

SAURER.



Efficient.

FusionTwister





Saurer Twisting Solutions is continuously setting new milestones in the development of twisting and cabling machines.

We combine innovative technology with decades of experience so that you can react reliably and confidently to the demands of an ever-changing market with our machines.

Our entrepreneurial and pioneering spirit is the driving force for further developments and innovations – for your future as well!

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Features and benefits

- Twist quality due to high quality yarn guide elements**
- Best price performance ratio. High worldwide well-known reliability**
- Low energy consumption due to unique spindle geometry**
- High flexibility due to wide yarn count range**
- Low space requirement due to narrow machine design**
- Minimum maintenance effort**
- Reduced erection and installation time**

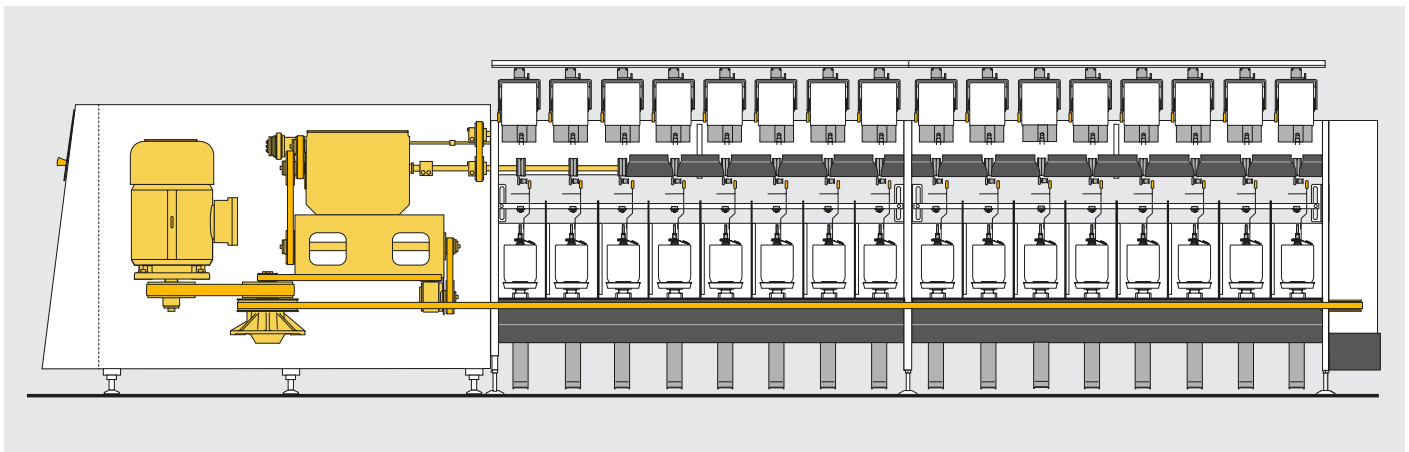
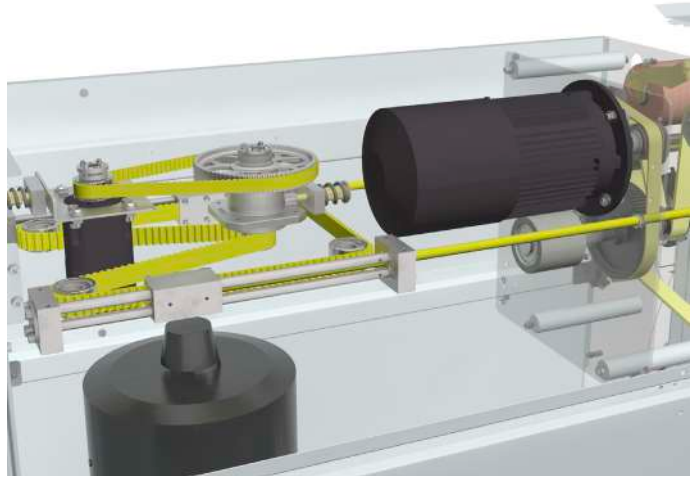
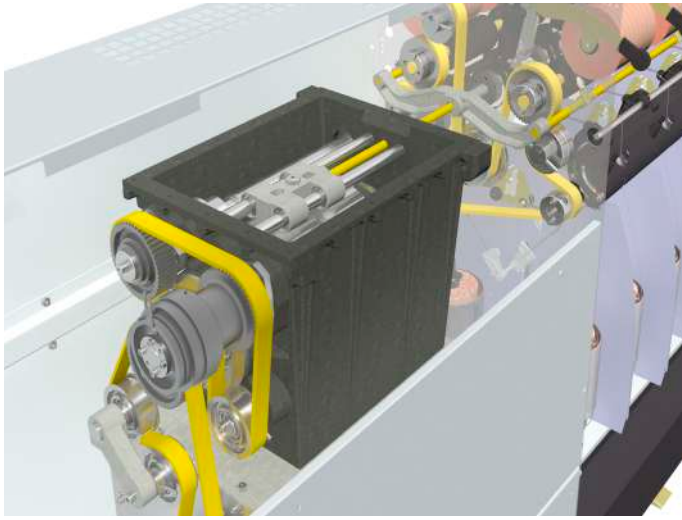


