns

TRÜTZSCHLER CARD CLOTHING

Metallic wires: Cards · Cards long staple · Cards Nonwovens Rotor spinning | Flat tops | Fillets | Carding segments Service machines | My Wires App | Service 24/7