



VARIOLine

Raw-material saving with high productivity



The variable concept for
optimal fiber preparation

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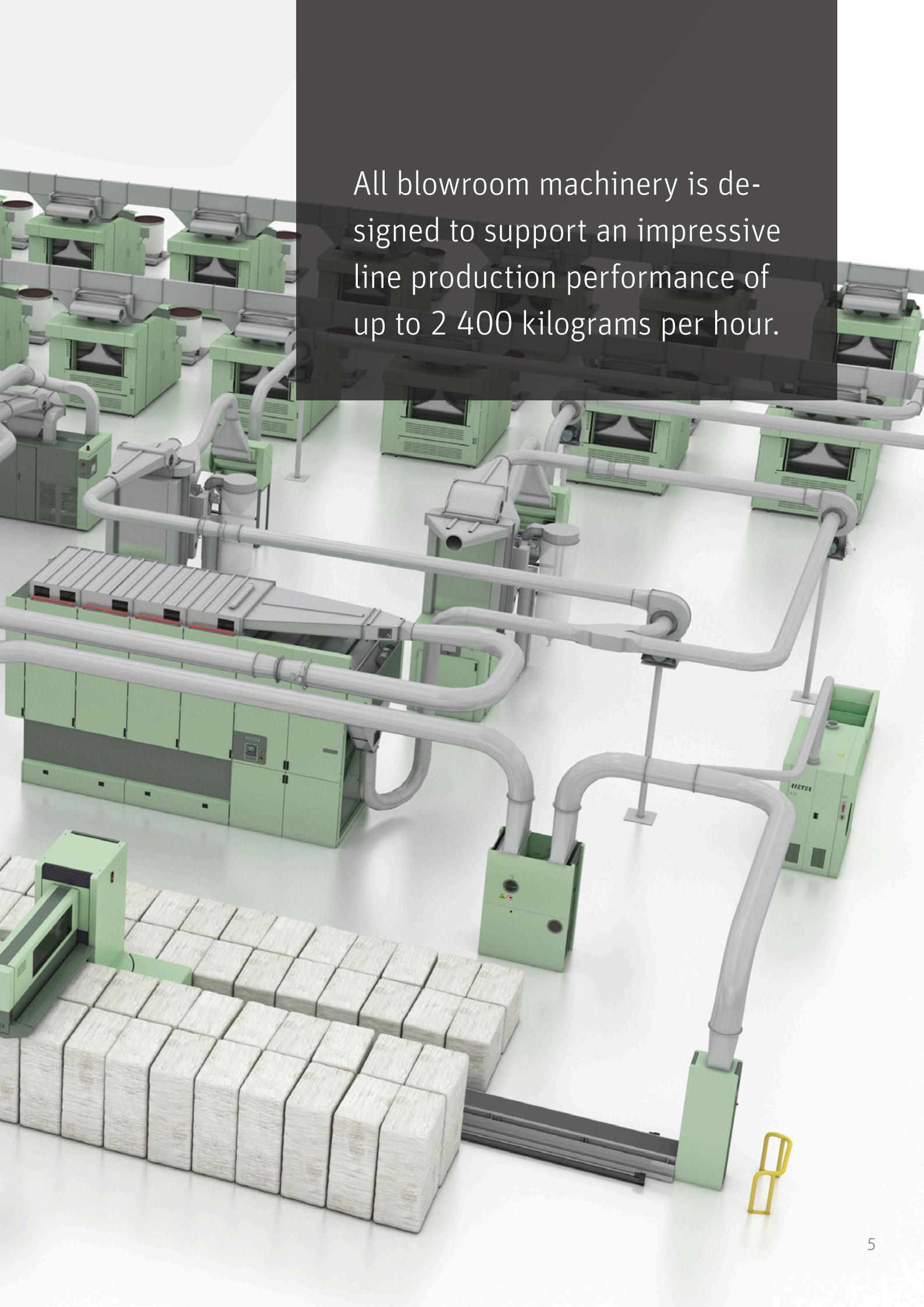
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VARTOline

A 3D rendering of a VARTOline industrial production line. The machinery is primarily green and grey, featuring a complex network of pipes and mechanical components. The line is set on a light-colored floor, and there are stacks of grey rectangular blocks in the foreground. The word 'VARTOline' is overlaid in large, white, semi-transparent letters across the top of the image.

2 400-Kilogram
Line Production
Per Hour



All blowroom machinery is designed to support an impressive line production performance of up to 2 400 kilograms per hour.



VARIOline

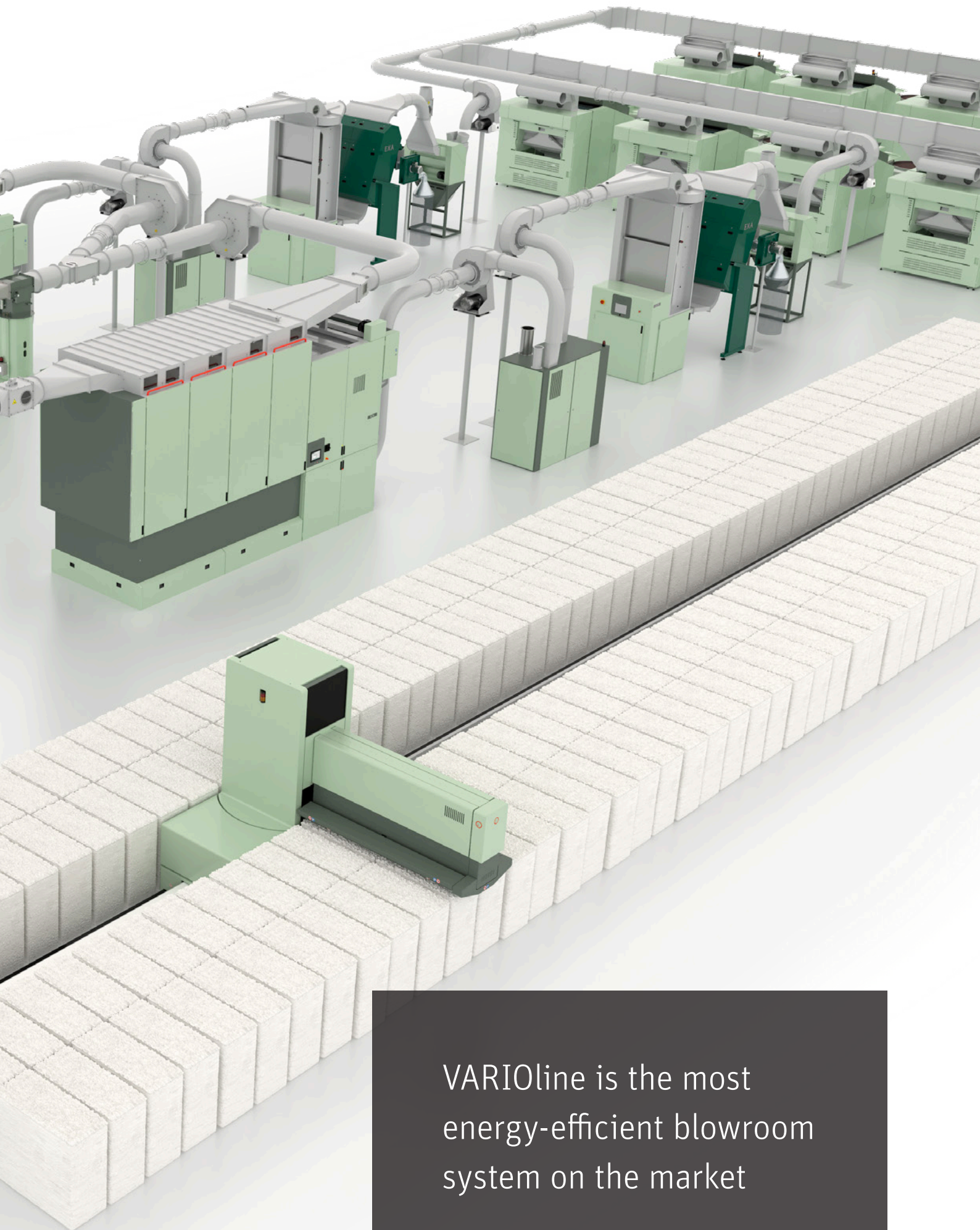
The optimum combination of microtufts, VARIOset and progressive cleaning delivers a 1% raw material saving compared with other systems available on the market.



Save up to 1%
of Raw Material

40% Energy Saving



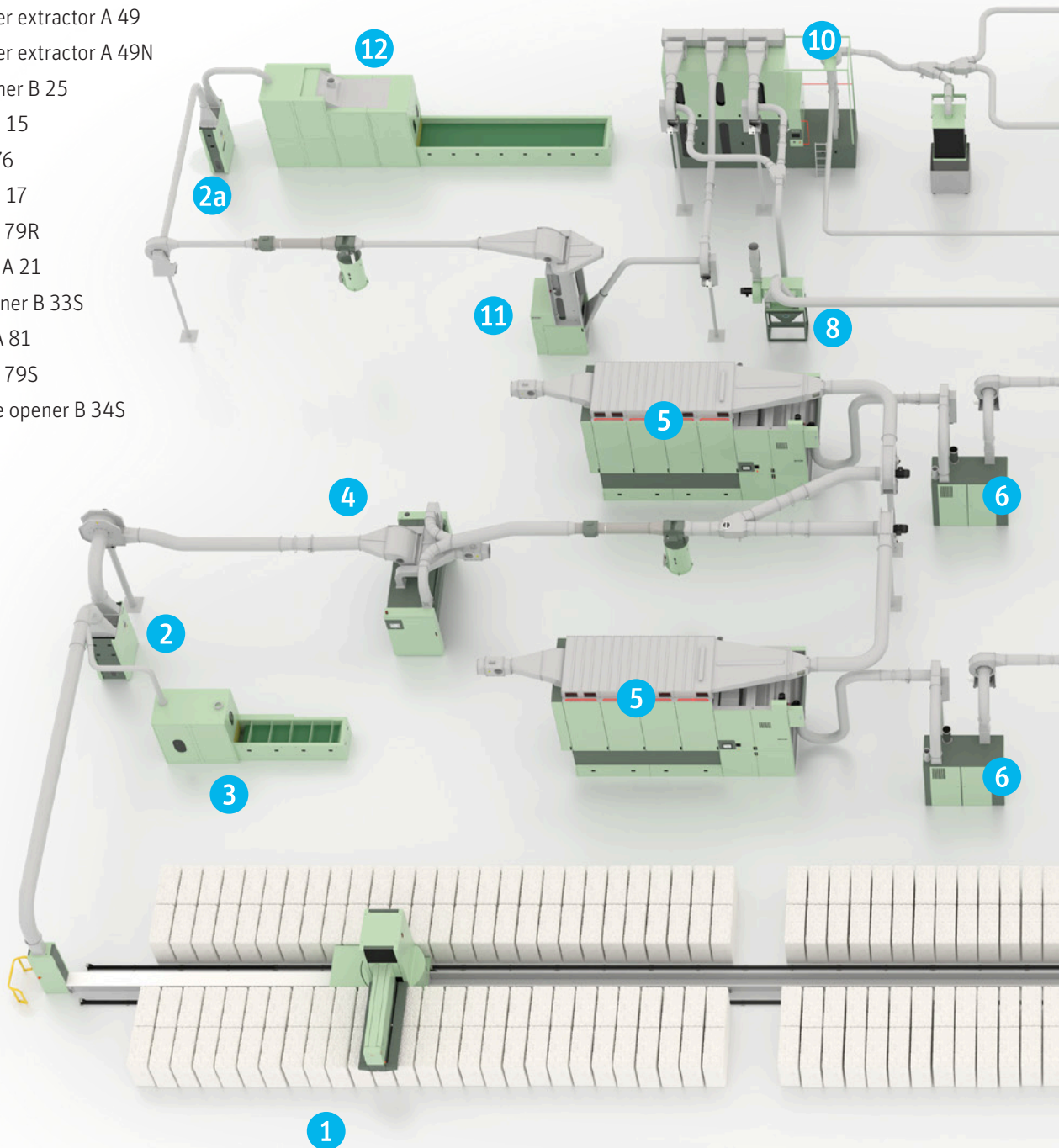


VARIOline is the most energy-efficient blowroom system on the market

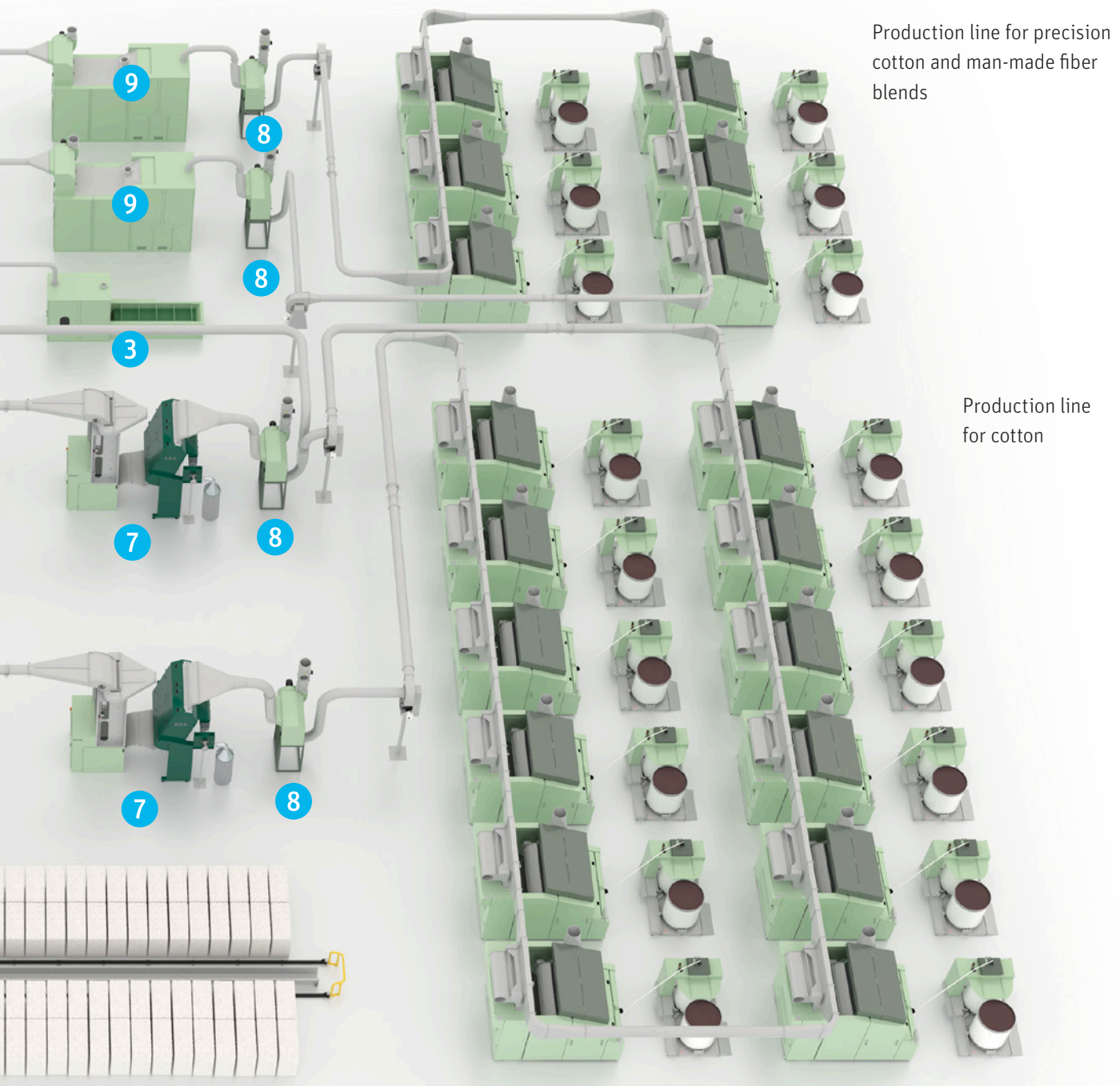
VARIOnline

Example blowroom layout

- 1 UNIfloc A 12
- 2 Solid-matter extractor A 49
- 2a Solid-matter extractor A 49N
- 3 Waste opener B 25
- 4 UNIClean B 15
- 5 UNImix B 76
- 6 UNIClean B 17
- 7 UNIstore A 79R
- 8 Condenser A 21
- 9 Mixing opener B 33S
- 10 UNIBlend A 81
- 11 UNIstore A 79S
- 12 Mixing bale opener B 34S