FusionTwister

With the two-for-one twisting systems for the manufacture of staple fibre yarns, Saurer Twisting Solutions offers an optimum in variability and flexibility with an energy consumption reduced by up to 40 %.

And there is more: we stand for dedicated employees, top quality and an infrastructure for all requirements from research and development to customer service.

An attractive comprehensive package is available with a range of service oriented toward customer needs – from project planning to a service guarantee with original part availability for all machine generations.



Drive concept

Drive unit

The drive unit includes the main drive motor, the gearbox and the central control unit of the machine. The drive power to the tangential belt is transmitted from the motor via an intermediate transmission unit. Thanks to ideal drive-to-transmission arrangement the intermediate belt pulley can be quickly and easily replaced to change the spindle speed. Moreover, the pulley change does not require any resetting of the spindle belt tension.

Optionally, a frequency inverter is available.

Gearbox

The unique design allows a rapid and contamination-free setting of new operating parameters – thanks to excellent accessibility and the fact that only the traverse guide cam in the middle section of the gearbox is lubricated by an oil circulation system. The front and rear compartments are oil-free. The anti-patterning device (ribbon breaker) is electronically controlled. Cylindrical and conical cross-wound packages of 6" can be produced in the formats 3°30', 4°20' and 5°57'.

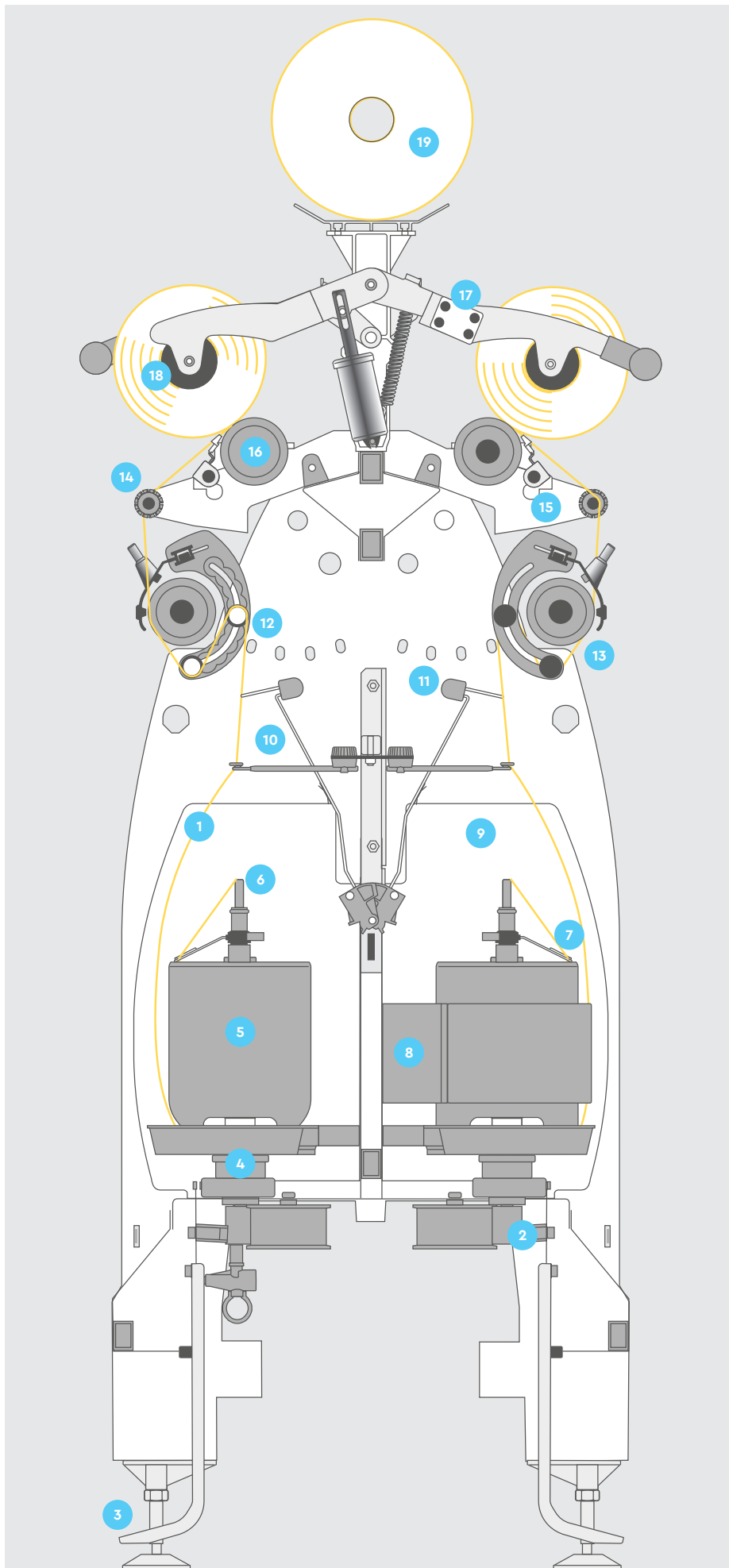
The FusionTwister offers two optimised drive concepts for the different needs of the market.

Mechanical drive section

- 6" traverse guide cam drive
- Proven technology
- Traverse variation
- Simple operation
- Electronically controlled anti-patterning device

Electronic drive section with servo gearbox

- Continuously adjustable spindle speed and amount of twist
- Flanged-bobbin form, traverse and traverse variation individually programmable
- Electronically controlled anti-patterning device
- Highest take-up speeds
- Oil-free, low-maintenance construction



