

blow room



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Trützschler

Blow Room Solutions

With our blow room machines we stand for:



Quality right from the start

made possible by our portal bale opener BO-P for better blending at less space requirement



Innovative, self-optimizing technology

as presented by our foreign part separator T-SCAN for a consistently reliable separation rate

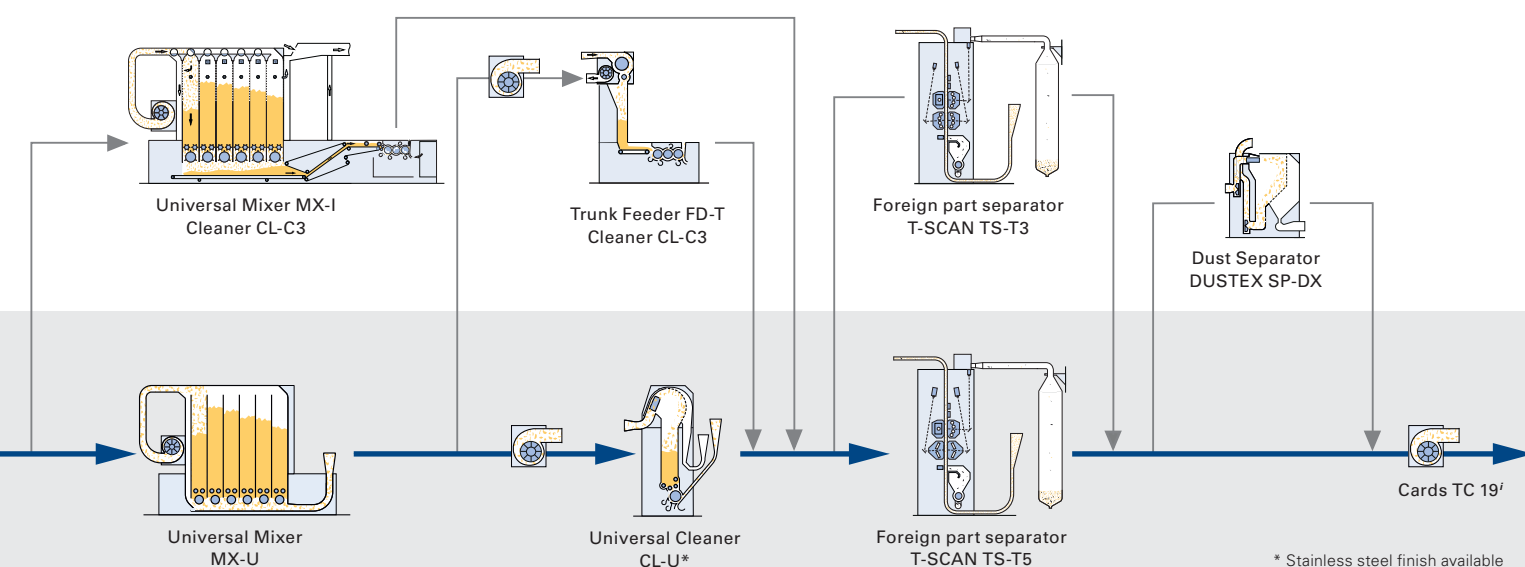


Resource conservation

with our waste sensor WASTECONTROL and recycling solutions







* Stainless steel finish available

■ = Universal

Material transport components such as fans, condensers or material separators have not been mentioned individually.

Fiber-friendly pre-cleaning

As first gentle fiber cleaning, the Pre-Cleaner CL-X is the ideal addition to a compact line. Coarse contaminants are reliably removed upstream from the mixers and fine cleaners.

Homogeneous blending

The Universal Mixer MX-U has been specifically designed to feed one or two Universal Cleaners CL-U.

Intensive and gentle cleaning

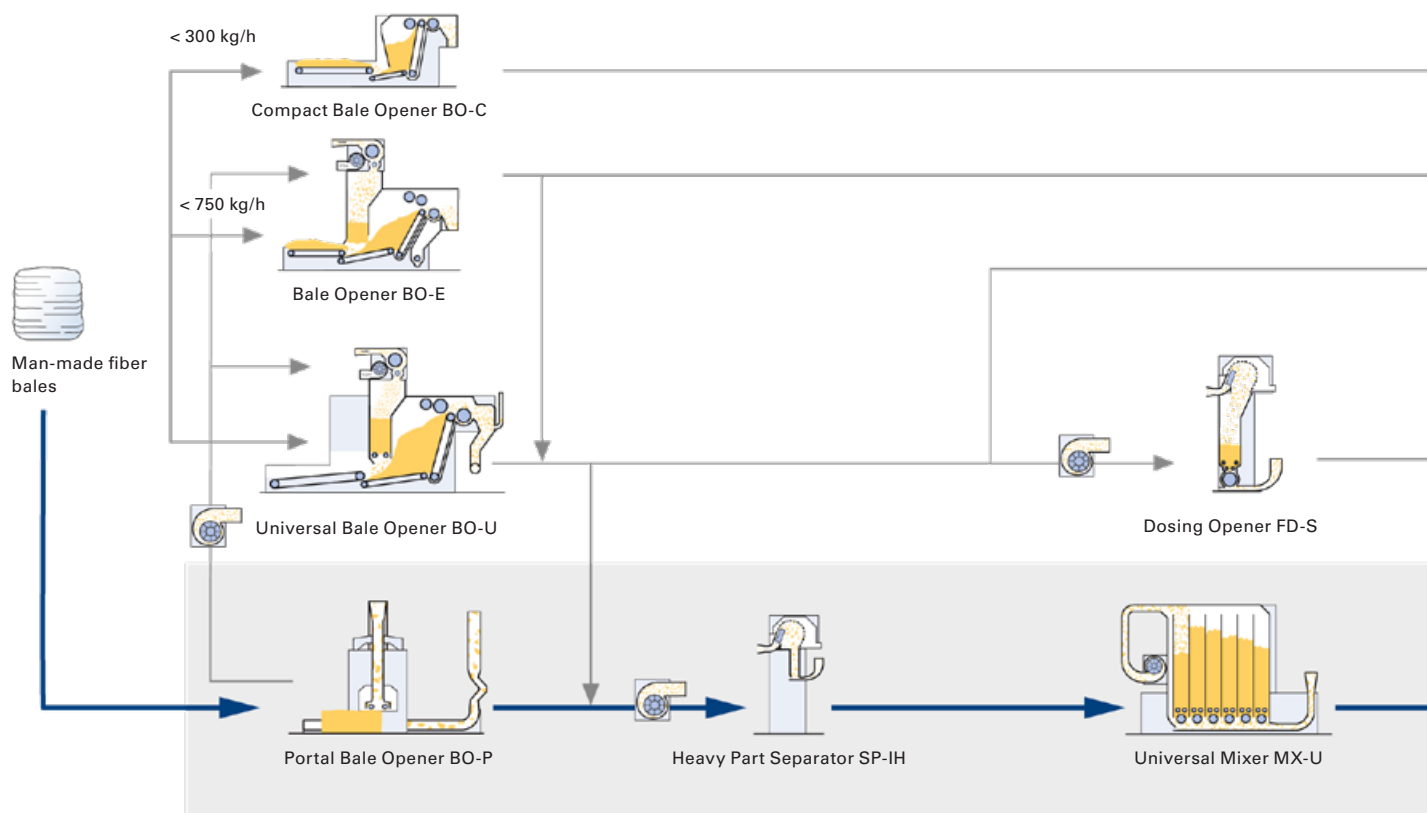
The Universal Cleaner CL-U is the first choice for almost all applications and also available in stainless steel finish. In the event of special applications, the Cleaners CL-C1 or CL-C3 are used.

Reliable detection and separation of foreign parts

The Trützschler T-SCAN TS-T5 is the most effective system for the separation of foreign parts. Self-optimisation functions and five combinable detection technologies ensure high separation rates. In addition, the high performance Dust Separator DUSTEX SP-DX can be connected downstream from the separators in rotor spinning.

Individual opening of different man-made fibers

Man-made fibers in an increasing variety are becoming more and more important in short staple spinning. For this purpose, the modular Trützschler blow room offers customised solutions – from small lines for feeding one card up to high production rates of 2,000 kg/h.

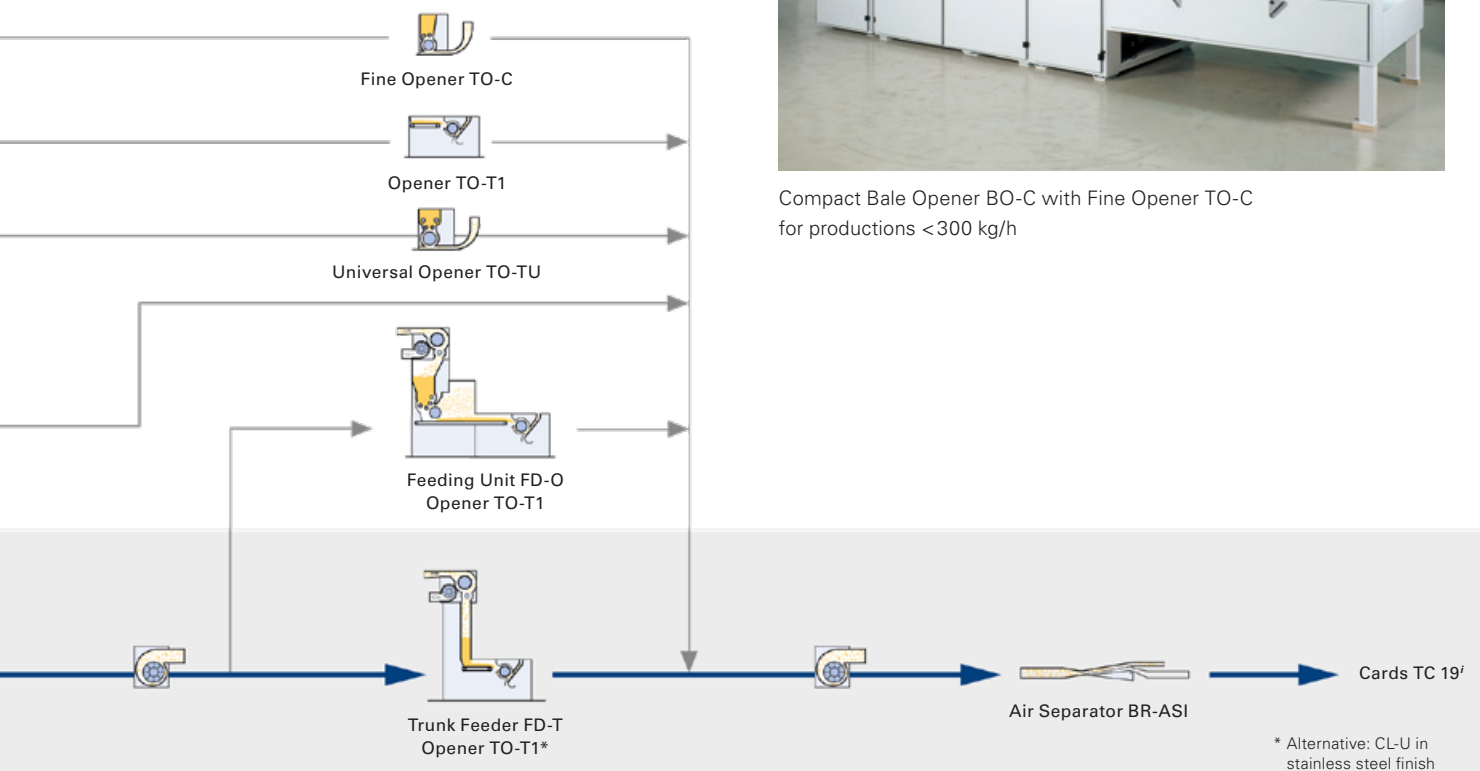


Optimal opening of every production size

The Portal Bale Opener BO-P is ideal for large lots. The four-row to seven-row bale lay-down ensures good blending from the start, even if material moisture or reviving agent application varies. The Bale Opener BO-E can be used for medium production rates. If only one or two cards are fed, the Compact Bale Opener BO-C provides the most economical solution.

Homogeneous blending for uniform card slivers

To achieve absolutely uniform card slivers with perfectly homogeneous fiber distribution, mixers such as the Universal Mixer MX-U are indispensable. This homogenisation is often neglected during processing of man-made fibers, thus the moisture content, for example with viscose, can differ greatly from bale to bale.



Compact Bale Opener BO-C with Fine Opener TO-C
for productions <300 kg/h

Optimal opener feeding

Trützschler openers can be optionally fed by different machines. The Feeding Unit FD-O is ideal for fibers that require additional opening prior to the fine opening process. All other man-made fibers are transported to the corresponding fine openers via the Trunk Feeder FD-T.

Individual degree of opening depending on fiber type

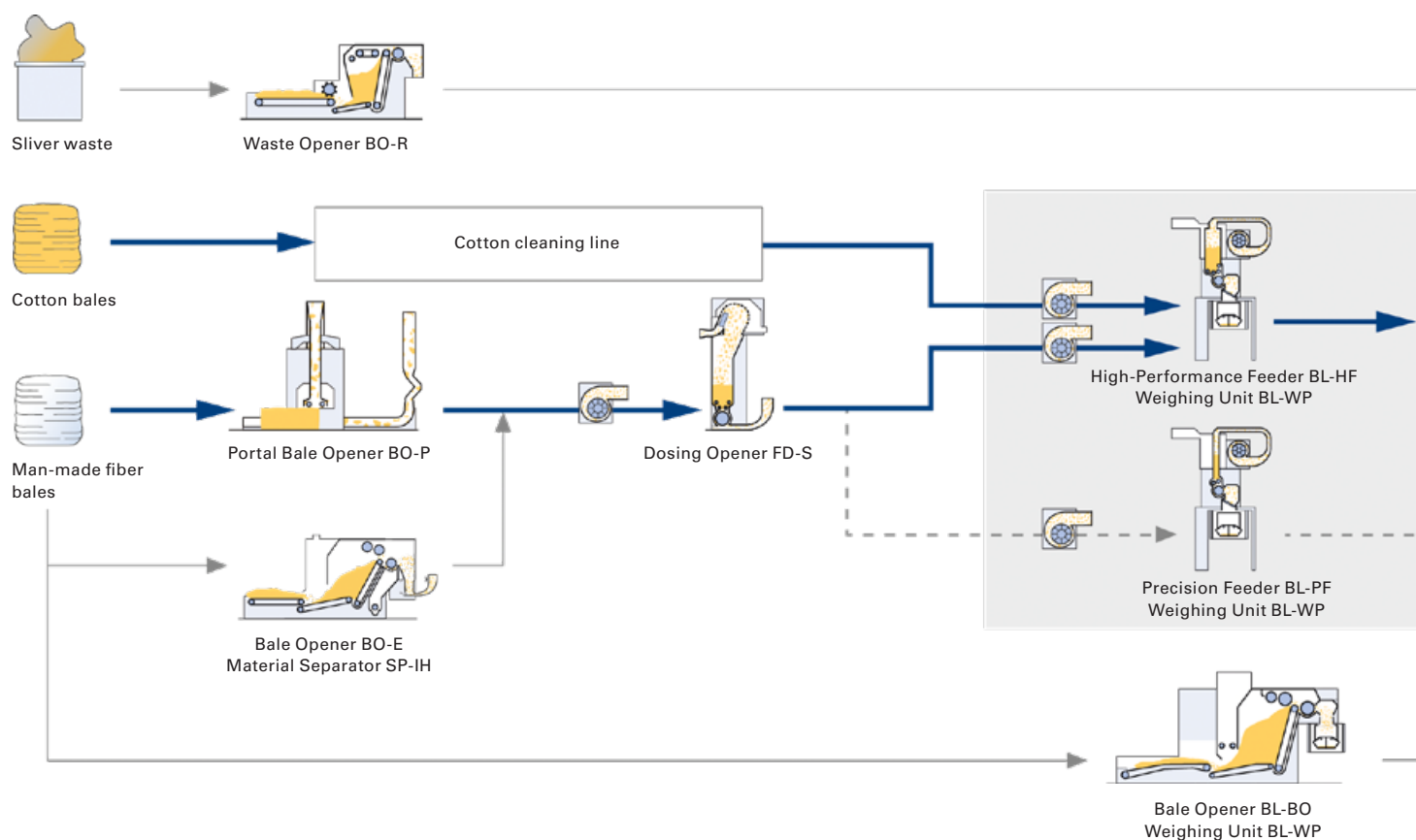
A smooth or siliconised polyester fiber or a tencel fiber require hardly any opening. In contrast, a dull viscose fiber or polypropylene fiber requires more intensive opening. To meet these different requirements, Trützschler offers three different fine openers with individual degrees of opening, depending on fiber type.

■ = Universal

Material transport components such as fans, condensers or material separators have not been mentioned individually.

Tuft blending – homogeneous and efficient

The production of tuft blends in a perfectly homogeneous as well as efficient manner is an art. The most important quality criterion is absolutely accurate maintenance of the blending ratios. This is only possible with weighing.