VARIOLine

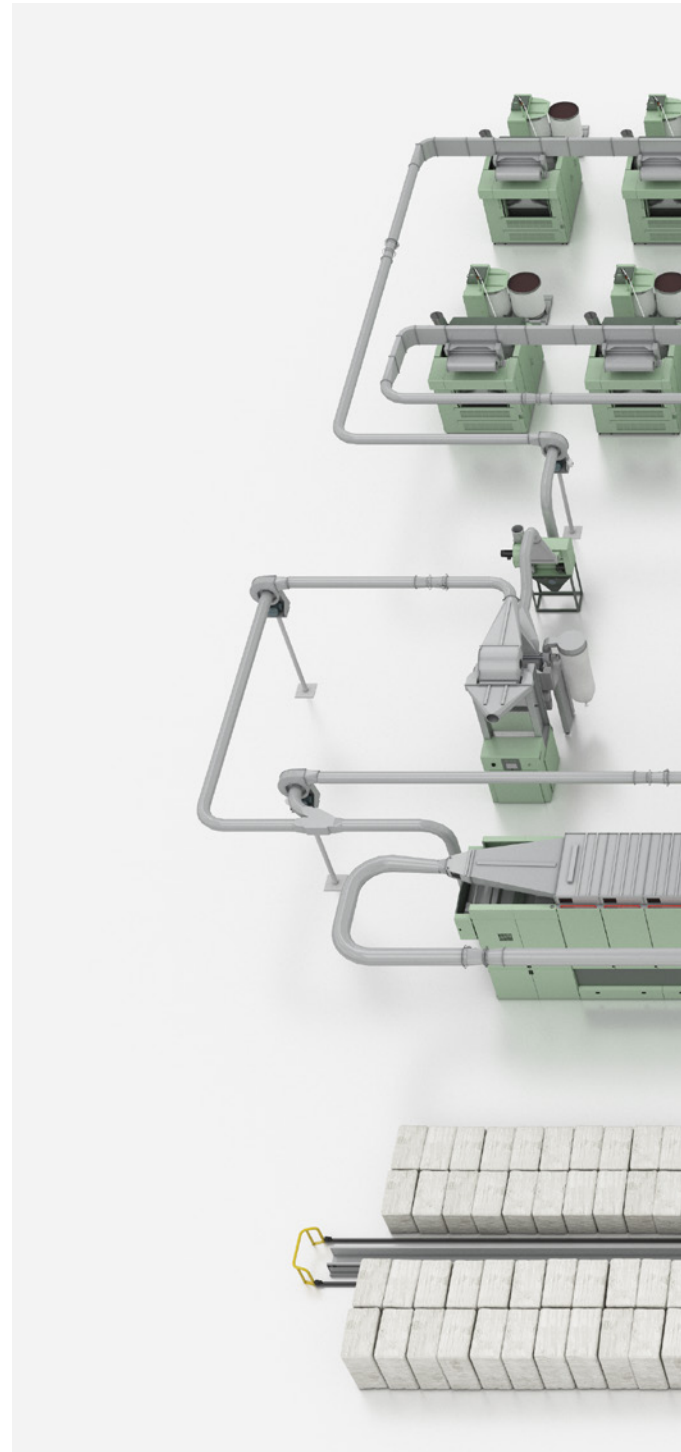


2 400-Kilogram Line Production Per Hour

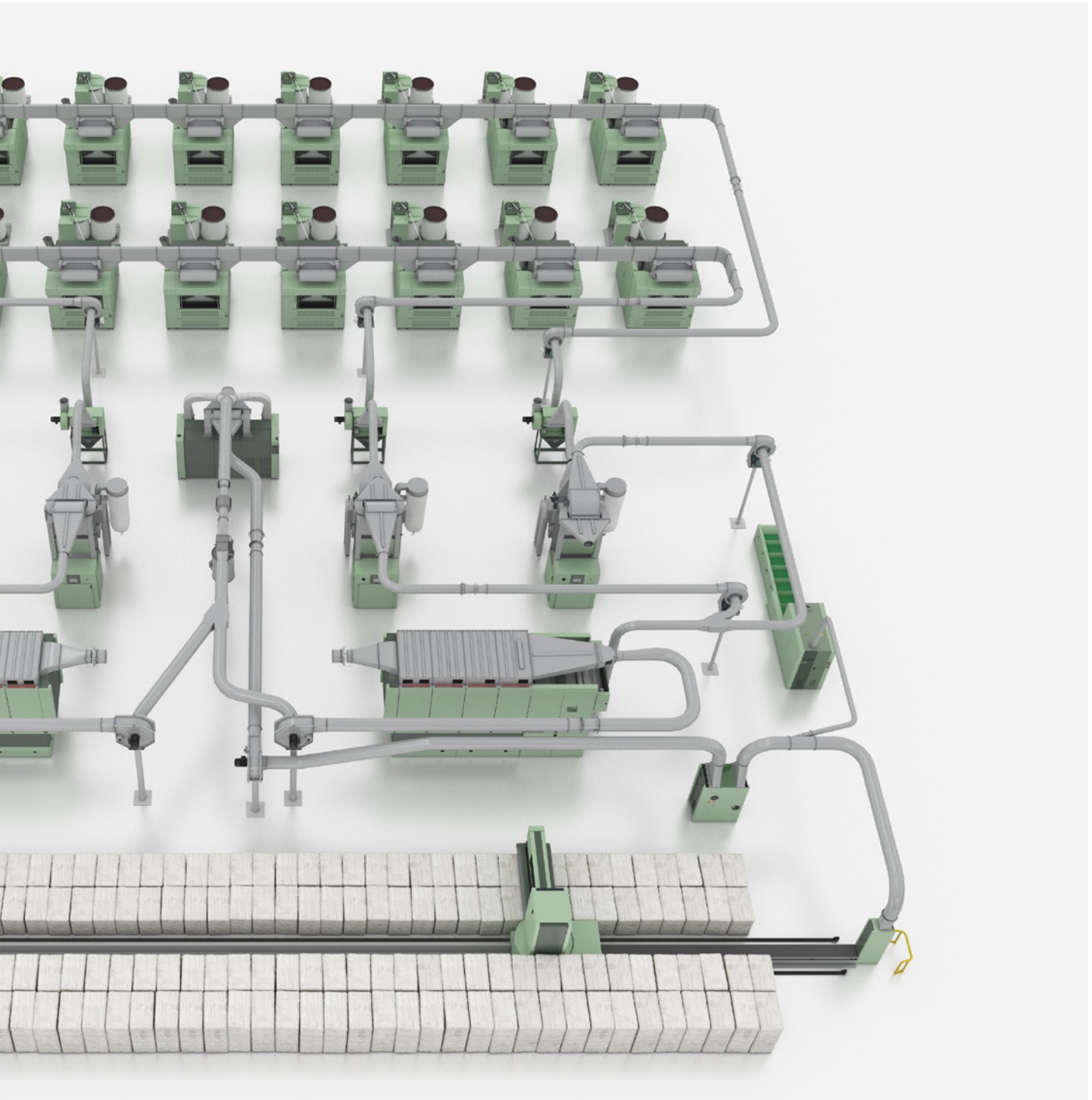
Perfectly coordinated processes from the bale opener to the carding line

Geared toward optimum production from A to Z

At the start of the VARIOline for a card sliver output of 2 400 kilograms per hour is the extremely robust and stable automatic bale opener UNIfloc A 12. The bale profiling system of the UNIfloc A 12 uses unique technology with scanning force measurement. This technology enables the machine to achieve a high production output from the outset. In a production line that is only available from Rieter, the fiber material runs via the solid-matter extractor A 49 to the pre-cleaner UNIfloc B 15. The fan A 46, which is designed to deliver high performance, then alternately feeds the mixing machines UNImix B 76 with 2 400 kilograms per hour. This separation of material creates a material buffer for continuous and therefore efficient and gentle cleaning in the cleaning machines UNIfloc A 79 – without compromising on quality.



Example of a high-output production line for cotton processing



Save up to 1% of Raw Material

The combination of microtufts, VARIOset and progressive cleaning makes the difference

In the blowroom, economical yarn production hinges on the cost of raw materials. Rieter's VARIOline offers various ways to make optimum use of the raw material. VARIOline is extremely gentle on fibers. With VARIOset, the degree of cleaning can be adjusted to the specific raw material and reproduced. Fewer good fibers are discarded, optimizing fiber usage as a result.

Depending on the prices of raw materials, raw-material savings of under one percent are already worth more than USD 10 000 per year.

The Secret to Achieving a 1% Raw-Material Saving

The key to economical production is a combination of:

- Microtufts
- VARIOset
- Progressive cleaning

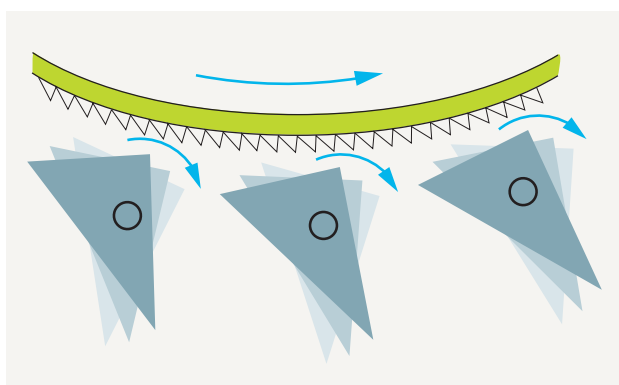


Microtufts simplify the cleaning process

The bale opener UNIfloc A 12 is the key to good cleaning in the blowroom. It removes extremely small tufts – the microtufts – from bales. These microtufts are cleaned and dedusted much more efficiently in the downstream processes.



Microtufts, UNIfloc A 12 opening roller



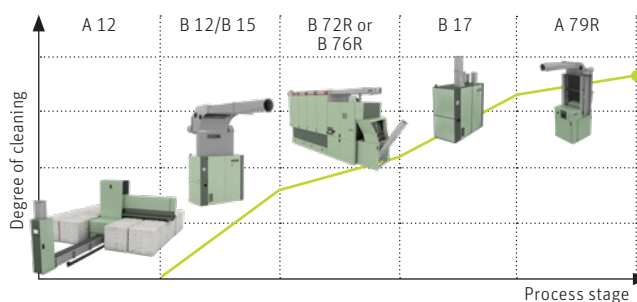
With VARIOset, the extraction elements and the roller speed are set centrally via the machine control.

VARIOset optimizes tailoring to the raw material

The function VARIOset is integrated into all VARIOline cleaning machines. VARIOset controls the intensity of the cleaning and the relative waste quantity. The degree of trash extraction can be entered quickly on the display and the settings are reproducible. The raw material is cleaned most effectively when the smallest amount of good fibers are removed with the greatest amount of trash. In multi-assortment operation, VARIOset automatically adjusts the parameters to the new assortment.

Progressive cleaning protects the fibers

Progressive raw-material cleaning means cleaning only to the extent required. The number of cleaning points included depends on the degree of contamination. This protects the fibers from any unnecessary stresses. Fiber shortening is prevented.



Progressive cleaning: The degree of cleaning increases progressively across each process step.

VARIOline – Modular and Flexible

The key to efficient and gentle opening and cleaning of the raw material

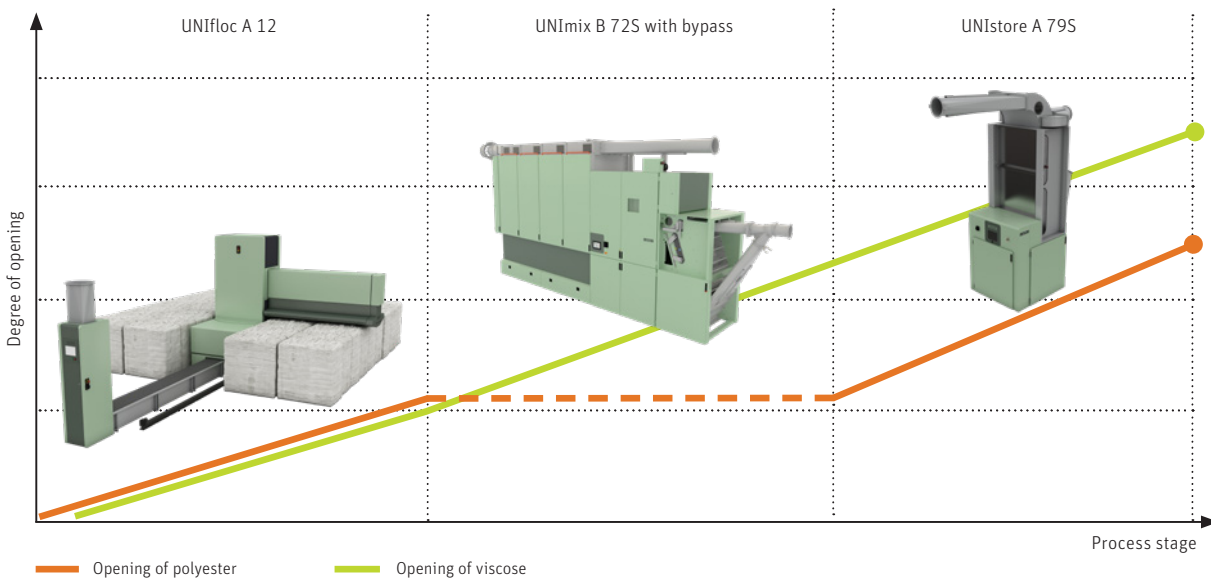
The VARIOline blowroom line is the variable opening and cleaning concept from Rieter. The machines are modular and configuration is tailored to the specific raw material and its properties. The material is opened and cleaned in several stages.

Gentle opening and cleaning

A pre-cleaner is used to effectively and efficiently clean and dedust the material. Depending on the residual trash content, the raw material passes through additional, standalone, fine cleaning stages. This means that the fibers pass through several cleaning stations during the blowroom process and are thoroughly and gently cleaned of trash and dust. The optimum degree of cleaning is achieved.

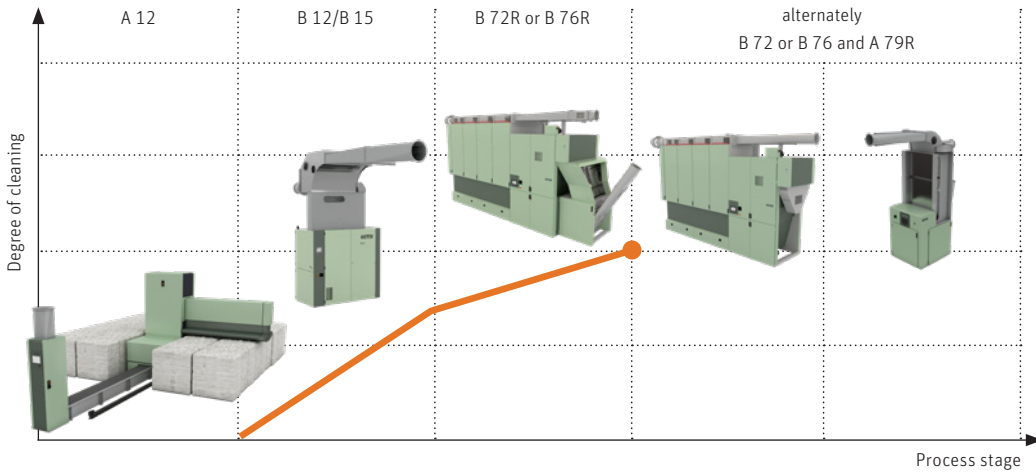
Quality pays off

The fibers are protected from any unnecessary stresses. The fibers have fewer neps than with conventional blowroom methods. Fiber shortening is largely avoided. The yarn stands out with better quality and this has a noticeable effect on operational behavior during further processing.

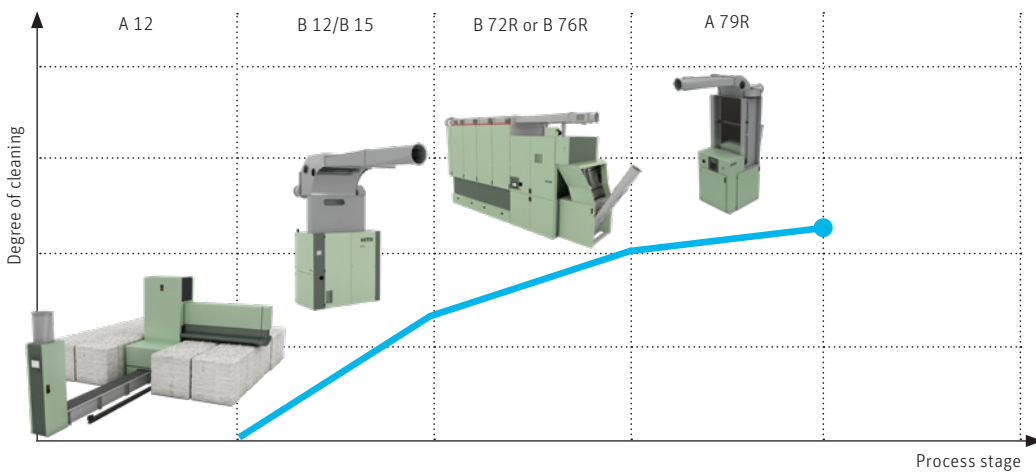


Man-made fibers do not require cleaning. The target degree of opening for the tufts is key when it comes to further processing. Typically, one or two opening modules are used. The opening module can be readily converted to the cleaning module, and vice versa.

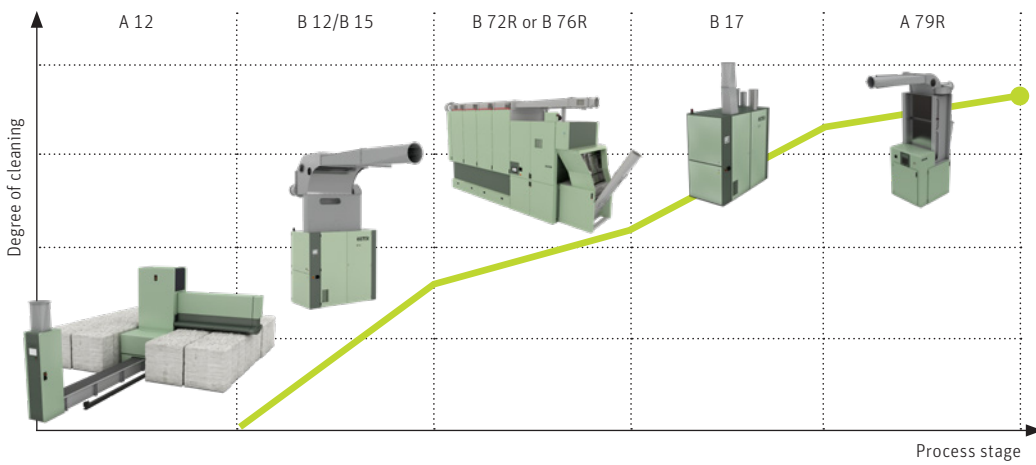
VARIOline cleaning concept – low trash content



VARIOline cleaning concept – medium trash content



VARIOline cleaning concept – high trash content



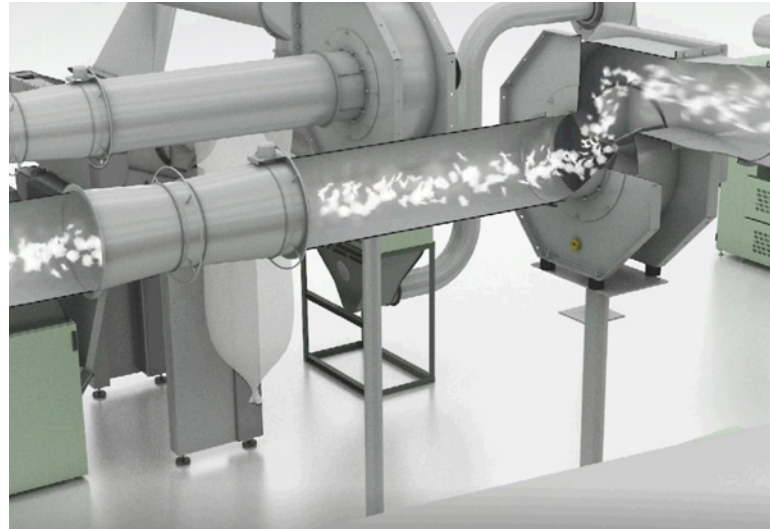
40% Energy Saving

VARIOline is the most energy-efficient blowroom system on the market

Rieter has been committed to increasing energy efficiency for many years now. This commitment has generated results – practical comparisons show that the Rieter blowroom line consumes around 40% less energy than solutions from other providers.

