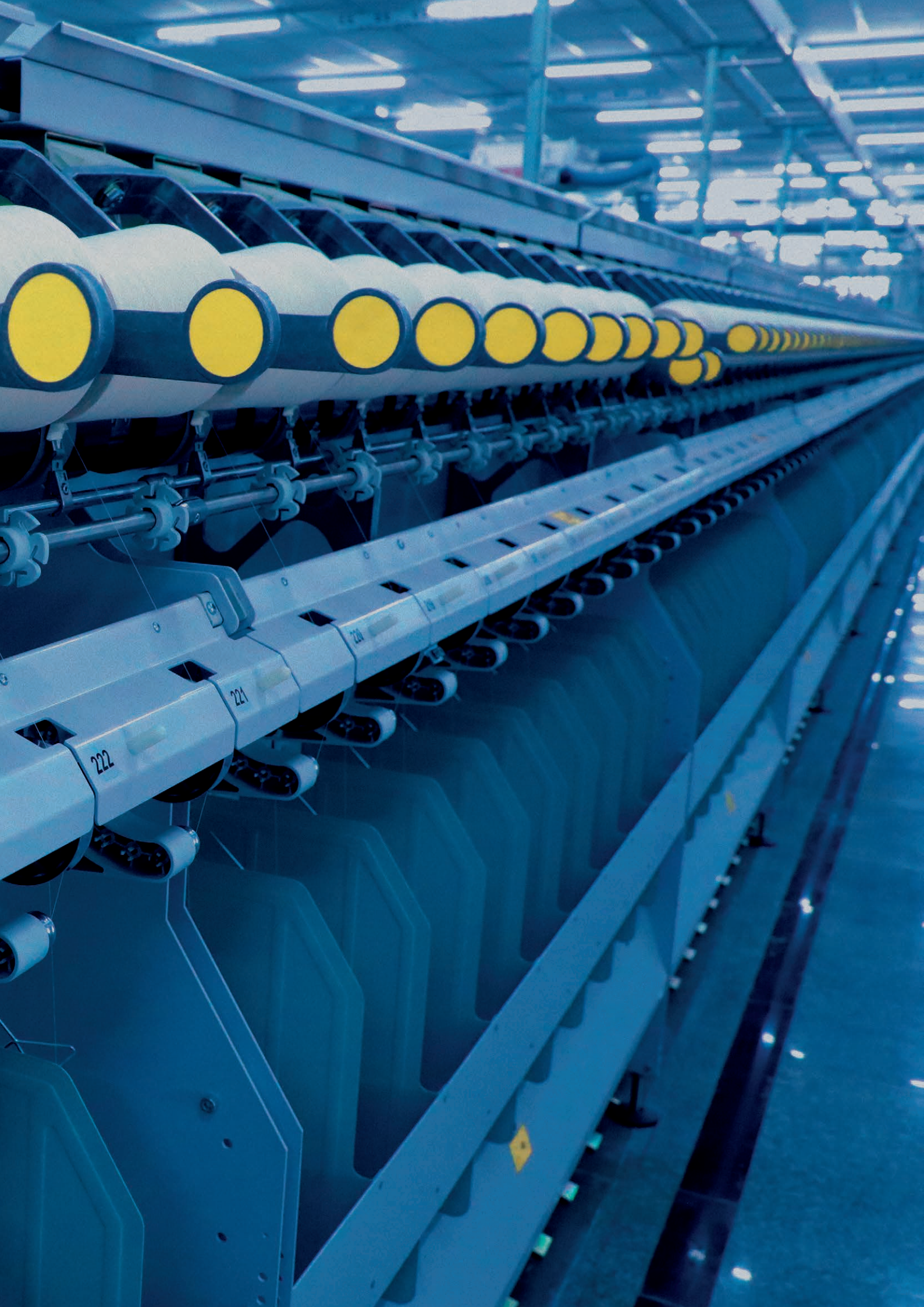


SAVIO PRODUCT SOLUTIONS SIRIUS





SIRIUS

TWO-FOR-ONE TWISTER

The worldwide flagship of Savio in high-end TFO segment.

The machine responds to the demands of customers looking for a significant reduction in labor and energy. Besides the demand to sustain low investment costs and lower energy consumption, the customers also take on great importance time and cost of maintenance.

MACHINE MODELS:

- **SIRIUS**
Two for one twister with Mechanical Drive System.
- **SIRIUS ELECTRONIC DRIVE SYSTEM (EDS)**
Two for one twister with EDS Electronic Drive System.