1 Yarn path

2 Spindle drive belt and belt guide roller

3 Pedal for spindle brake and Volcojet threading

4 Spindle rotor

5 Spindle pot

6 Yarn brake

7 Unwinding aids

8 Balloon limiter

9 Separator

10 Yarn balloon guide

11 Yarn stop device

12 Yarn deflection with optional 2nd roller

13 Pre-take-up roller

14 Yarn reserve

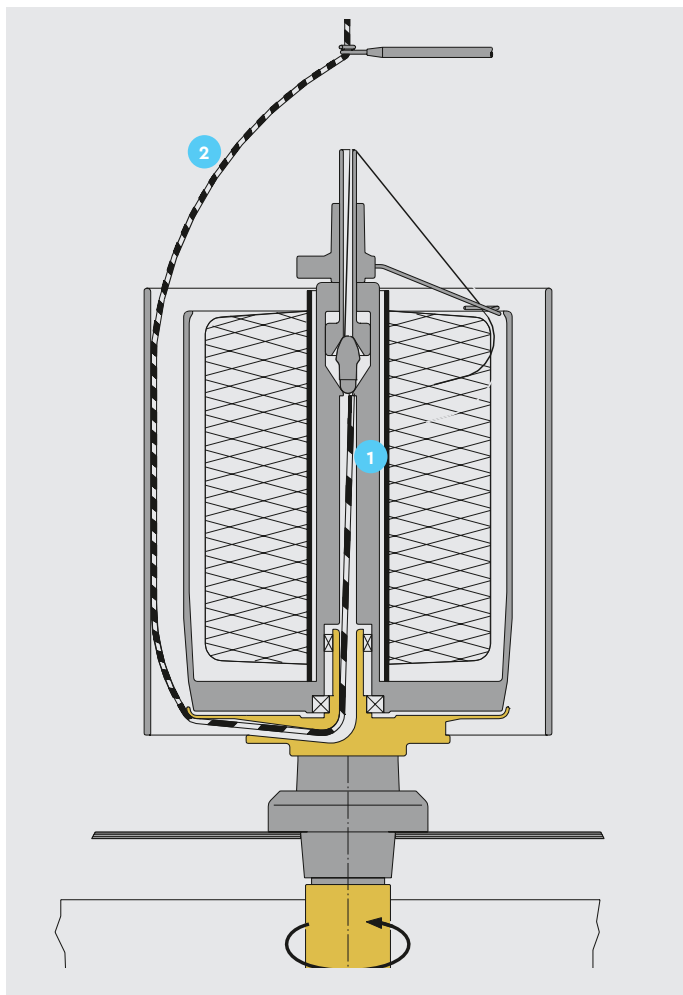
15 Traversing mechanism

16 Friction roller

17 Cradle

18 Centring disc

19 Package and tube creel



Two-for-One twisting process

Two-for-one twisting combines two or more single yarns into one twisted yarn. Two turns are inserted into the yarns with just one revolution of the spindle.

- 1 The yarns receive their first twist between the yarn brake and the exit of the spindle rotor
- 2 The second twist is received in the yarn balloon between the spindle rotor and the yarn balloon guide.

The Two-for-One spindle is the heart of the machine. Here not only the yarn count range that can be processed is decided, but also the quality of the twisted yarn produced and the energy requirement.

The broad-based spindle family of the FusionTwister covers the entire yarn count range from Ne 6/2 to Ne 120/2 and includes the spindle type series VTS -08 / -09 / -10 / -11.

Your advantages:

- High energy savings due to the latest spindle technology
- High cost-effectiveness due to optimum drive equipment and matching spindle combinations
- Self-cleaning yarn channel in the spindle rotor
- Reserve disc with special, wear-resistant surface finish
- Low-vibration running due to high production precision
- Lower noise emissions by optimised balloon geometry thanks to a new spindle design



Energy efficient spindle family

Feed package formats

Assembly wound feed packages measuring 6" and 7".