The factors that keep energy consumption so low are:

- VARIOline ECOrized
- Optimal blowroom line layout
- Intermittent waste removal
- Energy-efficient motors and innovative detailed solutions



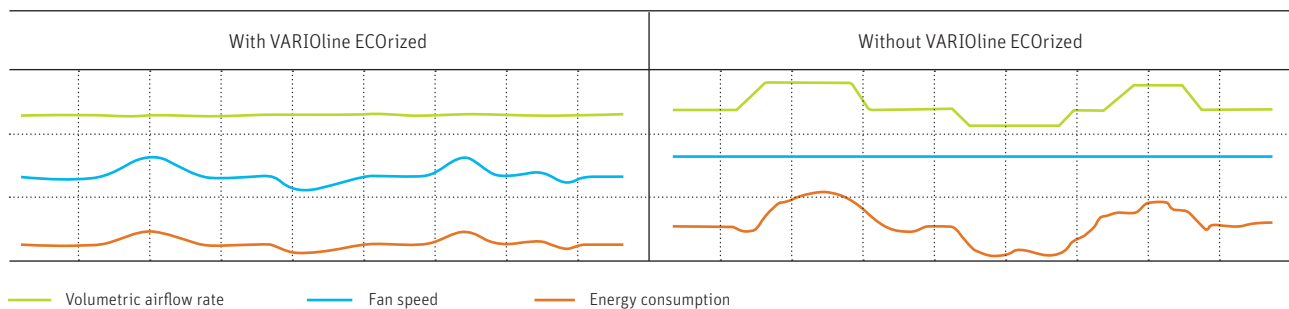
Key components of the VARIOline ECOrized

VARIOline ECOrized

VARIOline offers the most productive and energy-efficient fiber preparation with the best raw-material cleaning. The new function ECOrized makes the line even more efficient. It enables energy savings of up to 30% in the pneumatic fiber transport with a low exhaust air volume in the filter system at the same time. Intelligent software dynamically controls all fans and automatically adjusts the air balance when the fiber quantity is changed.

Low energy costs through optimal blowroom line layout

Where previously two UNIClean B 12 machines were required, a single pre-cleaner is now sufficient for up to 2 400 kg/h: the UNIClean B 15. The space-saving and energy-saving B 15 optimizes the spinning mill layout and therefore the production costs. With energy costs of USD 0.08 per kWh and production of up to 2 400 kg/h, up to USD 10 000 per year can be saved.

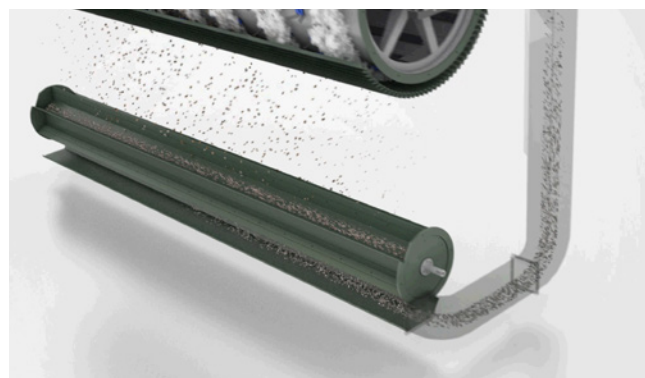


Intermittent waste extraction

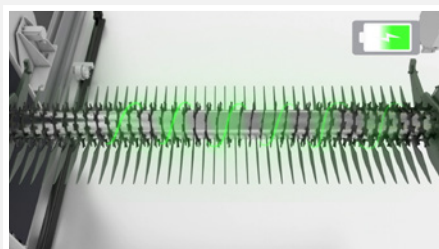
The intermittent extraction by the cleaning machines reduces the energy consumption required for waste transport in particular. The optimum raw-material extraction intervals are set via the blowroom control UNIconrol. The fans in the pneumatic fiber transport system are actuated only when extraction is required. This reduces the energy costs. The intermittent waste transport also prevents good fibers from entering the waste flow accidentally. This results in raw-material savings.

Energy-efficient drives and innovative detailed solutions

The VARIOline's impressive energy efficiency is achieved through optimized configuration of the machines and their integrated solutions. Only motors with a high efficiency class are used. The drives and motors are dimensioned such that they provide the power effortlessly, even at peak load.



The airlock roller seals the cleaning unit from the waste. The waste is removed intermittently.



Drives with a high energy efficiency class are installed in the UNIfloc A 12. The drive concept is based on torque-regulated servomotors. The integrated energy recovery reduces the energy consumption further. For example, the brake power generated during reversal of the take-off roller is fed back into the electricity grid. This is just one of the many refinements that makes the A 12 extremely energy-efficient.

VARIOline ECOrized

The function VARIOline ECOrized offers further benefits in addition to energy savings.

Reliable fiber flow in all production conditions

The blowroom line VARIOline with new ECOrized option makes the line even more reliable and allows even greater energy savings to be made.

The intelligent ECOrized software can be integrated into the Rieter blowroom control UNIcontrol in order to control all the fans dynamically. If no material is required, for example, the fan speed decreases. This ensures that fiber flows between the individual machines in a highly energy-efficient way.

The function readjusts automatically when the process sequence or assortment is changed. This means that the specialist no longer has to adjust the air balance manually.

VARIOline ECOrized saves energy

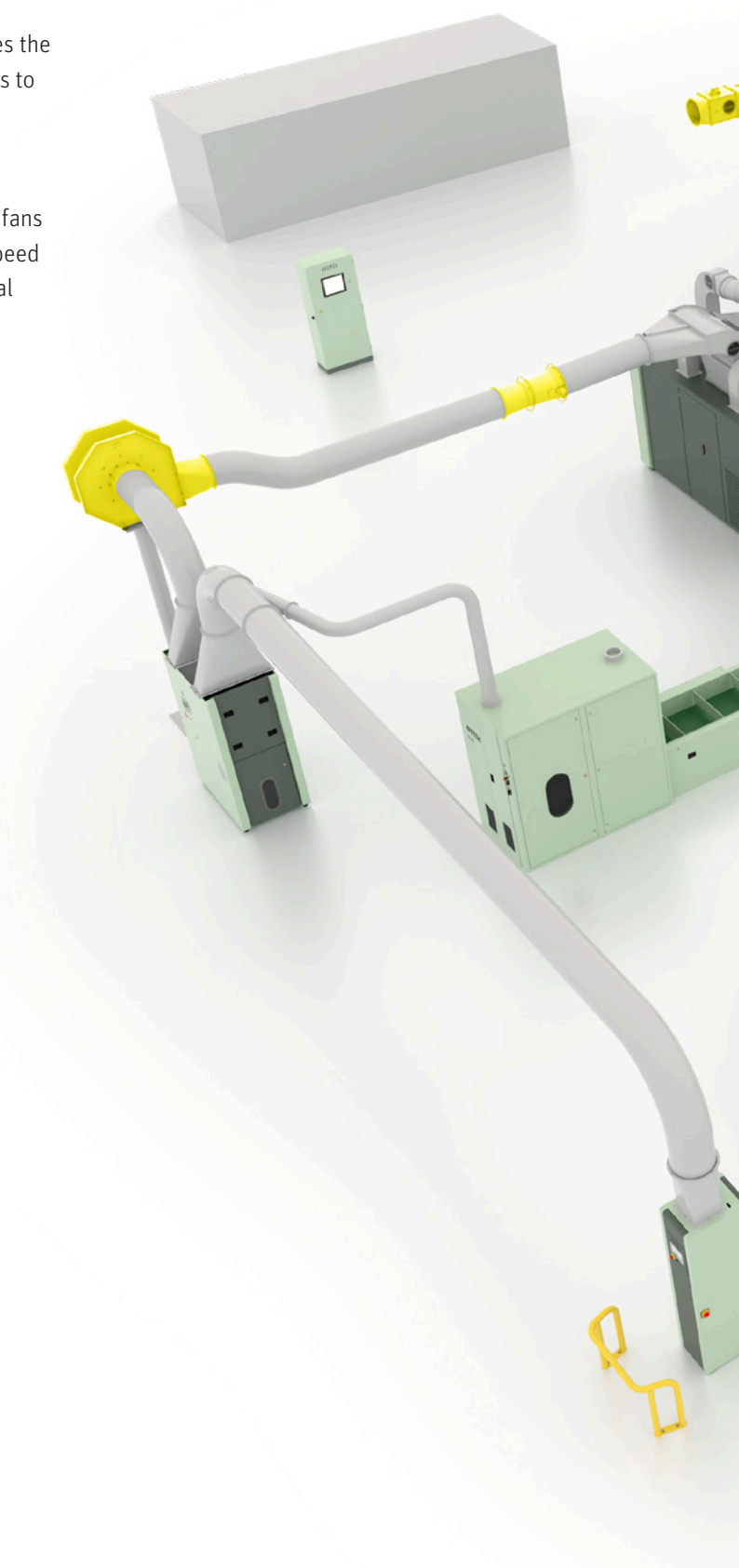
The VARIOline ECOrized solution reduces the energy consumption of the pneumatic fiber transport throughout the blowroom system by as much as 30%. The exhaust air volume in the filter system is kept low at the same time.

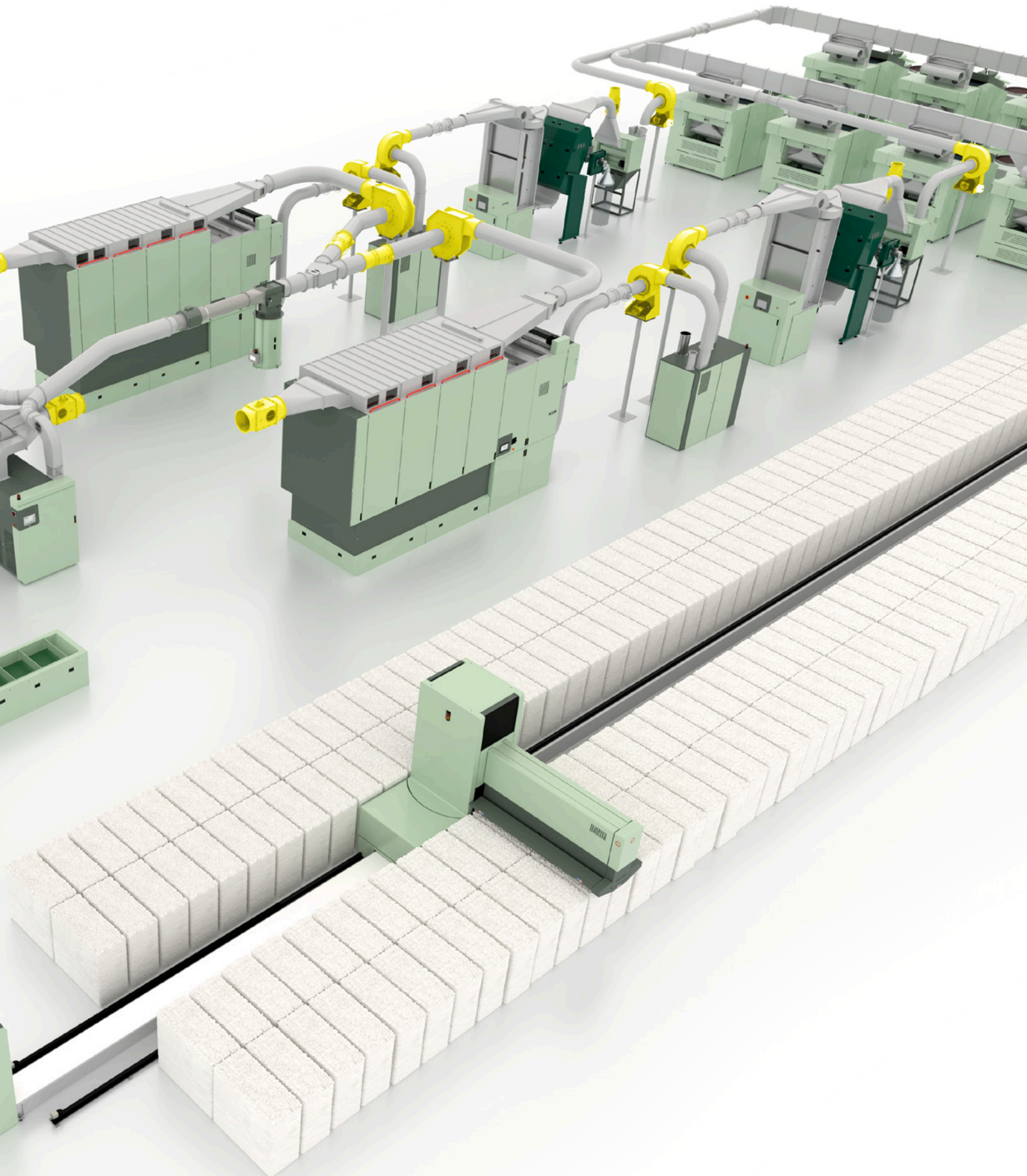
Support for Maintenance

The VARIOline ECOrized system also facilitates predictive maintenance by supplying trend information that helps to avoid unplanned interruptions in production.

Improved working environment

The VARIOline ECOrized solution also considerably reduces the amount of dust in the blowroom thanks to the closed exhaust air pipes to the filter station. This significantly improves the working conditions for operating personnel.

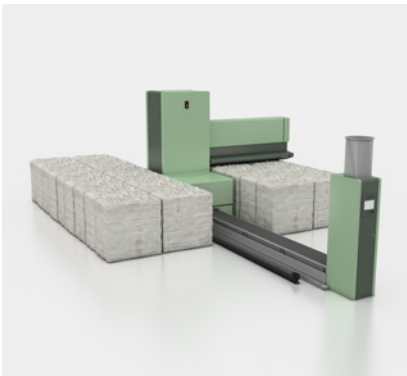




Tailored Solutions for Each Customer

Flexibility with few modules

Just a few standard machines and a range of cleaning and opening modules for the UNIstore A 79 and UNImix B 72 and B 76 allow any blowroom to be tailored to the customer's requirements. The system works regardless of whether the raw material, quality level or production volume is the key consideration.



UNIfloc A 12



UNIclean B 12



UNIclean B 15



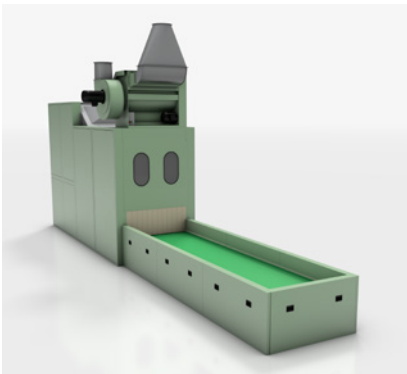
UNImix B 72



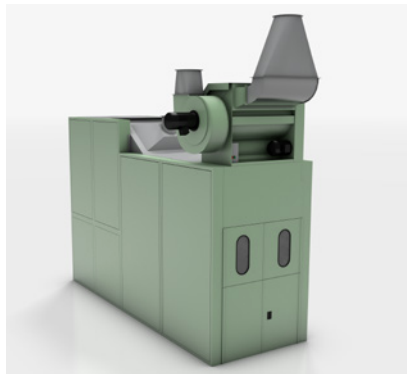
UNIclean B 17



UNIstore A 79



Mixing bale opener B 34



Mixing opener B 33



UNIblend A 81

Economical Cleaning Starts with Microtufts

Automatic bale opener UNIfloc A 12

The UNIfloc A 12 achieves a processing output of up to 2 400 kilograms of fiber material per hour and is therefore extremely economical. The machine has a rigid monocoque design. It has direct drives and a force measurement function that profiles the bale laydown. The fiber tufts are removed evenly by a patented roller system and broken down into microtufts. They are then fully prepared for the downstream blowroom process.

Functional down to the smallest detail

The UNIfloc A 12 processes natural and man-made fibers up to a staple length of 65 mm. The bales to be taken off are supplied in a longitudinal or transverse direction on both sides of the bale opener. The A 12 processes up to three different ranges. The combination with the patented double teeth on the take-off roller and the floor grid ensures that the raw material is gently opened into microtufts.



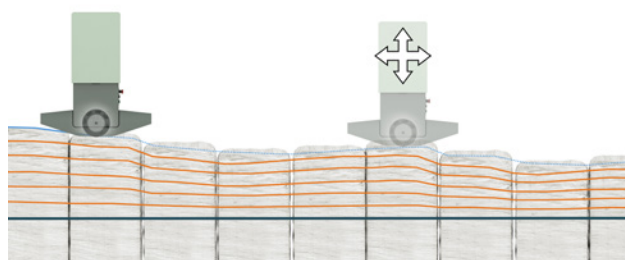
Automatic Bale Opener UNIfloc A 12

Innovative bale profiling

The bales being laid down may have different heights and densities. To achieve good machine productivity, the bales need to be equalized. The bale profiling system of the UNIfloc A 12 is based on unique technology. During the first production run, the A 12 profiles the bale height and density by taking a scanning force measurement. The bale profile is detected directly. Based on the system's calculations, the bales are taken off layer by layer during the runs that follow. The bale laydown is quickly equalized and taken off completely with high production rates.



Wobble disk take-off roller



Innovative bale profiling

Safety is paramount

Personal safety was high on the agenda when designing the new bale opener. A 2D scanner ensures a high standard of safety. The 2D scanner is resistant to external influences such as temperature and airflows, and immediately detects when a person has entered the hazard zone. The machine shuts down in a proper manner. Additional mechanical devices safeguard the work area of the A 12.

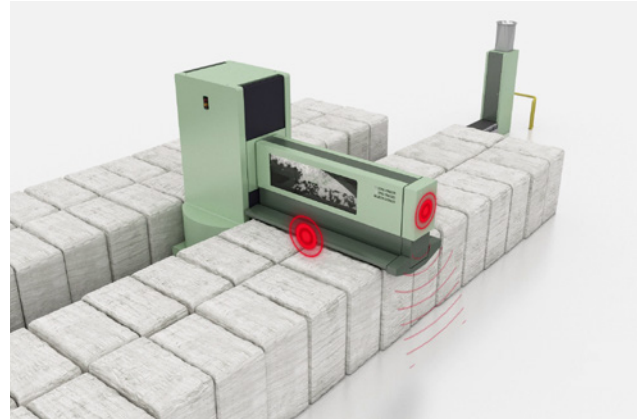
As an option, powerful permanent magnets can be attached to both sides of the take-off unit. They hold small and large iron parts securely so that they do not enter the blowroom process. These parts are removed sporadically in simple steps.

Flexible bale laydown

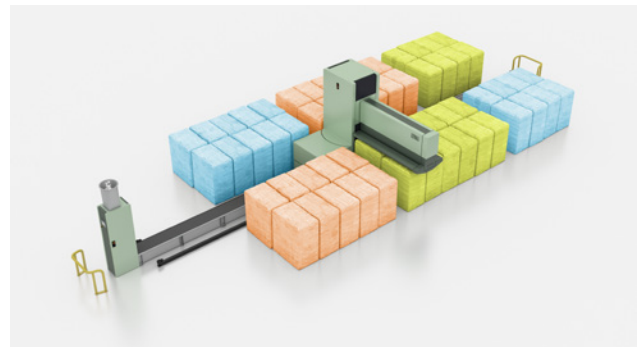
Up to three bale groups can be laid down on each side of the A 12. The bale sequence and the length of the bale groups can be freely selected. Up to three assortments are possible. The A 12 processes bale laydowns with a total length of between 6 and 46 meters. A maximum of 40 000 kilograms of raw material can be laid down. This ensures flexible and economical production.