BENEFITS FOR CUSTOMER'S
COMPETITIVE VALUE:



TECHNOLOGY

Widest range of feeding solutions.



EFFICIENCY

Great selection of optional covering all needs.

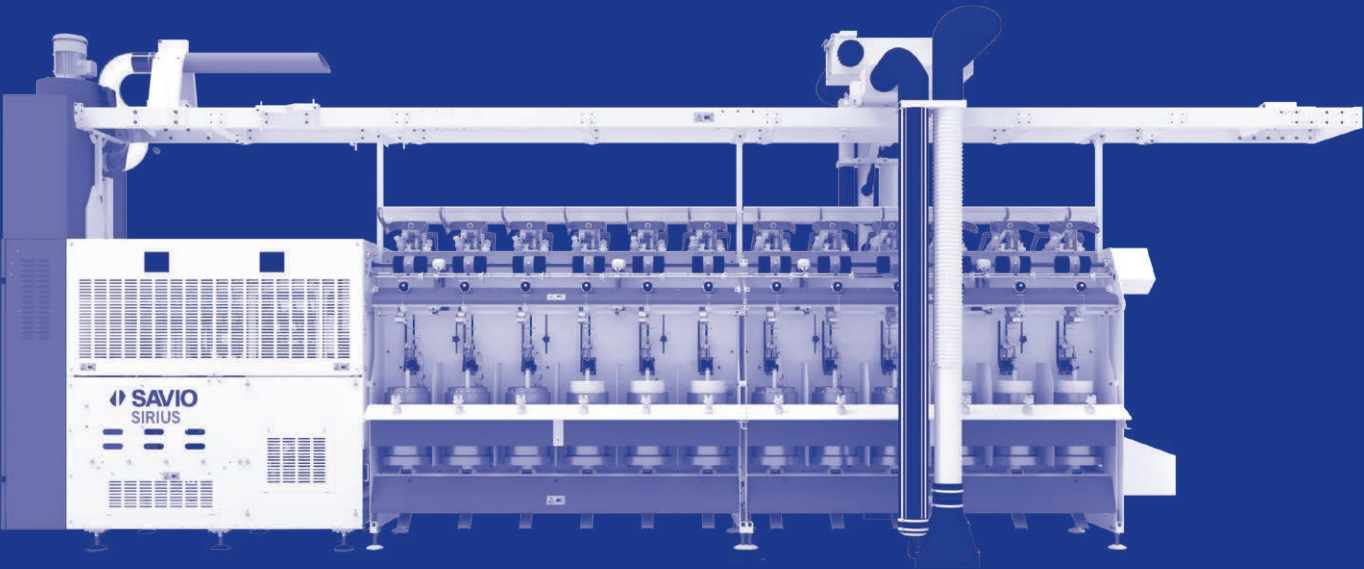


FLEXIBILITY

EDS and Inverter solutions to minimize downtime and enhance flexibility.