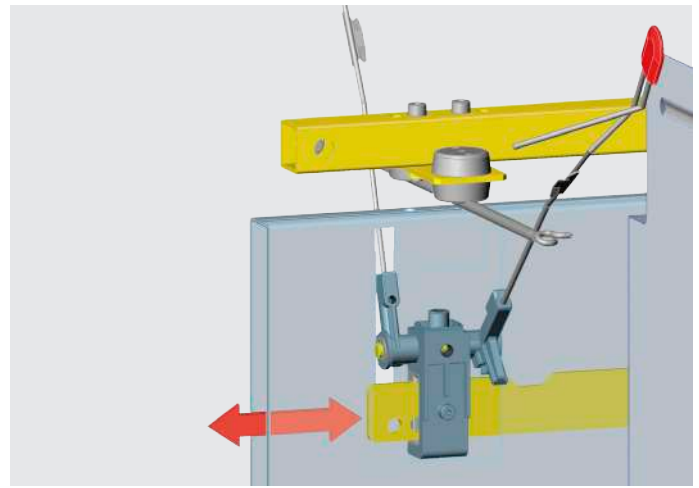
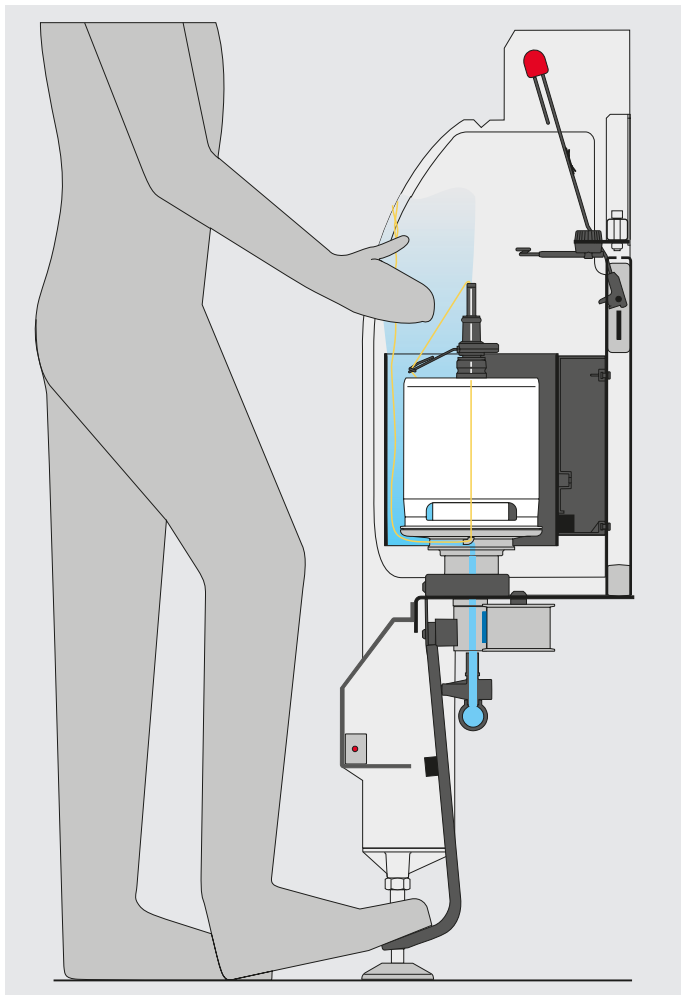
You can expect from us:

- Highest quality yarn packages
- Maximum productivity
- Low power consumption
- Easy operation

The Two-for-One spindle is the heart of the machine. The required energy and the quality of the twisted yarn produced are determined here. The energy saving spindle family is available for all machine types and for certain special yarn counts and twist ranges.

The advantages of these spindle types are:

- Optimised yarn guidance using high grade wear resistant surface finishes
- Larger feed packages due to the optimised spindle pot design
- Minimal vibration thanks to the damping effect of the spindle pot mounting
- Automatic pot bottom cleaning achieved with optimised directional airflow
- Air channel for Volcojet – the semi-automatic pneumatic threading system for quick and easy threading of the yarn through the spindle. No additional manual work needed.
- Yarn brake easily adjustable for all yarn types
- Textile contact area isolated from spindle drive area therefore avoiding any possible yarn contamination.



Handling optimization

Volcojet

The proven pneumatic threading system for Two-for-One spindles. Threading time is greatly reduced. Operation of the foot pedal stops the spindle rotor. When the pedal is pressed down further, compressed air is passing the yarn up to the top, where it can be easily grasped by the operator. Volcojet therefore ensures a quick threading.

Automatic yarn stop feeler lock

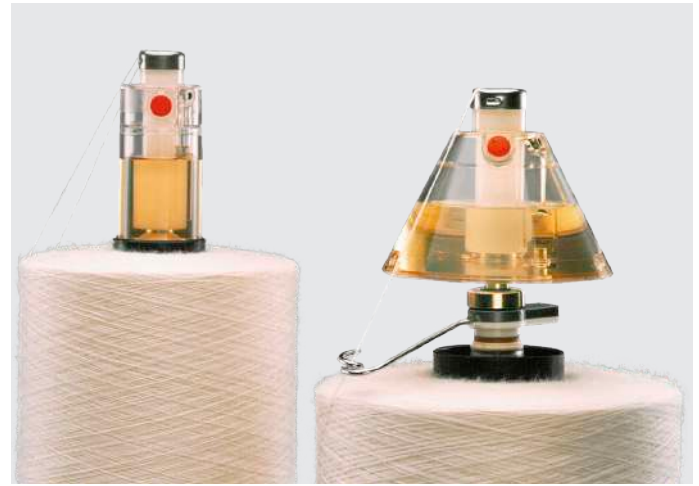
In the event of a machine stoppage or a power failure, the yarn stop feelers are automatically locked in their working position. This prevents the yarn stop feelers from dropping when the machine stops.