Simple operation

The operating unit is located on the front next to the suction duct and provides a good overview of the machine state. Parameters can be entered and easily changed by operating personnel. The A 12 is connected to the blowroom control UNIconrol. UNIconrol delivers the data to the superordinate spinning mill management system ESSENTIAL. As a result, the spinning mill manager has an overview of the machine's operating state at all times.



Optimum safety for personnel and during production



Bale laydown with three assortments

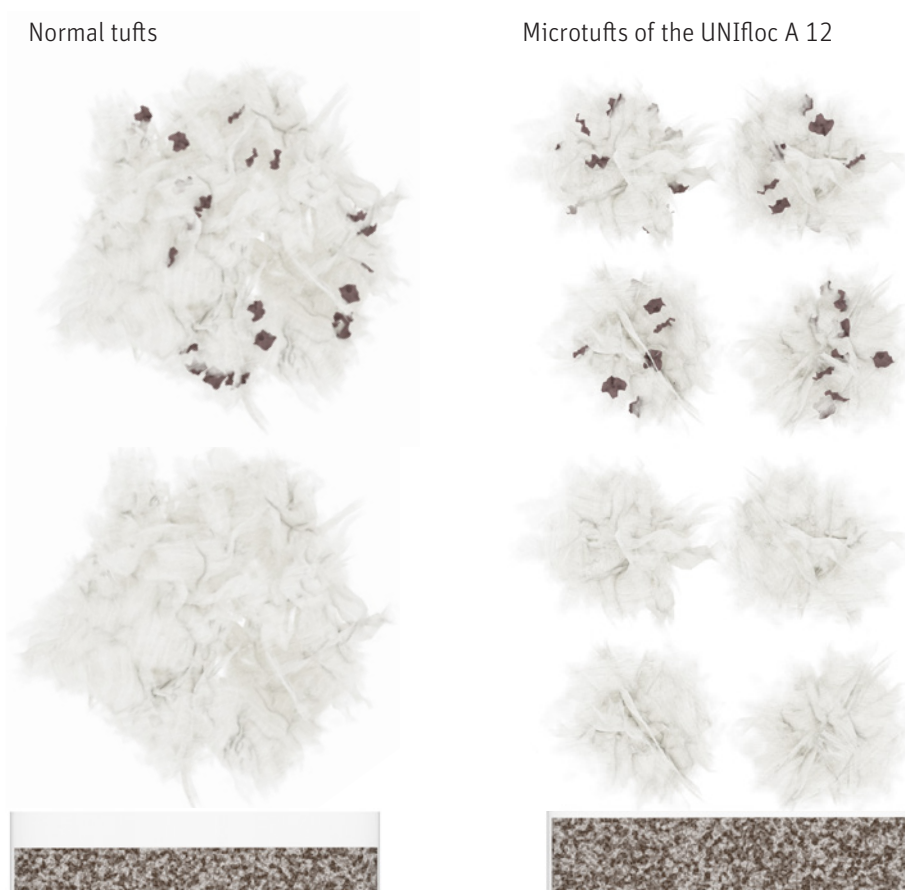


Rapid change of parameters on the operating unit

Microtufts – the key to optimum quality

An efficient blowroom process is dependent on the raw material being well opened from the outset. Only trash and dust that is on the tuft surface can be removed gently and efficiently during the blowroom process. The smaller the opened tufts, the larger their relative surface.

The fineness of the fiber tufts is determined via the 312 double teeth of the patented wobble disk take-off roller and their rotational speed. Continuous and even take-off of the bale laydown material is another requirement for small uniform microtufts. This is achieved by the take-off unit of the UNIfloc A 12, which moves over the bales and measures the scanning force using a patented method. This guarantees an even fiber flow to the next blowroom machine. The microtufts obtained in this way can be optimally cleaned and dedusted during the downstream blowroom process.



Microtufts of the UNIfloc A 12 have up to 60% higher cleaning potential

Economical Raw-Material Utilization in the Spinning Process

Waste opener B 25



Metered backward feeding of waste from the blowroom and card

As raw materials are expensive, economical production requires that fiber waste can be fed back into the blowroom process. The waste must be selectively and continuously fed back into the process in small amounts. It is normally fed into the material flow immediately downstream of the UNIfloc A 12. This guarantees a consistently good yarn quality.

The waste opener B 25 processes a diverse range of raw materials, tufts, slivers and opened roving from the blowroom and spinning preparation production stages.

Flexibility with Small Assortments

Mixing opener B 33 and mixing bale opener B 34

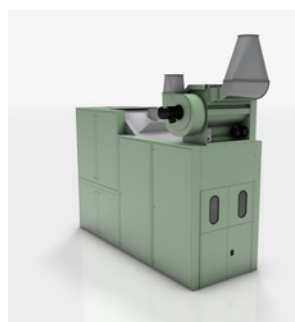
The strengths of the mixing opener B 33 and mixing bale opener B 34 lie in processing small assortments. Machines with an opening or cleaning unit are able to achieve outputs of up to 400 kilograms per hour. Machines without opening or cleaning units are able to process production quantities of 600 kilograms per hour per machine.

Thanks to their flexibility, they are particularly popular in spinning mills where space is limited and where the assortment changes frequently. The two machines have the same basic design and are equipped with a mixing chamber and an opening or cleaning unit* (S or R version). The storage capacity of the mixing chamber can be expanded by an optional intermediate box. The machines are highly reliable and simple to maintain. The S version of the machines is designed to process man-made fibers. The R version of the B 33 and B 34 is designed to clean and open natural fibers.

* Optional

Mixing opener B 33

The mixing opener B 33 is typically located in the center of the blowroom line and is supplied with material from the upstream machine via one or two condensers. For example, the B 33 is positioned downstream of the UNIBlend A 81 for the intermediate storage of the fiber blend in multi-assortment operation. It then feeds the carding line. The storage volume of the B 33 is increased by an intermediate storage unit. This results in reliable and continuous card production.



Mixing opener B 33 for mixing, cleaning and opening



Good opening of the tufts provides the basis for good yarn quality

Mixing bale opener B 34

The mixing bale opener B 34 is usually positioned at the start of the blowroom process. The material is supplied manually via a feed table. The raw material of various bales is distributed across a length of three to nine meters. Depending on the blowroom design, the mixing chamber and the intermediate box can also be filled by other blowroom machinery via one or two condensers. Blowroom and carding waste can also be fed to the B 34. They can be recycled by type at the beginning or in the middle of the blowroom process. This reduces raw-material costs.



Mixing bale opener B 34: flexible mixing of small lots

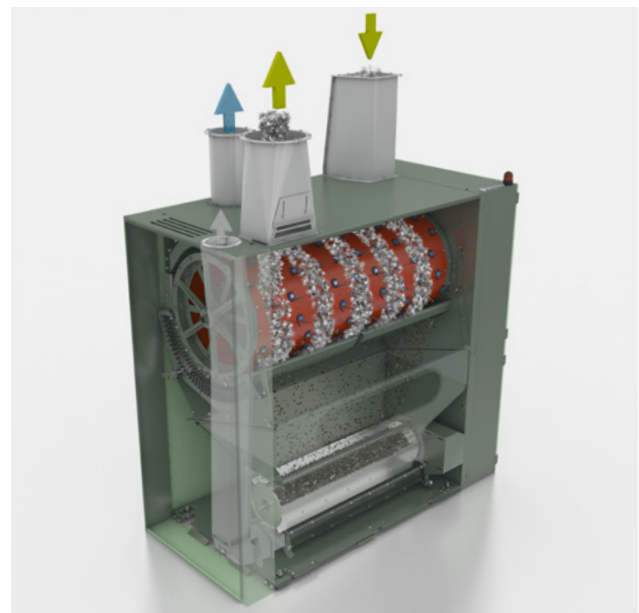
Efficient and Gentle Pre-Cleaning

Pre-cleaner UNIClean B 15/B 12

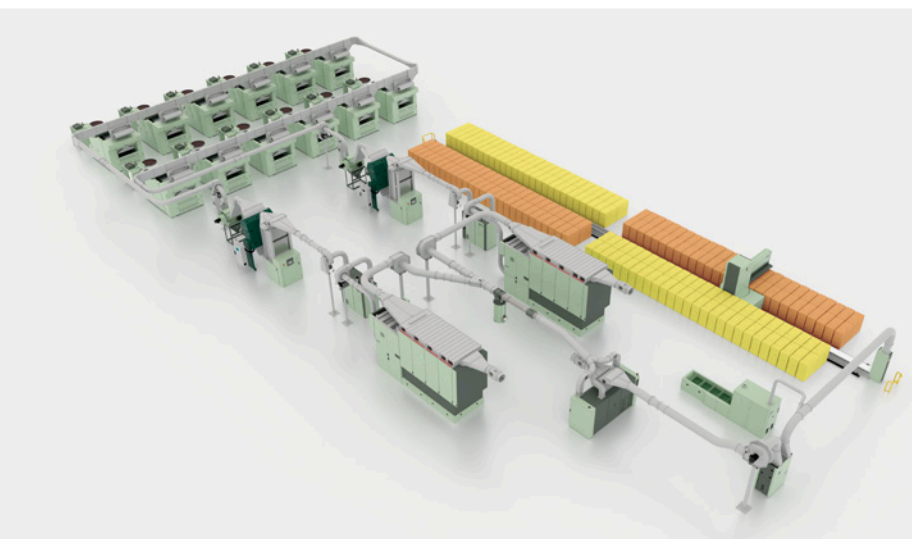
One of the primary tasks in the blowroom is to remove trash and dust from the natural fibers (cotton, linen, etc.). This is achieved in one pre-cleaning stage and in up to three fine-cleaning stages. The pre-cleaners UNIClean B 12 and B 15 are supplied with microtufts from the UNIfloc A 12. The tufts are fine-cleaned in the cleaning modules of the UNImix and UNIstore. In addition, a UNIClean B 17 is used for the fine-cleaning of heavily contaminated natural fibers.

Economical with high output

Cleaning with the UNIClean B 12 and B 15 is extremely gentle, as the material transfer does not involve any clamping. The optimum cross section of the grid bars, ideal material transfer and the large dedusting surfaces ensure reliable cleaning of the material. This improves the raw-material utilization and enables a cleaning efficiency of up to 90%. Cleaning is not disrupted by the influences of air. The removed trash drops into the waste chamber and is transferred to the waste removal system by an airlock roller. The waste extraction process is intermittent. Since waste extraction does not run continuously, this solution requires less energy.



UNIClean B 12: efficient and reliable pre-cleaning



VARIOline with a UNIClean B 15 in two-assortment operation

Fits in any blowroom

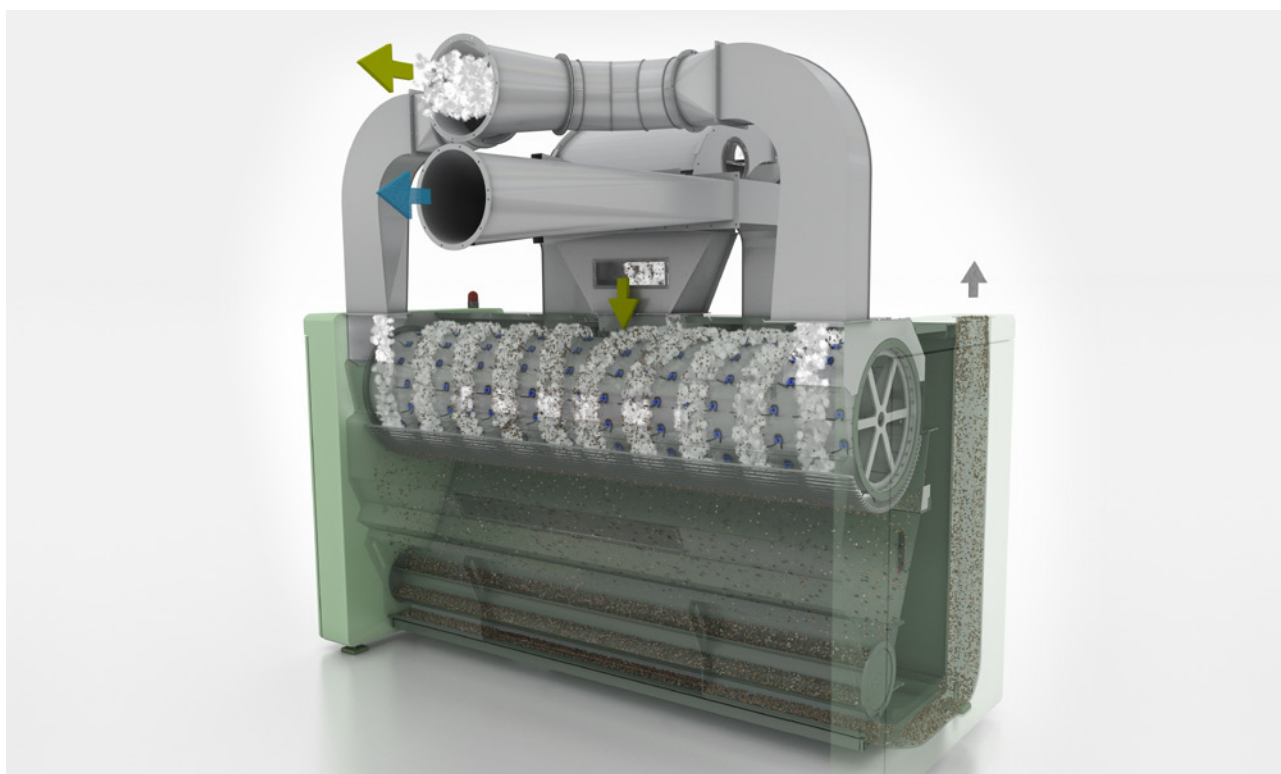
Thanks to their compact design, the B 15 and B 12 can be easily integrated into existing blowrooms and third-party systems. They also improve the cleaning performance of existing installations.

Unique working principle for high yarn quality

With a production output of 2 400 kilograms per hour, the B 15 is the most powerful pre-cleaner on the market. It is able to accept the quantity supplied by the UNIfloc A 12 directly 1:1. The first stage sees fiber tufts hit optimally arranged surface screens while being fed in. The first tufts to be dedusted are distributed evenly over the entire working width. Double hooks then pick up the material and pass it over the cleaning grid five times to clean it gently. In this second dedusting stage, dust particles escape through the surface screen integrated in the B 15. This ensures that the finest seed coat fragments and dust are mechanically removed. This working principle delivers excellent production results and high yarn quality – especially in rotor spinning mills.

Automatic adjustment to the raw material with VARIOset

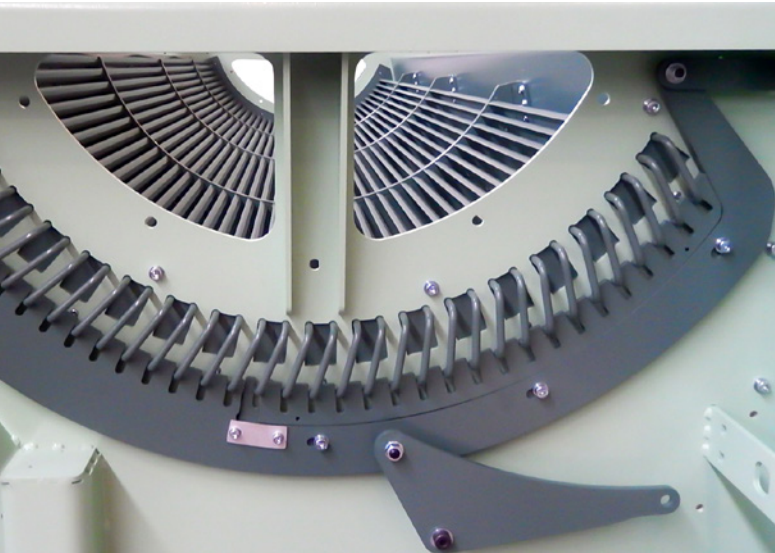
If the UNIfloc A 12 is processing different assortments, the function VARIOset adjusts the settings of the UNIClean B 15 and B 12 to the particular material. The optimal machine settings ensure efficient cleaning and good quality for each assortment. The settings can be adjusted to three different assortments.



The material is distributed evenly to the left and right over the entire drum width.

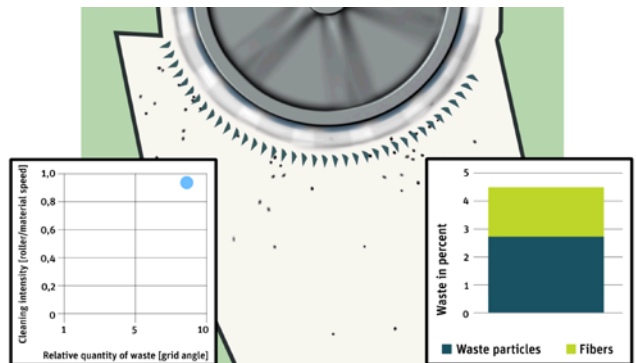
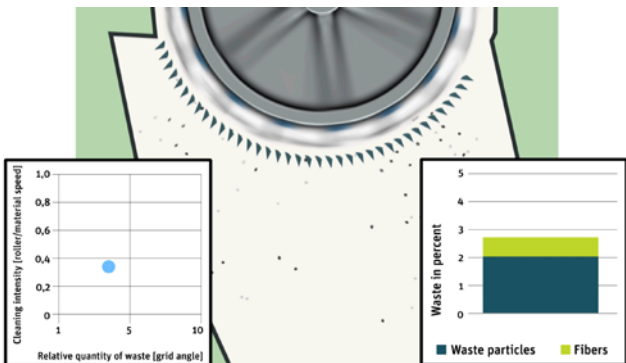
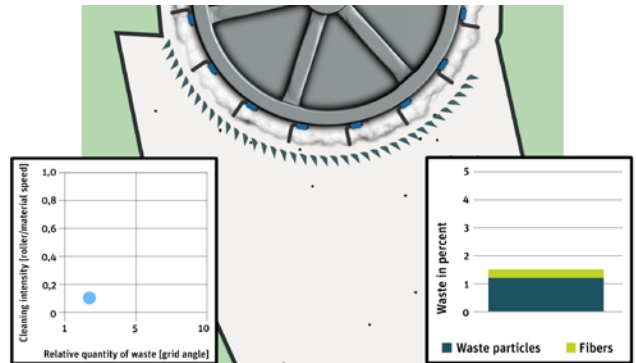
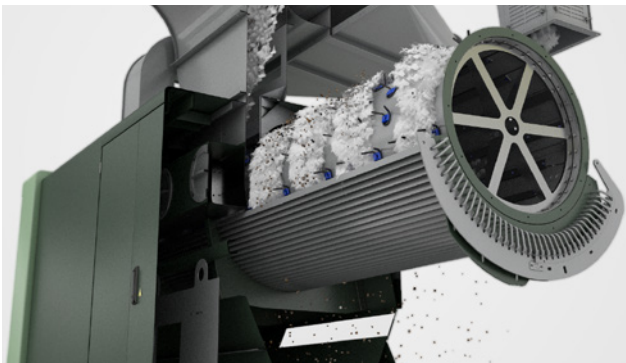
Maximum Raw-Material Utilization

VARIOset: integrated into all Rieter cleaning machines



Simple operation and reproducible settings

The values for cleaning intensity and waste quantity are entered at the machine operating unit. They can also be adjusted using the blowroom control UNIcontrol, which controls the material flow and the settings of all blowroom machinery. The new data is automatically applied by the machine that is running. In VARIOset, the optimum parameters are assigned to each assortment. This enables maximum fiber yield for cotton and is very convenient in the event of frequent lot changes.