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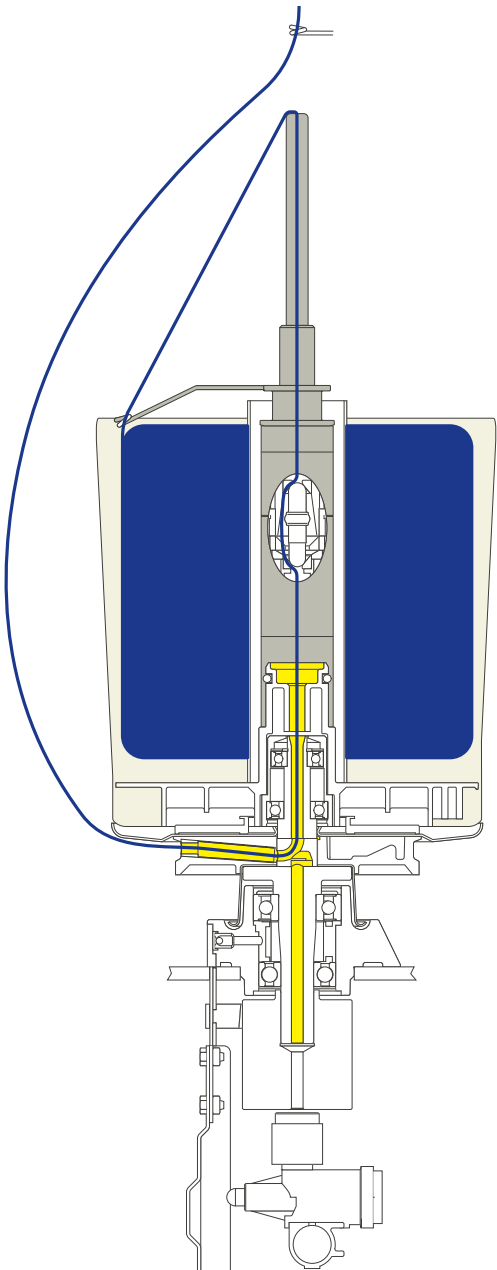
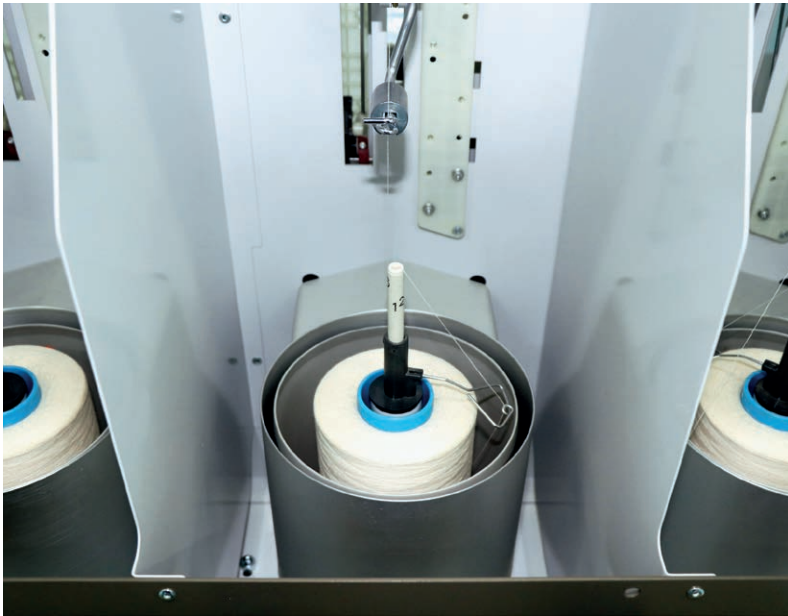
 TECHNOLOGY

THE SPINDLE

Twisting technology allows, by means of a twist, to tie together two or more threads, around their longitudinal axis. This procedure produces yarn with greater resistance, greater regularity and particular appearance/hand effects.

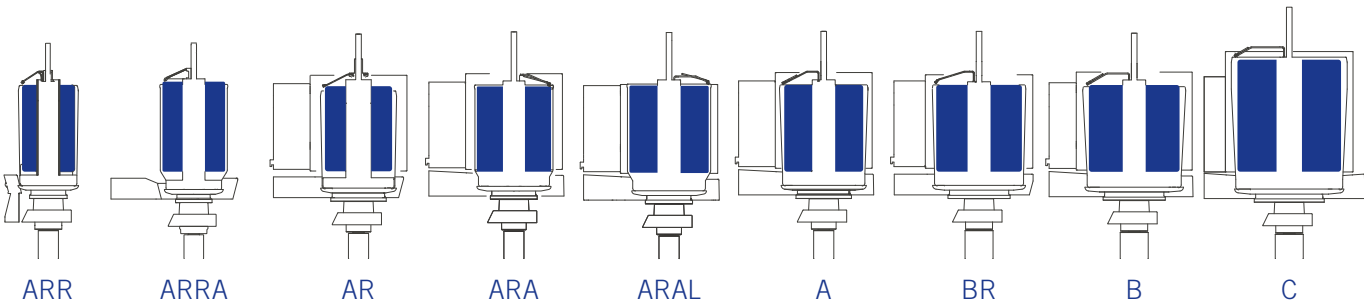
MAIN FEATURES OF SPINDLE

- Life lubricated top bearings, with special dustproof protection;
- Bigger wharve diameter, for B & C spindles types, to reduce belt load on the spindle bearings; this system guarantees twist evenness;
- Stainless steel plate and compensating pulley in aluminum with a ceramic coating, with optimized shape that guarantees less power absorption and maximum feeding content;
- Yarn tensioning with interchangeable spring pistons for different counts and materials;
- Tension can be adjusted with 6 different positions;
- High flexibility thanks to quick transformation from free to controlled balloon.
- The brake area ensures, reduced load on ball bearings and consequently longer life.