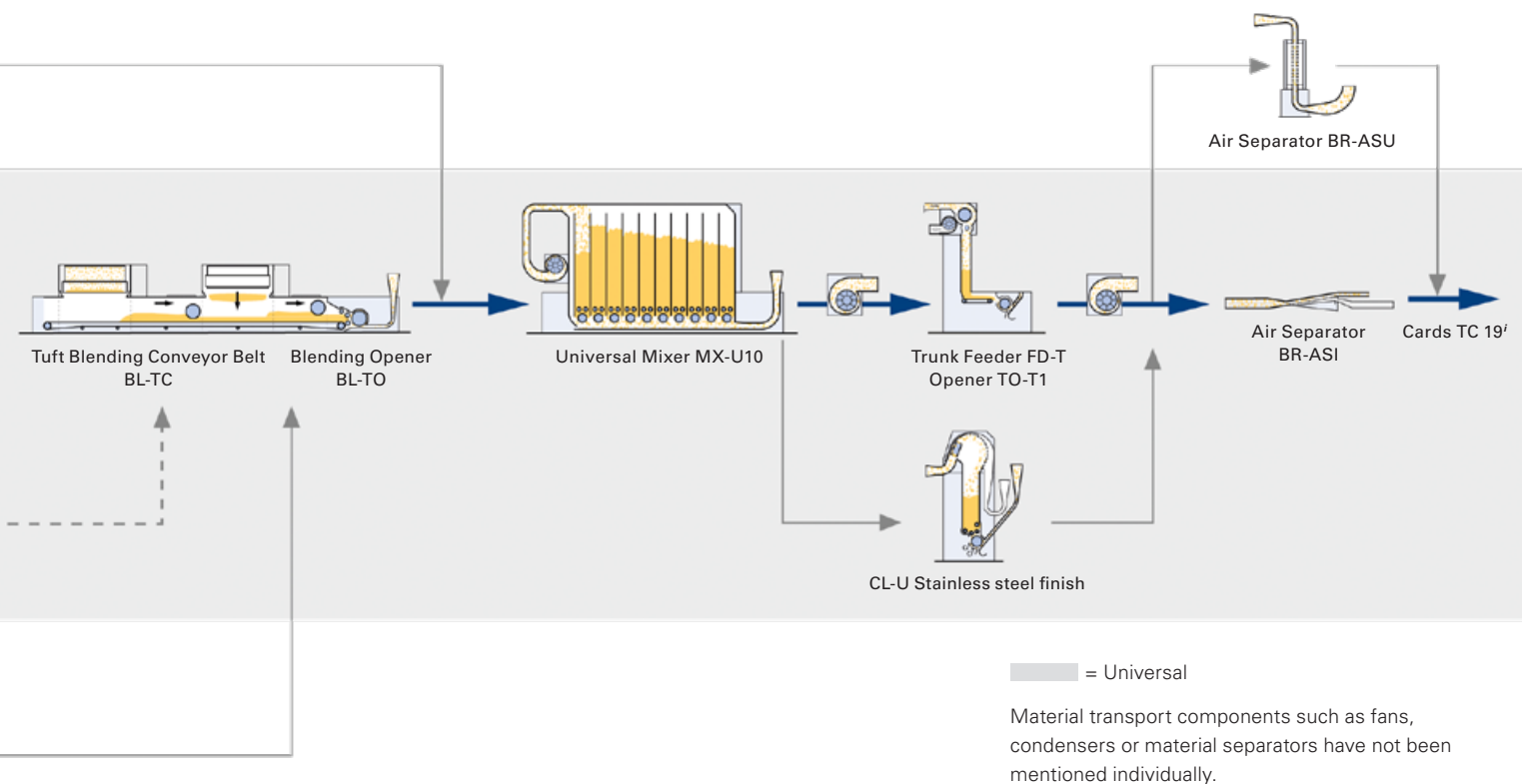


Flexible fiber preparation

The entire product range of bale work-off machines, pre-openers and cleaners is of course also available for tuft blending installations. When cotton is added it should be completely cleaned, dedusted and free of foreign parts before blending it with man-made fibers.

Flexible dosing

Tuft blending begins with the exact dosing of the blending components. This applies to 99 percent as well as 1 percent blending ratios. High production rates are best performed on the automatically fed High Performance Feeder BL-HF or the manually fed Bale Opener BL-BO. For low blending ratios, the Precision Weighing Feeder BL-PF is used.



Precision weighing

The pre-opened tufts of the various components are very precisely dosed in the Weighing Unit BL-WP.

Flexible homogenisation

The precise homogenisation of the tufts takes place with the Blending Opener BL-TO and the controlled operating trunk mixers MX-U.

Flexible fine opening

In principle, all Trützschler opener versions can be used here. Preferably, the opener TO-T1 or the CL-U in stainless steel finish is used.

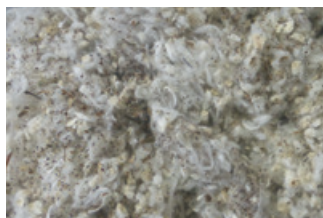
Increasing economic efficiency and conserving resources with waste recycling

Recycling production waste in spinning preparation

The recovery of good fibers from the spinning preparation waste can significantly increase the overall efficiency of the spinning

mill. Small, compact or even large high performance installations for central waste preparation have a short amortisation period.

Production waste / „Soft waste“:



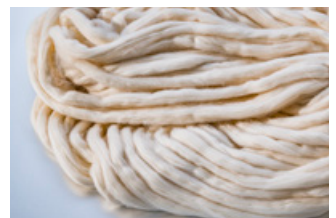
Gin notes



Production waste from the card and blowroom



Comber noils



Production waste, such as cleaned tufts or slivers, rovings

High short fiber count
High level of soiling

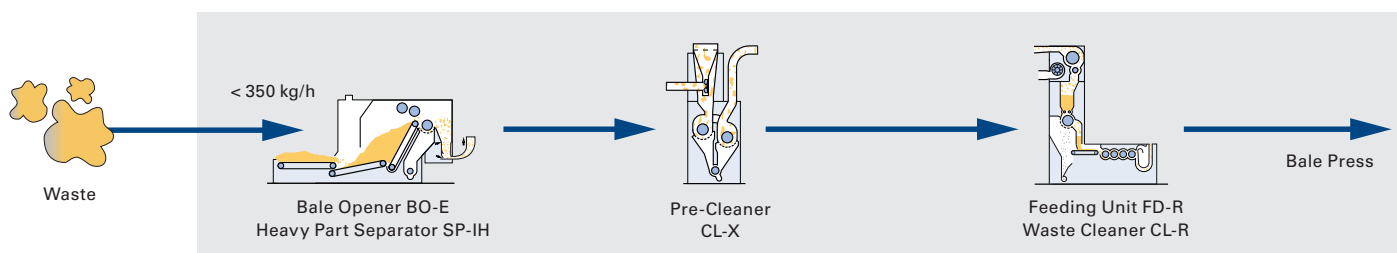
Low short fiber count
Low level of soiling

With flexible and individual setting options and intelligent sensor technology, Trützschler blow room machines can recycle cotton waste in an economical, environmentally friendly and user-friendly way.

Trützschler soft waste recycling portfolio:

- Separate pre-cleaning of heavily soiled cotton waste
- Further processing of pressed cotton waste
- Addition of comber noils via the tuft blending system T-BLEND

Example of an installation for separate pre-cleaning of soft waste:



For higher production rates > 350 kg/h the use of the Universal Bale Opener BO-U and a second cleaner is recommendable.

■ = Universal

Material transport components such as fans, condensers or material separators have not been mentioned individually.

A new life for textile waste

In comparison with production waste from spinning preparation, the recycling of textile waste is considerably more complex: Sorting, cutting and shredding processes are required in order to produce bales of secondary fibers which can then be fed to the

spinning preparation process again. Above all, particles of yarn and woven material and the high short fiber count in this secondary material present a major technological challenge for yarn production.

Textile waste / „Hard waste“:



Yarn residue



Woven fabrics, weft-knitted fabrics, warp-knitted fabrics



Clothing, home textiles (new or used)

Low short fiber count
Easy to open

High short fiber count
Difficult to open

With Trützschler blow room machines for optimal opening and cleaning, as well as gentle yet effective processing of short fibers, manufacturers can easily meet these challenges. Trützschler offers complete spinning preparation solutions from blow room, carding to

draw frame for processing secondary fibers from textile waste:

- Processing secondary fibers from shredded textiles (100 % shoddy fibers)
- Processing blends of secondary fibers with raw cotton and/or synthetic fibers

FROM **WASTE** TO **VALUE**

More information



or click here:

[Recycling brochure](#)

Modular concept

Highest yarn quality in an efficient manner

The modular installation concepts give you the opportunity to individually combine compactness, production capacity, product quality and economic efficiency into a reliable installation that is like a fingerprint of your requirements.



Bale openers

- Fully automated bale work-off
- Various manual solutions available



Installation protection

- Solutions for the separation of heavy parts and metal parts
- Integration of fire protection devices from reputable suppliers is provided



Cleaners and openers

- Perfect solutions for every application and fiber
- Gentle fiber treatment – minimal good fiber loss



Mixers

- Customized mixer sizes
- Controlled, reproducible mixing – maximum homogeneity



Foreign part separator

- Reliable detection with five modules
- Extremely high separation rate with minimal loss of good fibers
- Minimal cleaning and maintenance requirements



Tuft blending line

- Reproducible, exact blending consistency
- Blending of up to six components per process step
- Formula memory for quick lot changes

Portal Bale Opener BO-P

The Trützschler portal solution for higher productivity and increased quality



The new Portal Bale Opener BO-P



100 % more working width for higher production rates

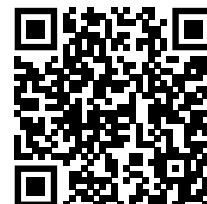
With 2,900 mm or 3,500 mm, the Portal Bale Opener BO-P offers very large working widths for flexible bale placement. Up to 2,500 kg/h or 3,000 kg/h tufts are gently and uniformly worked off.

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.

Watch video:



or click here:

BO-P

Above 100 % more working width

for higher production rates

Portal Bale Opener BO-P

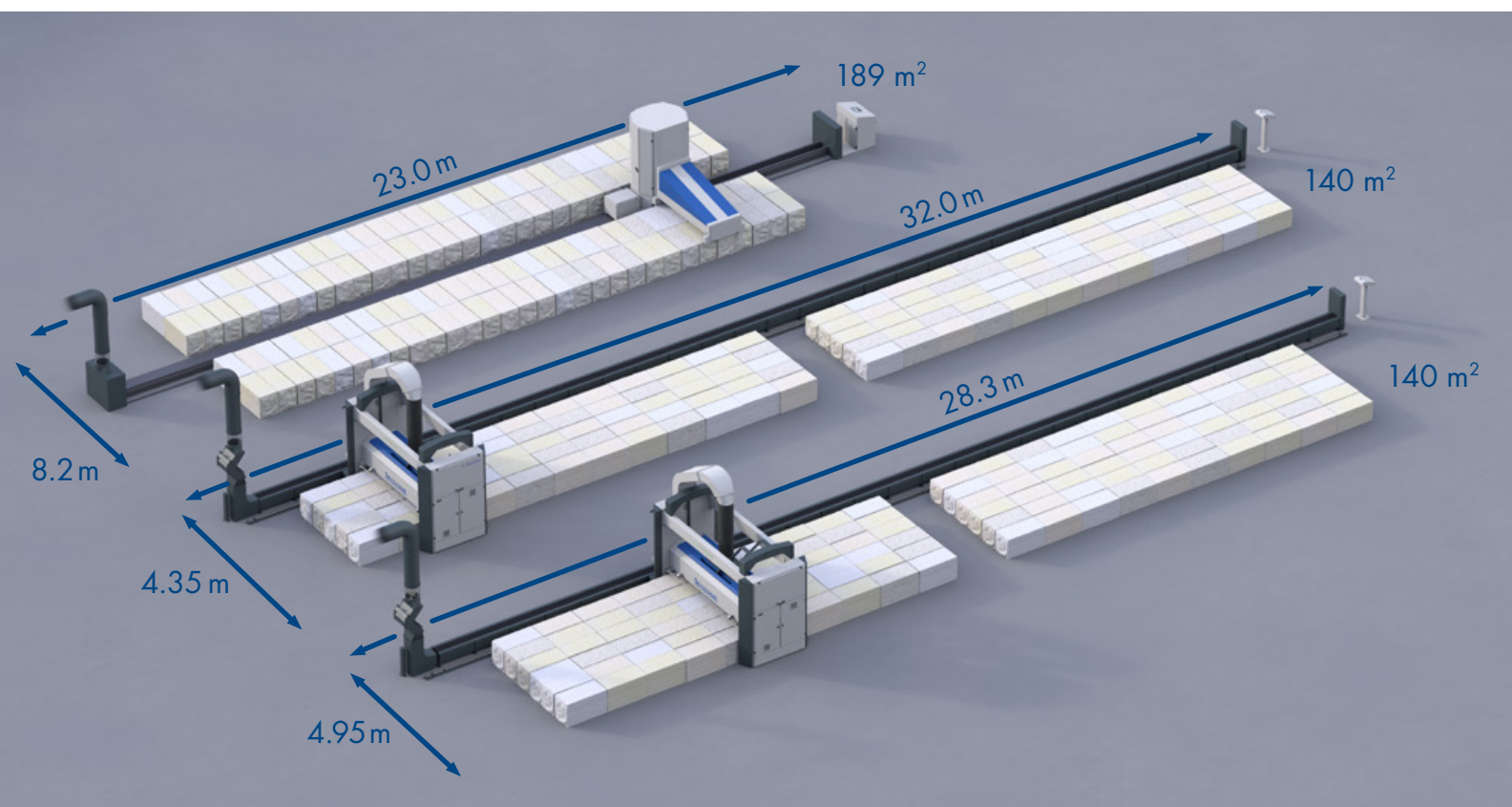
25 – 45 % less space requirement due to the larger working width

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.





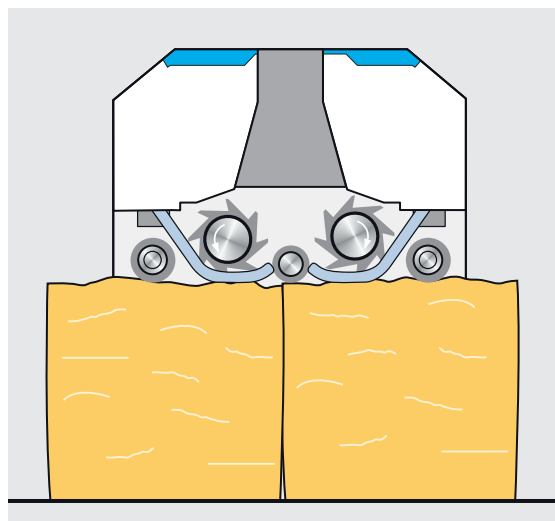
Higher degree of opening thanks to new work-off rolls

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 also equipped with the patented penetration inversion mechanism known from the predecessor model BO-A. Thus, the production is perfectly distributed on two rolls, eliminating wear-intensive deceleration with direction of rotation reversal.

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.



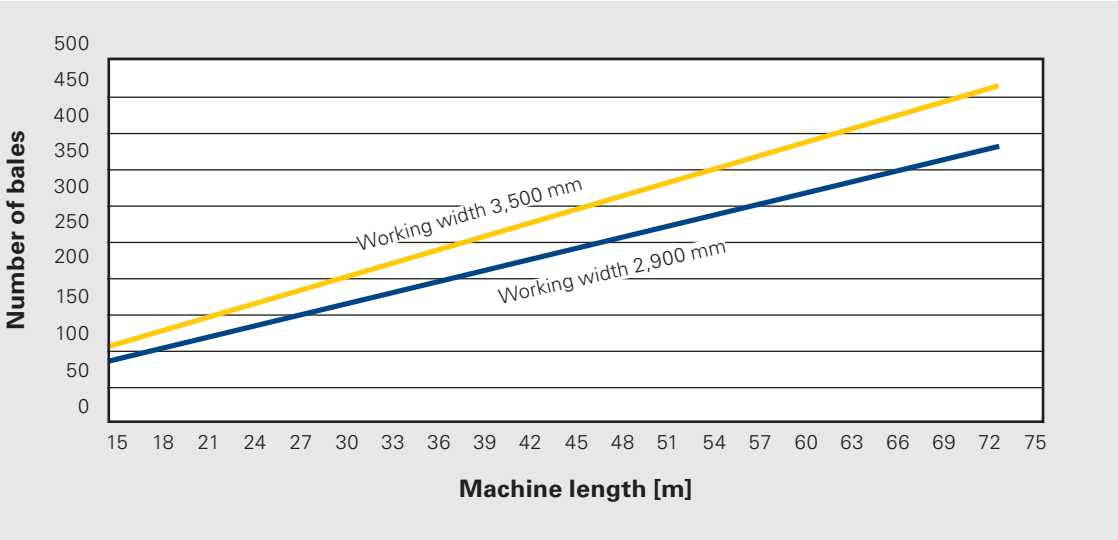
The point density is 25 % higher than on the automatic Bale Opener BO-A

Savings of up to 26 % building space

compared to BO-A

Portal Bale Opener BO-P

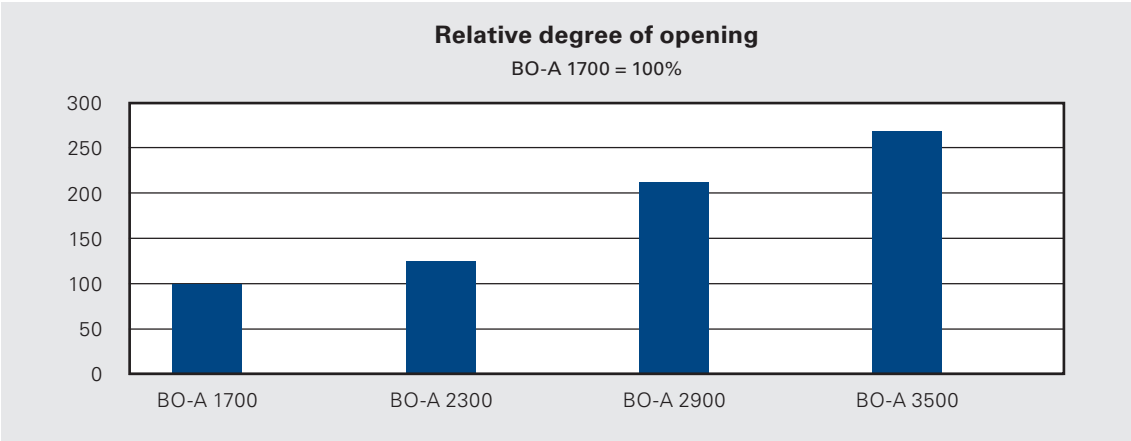
Using as many bales as possible in the lay-down improves homogenisation
Bale dimensions:
Length 800 mm,
width 600 mm



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



Substantially smaller tufts improve the downstream blending.