VARIOset settings and their effects on waste quantity and waste composition

Fine Cleaner for Natural Fibers with High Trash Content

UNIClean B 17

The UNIClean B 17 is used as a fine-cleaning machine for heavily-contaminated natural fibers. It processes up to 1 200 kilograms of fiber material per hour. It is typically located between mixing machine UNImix B 72 or B 76 with cleaning module and the UNIstore A 79R.

The B 17 cleans and dedusts efficiently and gently. The pre-opened tufts are passed over the adjustable grid seven times. For an improved cleaning effect, the tuft material is turned at the apex of rotation. The tufts are not nipped, which protects the fibers. The optimum parameters for the height and composition of the waste can be entered at the VARIOset. This ensures a high raw-material yield.

If the line is operated with less heavily contaminated cotton, the B 17 can easily be bypassed. The material is cleaned only to the extent required.



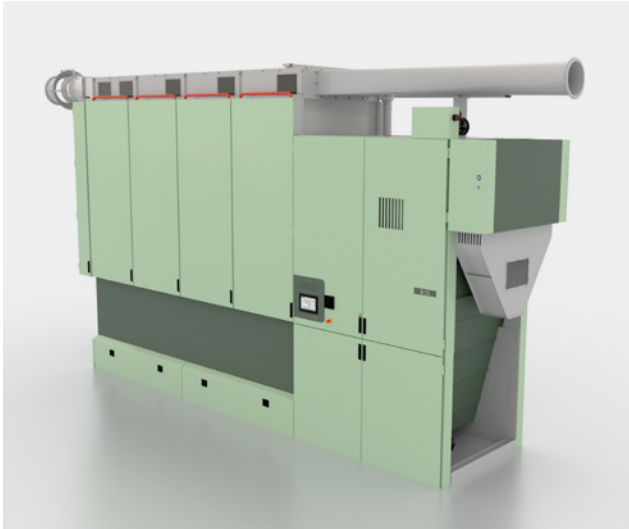
UNIClean B 17



Clearer roller of the UNIClean B 17

Rapid Adjustment to Different Raw Materials

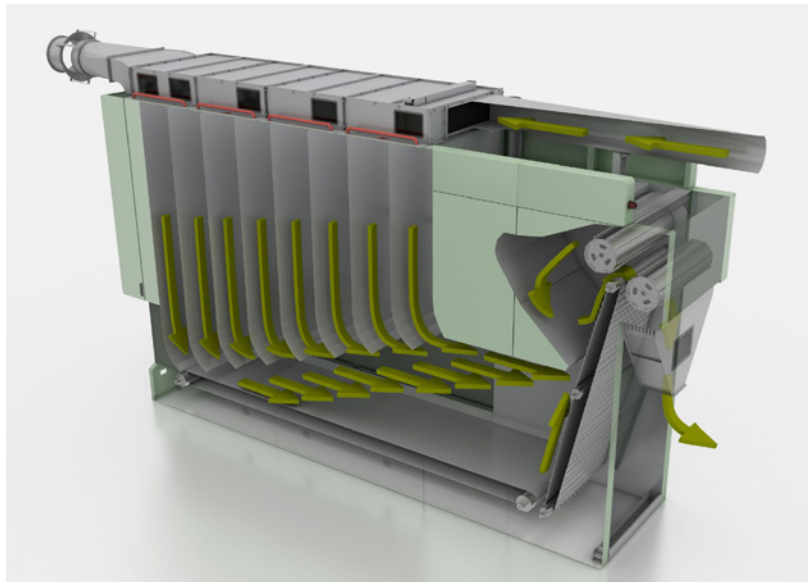
UNImix B 72 and B 76 with R- and S-modules



UNImix B 72

The compact mixing machines UNImix B 72 and B 76 are fed from the pre-cleaner or directly from the UNIfloc A 12. The material is evenly distributed across eight mixing chambers. Thanks to the unique three-point mixing process, natural and man-made fibers are evenly mixed. Any oversights with the bale setup are offset by the sophisticated mixing process.

The large storage capacity ensures a reliable feed to the downstream blowroom machinery. Brief standstills at the upstream machines can be bridged effectively. The mixing machines process 800 kilograms of raw material per hour (B 72) or 1 200 kilograms of raw material per hour (B 76). Despite this powerful performance, they require little space.



Material flow in the UNImix

Uniform feed

The degree of tuft opening can be optimized for the raw material and spin technology used. This is achieved through the rotational speed and direction of the mixing roller. The parameters can be easily set on the machine display. Uniform feed to the downstream machines is guaranteed in every operating state.

Consistent Quality Values over a Prolonged Period

Uniform blend with the three-point mixing process

The uniform mixing of the fiber raw materials, especially cotton, is an important factor when it comes to achieving economical, superior-quality yarn production.

The process starts with the optimum configuration of cotton bales in the bale laydown. The various fiber characteristics such as color, fineness and trash content are factored in when the bale is laid down. The automatic bale opener UNIfloc A 12 simultaneously and evenly removes material from several adjacent bales at the same time. This process mixes the material for the first time. The tufts are then mixed in the mixing machine UNImix B 72 or B 76 by means of a three-point mixing process.

The combination of optimum bale configuration and thorough mixing of the material in the UNImix guarantees constant material quality and composition for a prolonged period.

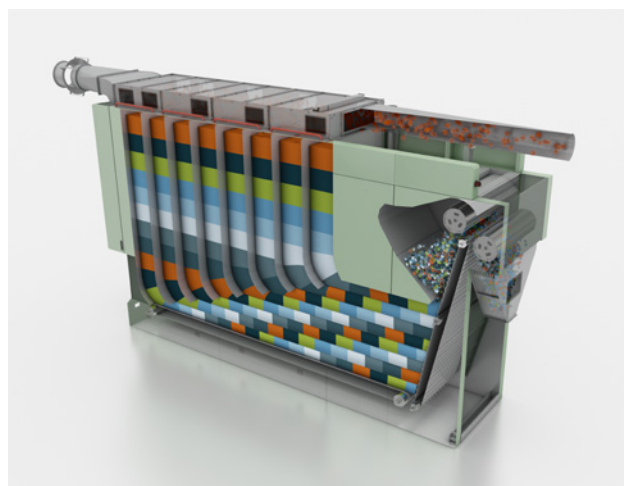
The UNImix 3-point mixing principle

The fed fiber tufts are distributed at random in thin layers across the eight chambers. The fiber material is uniformly and mixed at three different points:

1. The tuft mass is deflected through 90°. This causes the layers to shift spatially and temporally. The result is a defined long-term blend.
2. The spiked lattice removes tufts from all eight layers at the same time. This gentle opening process results in a second, random, mixing of the tufts. The blend is already uniform at this stage.
3. The free tufts undergo a third intensive mixing process in the mixing roller zone. This additional mixing process further improves the fiber mixing.



The UNImix B 76 can be fitted with an R- or S-module.



3-point mixing process – production of a consistently homogeneous fiber blend

Gentle fiber handling with the bypass module

The bypass module is available for the UNImix B 72 with the R- or S-module. This module simply bypasses the opening or cleaning module of the B 72. The full performance of the UNImix is always retained.



Flexibility through the use of an opening or cleaning module



UNImix B 72 using the bypass module to bypass the R- or S-module

Simple operation and maintenance

The UNImix has no mechanical change points and is therefore easy to maintain. The distance between the mixing roller and the spiked lattice, for example, can be set at the operating unit, as can the required production output. The setting values for other raw materials or production conditions can easily be changed on the machine display while the machine is running. The settings are reproducible and therefore support modern quality management.



Machine settings are easy to change and reproduce.

Precision Mixing in the 1% Range

UNIblend A 81

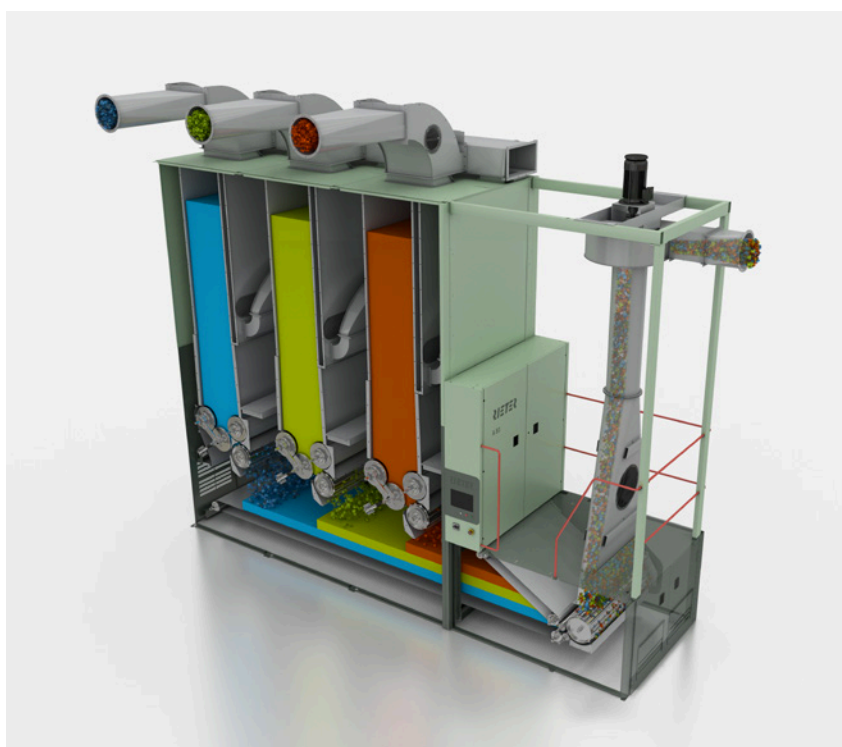
The precision blender UNIblend A 81 sets the highest standards for multi-component blends. Raw-material ratios are mixed to a great degree of accuracy. A deviation in the blending ratios of less than 1% is guaranteed.

Benefits of metered blending

A yarn derived from a raw material that has been blended using the UNIblend A 81 has a uniformity that cannot be achieved by any other blending method.

The benefits are:

- even dyeing of woven and knitted fabrics,
- improved running characteristics of the yarn on end-spinning machines,
- higher yarn strength and
- improved running characteristics of the yarn during weaving and knitting



UNIblend A 81 for economical and precise mixing of quality yarns

Maximum production output of 1 000 kilograms per hour

One A 81 can produce up to four different blends and so can feed up to four different carding lines simultaneously. It processes numerous different staple fibers. This enables a rapid and economical response to fashion trends.

Wide range of applications

The UNIBlend A 81 is equally suitable for standard and special blends. It processes cotton, man-made fibers, waste material and a diverse range of staple fibers such as flax with a fiber length of up to 65 mm. The wide application range of the A 81 means that special yarn creations are possible. The batch size function opens up further possibilities for blends in an exact range of 1 kg to 28 000 kg. In this case, the A 81 supplies material until the specified batch size is reached.

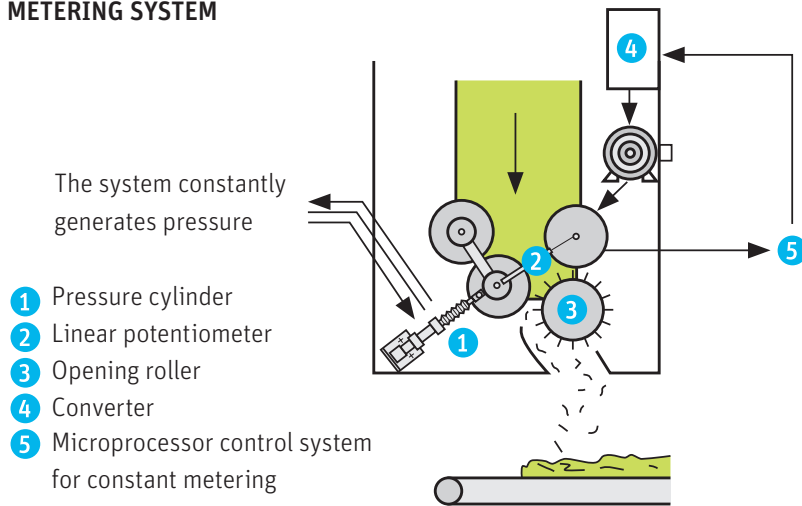
Optimized Raw-Material Costs

Very rare and expensive fibers, dyed cotton or extreme blends (e.g. 98% to 2%) can be economically processed into special yarns. Only the amount of expensive material essential to guaranteeing the functionality of the yarn is used. Recycled fibers are fed into the blend in small, precisely defined volumes. Raw-material costs are reduced as a result and a constant yarn quality is guaranteed.

Unique metering system

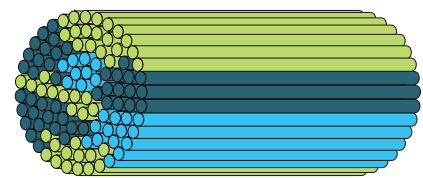
The A 81 comprises up to eight blending modules. Each module contains an independent, Rieter-patented metering system. This system generates an even material flow. One of the feed rollers is movable and is pressed against another, fixed, roller with a constant force. The leveling system detects any change in material thickness caused by different densities and adjusts the speed of the roller. As a result, the material flow mass remains the same at all times.

METERING SYSTEM

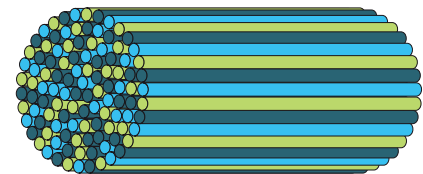


Precise and reliable metering thanks to a rapid check system

Yarn produced on the draw frame



Yarn produced using UNIBlend A 81



Cross section of fiber distribution in a blended yarn

Efficient and Gentle Fiber Cleaning and Opening

UNIstore A 79

The UNIstore A 79 is fed from the upstream machine via a dust extractor. The material enters the UNIstore storage module first. This module forms a material store (buffer) and then feeds the S- or R-module. The A 79S version is used for opening man-made fibers and the A 79R version is used for opening and cleaning natural fibers. The material is dedusted as it enters the dust extractor. It is then gently opened and/or cleaned. VARIOset can be programmed to use the most economical settings for each fiber material.

The machine is highly productive and processes up to 1 000 kilograms of material per hour. The A 79 stores up to 15 kilograms of tufts. This guarantees even feeding of the cards.



UNIstore A 79

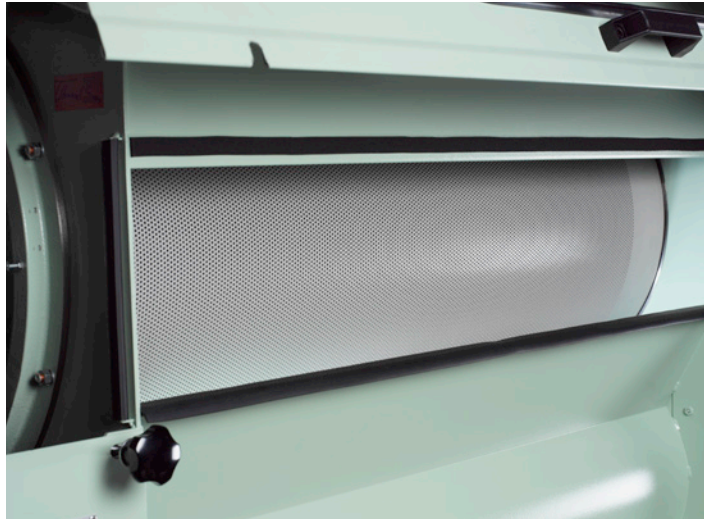
Optimum Air Conditions for Tuft Transport

Condenser A 21

A condenser can be deployed at various positions in the blowroom line to achieve optimum air conditions for the downstream machines. The fiber tufts hit the sieve drum located in the condenser at high speed. The tufts are freed of dust (including fine dust) and dirt particles (trash). Dust and trash are fed to the blowroom filter unit with the exhaust air.

The condenser A 21 is positioned upstream of the card and can also be used on the mixing opener B 33 and mixing bale opener B 34.

The good quality of the tufts after dedusting has a positive effect on the end spinning process. This is primarily apparent with rotor spinning, but also in the subsequent yarn processing.



Optimum tuft transport and maximum dedusting with the condenser A 21



Mixing bale opener B 33 with two condensers A 21

Safety During System Operation

Solid-matter extractors A 49 and A 49N

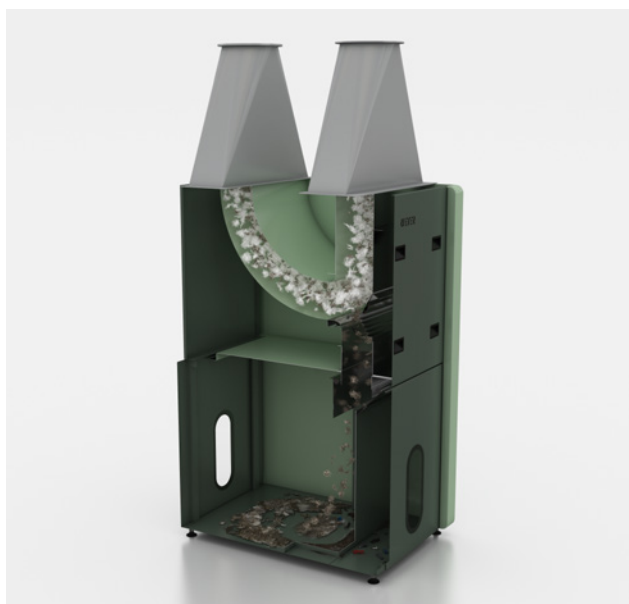


Two versions: Solid-matter extractors A 49N and A 49

Solid-matter extractors are positioned immediately downstream of the UNIfloc A 12 or the mixing bale opener B 34. They reliably remove metal, stone, wood, plastic, rubber, etc. as well as sections of rope and cord. The extractor ensures safe operating conditions at the downstream blowroom machinery. Machinery damage is prevented. Two solid-matter extractors are available for the VARIOline.

Solid-matter extractor A 49

The A 49 is positioned downstream of the UNIfloc A 12. Heavy particles are reliably separated out via aerodynamically optimized conducting and extraction elements. Fiber waste is minimal as a result. The modular construction means that the A 49 can be installed in any blowroom line.