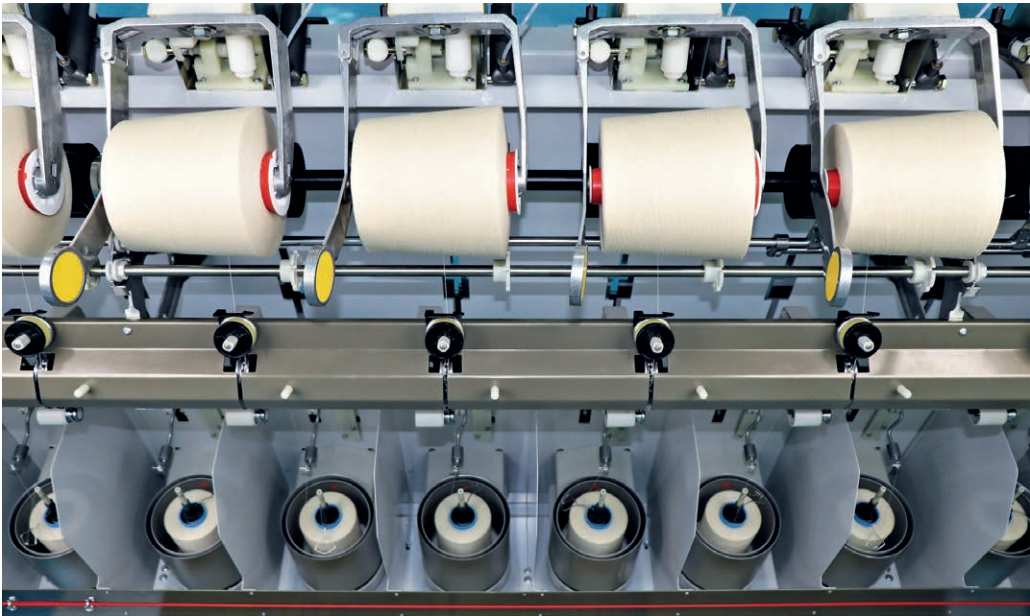
SPINDLE RANGE

You can choose the best spindle according to dimension, weight and density of feeding package.
Sirius has been realized to support the entire Savio spindle range.
Savio spindle is designed to optimize its integration within the machine structure.



The use of the smaller diameter spindle involves: lower energy consumption, less energy per kilos of twisted yarn produced, higher twisting speed and higher productivity, lower twisting tension and better quality of twisted yarns, less noise at the same speed.

The use of the bigger diameter spindle involves: lower needs of work force, less package doffing is necessary at a certain package weight, lower number of joints in the final package.