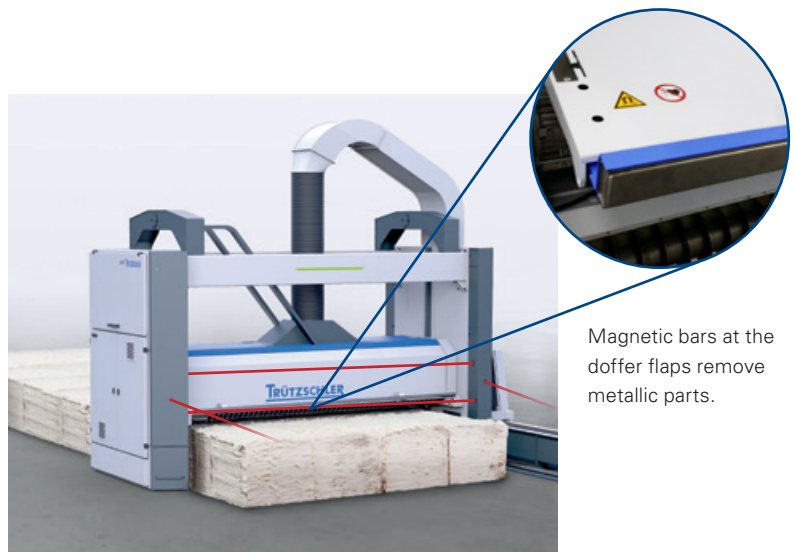
Intelligent new machine design

- 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.
- Magnetic bars positioned at the doffer flaps remove metallic parts from the raw material. This foreign part detection ensures safe and reliable production right from the start. (option)

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.



Magnetic bars at the doffer flaps remove metallic parts.

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 lots
- Flexible size of the two working areas



Automatic Bale Opener BO-A

Establishing the quality chain with maximum performance



The 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

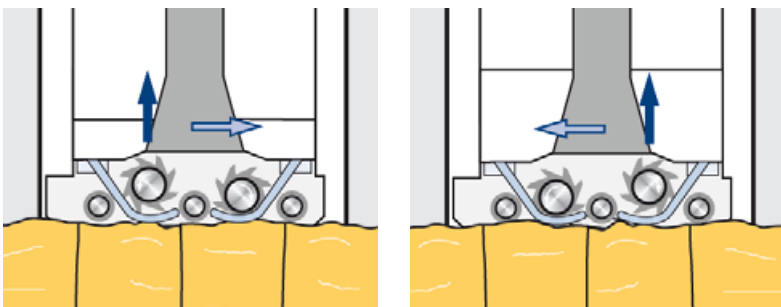
- Production capacity up to 2,000 kg/h
- Work-off of 1 to 3 bale groups per work area, optionally on one or two sides
- Up to 200 bale lay-down for extended, unattended operation (up to three lines simultaneously)
- Different bale heights are possible
- Free work-off area for a complete reserve set of 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 BO-A when it comes to powerful performance and economic efficiency:

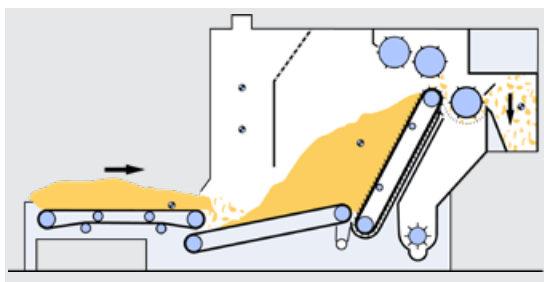
- Specific blending of different material flows by means of additional trunk feeder
- Dosed addition of cleaned waste and re-feeding of sliver waste
- Selective lay-down of bale layers/bales
- Can be combined with cleaners and openers



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

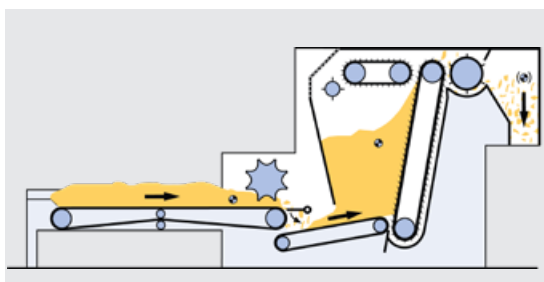
The Compact Bale Opener BO-C is specifically designed for opening of man-made fibers at low and medium production rates up to 300 kg/h. It allows highest flexibility on smallest space by direct feeding of individual cards or small card groups.



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.



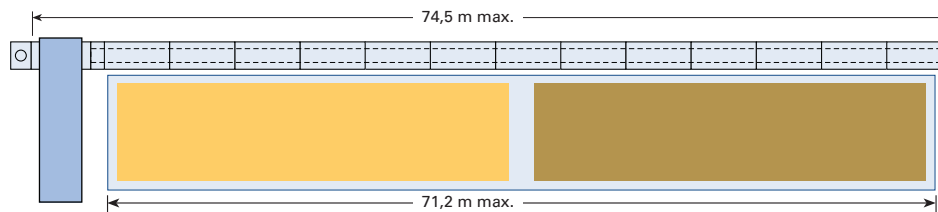
The Waste Opener BO-R reliably opens sliver waste as well.

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	2,800/3,400	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	30.25²⁾	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 2,8 m	Number of bales ³⁾	33	49	64	80	95	111	126	142	157	173	188	204
Work-off width 3,4 m	Number of bales ³⁾	40	59	78	97	115	135	153	172	191	210	228	247
Work-off width 2,8 m	Total weight t ³⁾	6	9	12	14	17	20	23	26	28	31	34	37
Work-off width 3,4 m	Total weight t ³⁾	7	11	14	17	21	24	28	31	34	38	41	45
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 2,8 m	Number of bales ³⁾	219	235	250	266	281	297	312	328	343	359	374	
Work-off width 3,4 m	Number of bales ³⁾	266	285	303	323	341	360	379	398	416	435	454	
Work-off width 2,8 m	Total weight t ³⁾	39	42	45	48	51	53	56	59	62	65	67	
Work-off width 3,4 m	Total weight t ³⁾	48	51	55	58	61	65	68	72	75	78	82	

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

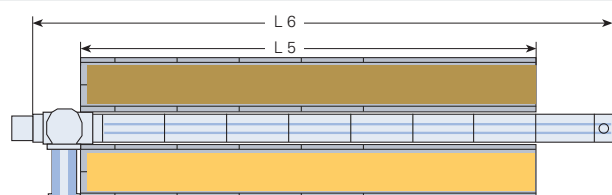
1) depending on material characteristics

Automatic Bale Opener BO-A

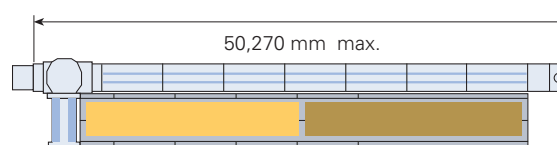
Automatic bale opener	Frame width mm	Height mm	Max. bale height mm	Machine length min. mm	Machine length max. mm	Max. continuous power kW	Average power consumption at max. production kW	Max. continuous production kg/h	Noise level db (A)
BO-A	1,720/2,300	2,900	1,800	10,670	50,270	10,6/10,6 ¹⁾	7,4/8,4 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 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 BO-A
●	The standard version of the 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 Trützschler, the fan operates only at the currently required performance, depending where the Portal Bale Opener BO-P or the Automatic Bale Opener 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, Trützschler 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 m³/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

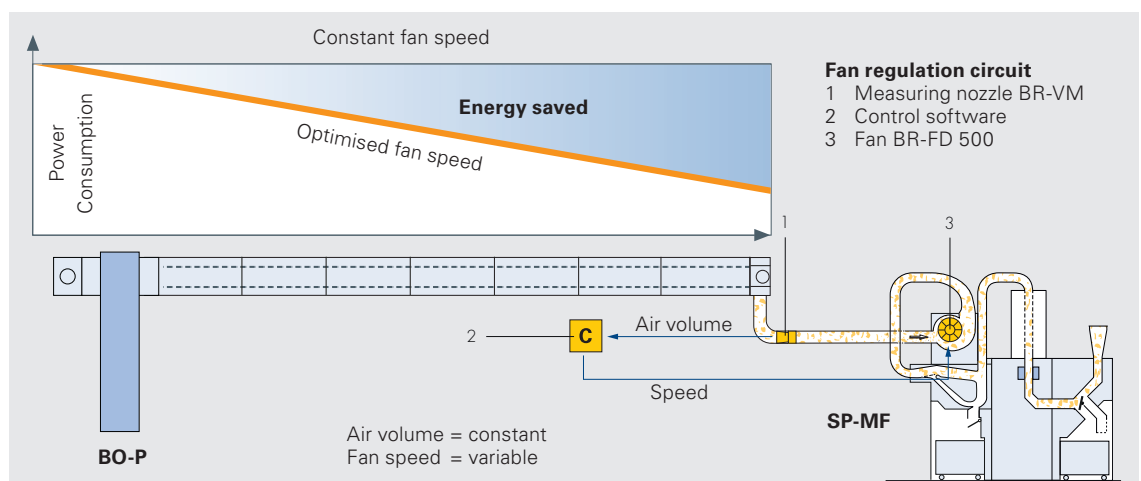
Cleaners and cards are securely protected against metal parts: An electronic sensor surrounds the fiber channel and detects metal parts in the SP-MF. The subsequent extraction flap is a special Trützschler development; since it is actively moved, it responds quickly in both directions. The customary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

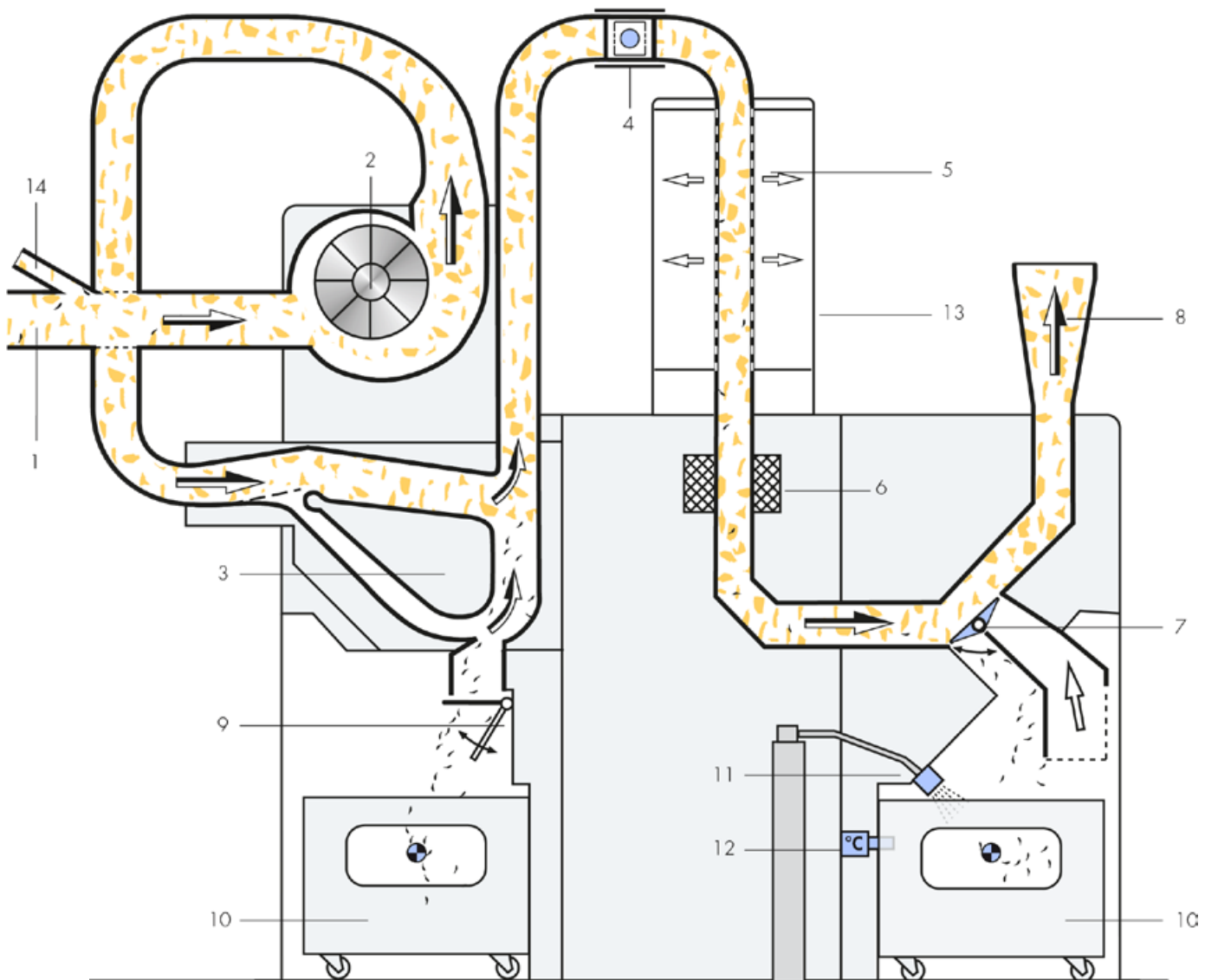
6. Waste re-feeding

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





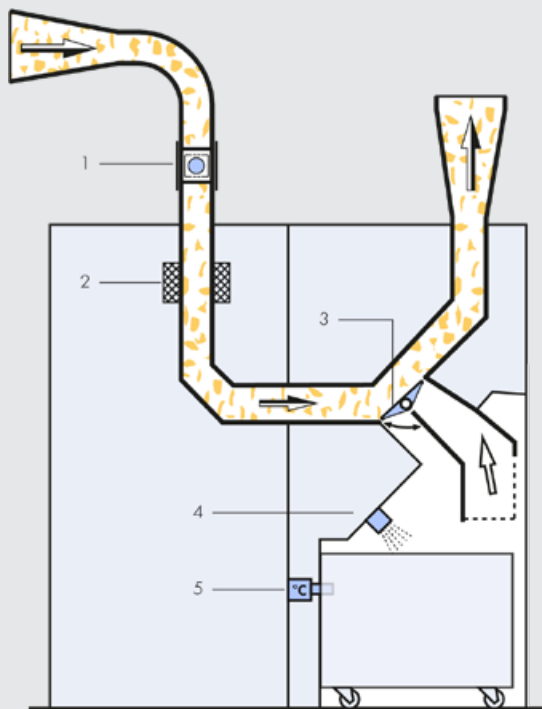
The Multi Function Separator SP-MF combines many functions in a compact form

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

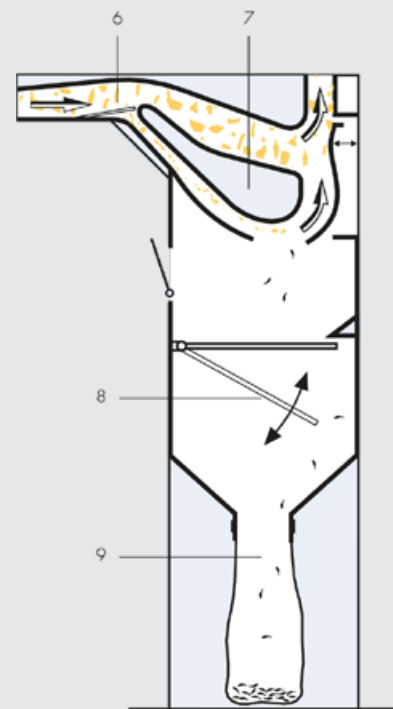
* These devices are no substitute for fire protection and extinguishing equipment to be provided by customer

Special machines for installation protection

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



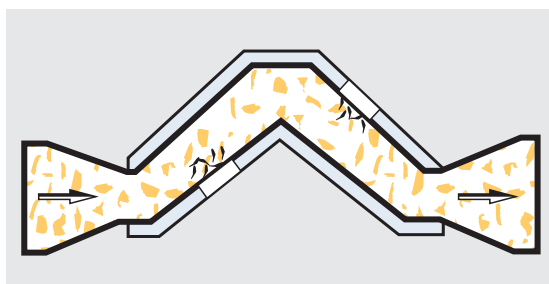
Electronic Metal Separator SP-EM



Heavy Part Separator SP-H

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.