When the machine restarts, the yarn stop feelers are released after a timed delay to avoid any yarn breaks as the machine gets back up to speed.

This means that the automatic yarn stop feeler locking system is an important element in achieving quality twisted yarn production. Also each individual yarn stop feeler can be magnetically held in the 'up' position for easy reloading of the yarn feed package into the spindle pot.

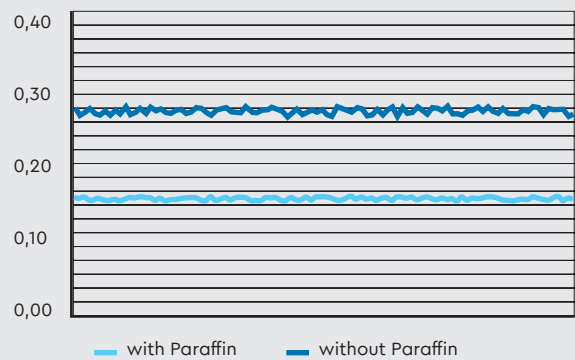
Ball yarn brake

The new, self-cleaning ball yarn brake offers convincingly easy handling. A single ceramic ball, adjustable by simply turning of the yarn inlet tube, covers a large braking range and replaces the time-consuming replacement of tension capsules.



Nm 50/2 Cotton - 400 T/m

Reibwert [μ]



Add-on balloon limiter

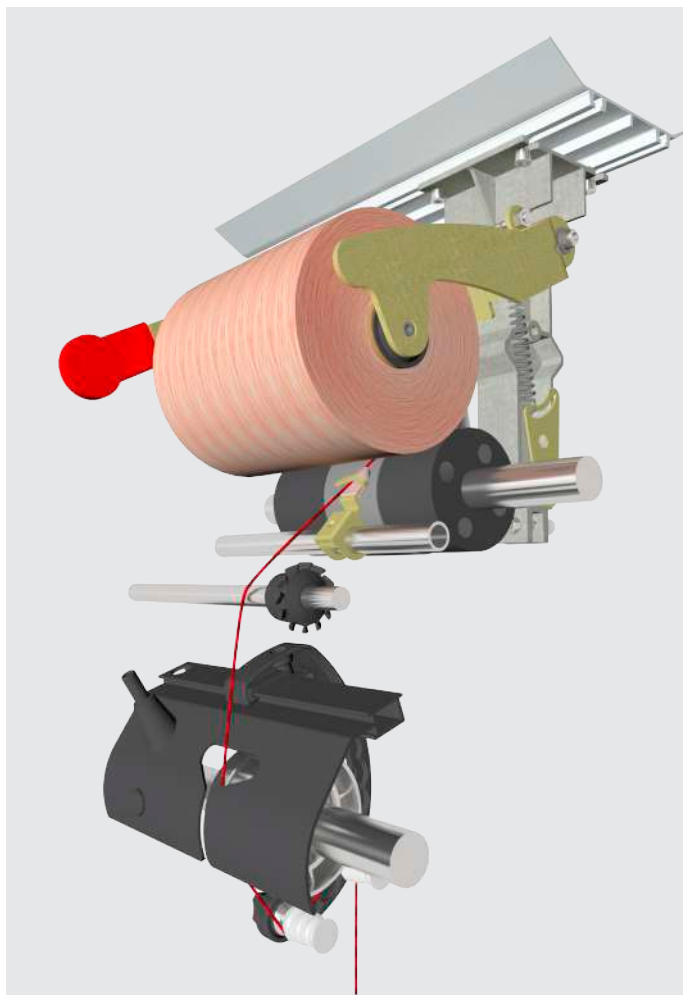
Particularly delicate fibres are, as a rule, twisted without a balloon limiter. When processing natural fibres or applying the option Constant-Lubritwist oiling system, the add-on balloon limiter can be retrofitted for spindles with free yarn balloon. This extends the range in favour of coarser yarn counts. Reduction in power consumption and an increase in productivity can be achieved.