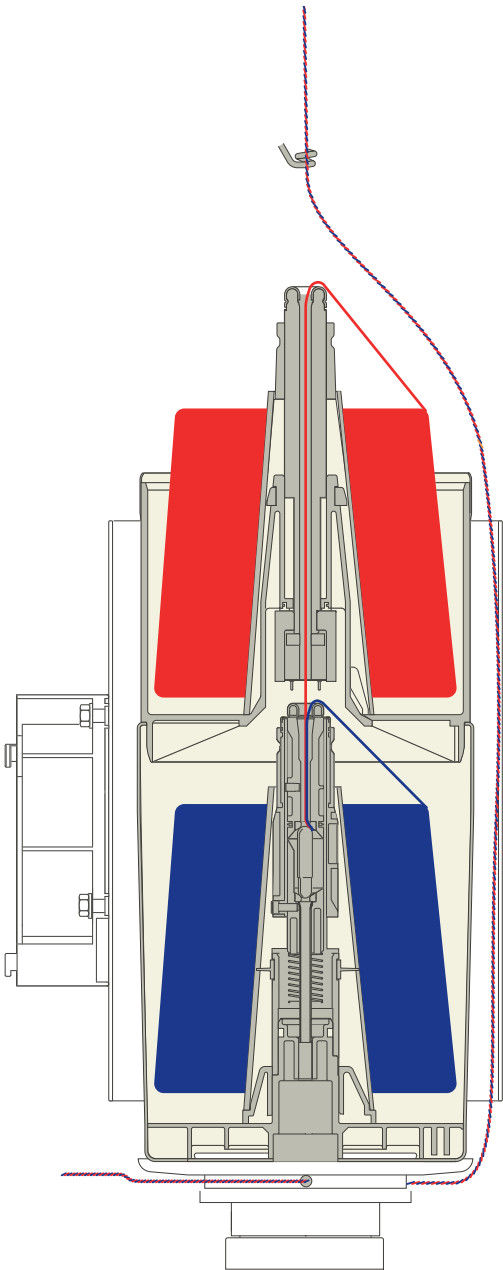


DUO POT SYSTEM

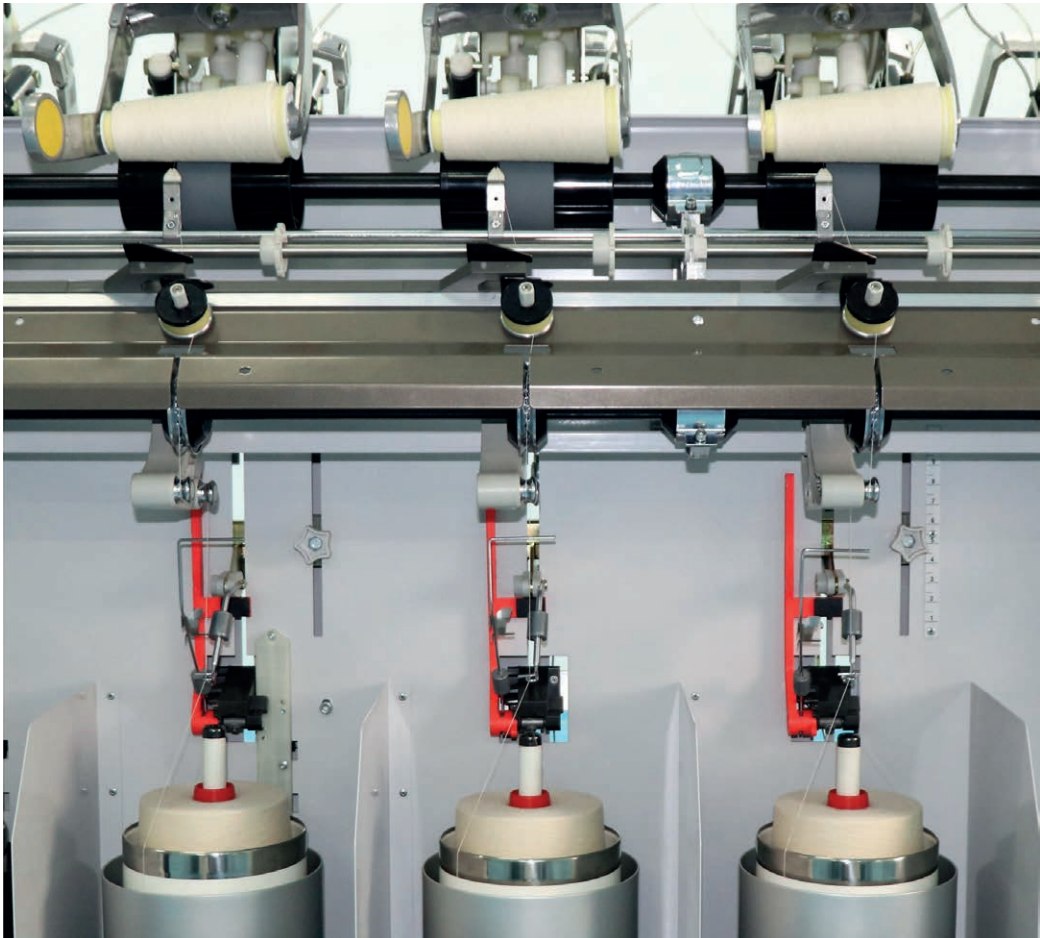
Savio's DUO POT system can be considered the real direct twisting of overlapped packages, it can be considered an “all-in-one” assembling and twisting. This allows to obtain a shortened production cycle by using standard conical packages.

The application consists of a spindle divided into two parts, upper and lower. Each package, housed in the upper and lower part, has a twin passage of the thread (“Twin Threading”), since it realizes the same wire unwinding distance for both positions. This keeps separated the unwinding of the upper bobbin thread from the lower one. Consequently, the constant tension of unraveling the two independent cones and the absence of tangles are ensured, reducing to a minimum the defects and irregularities of the twisted yarn.

DIRECT FEEDING WITH STANDARD CONICAL PACKAGES 2x1°30' — 2x3°30' — 2x4°20' — 2x5°57'
The main characteristics of the new system is the separate directions of the two yarns that only join at the point of control of the tension.
ADVANTAGES
<ul style="list-style-type: none">- FORMAT STANDARDIZATION: The system uses standard packages 1°30' - 3°30' - 4°20' - 5°57 with a 152 mm traverse. Minimum diameter on tube nose is 28 mm.- PRODUCTION INCREASE: Higher speed, reduced breaks, reduced yarn waste- IMPROVED QUALITY: Separate unwinding of the two ends. Tension evenness. No knots, tangles or ravels.- FLEXIBILITY: Use of yarns, which differ in count, material and color.- UPPER AND LOWER YARN PACKAGE BRAKE: A patented device brakes the unwinding of the lower package in case of upper yarn break. This avoids that single lower package yarn continues to be twisted.