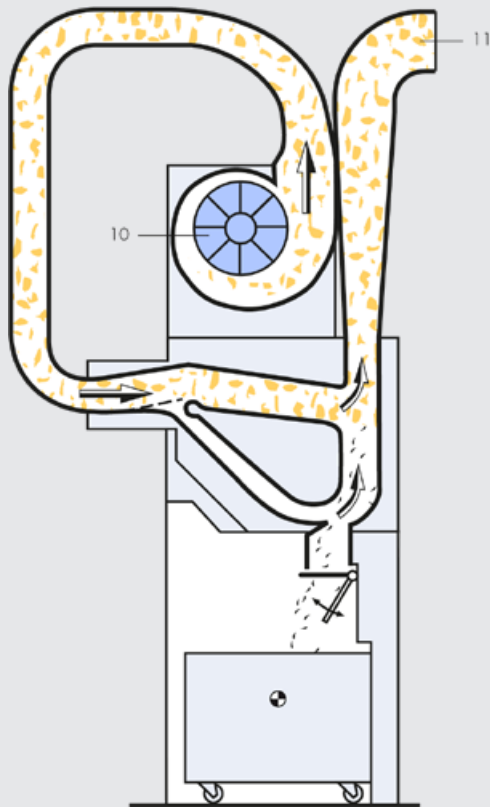
Principle of Magnet Trap BR-MT

Safe metal separation: SP-EM

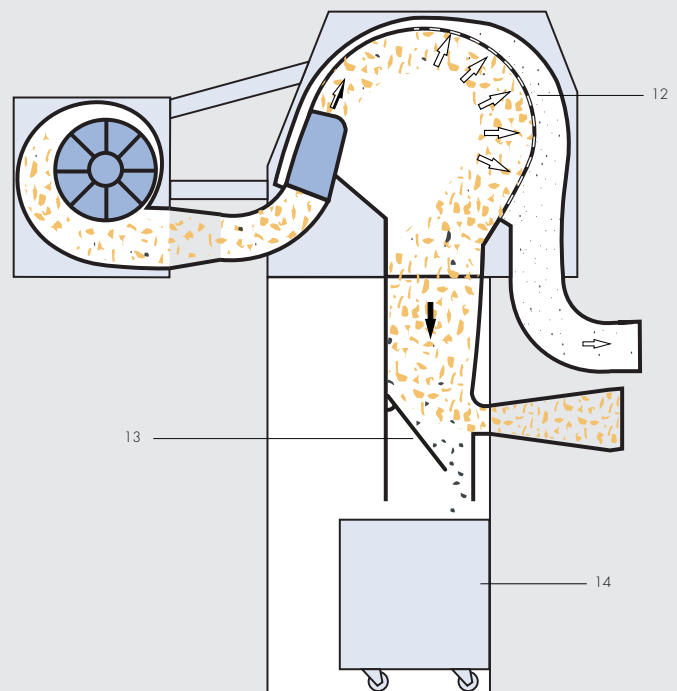
The electronic Metal Separator SP-EM supports the protection of cleaners and cards from metal particles. Since, in the process, the material transport is performed by the downstream machine, it is free of exhaust air and requires no filter capacity.

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.



High performance Heavy Part Separator SP-HU

Material Separator BR-MS 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 material separator. 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 material separator separates fibers from transport air and dust
- 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	Total width	Total length	Total height	Max. continuous power	Average power consumption	Max. continuous production	Noise level
	mm	mm	mm	mm	kW	kW	kg/h	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-IH⁴⁾	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) Is combined with a material separator or a manual bale opener

5) Depending on upstream machine



WASTECONTROL

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.

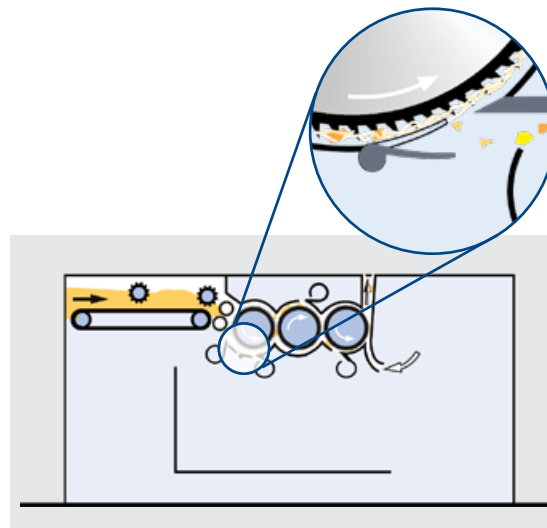
Perfect cleaning – the key to efficient production

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 Universal Cleaners CL-U, Fine Cleaners CL-C3 and Pre-Cleaners CL-X.



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

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

Trützschler cleaner 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.

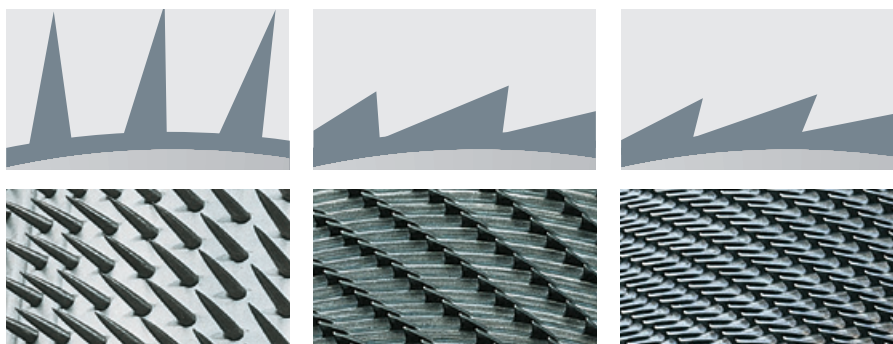
Cleaner system:

- 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 Trützschler micro-computers



CL-C3 for heavily contaminated cottons in rotor spinning

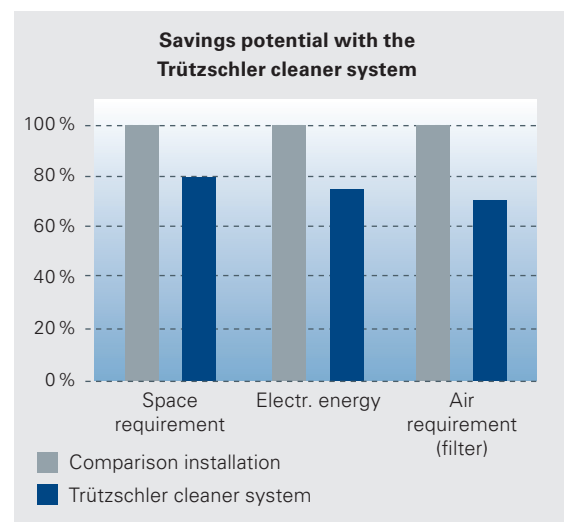
The Cleaner CL-C3 features increasingly finer clothing and steeper angles of the clothing teeth from roll to roll





CONTIFEED 2: Self-optimizing 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. 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.



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 Trützschler 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 Trützschler pressure sensors.

Stainless steel finish

The CL-U is also available in stainless steel finish. All material-carrying parts are made of high-quality stainless steel.

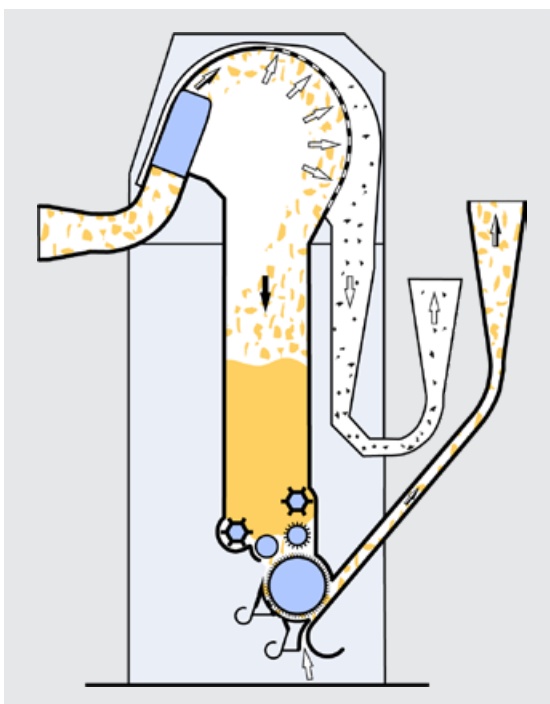
This equipment prevents the accumulation of reviving agent and thus leads to significantly safer fiber transport.

The CL-U in stainless steel finish is the right choice for customers who want to be flexible in processing different fiber types:

- Cotton
- Man-made fibers
- Cotton and man-made fiber blends
- Secondary fibers made from textile waste

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

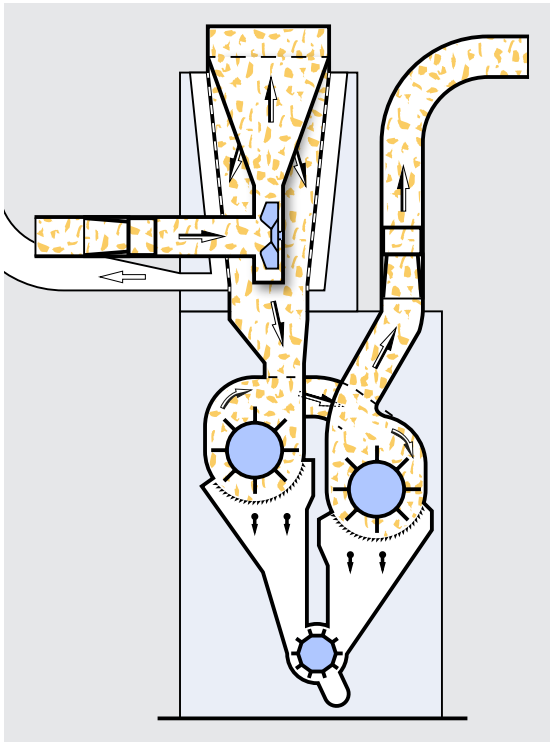


CL-X: New benchmark for pre-cleaning

- 1,600 kg/h production
- 30 % less energy consumption*
- >100 % improved cleaning efficiency*
- 2.60 m long cleaning section
- Two-step cleaning
- Synchronized lot management
- WASTECONTROL sensor

* compared to current benchmark

Pre-Cleaner CL-X



Pre-Cleaner CL-X

Gentle fiber cleaning at high production and minimal energy consumption:

The CL-X Pre-Cleaner is the first choice when it comes to gentle removal of coarse impurities from cotton.

Despite high productivity, the CL-X is energy-efficient and gentle on fibers.

The standard WASTECONTROL system ensures maximum raw material utilization and minimum good fiber loss. The lot management system enables direct, automated coordination with the Bale Opener BO-P.

Watch video:



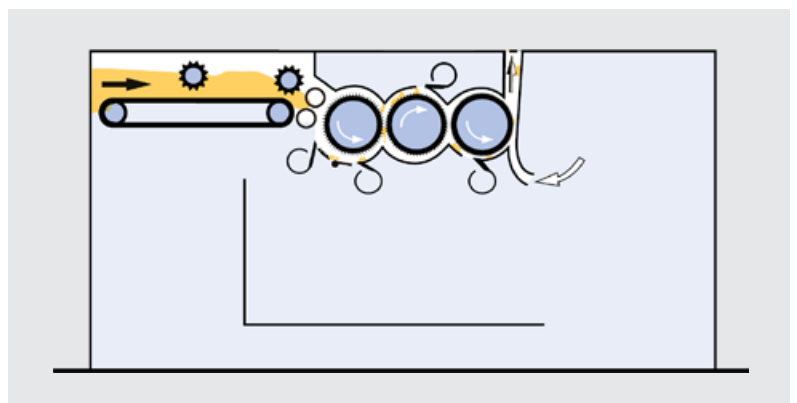
or click here:

[CL-X](#)

Fine Cleaner CL-C3

The fine cleaner for heavily contaminated cotton:

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



Fine Cleaner CL-C3

Waste Cleaner CL-R

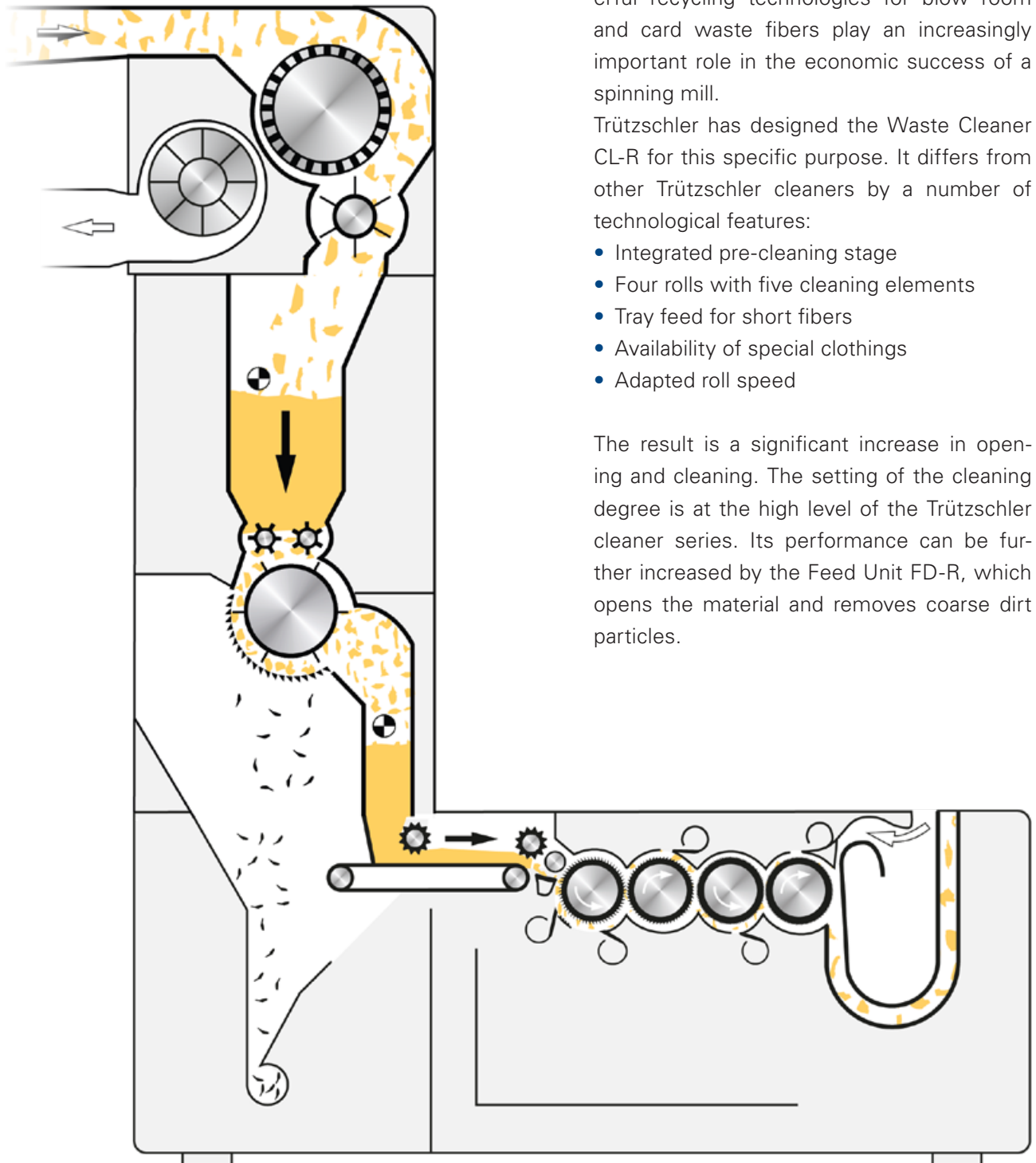
Recycling waste means saving costs and conserving resources

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.

Trützschler has designed the Waste Cleaner CL-R for this specific purpose. It differs from other Trützschler cleaners by 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 cleaning degree is at the high level of the Trützschler cleaner 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 lay-down of another lot.
2. Waste cleaning as separate line consists of a Universal Bale Opener BO-U and a Pre-Cleaner CL-X, which removes coarse contaminants. Another cleaning occurs in the Waste Cleaner CL-R. Then the waste can be fed to a bale press.

Trützschler waste cleaning concept**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**

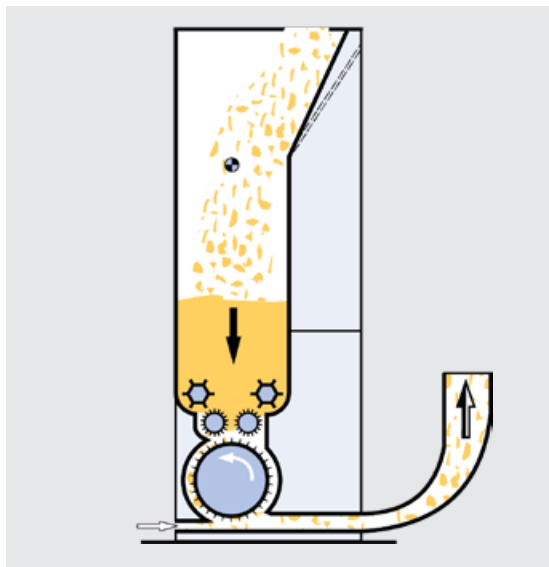
Trützschler opener system

The tailor-made opener program

Trützschler opener system

The Trützschler openers offer perfect solutions for every application: From universal opener for all fibers ≤ 130 mm to special openers for

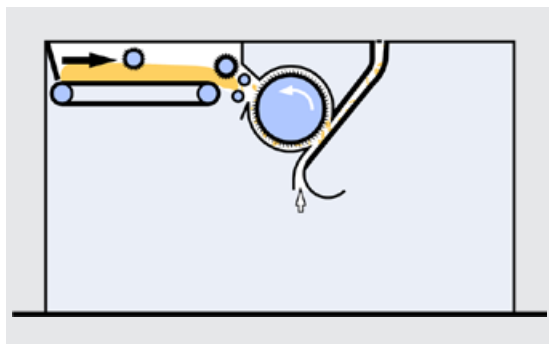
for PES/Viscose/Acrylic and other man-made fibers. Other individual requirements can be realised by different opening rolls.