Constant-Lubritwist

Lubrication smoothes the yarn and prevents wear, dust and fibre fly from developing. It reduces the frictional coefficients of the various elements in contact with the yarn and allows increased spindle speeds. The Constant-Lubritwist system guarantees a continuous and metered application of lubricating fluid during the twisting process.

Waxing

Targeted application of paraffin wax significantly reduces yarn friction in further processing. The optimised yarn guidance guarantees an even application of the paraffin wax with a constant yarn tension. The clear design offers easy handling and is matched to a variety of different paraffin waxes.



Take-up geometry

The extended take-up triangle between the overfeed roller and the take-up package helps to provide an even more uniform yarn quality and a more consistent density within the take-up package. The new take-up geometry optimises both the regularity and the quality of the twisted yarn. Furthermore, the whole package density itself will be more regular from inside to outside and from side to side, which is advantageous for subsequent processes such as package dyeing.

What's proven and what's new

The FusionTwister has kept all the trusted and proven quality machine elements that come into direct contact with the yarn. Proven elements like the overfeed discs, the tailing device shaft, the traverse guides and the friction rollers have all been incorporated in the newly designed take-up geometry. The newly designed protection cover has the proven storage places.

Rotating transfer-tail device

The automatic transfer-tail device allows you to set the exact length of yarn that is initially wound onto the take-up package. This short length of yarn may be used later to join packages together. For block doffing, the servo traverse can be used to select an individual yarn reserve and yarn length.

Cradle

Cross-wound take-up packages can be wound up to a maximum diameter of 300 mm. The cradle design produces take-up packages with a very good shape and feel. It also has the well proven clip-on centring discs that help to prevent the formation of yarn laps.