A 49: Cross section with magnet option

Solid-matter extractor A 49N

The A 49N is installed in the blowroom, downstream of the mixing bale opener B 34, mixing opener B 33 or waste opener B 25. It is ideal for processing smaller production quantities.

Option with magnets

Multiple magnets in the fiber flow collect magnetic solid matter such as screws, nuts, ring travelers and wire. This solid matter is later deposited sporadically in a separate chamber in the A 49 via the mechanism activated by the UNIconrol. Separation with magnets prevents damage to the fiber-guiding elements in the downstream machines.

Flexible, Reliable and Safe

Foreign parts detection of all kinds

Foreign bodies – a challenge for spinning mills

A diverse range of foreign matter and materials can be found in bales of all cotton provenances and man-made fiber types. Depending on the country of origin, cotton is contaminated to varying degrees. It makes no difference whether it is picked by hand or by machine. Foreign fibers and materials are among the greatest challenges for reliable operation in a spinning mill. They also have a significant impact on yarn quality. Defects due to contamination in the yarn sometimes only come to light in the final product.

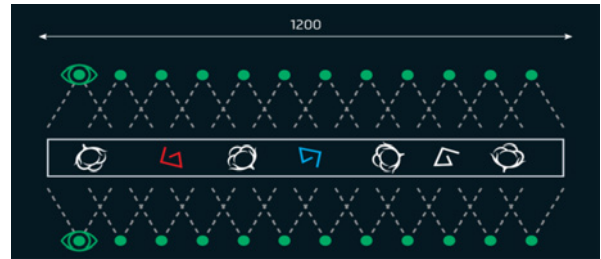
Easy Link EXA – the most comprehensive and precise system for foreign fiber detection

Tailor-made solutions for foreign fiber detection are available to every customer with the Easy Link EXA. Thanks to the modular design, the Easy Link EXA system can be designed precisely to meet the customer's requirements for the detection and extraction of synthetic as well as natural fiber materials. Due to the modular design, Easy Link EXA can be upgraded with additional technology modules at any time.



High detection and extraction efficiency – with the EXA principle

For a maximum detection and extraction rate of all foreign fibers, the EXA system uses a large number of cameras and various lighting sources. The material in the fiber channel is optimally illuminated by the lighting sources and monitored by a series of dustproof embedded cameras on both sides of the fiber channel.



The following light sources are used to detect all foreign materials:

- White light: Identification of colored and light colored contamination including dark colored and very thin, light colored polypropylene strings
- Ultraviolet light: Identification of optically brightened contamination, including fluorescent white polypropylene strings, dead and immature cotton fibers
- Red light: Identification of glossy contaminated surface, including white polypropylene strings

The EXA system has the following unique advantages:

- High resolution and accuracy due to direct viewing of the fiber material
- No lateral optical distortion thanks to the small viewing angle of many individual cameras
- Maintenance-free camera and lighting system thanks to dustproof construction and without the use of mirrors

Minimum fiber loss

Solenoid valves are arranged over the entire working width. A valve with three nozzles is activated for proper extraction. The integrated intelligent software synchronizes the process from identification to extraction of the foreign fibers. The filtering of the fiber material shadow and continuous measurement of the fiber flow allows the extraction of foreign fibers with minimal loss of good fibers.

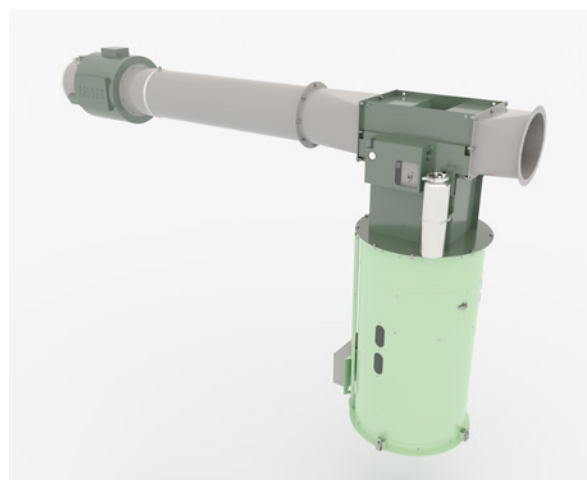
Rieter Metal and Spark Detector

The combined Rieter metal and spark detector identifies all types of magnetic and nonmagnetic metallic particles. The bypass valve is activated at the optimal time to minimize loss of fiber material. The device is easy to integrate into the blowroom line thanks to its compact design and is designed for a production of up to 2 400 kg/h.

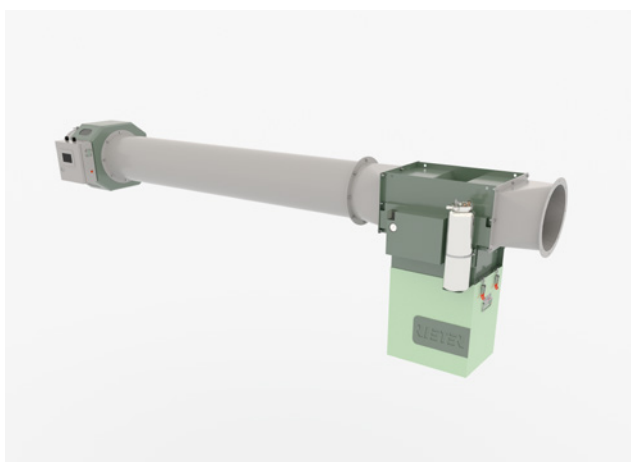
With the highly sensitive infrared spark detection system, sparks and embers that are identified in the fiber tufts are removed immediately and placed into the large collection container with integrated extinguishing system. The spark sensors are self-monitoring and send an alarm as soon as cleaning is required. This increases the reliability of spark detection.

The condition monitoring for flap position, compressed air, water level and collection container capacity ensures that the detection system is ready for operation at all times.

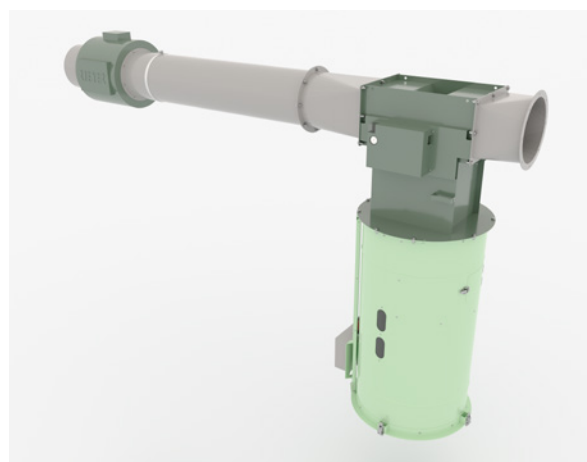
Depending on the application and safety requirements, additional metal and spark detectors can be added to the line.



Metal and spark protection device (combination device)



Fire protection device



Metal protection device

Constant Material Flow in the Blowroom

UNIcontrol: the modern control system for the rieter blowroom and carding line

UNIcontrol is the highly-developed VARIOline plant control system and automatically controls all blowroom machinery. The system is customized and can be modified to suit the customer's exact requirements. The software is easy and inexpensive to modify if the blowroom or carding line is expanded. The control system for waste transport is integrated into the UNIcontrol.

System operation is simple and intuitive. On the touch-screen of the UNIcontrol, all operating states are clearly presented in graphics and colors and can be viewed at a glance. For each screen view there is a help function that explains in detail the icons and functions displayed in this screen.

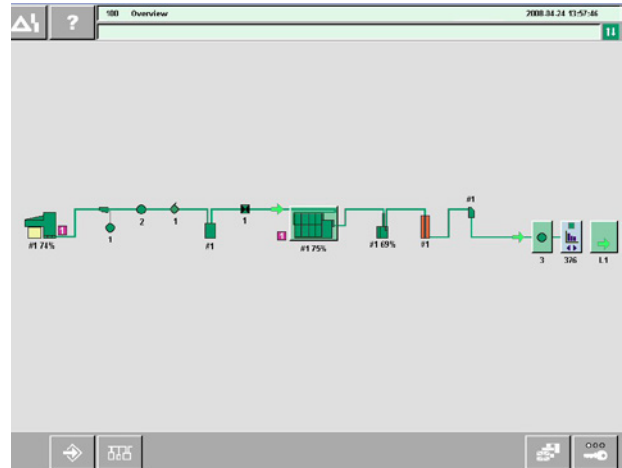
Customers can number the machines for a better overview across their machinery pool.

Easily reproducible process

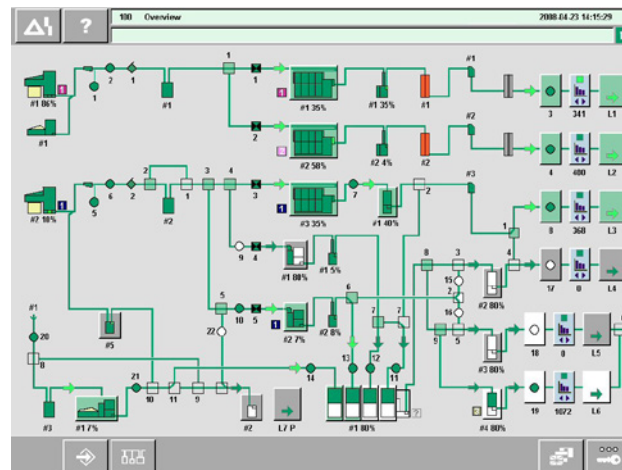
Process conversions can be reliably implemented in a short time. Various process parameter sets can be saved in the control system or on a USB stick. For repeat orders, the production parameters are quickly uploaded to the control system. Events (event history and operating history) are seamlessly recorded in logbook files. This helps the operating personnel to optimize the process and maintain the machines.

UNIcontrol can be accessed via a secondary control station*. It can be installed in an office or production area. It simplifies the operating personnel's work in larger installations.

* Optional



Representation of a simple VARIOline on the UNIcontrol screen



Representation of a complex blowroom on the UNIcontrol screen

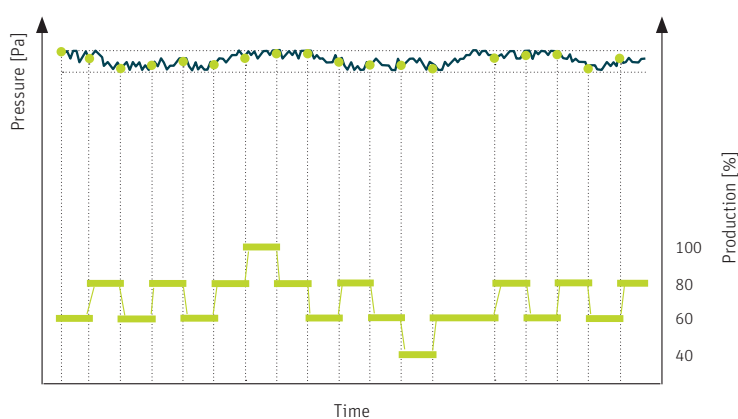
The machine remote control* (Rieter Remote Panel), which can be integrated into the UNIcontrol, allows access to the blowroom machine panels for direct display of the machine parameters and for adjustment if necessary.

Smartfeed for a uniform lap feed

The function Smartfeed is integrated into the UNIcontrol system controller. Smartfeed permanently controls and optimizes the material flow.

The software records the data from a pressure sensor, which measures the changes to the pressure conditions in the card feed channel AEROfeed. Smartfeed uses these measurements to calculate the optimum switch-on and switch-off points for the feed. The result is constant filling of the card feed chute and uniform lap feed. This guarantees high, consistent card sliver quality.

Multi-stage feed with Smartfeed



Optimally-metered production volume

Rapid adjustment to new conditions

If the production volume in the carding line changes, the feed rate is adjusted accordingly. The speed of the feed roller in the R- or S-module of the UNIstore and the UNImix is adapted to the new conditions. The R- or S-module ensures a constant tuft size.

ESSENTIAL – Rieter Digital Spinning Suite

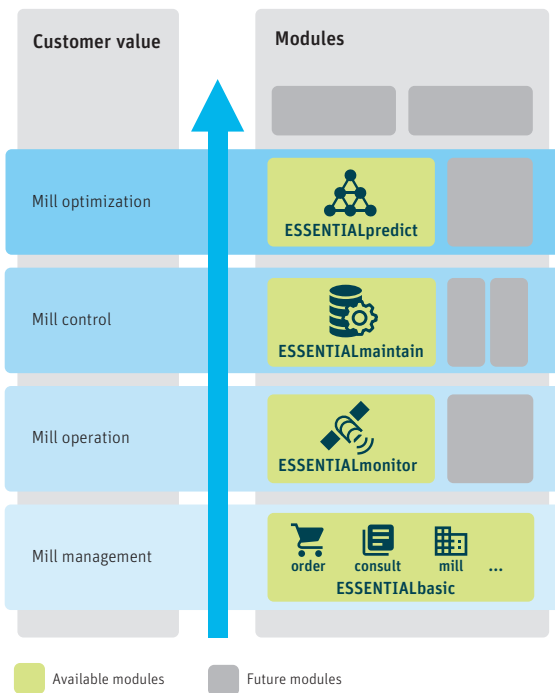
ESSENTIAL brings digitization into the spinning mill. The Rieter Digital Spinning Suite analyzes data of the entire spinning mill immediately, which helps the spinning mill’s management to make fast decisions.

ISM collects all necessary data and makes it available for ESSENTIAL. ESSENTIAL then provides meaningful key performance indicators and visualizes improvements for the entire spinning process.

With comprehensive and clearly arranged digital

analytics, this mill management system supports the management in order to strengthen the expertise of mill staff, eliminate inefficiencies, and optimize costs.

ESSENTIAL is a modular system. The spinning mill can be gradually digitized. ESSENTIALbasic, the starter package of the Rieter Digital Spinning Suite, is available free of charge for all Rieter customers.



Modular setup of ESSENTIAL

Animations

More information about VARIOline



UNIfloc A 12

Innovative bale take-off technology guarantees high efficiency in the blowroom

Scan the QR code for more information

<http://Lead.me/bakZ86>

(Animation)



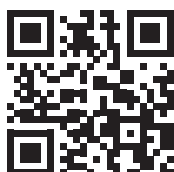
UNIClean B 15

Efficient and gentle pre-cleaning at high production rates

Scan the QR code for more information

<https://Lead.me/bbIzGe>

(Animation)



UNIBlend A 81

Economical and precisely-metered blending for quality yarns

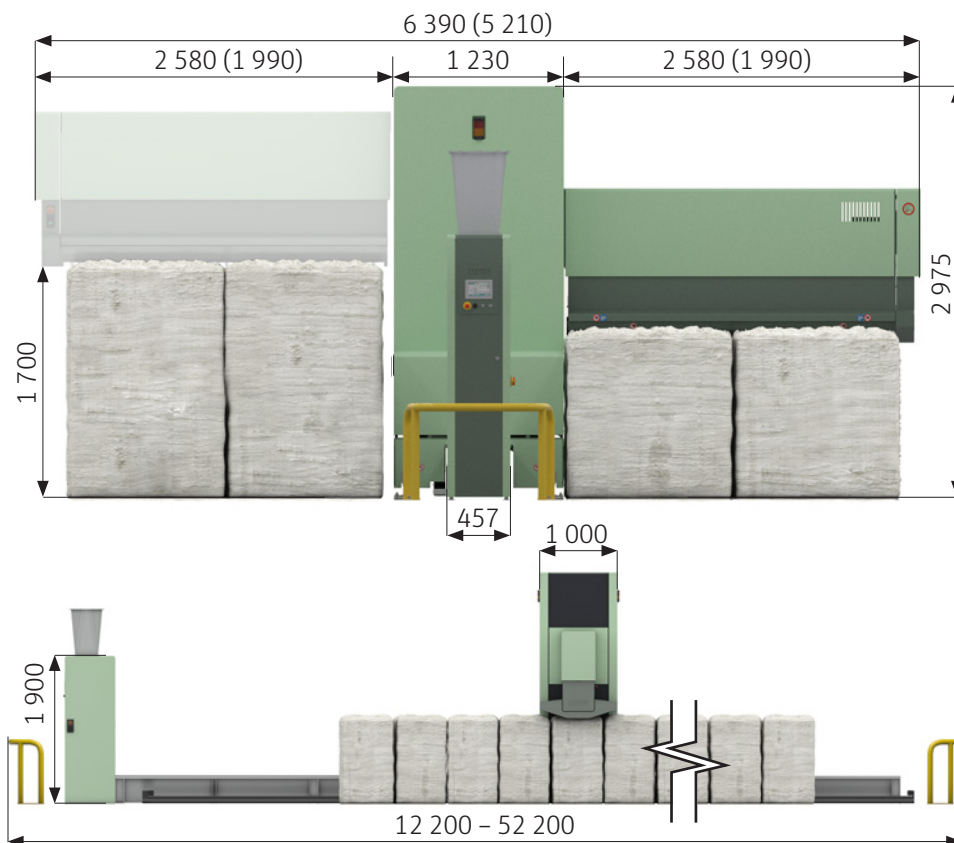
Scan the QR code for more information

<http://Lead.me/bbOKYX>

(Animation)

Automatic Bale Opener UNIfloc A 12

Machine data and technical data



TECHNOLOGICAL DATA

Material	Cotton, man-made fibers with a maximum staple length of 60 mm	
Production output* (maximum with 2 300-mm take-off unit)	Cotton and viscose	Man-made fibers
1 assortment	2 400 kg/h	1 400 kg/h
2 assortments	2 000 kg/h	1 100 kg/h
3 assortments	1 400 kg/h	800 kg/h

TECHNICAL DATA

Design variants of the take-off unit	1 700 mm	2 300 mm
Installed power	17.4 kW	17.4 kW
No. of bales per side	$\frac{ML}{B}$ and $\frac{2ML}{L}$ ***	$\frac{1.5ML}{B}$ and $\frac{3ML}{L}$ ***
Net weight (10.00 m)	3 890 kg	4 050 kg
Additional duct length	+88 kg/m	+88 kg/m

MACHINE DATA

Material feed length (ML)	6.0 – 46.0 m**
Duct length	10 – 50 m**

* Line production (card production)