Dosing Opener FD-S

Dosing Opener FD-S

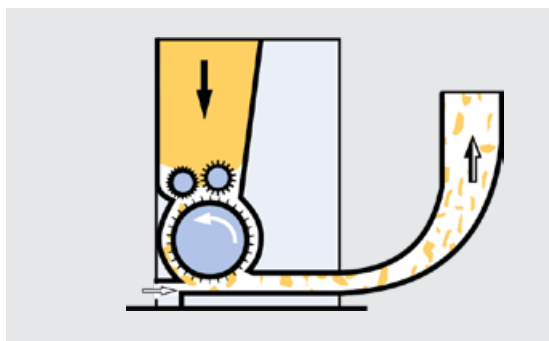
- High performance opener for all fibers
- Three different opening rolls for each material and each application



Opener TO-T1

Opener TO-T1

- PES/viscose/acrylic as well as cotton and man-made fiber blends
- 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 devices

Trützschler 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

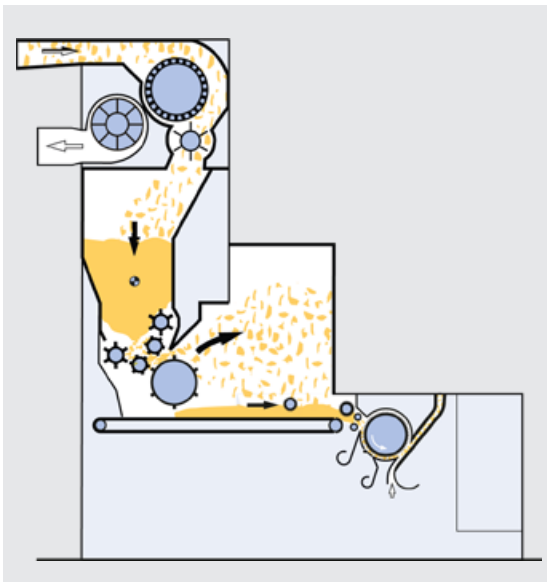
The intelligent design of the FD-O with its pre-opening function gives fine openers a clear performance advantage.

Trunk Feeder FD-T

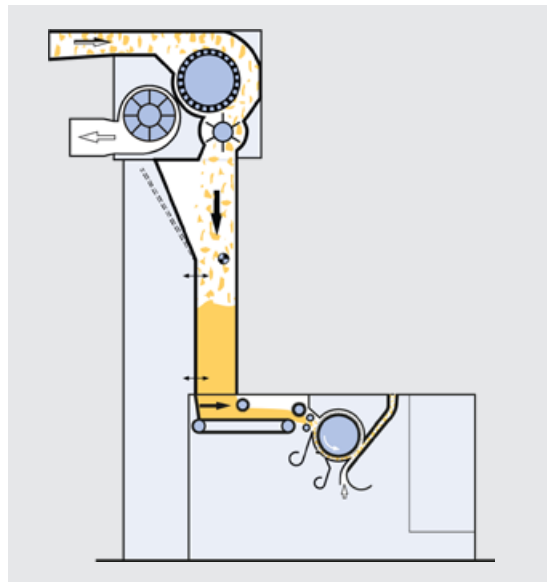
The most cost-efficient feeding option is the Trunk FD-T in combination with a cleaner.

Integrated Mixer MX-I

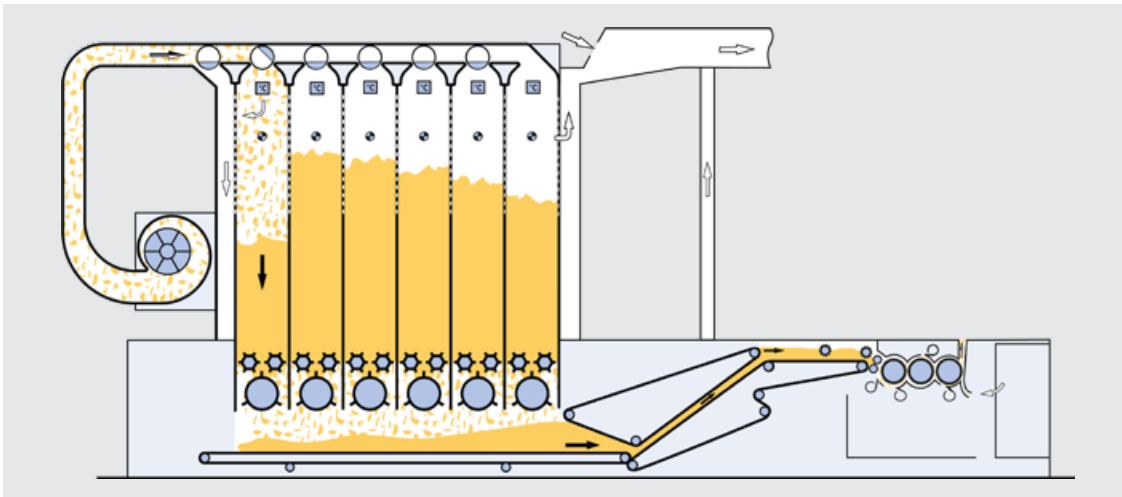
A very homogeneous cotton lay-down for cleaners is possible as the most space and energy saving solution in combination with a mixer.



Feeding Unit FD-O








Trunk Feeder FD-T



Integrated Mixer MX-I

Technical data

Cleaners

Types		Working 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-X¹⁾	1,300	1,950	1,700	4,495	12.2/21.2	4.9/9.0	1,600	< 70
	CL-U²⁾	1,600	2,200	1,480	3,900	5.9	3.0	1,200	< 70
	CL-C1 + BR-COI + FD-T	1,200	1,864	2,825	4,260/ 4,695	11.21 ³⁾	7.6 ³⁾	750	77
		1,600	2,264			12.71 ³⁾	8.4 ³⁾	1,000	
	CL-C3 + BR-COI + FD-T	1,600	2,264	3,115	4,260/ 4,695	18.8	11.4	1,000	77
	CL-R¹⁾ + BR-COI + FD-R	1,600	2,264	3,265	4,230	27.4	16.4	200 ⁴⁾	77




1) Maintenance platforms are optionally available

2) Available in stainless steel




3) Production > 600 kg

4) Input 300 kg/h

Condensers/Separators

Types		Working 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)
	BR-MS	1,200	1,464	1,480	1,290	0.12	0.1	700	73
		1,600	1,864					1,200	
	BR-COI	1,000	1,464	1,100	1,000	6.6	5.3	1,800	77
						8.6	6.9		
	BR-COU	1,000	1,464	1,100	3,200	6.6	5.3	1,800	77
						8.6	6.9		

Openers

Types		Working width	Total width	Total length	Total height	Max. continuous power	Average power consumption	Max. continuous production	Noise level
		mm	mm	mm	mm	kW	kW	kg/h	db (A)
	TO-T1 + BR-COI + FD-TS	1,200	1,864	2,825	4,260/ 4,695	11.2	8.5	750	77
		1,600	2,264			12.7	9.6	1,000	
	TO-T1 + BR-COI + FD-O	1,600	2,264	4,030	4,000- 5,000	15.1	10.8	1,000	77
	TO-C	1,000	1,464	860	1,250	2.4	1.7	250	< 70



Mixer MX-U and MX-I

Controlled mixing at high precision

In the area of one component staple fiber blends, Trützschler 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 optimizing 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.

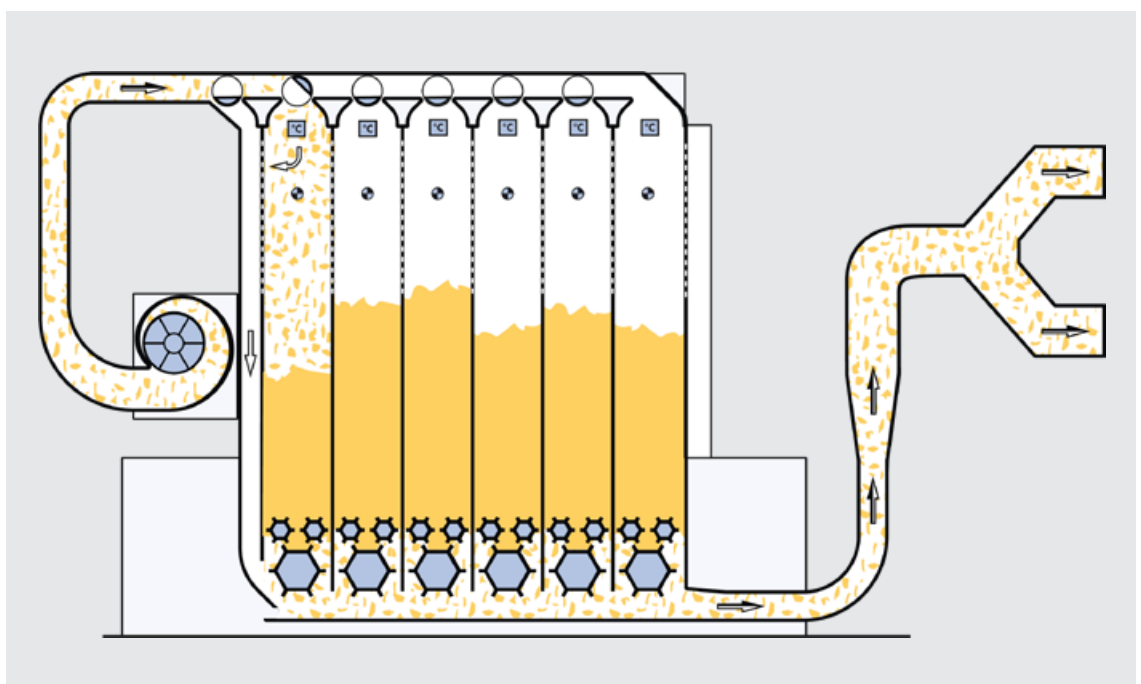
Controlled blending

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



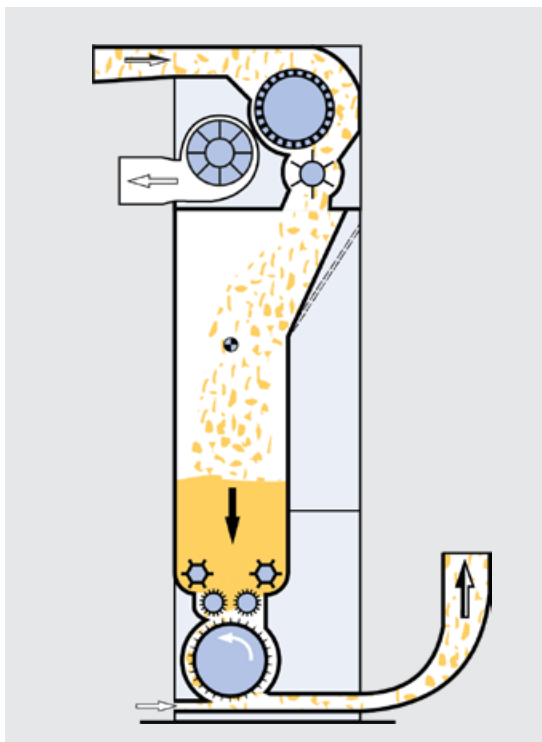
Integrated Mixer MX-I10, directly coupled with a Cleaner CL-C3

MX-I: the direct linkage

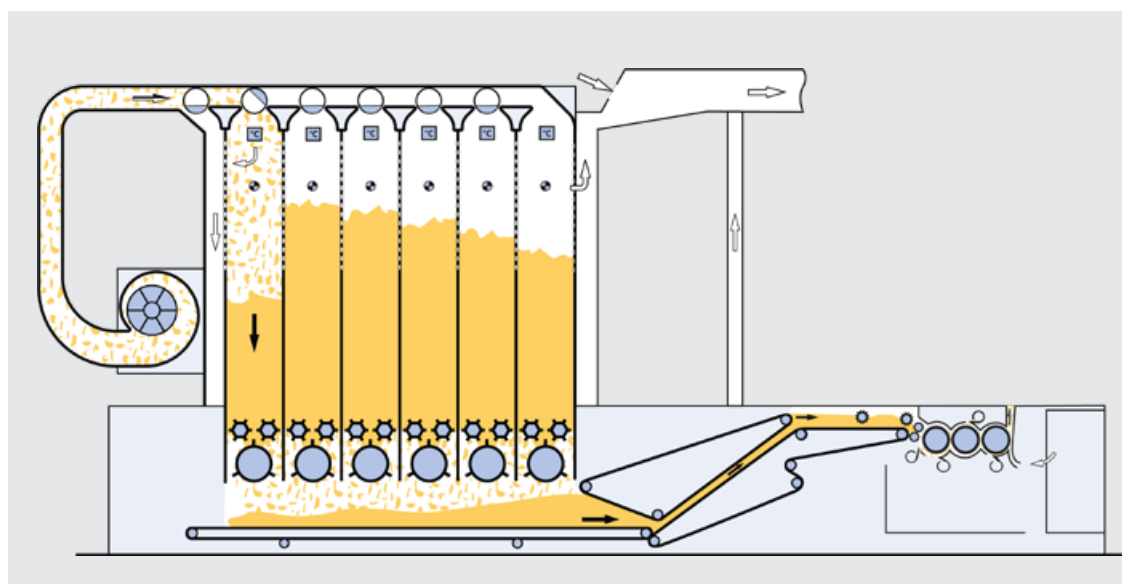
Its direct coupling with a cleaner or opener makes the Integrated Mixer MX-I ideal for compact installations. The mixing chambers are fed from the top by the directly attached fan: Low-maintenance rotating flaps forward the material in sequence to all the trunks. In the lower section of the trunks it 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 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 the 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 mm	Max. continuous power kW	Average power consumption kW	max. continuous production kg/h	Noise level db (A)
	FD-S + BR-COI	1,200	1,664	1,100	3,980–4,980	12.4	8.2	1,300	77
		1,600	2,064				9.3	1,800	
	FD-S + BR-MS	1,200	1,664	1,100	3,980–4,980	5.9	3.0	1,300	73
		1,600	2,064				4.1	1,800	

* Maintenance platforms are optionally available



Trützschler 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 Trützschler 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 →

The separation of such parts should be handled by the card



Trützschler T-SCAN TS-T5

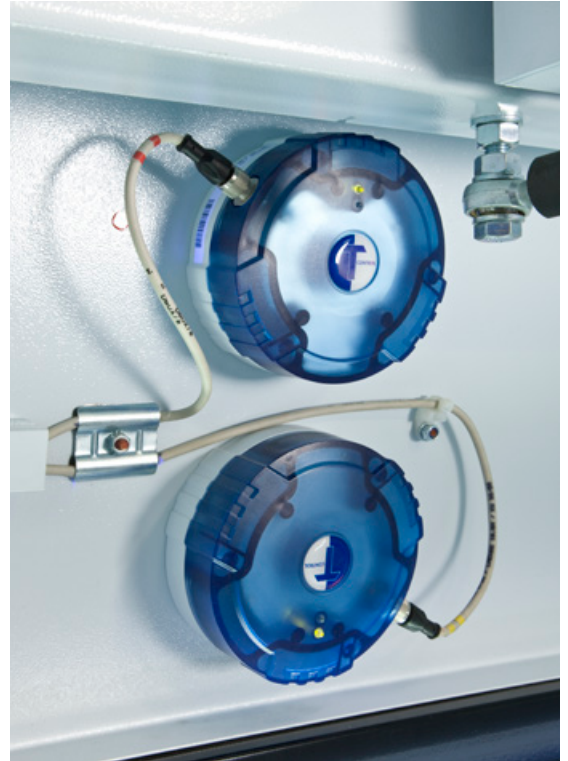


Trützschler T-SCAN TS-T5

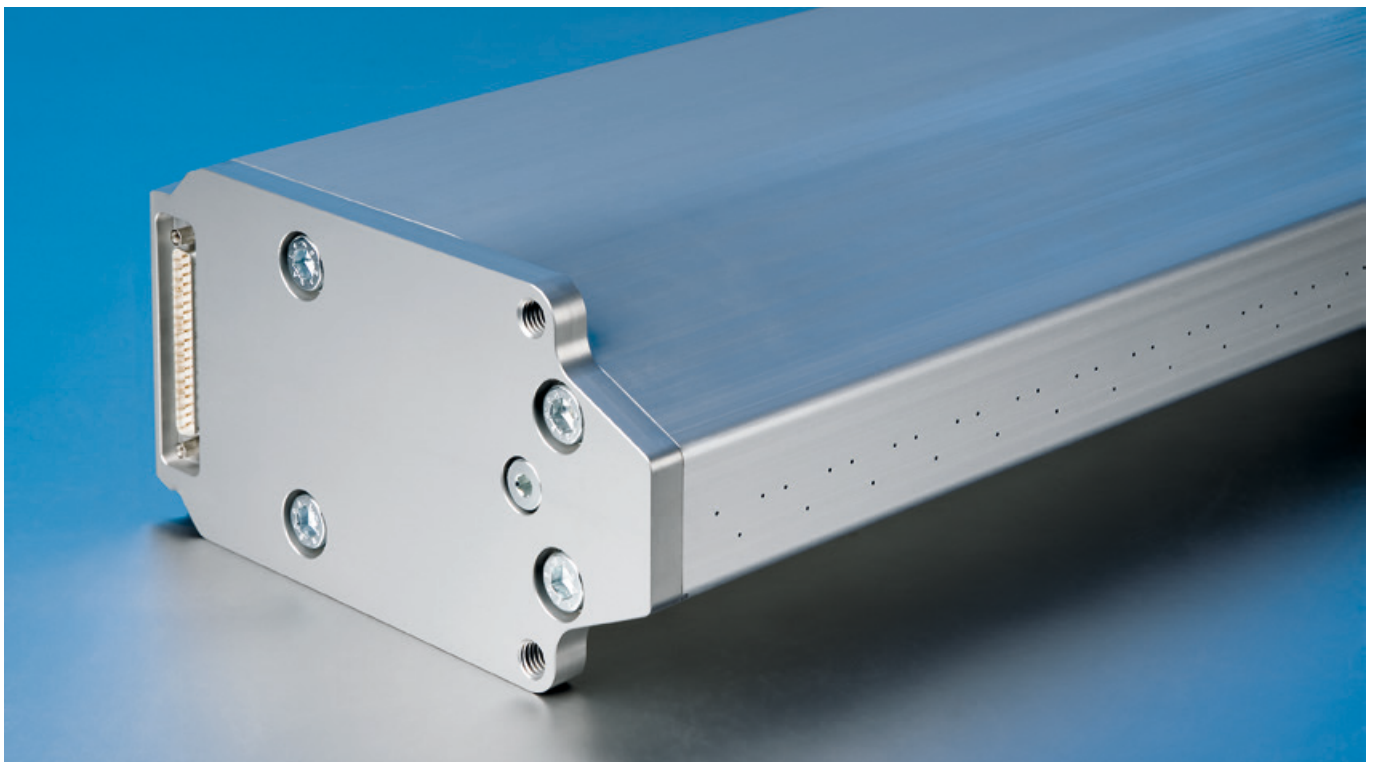
Reduced loss of good fibers and lower air requirement