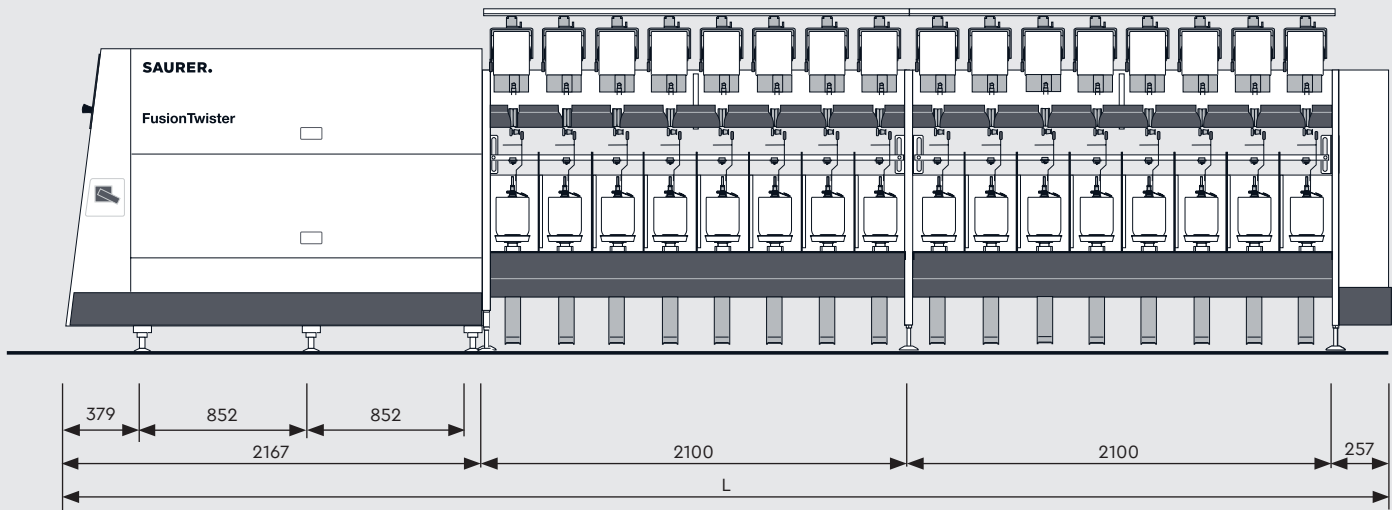
Package lift-off

Following a time delay, the pneumatic package lift-off device takes the take-up package off the drive drum, avoiding any unnecessary rubbing of the package surface. After the package is lifted, it is clearly visible along the side of the machine.

**Senses**

With Senses, our innovative Mill Management System, you can take the evaluation of your key production figures to a new level. Integrated into your IT infrastructure, Senses enables production-relevant data to be analysed and checked on any browser-enabled device.

Technical and textile Data



Machine dimensions

Machine width	620 mm
Machine height	Control unit 1540 mm / Machine section 1601 mm / End unit 1400 mm
Twist inseration rate:	up to 28.000 min ⁻¹
Spindle gauge / (spi./section)	207 mm (20) / 230 mm (18) / 259 mm (16)
Spindle type Series VTS	-08 / -09 / -10 / -11 / -08 HD ⁷⁺ / -10 HD ⁷⁺

VTS-08 / -09 / -10 / -11

Number of sections	1	2	3	4	5	6	7	8	9	10	11	12
Spindles (259 mm)	16	32	48	64	80	96	112	128	144	160	176	192
Spindles (230 mm)	18	36	54	72	90	108	126	144	162	180	198	216
Spindles (207 mm)	20	40	60	80	100	120	140	160	180	200	220	240
Total length L (mm)	4 524	6 624	8 724	10 824	12 924	15 024	17 124	19 224	21 324	23 424	25 524	27 624

Spindle range attributes

Spindle type	VTS-08	VTS-09	VTS-10	VTS-11
Twisting range:	110 – 2763 T/m 2.79 – 70.09 T/inch	110 – 2763 T/m 2.79 – 70.09 T/inch	110 – 2763 T/m 2.79 – 70.09 T/inch	110 – 2763 T/m 2.79 – 70.09 T/inch
Spindle speed:	up to 12.500 min ⁻¹	up to 13.500 min ⁻¹	up to 14.000 min ⁻¹	up to 14.000 min ⁻¹