↑ Like the traditional system, it involves a few simple operations, and, thanks to its pedal control, pneumatic threading is extremely fast.



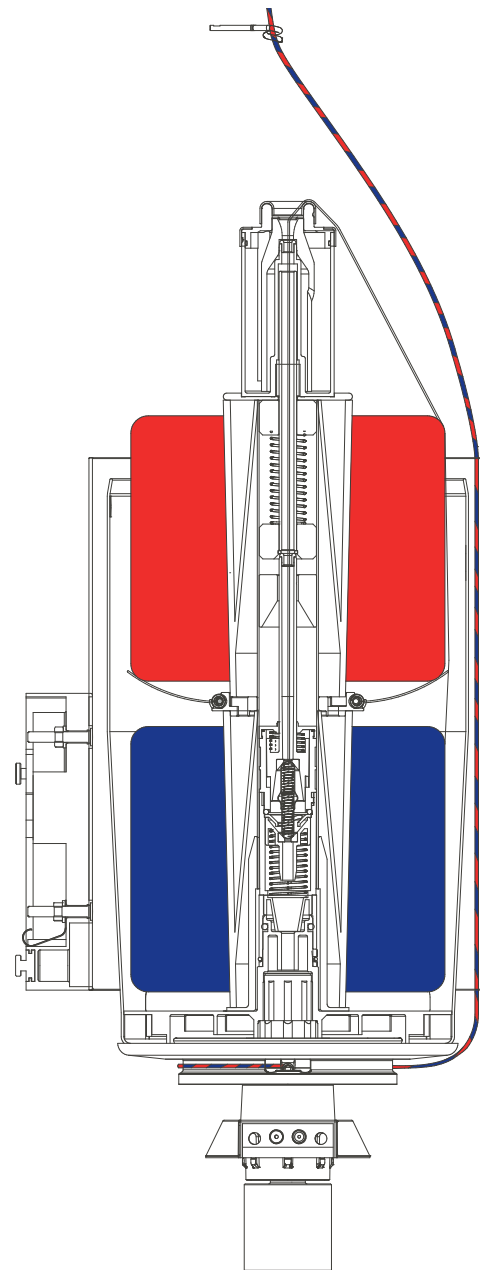
SUPERIMPOSED FEEDING

Savio's SINGLE POT – Super imposed feeding of two standard cylindrical single yarn packages, allows twisting in one process, eliminating assembly winders for shortened production cycle

The application consists of two feeding packages housed in single spindle for twisting in single process. It has advantage of optimal use of oiling device for yarn lubrication during twisting for acrylics and woolen materials.

DIRECT FEEDING WITH TWO STANDARD CYLINDRICAL PACKAGES OF TRAVERSE 85 MM, 110 MM, 150 MM

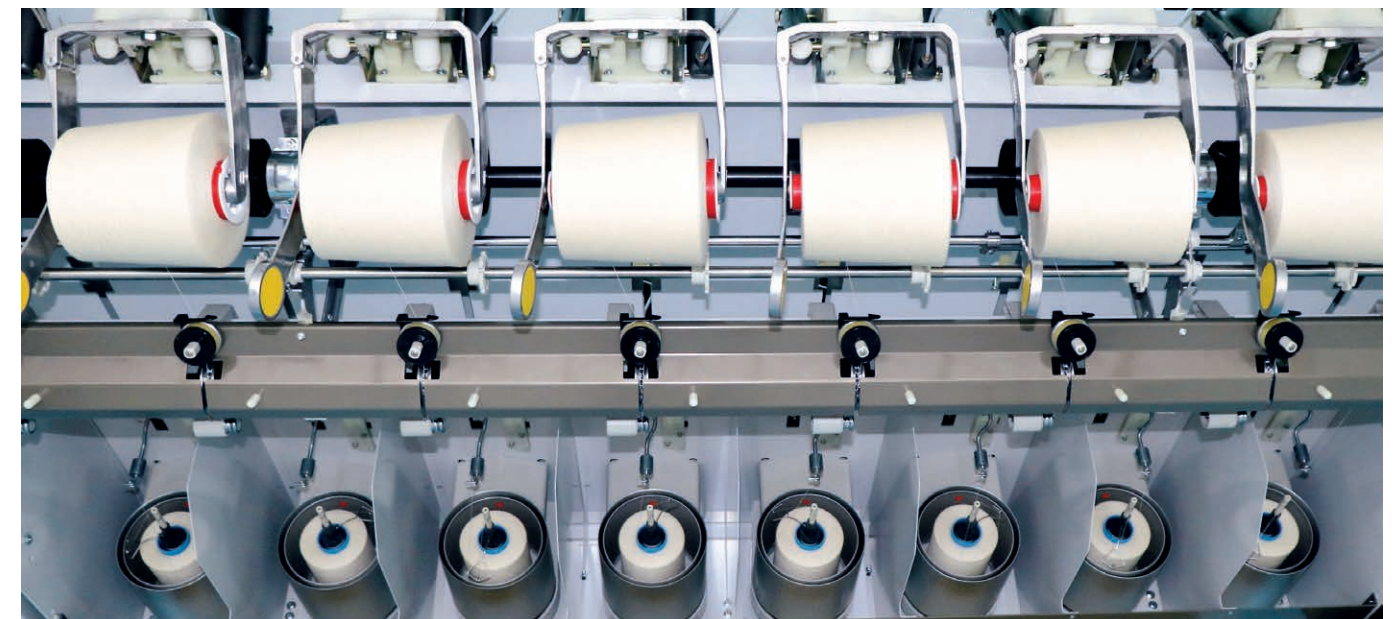
The main characteristics of the system is two single packages being twisted, eliminating assembly winding process to achieve higher take up weights without joints and saving in infrastructure cost and manpower.