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



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



The nozzle beam with 144 tiny nozzles

Reducing cleaning to a minimum

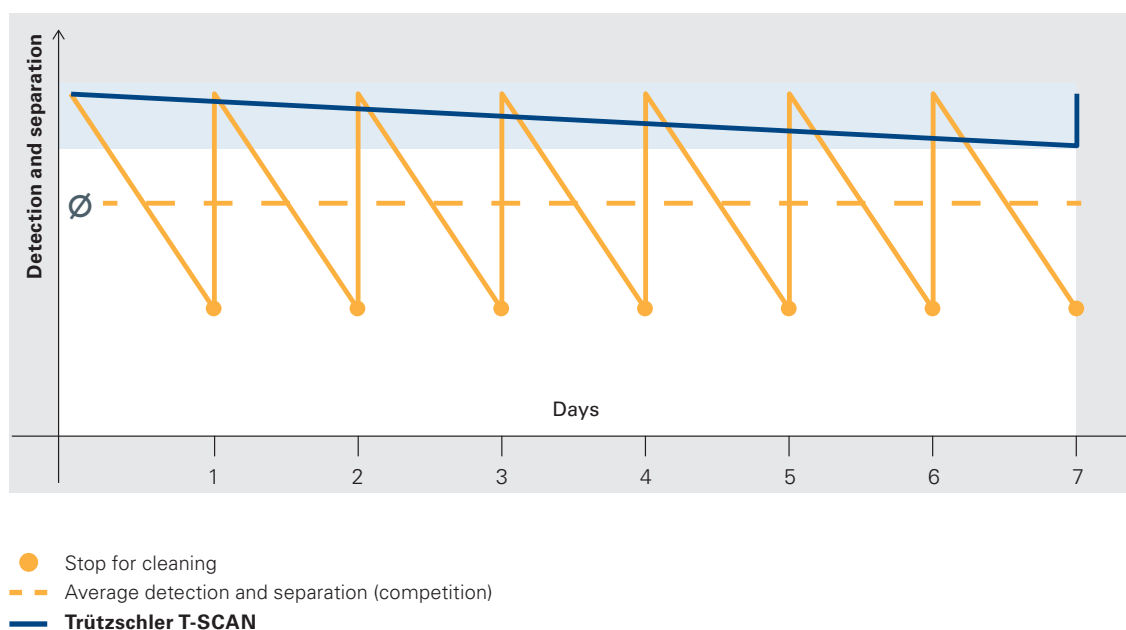
The Trützschler T-SCAN is very effectively sealed against penetration of dust. Compared to other systems, it requires substantially less cleaning. Thus, downtimes are reduced by more than 80%.

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 Trützschler 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 Trützschler 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.



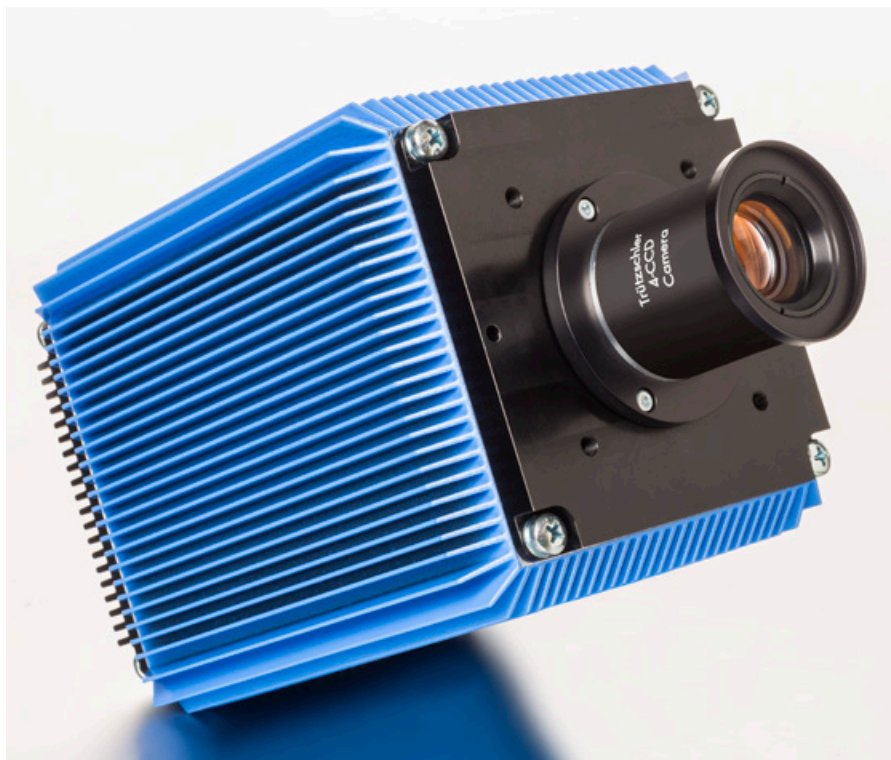
T-SCAN modules

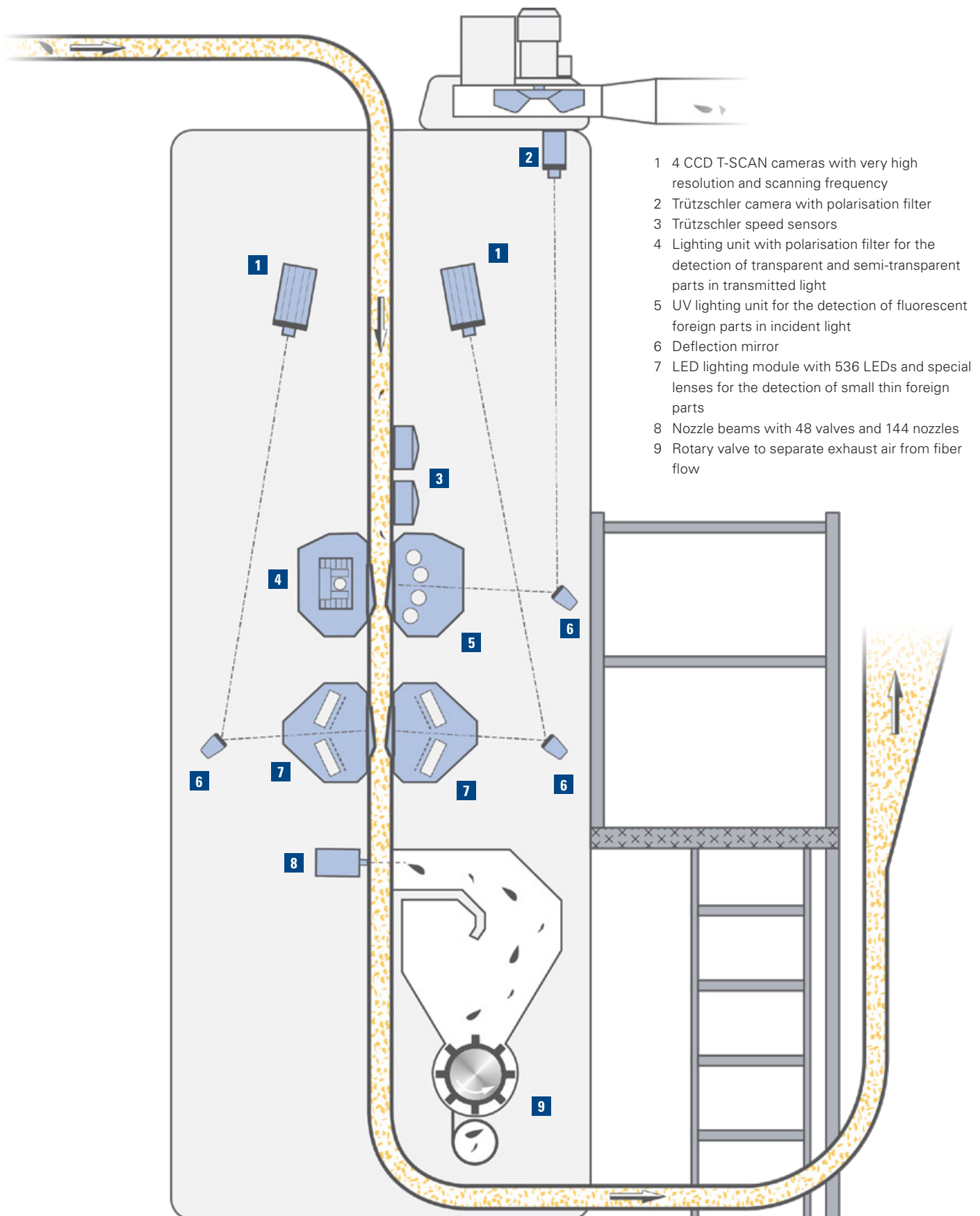
Trützschler uses five modules for the detection of foreign parts. Each one is specialised to reliably detect the characteristic of various foreign parts in the fast fiber flow.

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 Trützschler 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.





Trützschler T-SCAN TS-T5

T-SCAN modules

F-module detects coloured parts (1)

Trützschler 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 Trützschler 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)

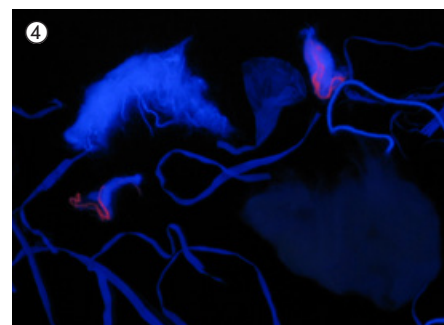
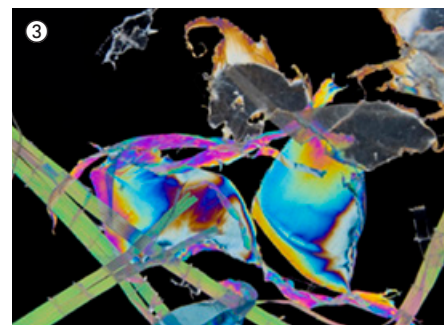
The Trützschler P-module detects transparent and semi-transparent parts, regardless of their colour. To achieve this, the patented method uses polarised transmitted light. If the cotton contains transilluminable foils, packaging residues from PP fabric and similar parts, they are reliably detected by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

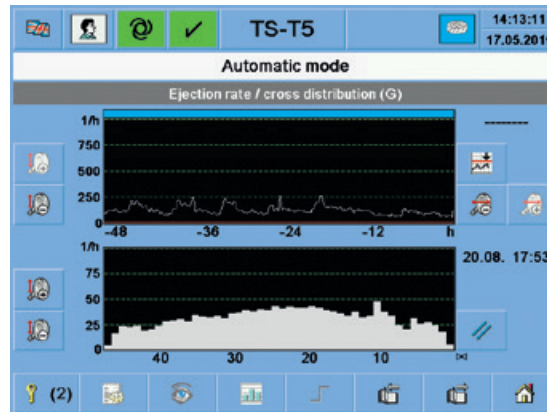
The T-SCAN with large-size touch screen is easy and intuitive to operate. The screen also allows the presentation of quality data in clearly structured diagrams.

T-LED – the Trützschler remote display

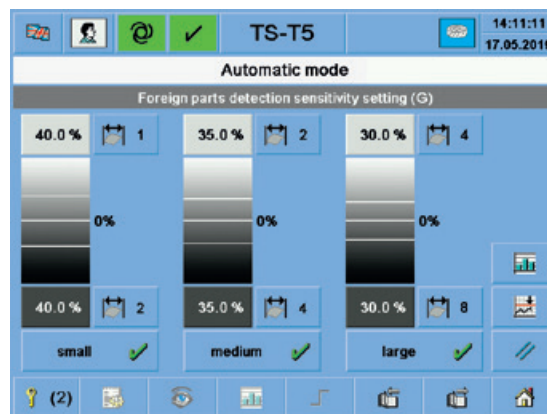
In addition to the touch screen, the Trützschler remote display T-LED makes machine conditions visible from far away. Thanks to the multicoloured LEDs, various operating statuses can be indicated.

Data transmission to Mill Monitoring System “My Mill”

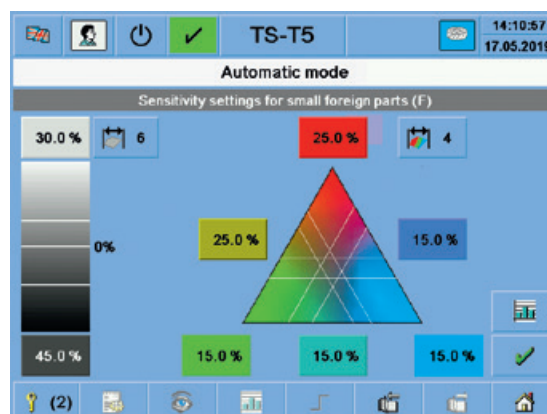
The separation data are important for quality management. For this reason, T-SCAN data can also be forwarded to our higher-level data systems.



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



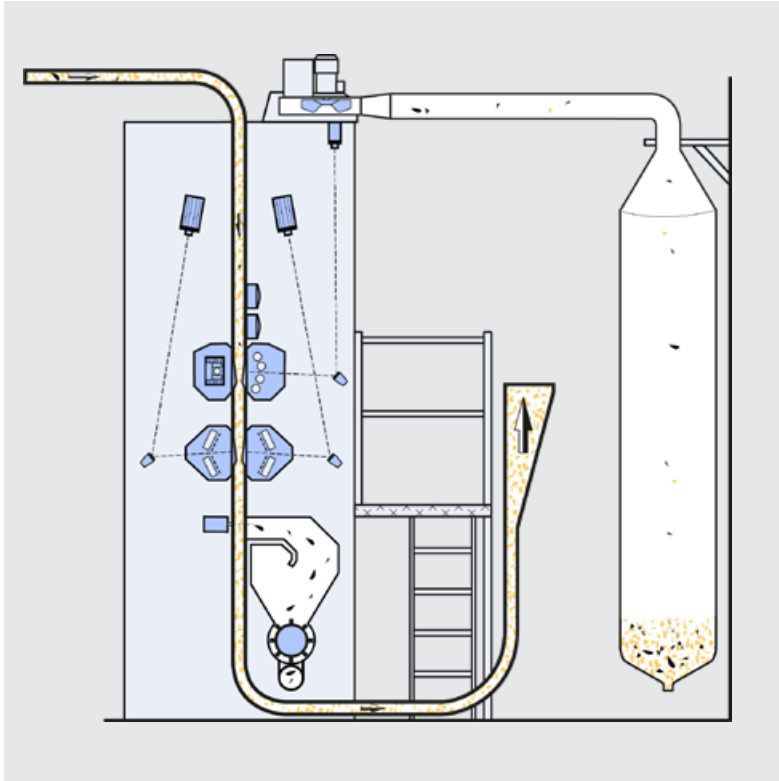
G module settings



The screen is also used for detailed setting information.

Trützschler Foreign part separator

The right machine for every task

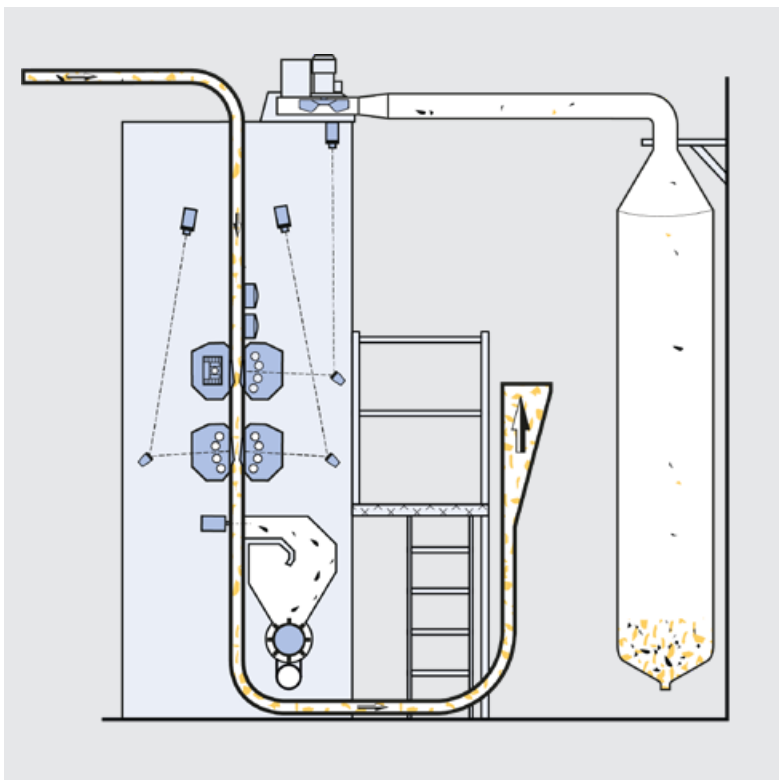


T-SCAN TS-T5

Trützschler 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

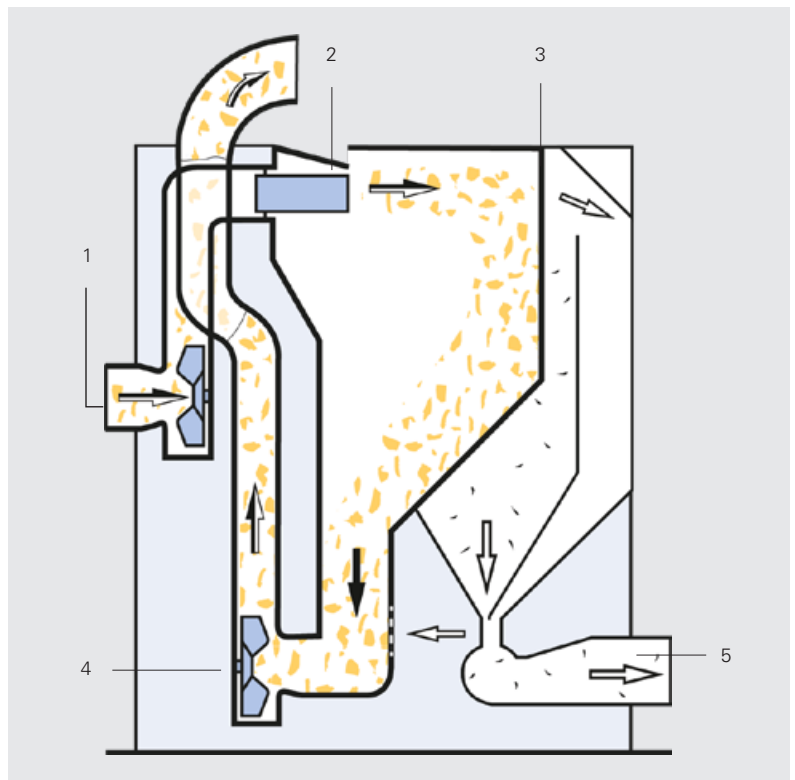
This is of particular advantage to downstream processing: Thoroughly dedusted slivers ensure optimised running behaviour during yarn formation, e.g. in rotor spinning machines, but also significantly higher efficiency rates (less yarn breaks) in winding, knitting, warping and weaving.