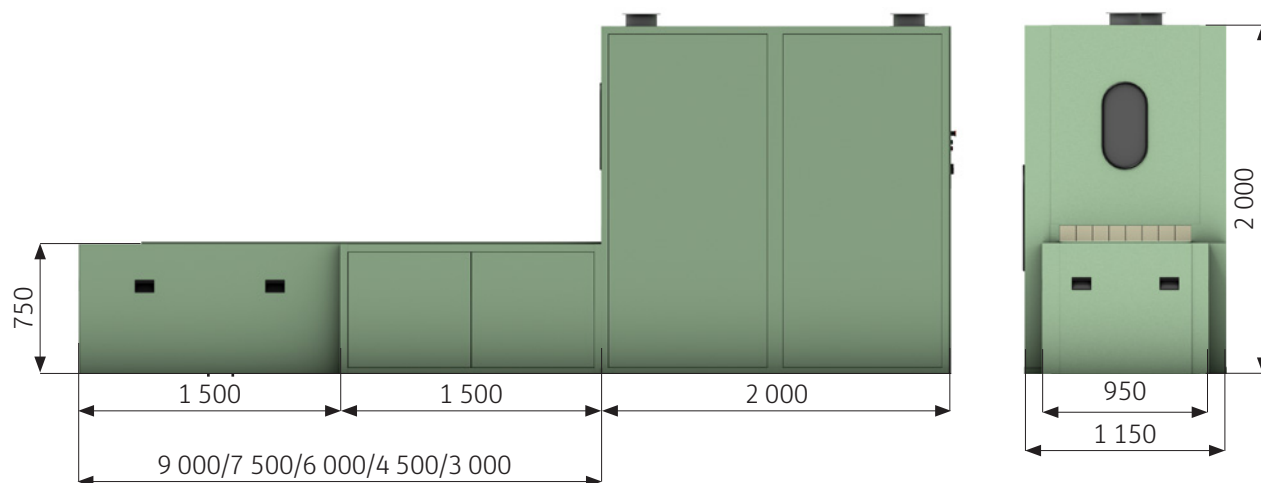
** In increments of 2.5 m

*** Depending on the type of man-made fiber (e.g. bulky polyester), production may be lower

Abbreviations: ML material feed length, B bale width, L bale length

Waste Opener B 25

Machine data and technical data



TECHNOLOGICAL DATA

Material	Cotton and man-made fibers with a maximum staple length of 60 mm, bale residue, slivers, batt, noils, pre-opened rovings
Production	3 – 60 kg/h

TECHNICAL DATA

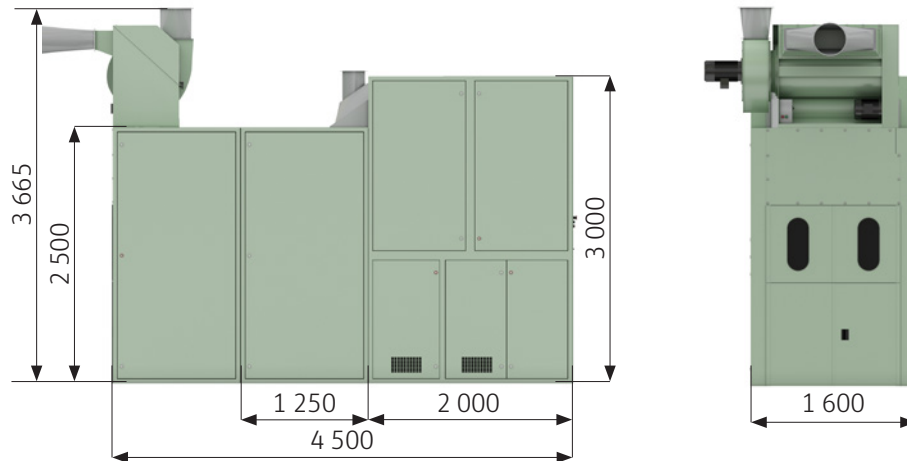
Installed power	3.15 kW
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MACHINE DATA

Working width	750 mm
Dimensions:	
- Length	5 000 mm (incl. 3-m feed table)
- Feed table	3/4.5/6/7.5/9 m
- Width	1 150 mm
- Height	2 050 mm
Weight:	1 920 kg
- Feed table	150 kg/segment with 1.5 m

Mixing Opener B 33

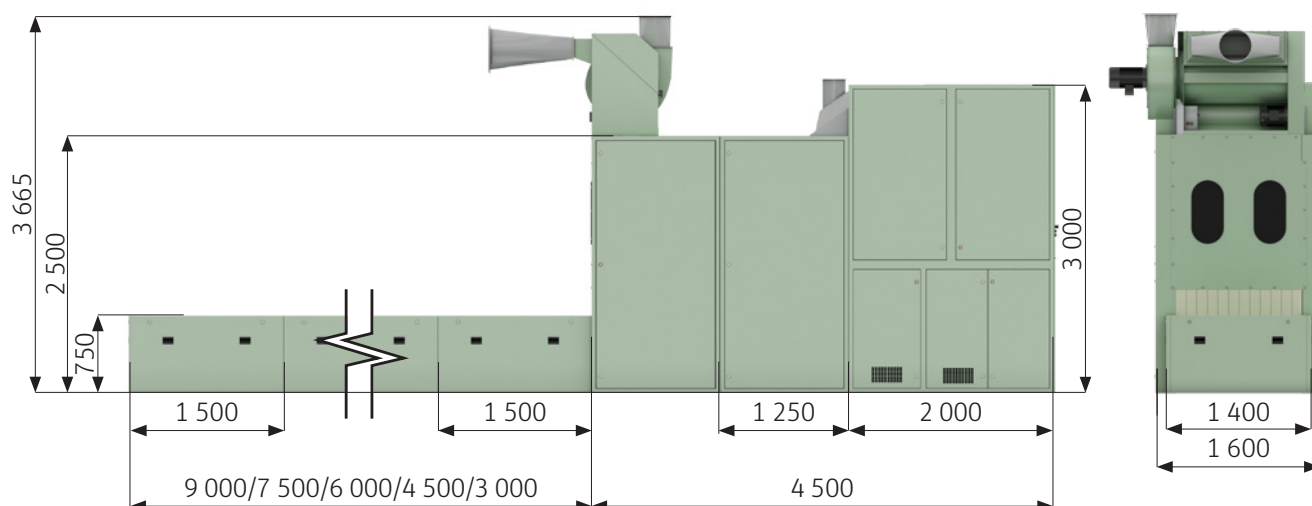
Machine data and technical data



TECHNOLOGICAL DATA	
Material	Cotton, man-made fibers and blends with a maximum staple length of 60 mm
Production:	
- Type B 33	up to 600 kg/h
- Type B 33R/B 33S	up to 400 kg/h
TECHNICAL DATA	
Installed power (without condenser A 21):	
- Type B 33	3.1 kw
- Type B 33R/B 33S	10.5 kw
MACHINE DATA	
Working width	1 200 mm
Storage volume of mixing chamber	25 - 40 kg
Dimensions:	
- Length	3 250 mm
- Width	1 600 mm
- Height	3 000 mm
Weight (incl. condenser A 21):	
- Type B 33	3 160 kg
- Type B 33R/B 33S	3 660 kg/3 560 kg

Mixing Bale Opener B 34

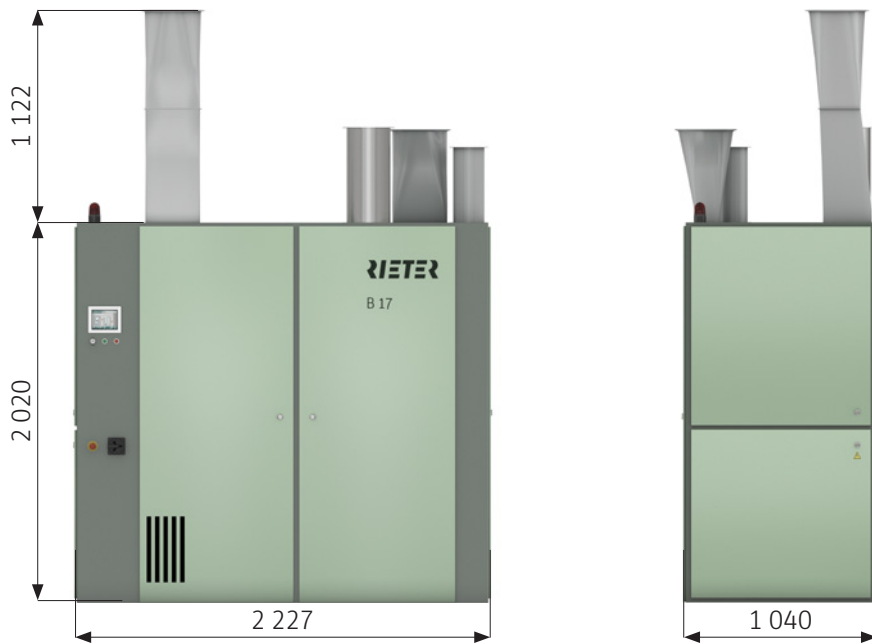
Machine data and technical data



TECHNOLOGICAL DATA	
Material	Cotton, man-made fibers and blends with a maximum staple length of 60 mm
Production:	
- Type B 34	up to 600 kg/h
- Type B 34R/B 34S	up to 400 kg/h
TECHNICAL DATA	
Installed power (without condenser A 21):	
- Type B 34	3.1 kw
- Type B 34R/B 34S	10.5 kW
MACHINE DATA	
Working width	1 200 mm
Storage volume of mixing chamber	25 – 40 kg
Dimensions:	
- Length	3 250 mm
- Feed table	3/4.5/6/7.5/9 m
- Width	1 600 mm
- Height	3 000 mm
Weight (incl. condenser A 21):	
- Type B 34	3 160 kg
- Type B 34R/B 34S	3 660 kg/3 560 kg
- Feed table	170 kg/segment with 1.5 m

Pre-Cleaner UNIclean B 12 and Cleaner B 17

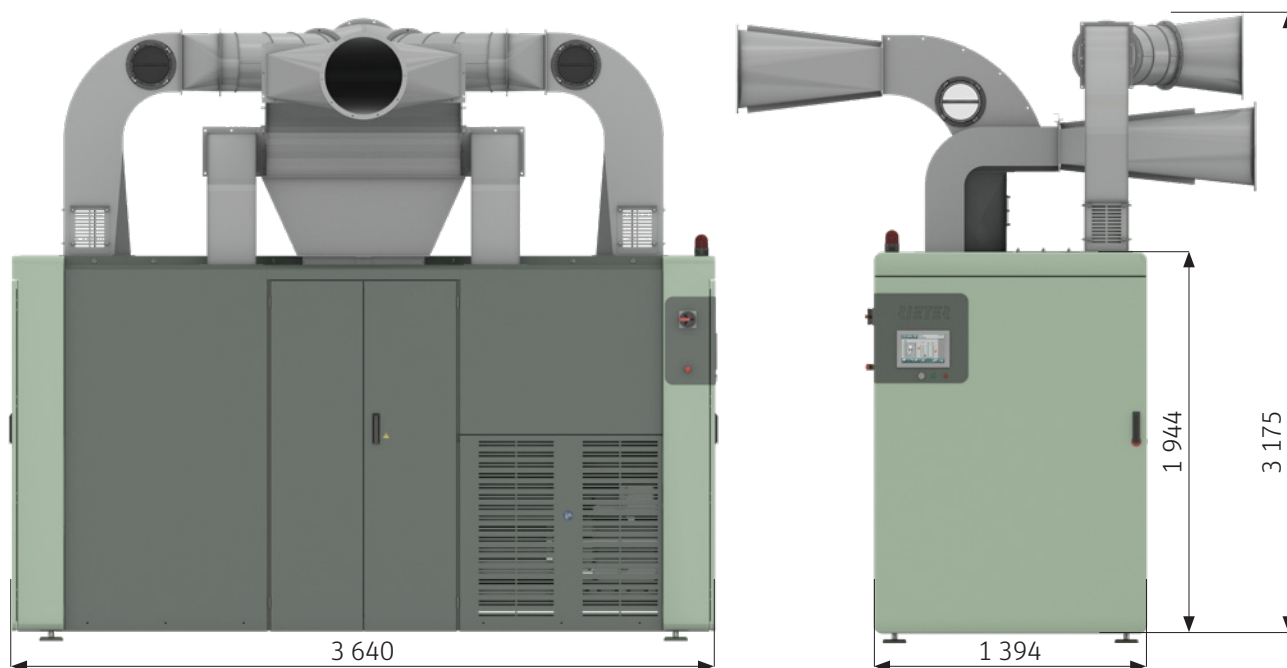
Machine data and technical data



TECHNOLOGICAL DATA	B 12	B 17
Material	Cotton, cotton waste, linen	Cotton, cotton waste, linen
Production volume	up to 1 400 kg/h	up to 1 200 kg/h
TECHNICAL DATA		
Installed power	15.25 kW	15.25 kW
Connection values	380/400 V, 50 and 60 Hz	380/400 V, 50 and 60 Hz
MACHINE DATA		
Working width	1 600 mm	1 600 mm
Clearer roller Ø	750 mm	750 mm
Speed	480 – 960 rpm	480 – 960 rpm
Length	2 227 mm	2 227 mm
Width	1 040 mm	1 040 mm
Height	2 020 mm	2 020 mm
Weight	1 185 kg	1 185 kg

Cleaner UNIclean B 15

Machine data and technical data



TECHNOLOGICAL DATA

Material	Cotton, cotton waste, linen
Production volume	up to 2 400 kg/h

TECHNICAL DATA

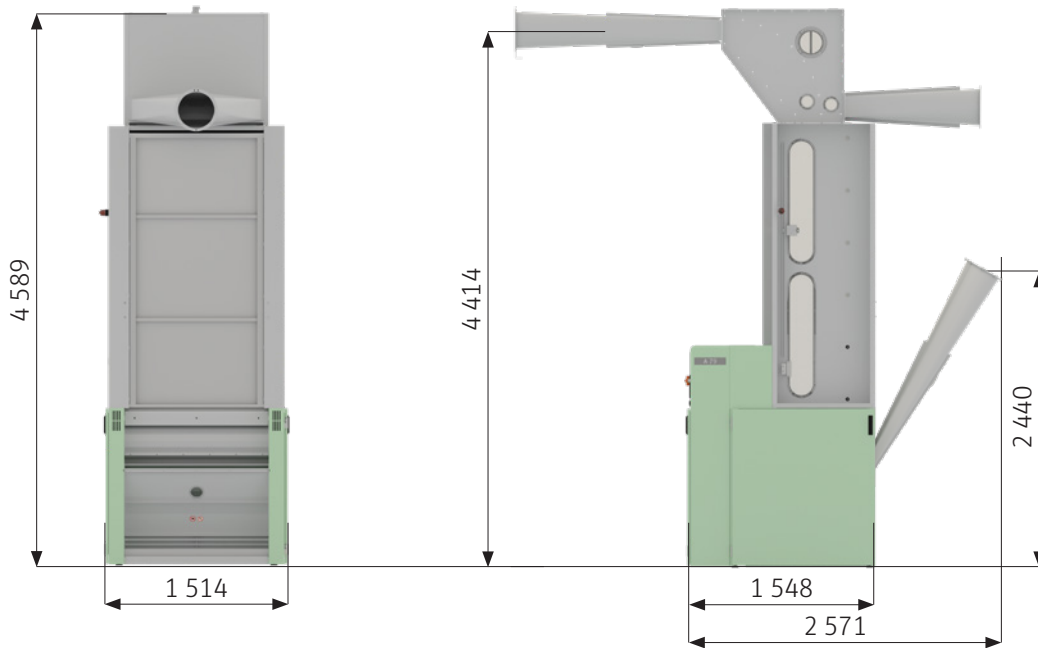
Installed power	30.5 kW
Connection values	380/400 V, 50 and 60 Hz

MACHINE DATA

Working width	3 000 mm
Clearer roller Ø	750 mm
Speed	480 – 960 rpm
Length	3 640 mm
Width	1 390 mm
Height	1 994 mm
Weight	3 000 kg

Combined Storage, Opening and Cleaning Machine UNIstore A 79

Machine data and technical data

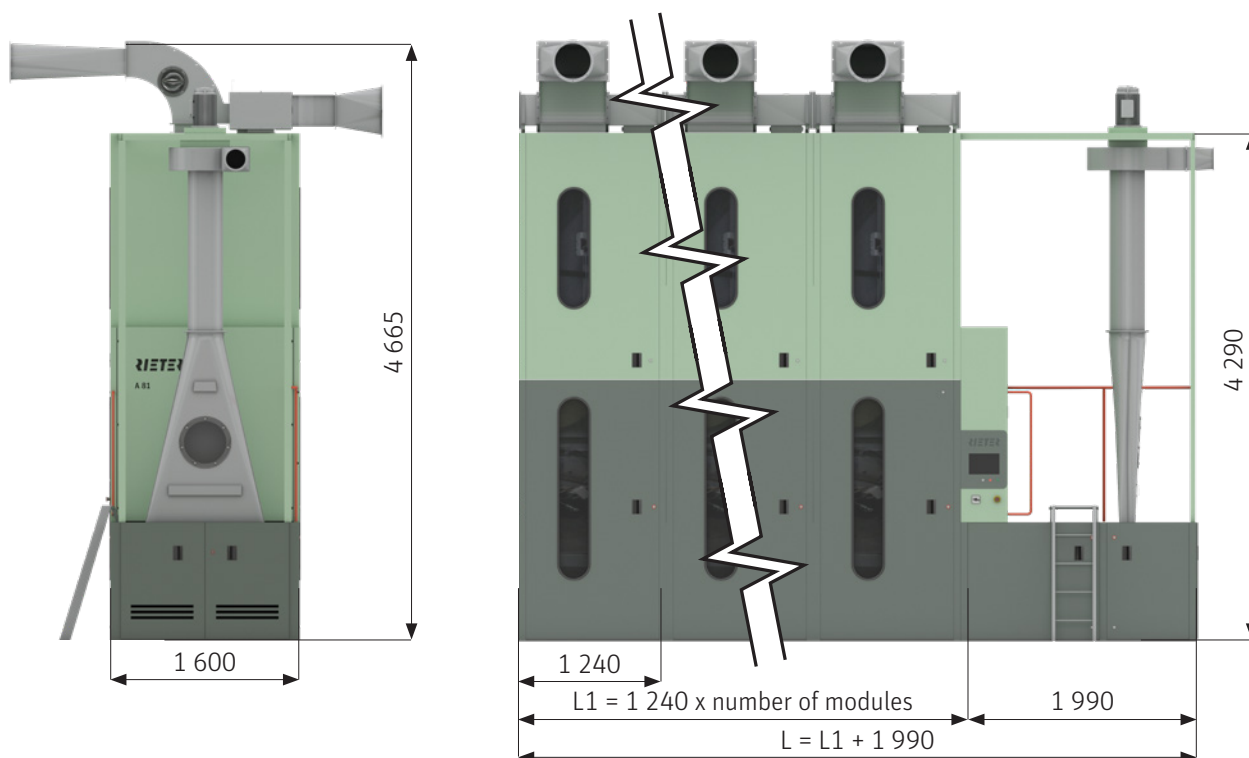


TECHNOLOGICAL DATA	
Material	Cotton, man-made fibers and regenerate with a maximum staple length of 60 mm
Production*	up to 1 000 kg/h
TECHNICAL DATA	
Installed power	12.6 kW
MACHINE DATA	
Working width	1 200 mm
Opening roller Ø	320 mm
Storage capacity	15 kg of cotton 10 kg of man-made fibers
DIMENSIONS	
Length	1 548 mm
Width	1 514 mm
Height	4 589 mm
NET WEIGHT	
A 79S	1 830 kg**
A 79R	1 880 kg**