Twist inseration rate:	up to 25.000 min ⁻¹	up to 27.000 min ⁻¹	up to 28.000 min ⁻¹	up to 28.000 min ⁻¹
Yarn count range (max.): partial ranges depending on spindle configuration with balloon limiter:	Ne 6/2 – 65/2	Ne 12/2 – 120/2	Ne 30/2 – 120/2	Ne 35/2 – 160/2
without balloon limiter:	Ne 16/2 – 65/2	Ne 12/2 – 120/2	Ne 30/2 – 120/2	
Feed package cylindrical:	Ø up to 155 mm	Ø up to 135 mm	Ø up to 125 mm	Ø up to 96 mm
Feed package conical:	Ø up to 160 mm	Ø up to 140 mm		
Take-up package conical:	up to 5°57 Ø up to 300 mm	up to 5°57 Ø up to 300 mm	up to 5°57 Ø up to 300 mm	up to 5°57 Ø up to 300 mm

Optional additional devices:

The optional additional devices are not included in the standard scope of delivery of the machine are:

Volcojet, electronical drive section with servo gearbox, conveyor belt, die-cast cradle, pneum. cradle load relief system, pneum. package lift-off, rotating transfer-tail device, ball yarn brake, add-on balloon limiter, various adapters and unwinding aids, waxing, lubrication system, quality sensor, Senses.

General note:

Research and development do not stand still. This can mean that one or another statement about our products is superseded by technical progress. The illustrations have been selected according to informative aspects. They can also contain optional additional equipment that is not included in the standard scope of delivery. Our technical details in the offer and order confirmation are decisive for the binding machine design.

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