Dust Separator DUSTEX SP-DX

- 1 This fan sucks the material off the Cleaner
- 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	Total width	Total length	Total height	Max. continuous power	Average power consumption	Max. continuous production	Noise level
		mm	mm	mm	mm	kW	kW	kg/h	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
	SP-DX	1,600	1,864	2,150	3,110	0.5 ¹⁾	0.4 ¹⁾	1,200	< 70
	TS-T5	1,200	1,864	2,618	4,450	2.9 ²⁾	2.5 ²⁾	1,200	79
	TS-T3	1,200	1,864	2,618	4,450	2.8 ²⁾	2.4 ²⁾	1,200	79

1) Without fans

2) Including waste fan

	TS-T5	Compressed air requirement per F module ejection (at 7 bar)	NI	0,3
		Compressed air requirement per P module ejection (at 7 bar)	NI	1,4
	TS-T3	Example of compressed air consumption from practice - for F/G module 7,200 ejections/h - for P/UV module 1,000 ejections/h	NI/h	3,800

The compressed air consumption in standard litres refers to the reference conditions according to DIN1343.



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.



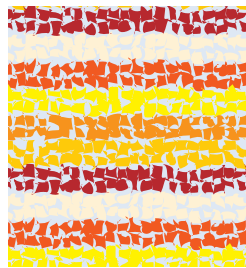
Trützschler tuft blending system T-BLEND

Precision weighing is the key

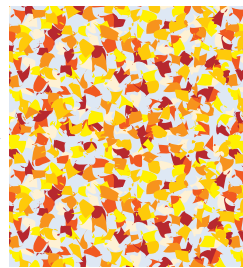
Bad product quality at a later production stage wipes out all previous production efforts and is thus a “full cost”. This is the reason why the Trützschler T-BLEND concept for tuft blending relies on a reproducible and precise blending consistency. The self-monitoring system ensures the perfect quality 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-optimizing 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 Trützschler tuft blending technology:

Creation of precisely dosed layers of different raw materials and perfect blending of all these layers.

Only Trützschler has this to offer:

- Precision mass measurement
- Auto start: The control finds the optimal parameters in a self-optimizing 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, Trützschler uses specially developed precision scales to measure the mass and not

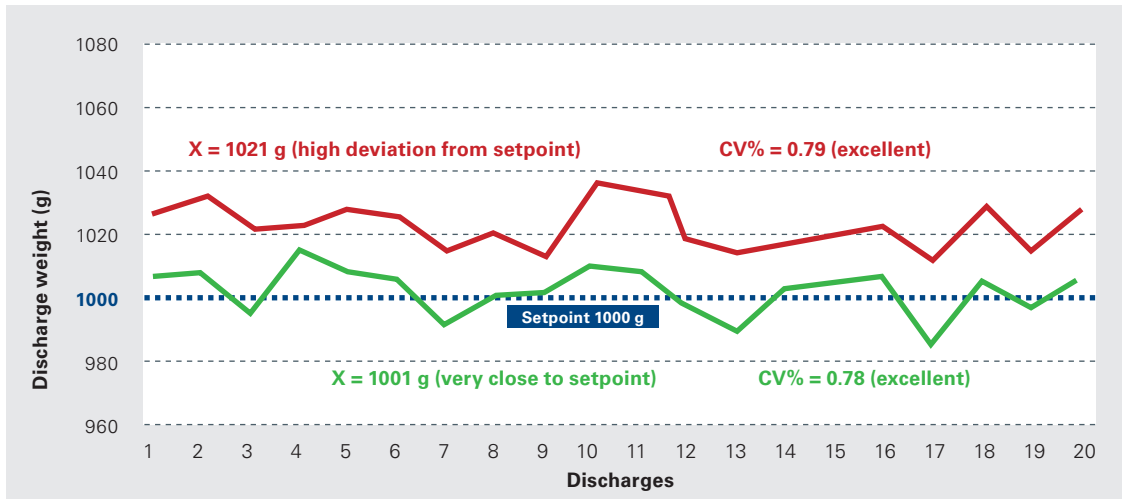
the volume. During each weighing, the small difference to the setpoint is captured and compensated fully automatically during the next weighing.

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 Trützschler 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.

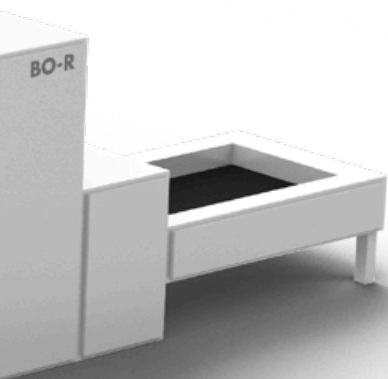
Highest quality in harmony with high production rate

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 Trützschler 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-optimizing 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, Trützschler installations achieve an absolutely uniform result:

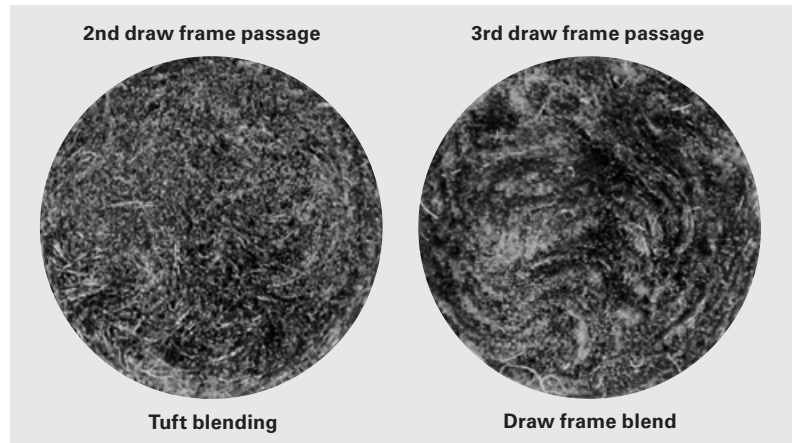
- Items dyed tone in tone
- Items where only one component is dyed

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

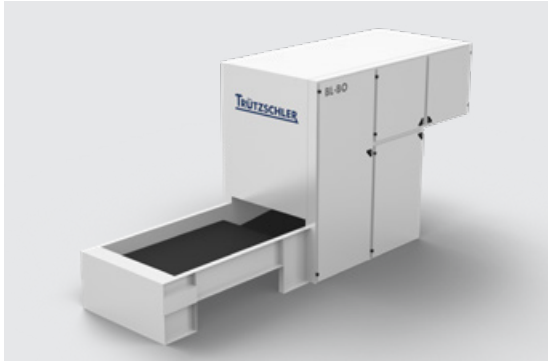
Tuft blending installation for polyester/cotton 65%/35%, production 2,000 kg/h with waste feeding

- 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.

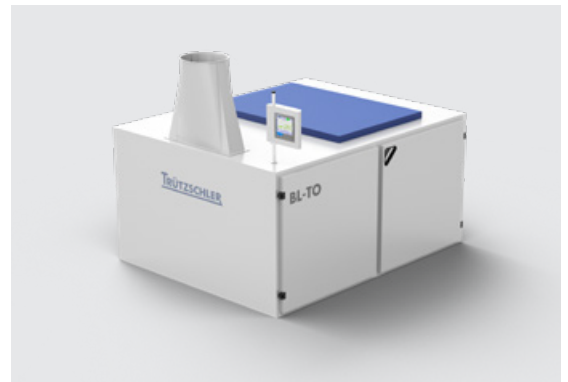


The Weigh Pan BL-WP is suspended at three points on a solid frame.

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 needed opener roll ensures gentle opening.



High Performance Feeder BL-HF with automatic feeding



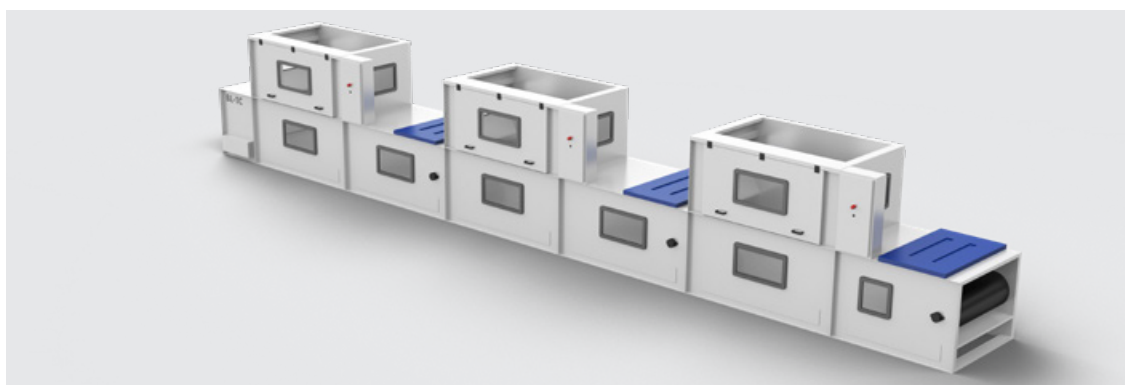
Precision Feeder BL-PF for precision dosing

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 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

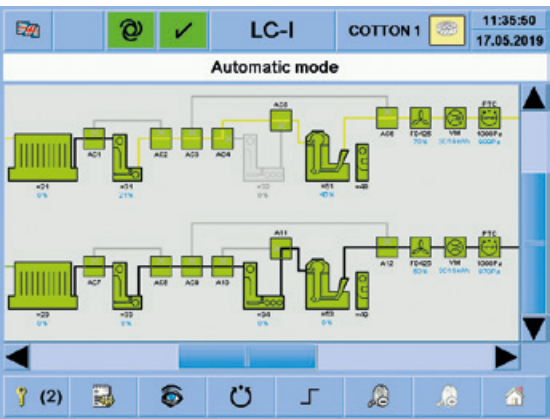
The BLENDCONTROL LC-BC which is integrated into the installation control of the tuft blending installation is operated via the screen of the LINECOMMANDER. New lots



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.

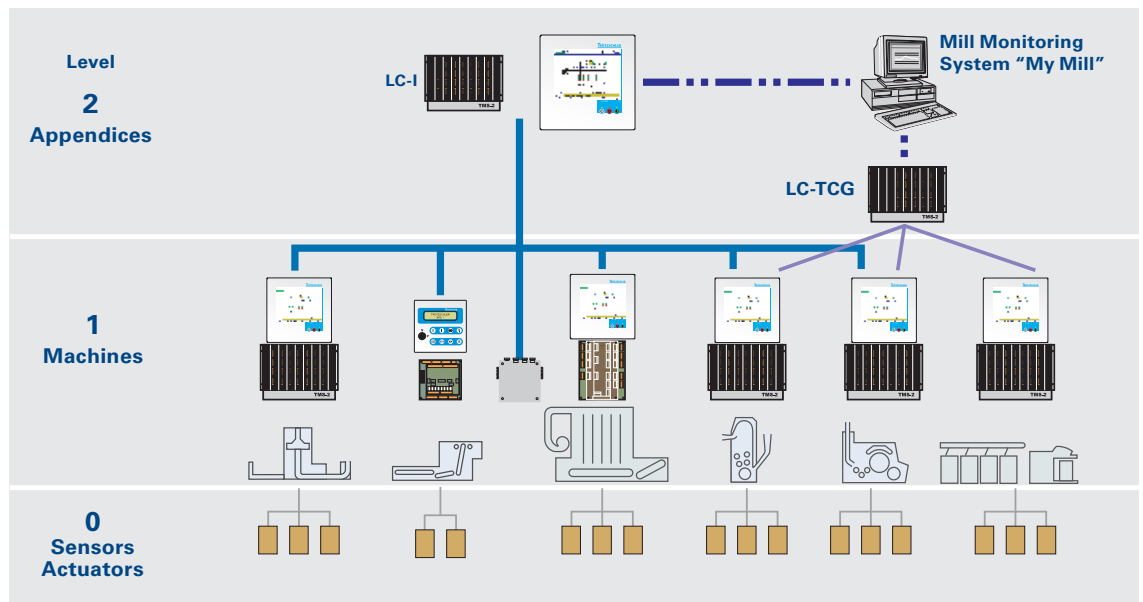
● = Series ○ = Option



Installation controls and machine controls

Simple operation and optimal data flow

Trützschler control hierarchy and communication



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

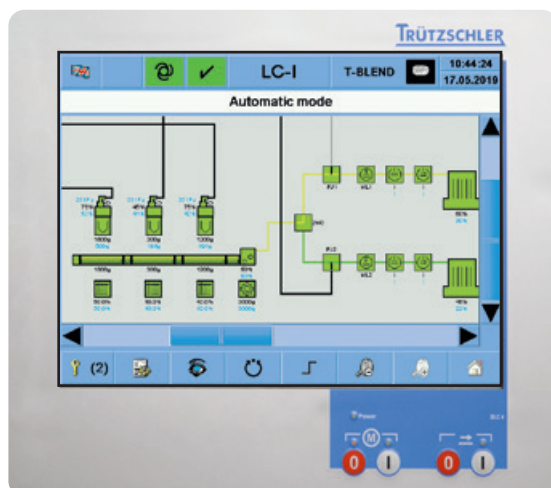
- Flexible adjustment to individual customer requirements
- Reliable, even under extreme conditions
- Network capability
- Worldwide online availability via Mill Monitoring System "My Mill"
- User friendliness

These criteria are only met by the Trützschler 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 Trützschler 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

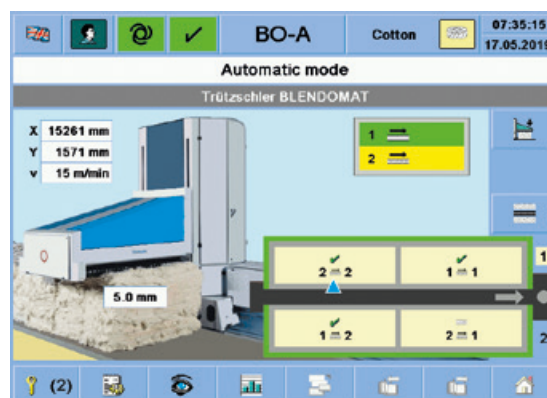
Convenient operation of all blow room machines

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 an automatic bale opener BO-A

Continuous material flow with CONTIFEED 2

Optimal cleaning and uniform card feeding

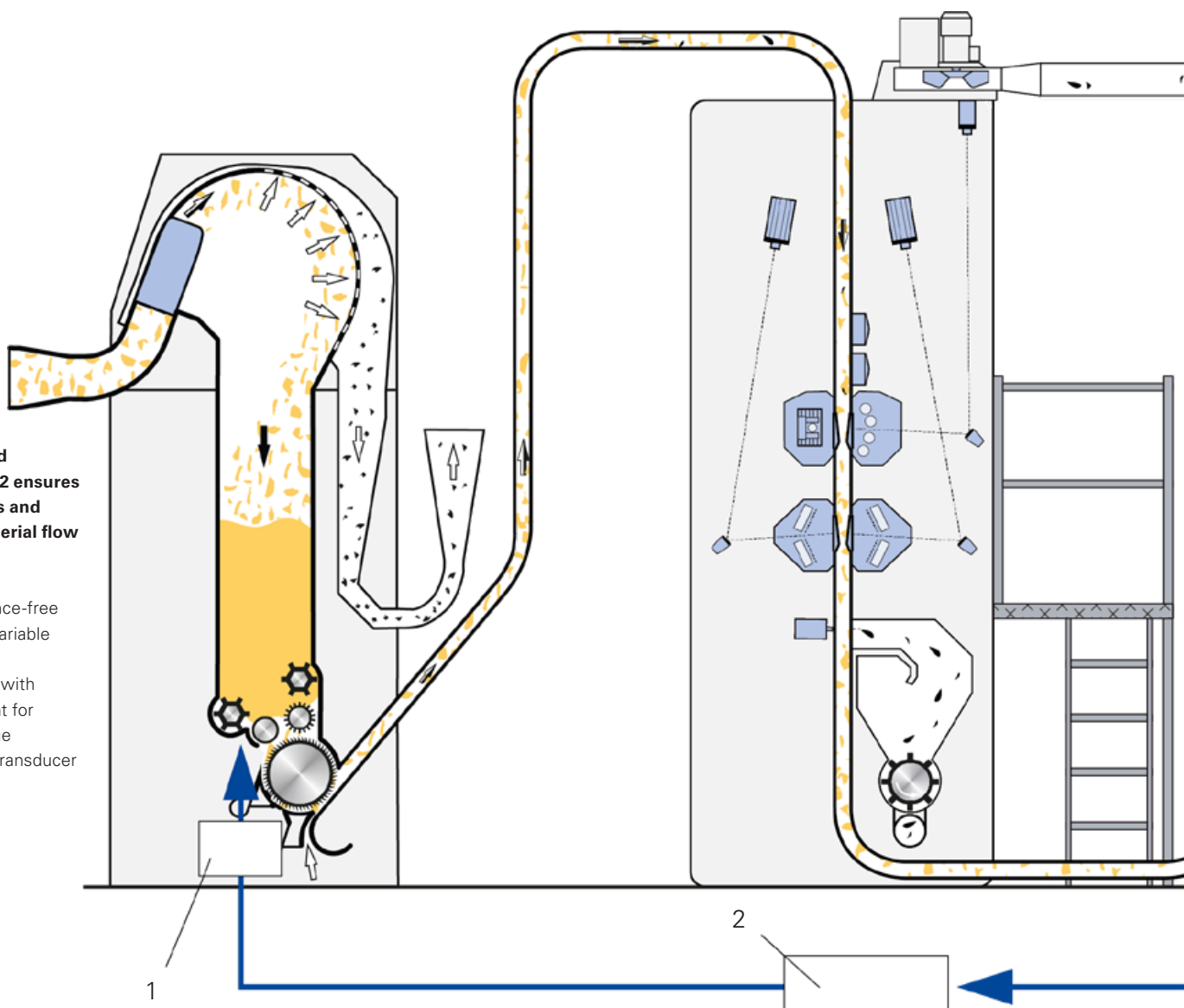
Conventional installations operate on a stop-and-go basis: The material transport is frequently switched on and off due to production fluctuations. Result: uneconomical production and increased quality risks.