* Card line production
** with saw tooth rollers

Precision Blender UNIBlend A 81

Machine data and technical data

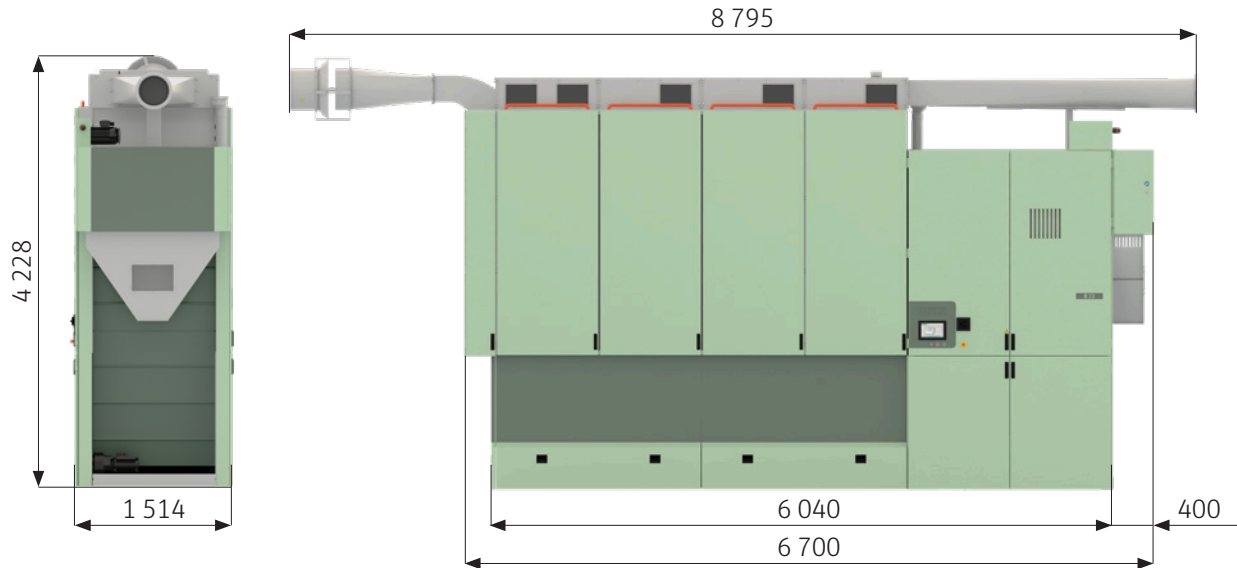


TECHNOLOGICAL DATA	
Material:	Various staple fibers up to 60 mm
Production (dependent on mixing ratio):	
- Module	3 to 300 kg/h
- Machine	up to 1 000 kg/h
TECHNICAL DATA	
Installed power:	
Machine + two modules	10.9 kW
Plus for each additional module	2.3 kW

MACHINE DATA	
Working width:	1 200 mm
Length:	
- 2 modules	4 470 mm
- 3 modules	5 710 mm
- 4 modules	6 950 mm
- 5 modules	8 190 mm
- 6 modules	9 430 mm
- 7 modules	10 670 mm
- 8 modules	11 940 mm
Width:	1 600 mm
Height:	
- Low version	3 919 mm
- Standard version	4 665 mm
Weight:	
- 1 module	1 560 kg
- Opening unit	1 210 kg
- Control unit	250 kg
- Suction system	220 kg

Mixing Machine UNImix B 72

Machine data and technical data



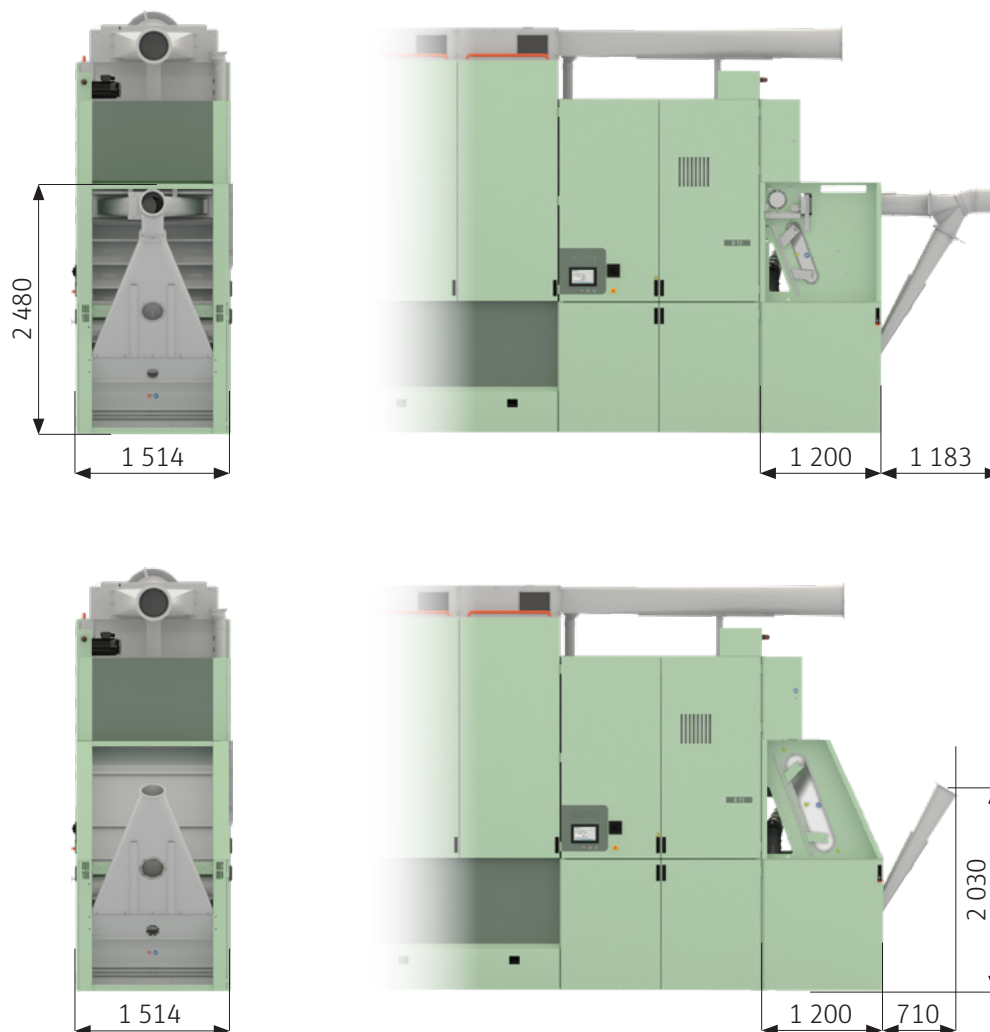
TECHNOLOGICAL DATA	
Material	Cotton, man-made fibers and blends
Production volume 1) 2)	Cotton, man-made fibers and blends up to 800 kg/h
Number of chambers	8
TECHNICAL DATA	
Installed power	4.0 kW
Opening roller speed	500 – 610 rpm
Take-off roller speed	660 rpm (constant)
Spiked lattice	21.6 – 216 m/min
Feed belt	0.0 – 0.7 m/min

- 1) Line production (card production)
 2) If the blend has a high waste or noil content, i.e. more than 40% short fibers, the maximum production will be 600 kg/h

MACHINE DATA	
Length	8 795 mm
Width	1 514 mm
Height	4 228 mm
Working width	1 200 mm
Net weight	4 325 kg

Mixing Machine UNImix B 72R/S with Cleaning or Opening Module

Machine data and technical data



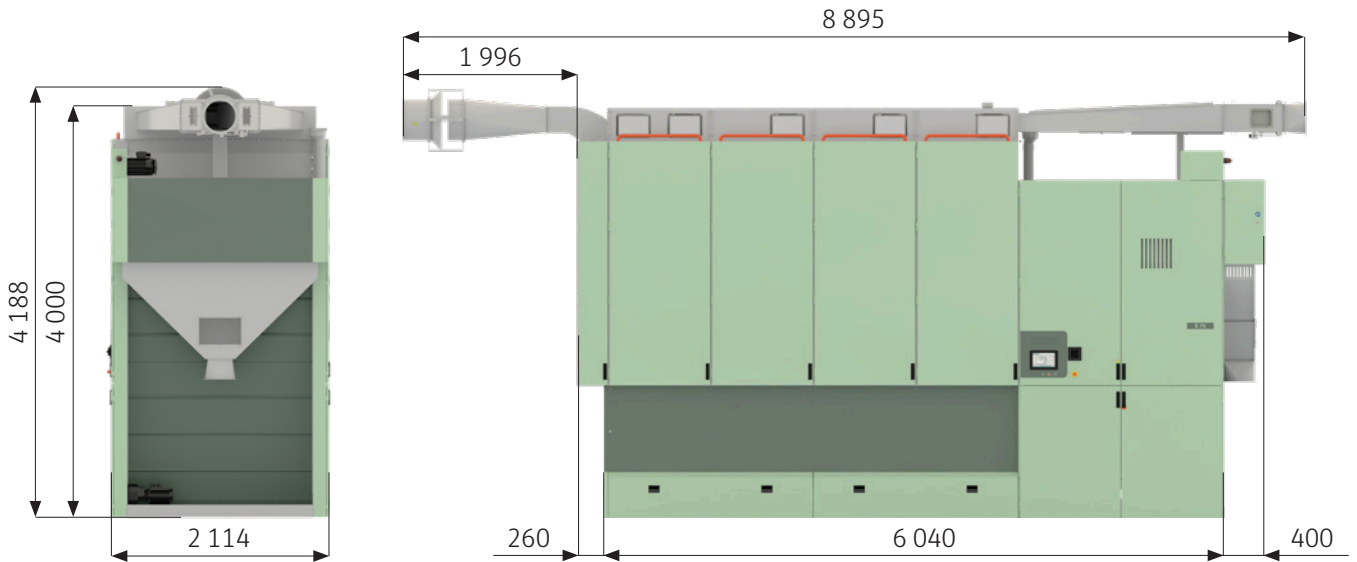
TECHNOLOGICAL DATA	
Material	Cotton, man-made fibers and blends
Production volume 1) 2) 3)	Cotton, man-made fibers and blends up to 800 kg/h
Optional by-pass	Yes
TECHNICAL DATA	
Installed power B 72R/S	15.6 kW
Net weight of feed unit	240 kg
Net weight of by-pass	330 kg

- 1) Line production (card production)
- 2) If the blend has a high waste or noil content, i.e. more than 40% short fibers, the maximum production will be 600 kg/h
- 3) Depending on the type of man-made fiber, production may be lower

MACHINE DATA MODULE	
Length	1 200 mm
Width	1 514 mm
Height	1 340 mm
Working width	1 200 mm
Net weight of R-/S-module	1 100 kg

Mixing Machine UNImix B 76

Machine data and technical data



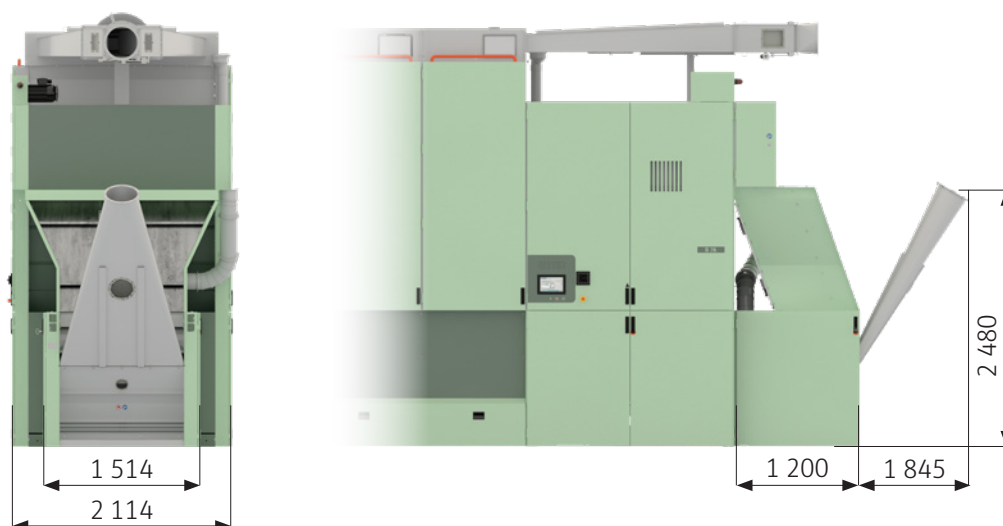
TECHNOLOGICAL DATA	
Material	Cotton, man-made fibers and blends
Production volume 1) 2)	Cotton up to 1 200 kg/h, man-made fibers up to 1 000 kg/h
Number of chambers	8
TECHNICAL DATA	
Installed power	4.7 kW
Opening roller speed	500 – 610 rpm
Take-off roller speed	660 rpm (constant)
Spiked lattice	21.6 – 216 m/min
Feed belt	0.0 – 0.7 m/min

- 1) Line production (card production)
- 2) If the blend has a high waste or noil content, i.e. more than 40% short fibers, the maximum production will be 800 kg/h

MACHINE DATA	
Length	8 895 mm
Width	2 114 mm
Height	4 188 mm
Working width	1 800 mm
Net weight	5 515 kg

Mixing Machine UNImix B 76 with Cleaning or Opening Module

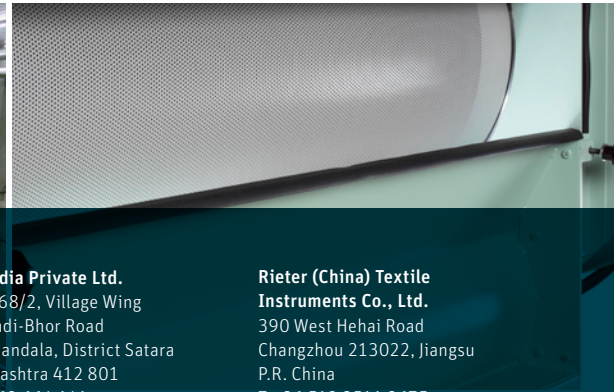
Machine data and technical data



TECHNOLOGICAL DATA	
Material	Cotton, man-made fibers and blends
Production volume 1) 2) 3)	Cotton up to 1 000 kg/h, man-made fibers up to 1 000 kg/h
Optional by-pass	No
TECHNICAL DATA	
Installed power B 76R/S	16.3 kW
Net weight of feed unit	155 kg

MACHINE DATA MODULE	
Length	1 200 mm
Width	1 514 mm
Height	1 300 mm
Working width	1 200 mm
Net weight of R-/S-module	1 100 kg

- 1) Line production (card production)
- 2) If the blend has a high waste or noil content, i.e. more than 40% short fibers, the maximum production will be 800 kg/h
- 3) Depending on the type of man-made fiber, production may be lower

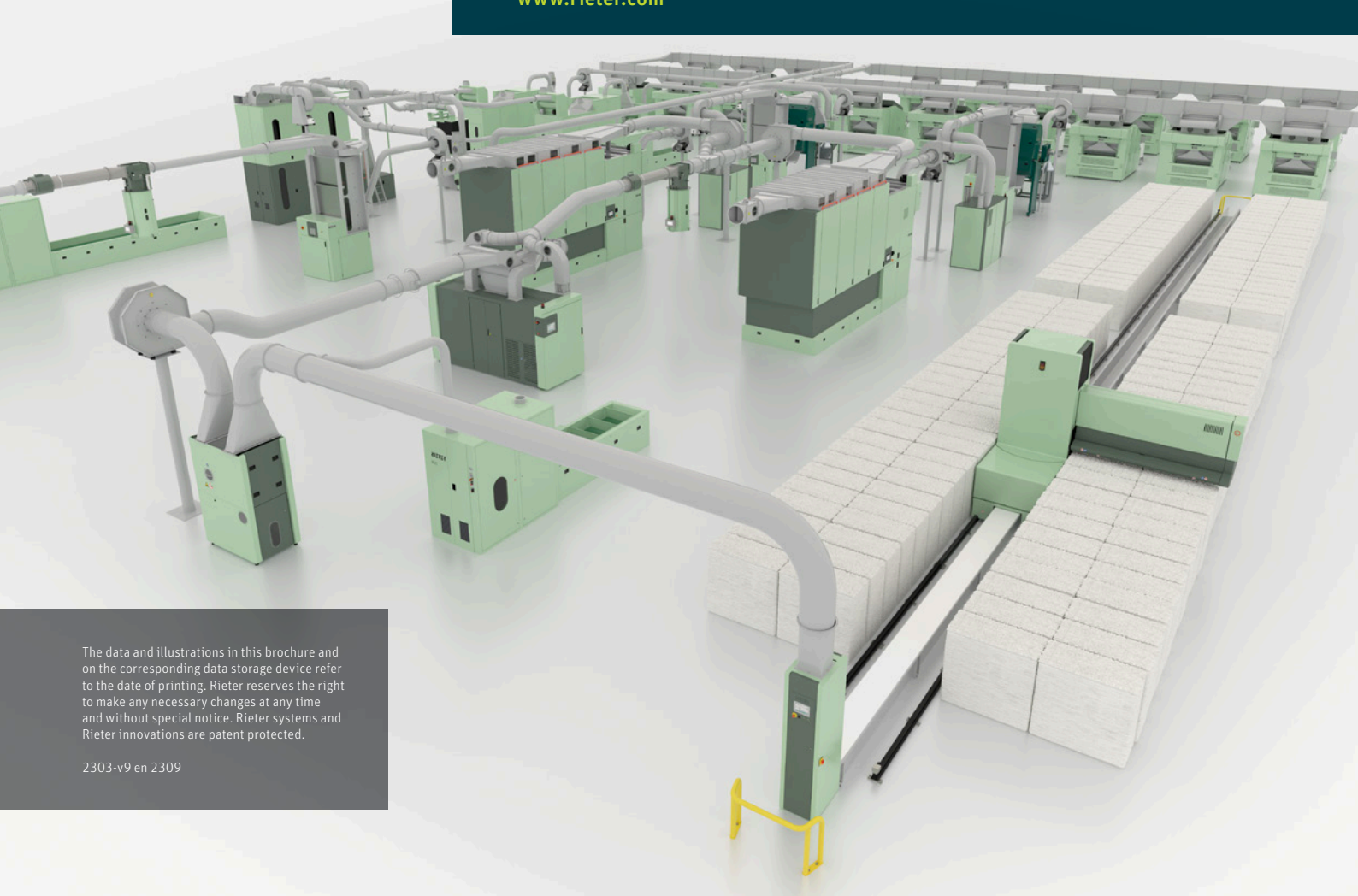


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