PACKAGE CRADLE

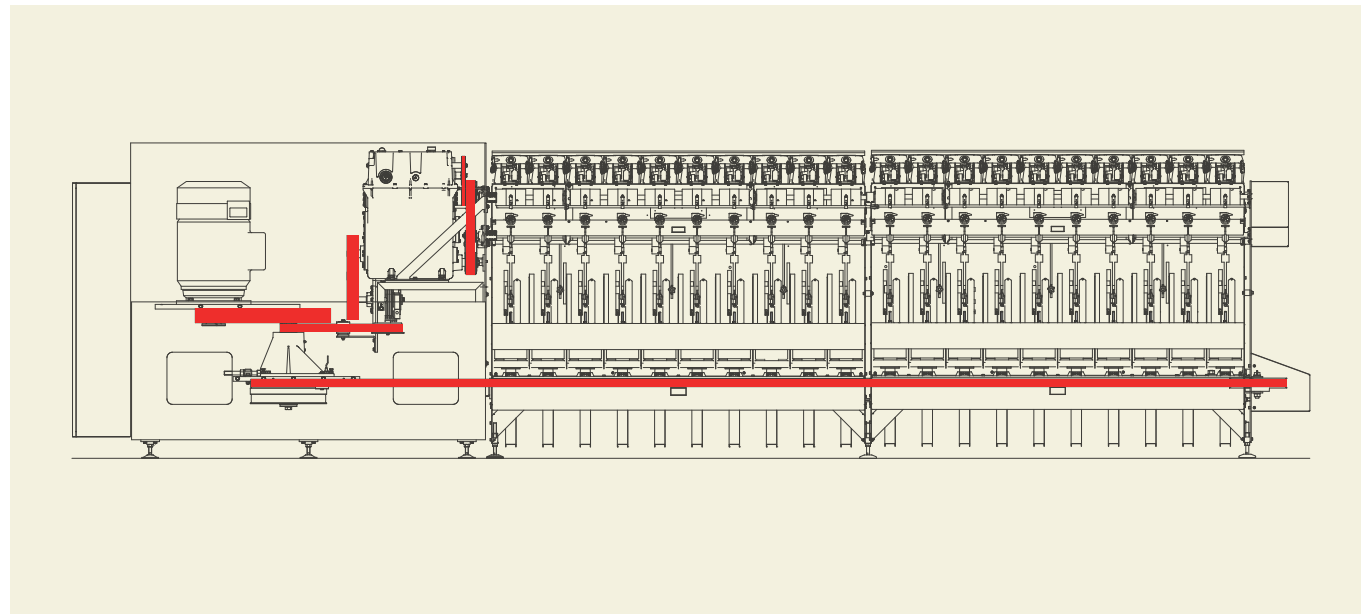
The package cradle, specifically designed to perform a simple manual package doffing, is equipped with:

- Mechanical counterweight with four adjustment possibilities. Setting requires no tools.
- Anti-vibration device (an adjustable friction disk) to optimize package formation and eliminate package vibration even at high take-up speed.



COMPACT TANGENTIAL DRIVE

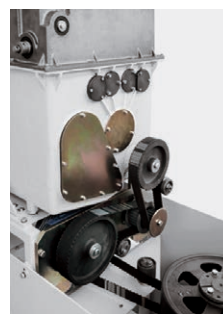
Encased tangential drive and motorization system to reduce noise, keeping free from dust and lint.