To ensure continuous operation from the cleaners to the cards, Trützschler has been using the Modular Control System CONTIFEED for decades. It is integrated into the installa-

tion 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

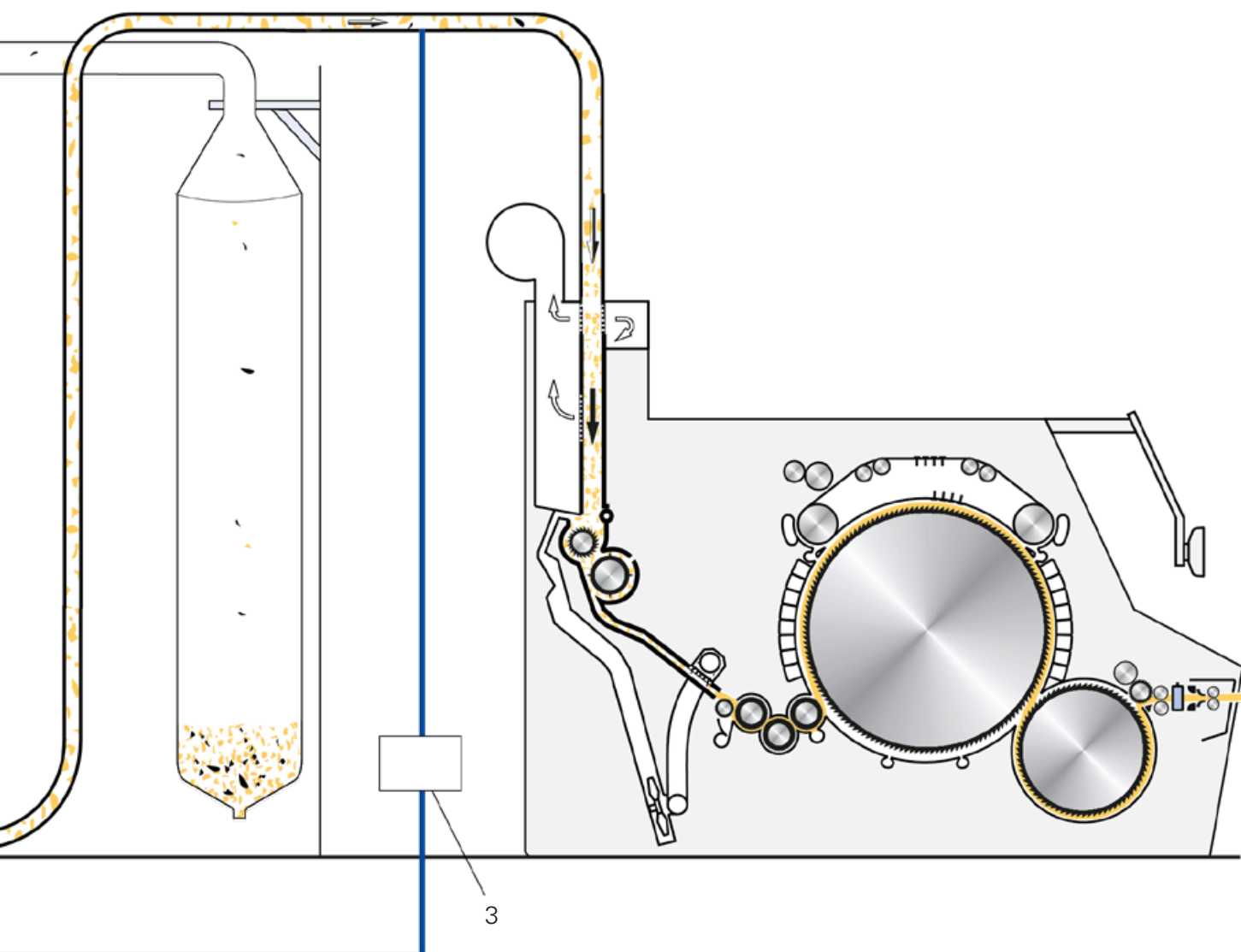
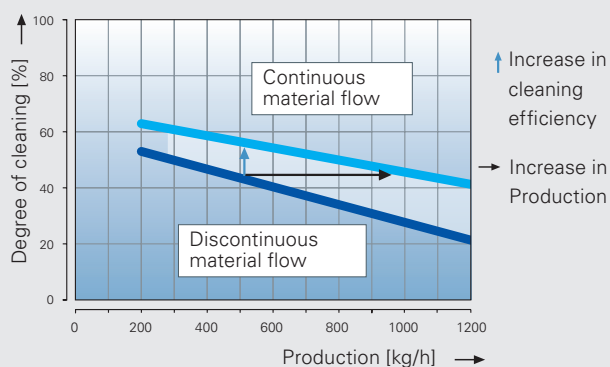
- 1 Maintenance-free infinitely variable motor
- 2 Controller with adjustment for target value
- 3 Pressure transducer



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 cleaners even at higher productions.



Modular Control System CONTIFEED 2

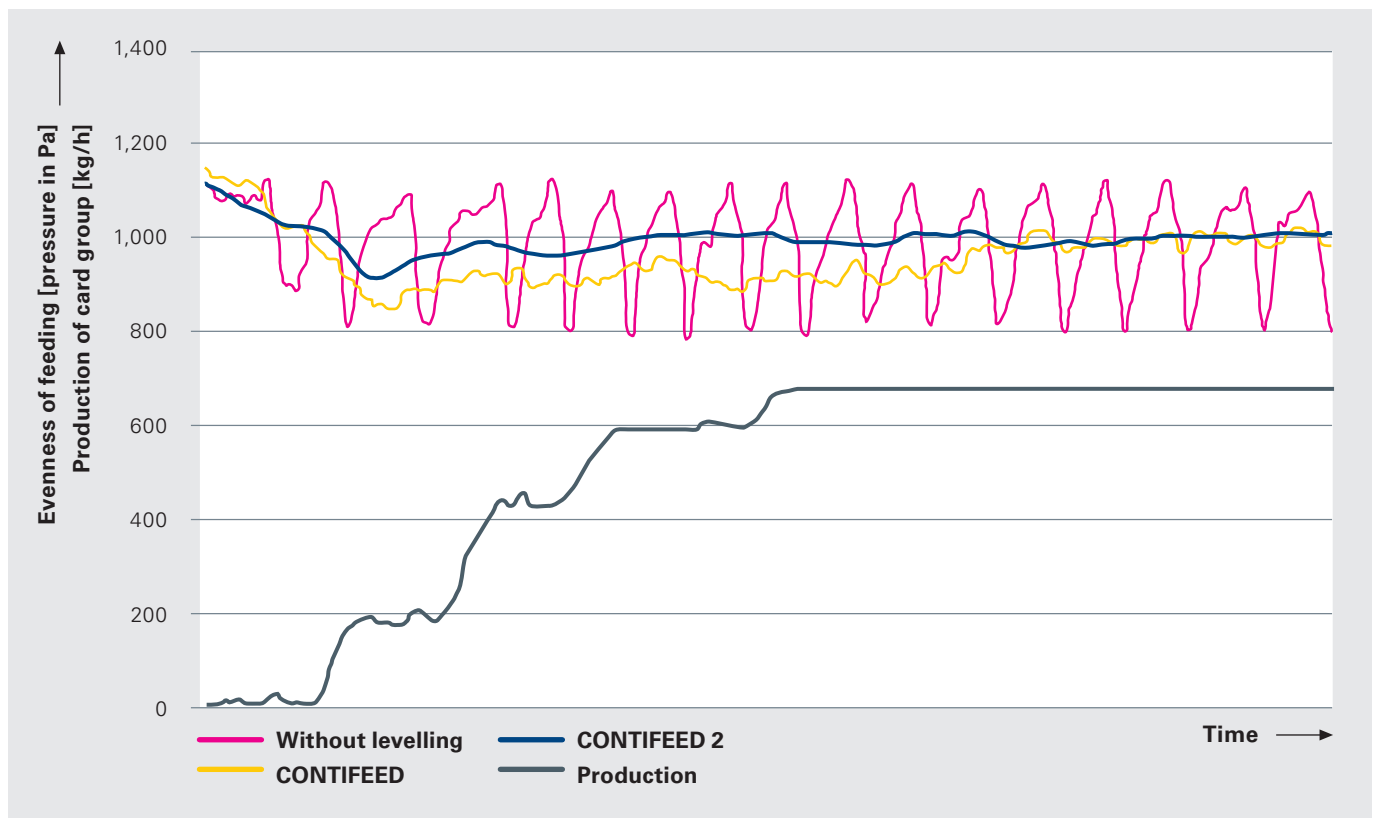
Self-optimisation relieves the operator

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



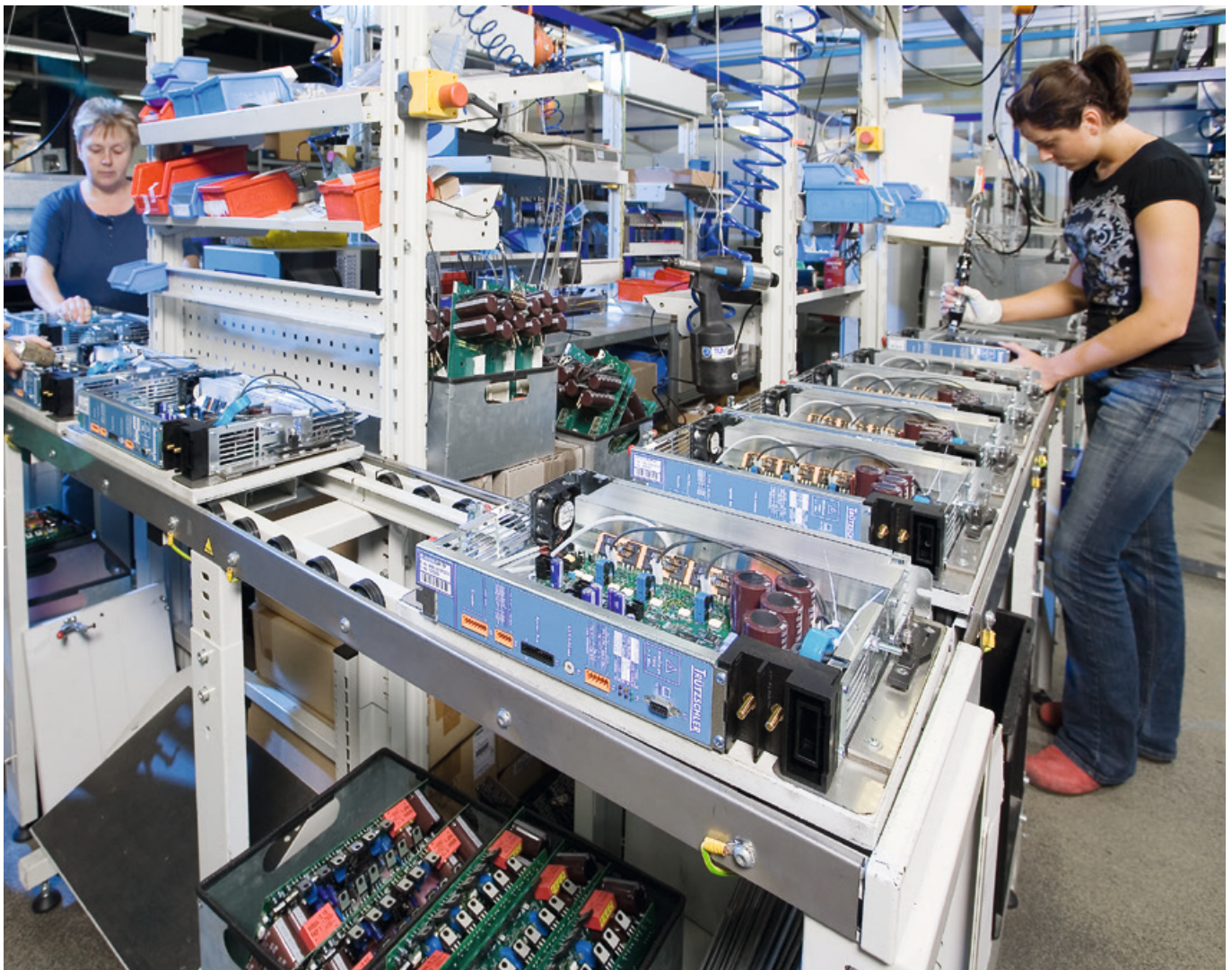
Compared to the reliable CONTIFEED system, the new CONTIFEED 2 features self-optimisation during a short learning phase.

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. 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 Trützschler headquarters in Mönchengladbach, Germany

Technical data

Special controls for a wide range of applications

Trützschler 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 Trützschler installation
LC-CU	Conversion of control	Conversion of existing controls
LC-BC	BLENDCONTROL	For tuft blending installations as integrated feature in LC-I

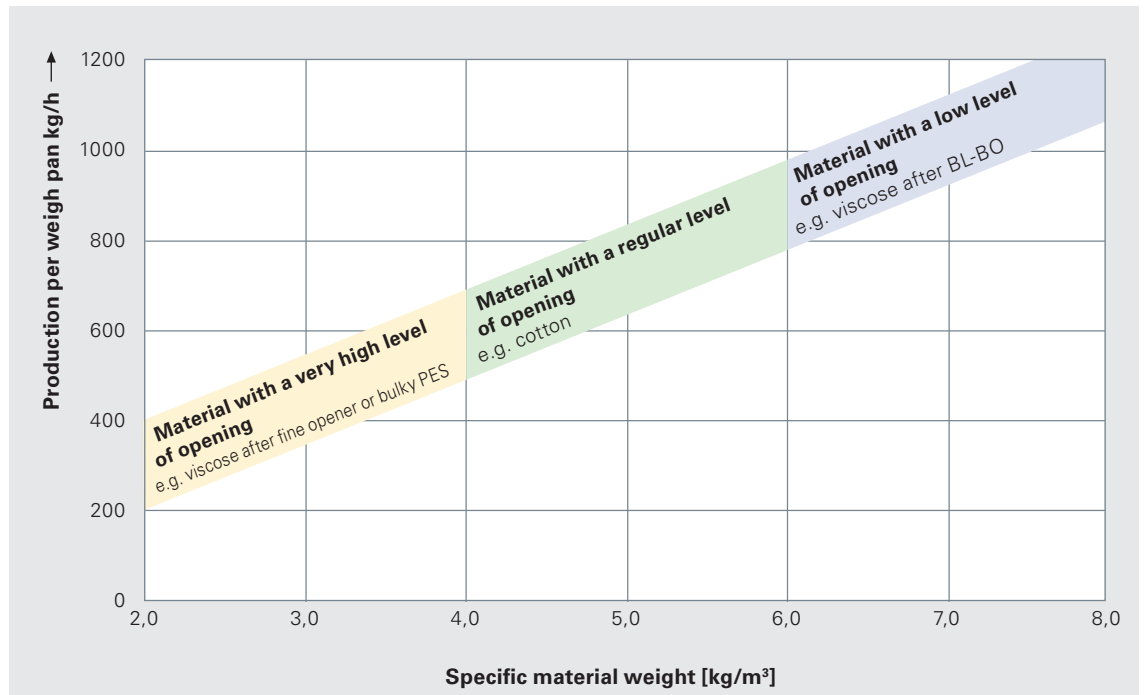
SUBDISTRIBUTIONS

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 Trützschler 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.





GERMAN  Technology

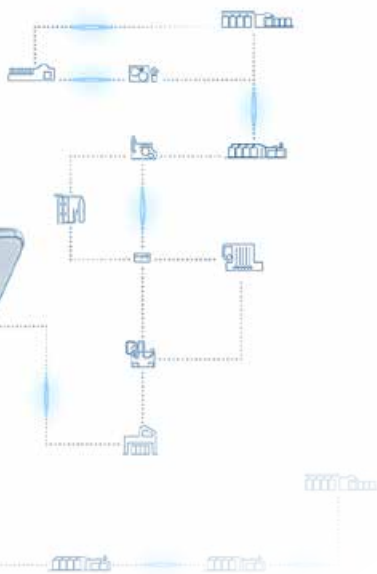


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TRÜTZSCHLER

S P I N N I N G

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

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N O N W O V E N S

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

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M A N - M A D E F I B E R S

Filament lines: Carpet yarns (BCF) · Industrial yarns

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C A R D C L O T H I N G

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