- Twist change by means of drive pulleys positioned at the front for easy access;
- Mechanical change of S/Z twist change;
- Headstock gears allows regulating the mechanical modulation for antiribboning effect, and the cross winding angle change for package density;
- The oil lubrication of the top gearbox has oil level indicator and pilot light to check the circulation pump.

Control unit with display for:

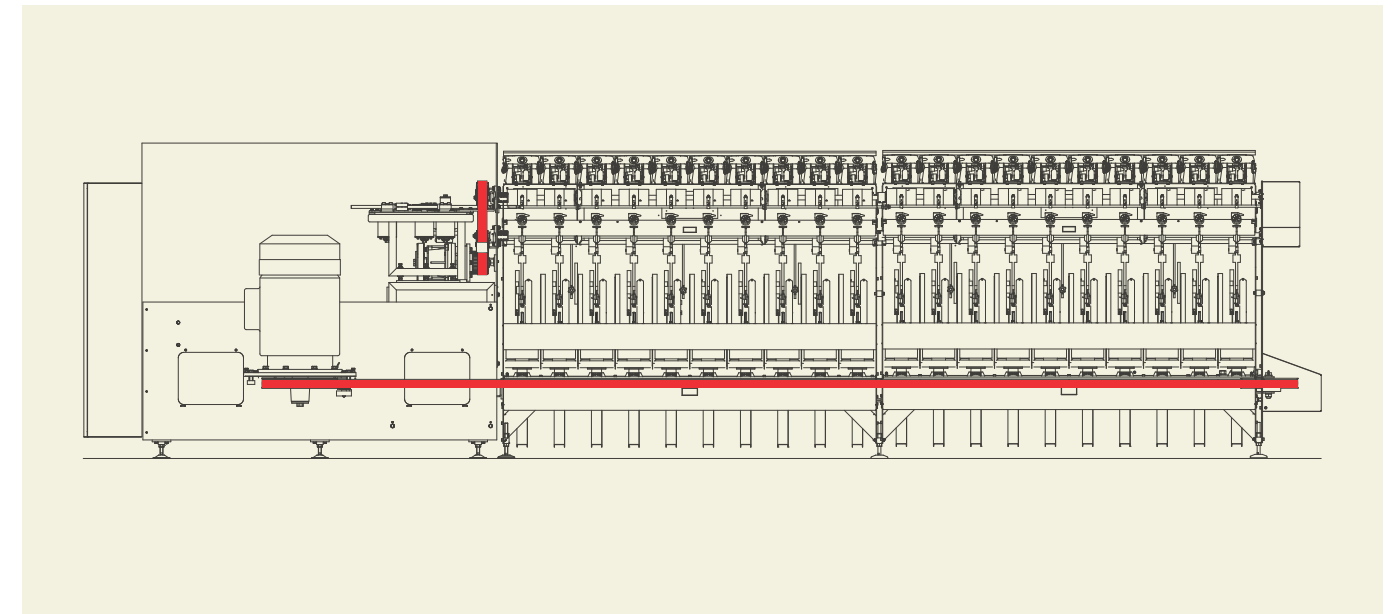
- Spindle speed;
- Twists number;
- Take-up speed;
- Motor power absorption (Ampere);
- Time counter;
- Yarn length meter for programmed machine stop.



ELECTRONIC DRIVE SYSTEM (EDS)

The Electronic Drive System uses three independent motors to drive, respectively:

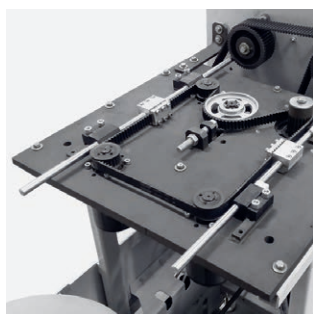
- Spindles;
- Take-Up (overfeed and drums);
- Thread-guide.



Allowing customers to set all working parameters via PC, machine set-up time is strongly decreased, by introducing a simple and direct way to change any setting.

This system allows to reduce the number of operators for each machine, and to change settings continuously and not "step by step", as in the mechanical version, allowing customers to try any parameters combination, in order to obtain the best results.

An electrical control links the speed ratio among the various motors, guaranteeing the twists evenness. The evenness is thus granted during normal running conditions, start/stop phases and in case of brown out / black out.





EFFICIENCY

CONTROL OF TWISTING PROCESS

The simplified PC interface allows to program with few settings the working parameters, thus reducing set up times. This simplifies the use and maintenance of the machine, allowing customers to change settings by a simple touch screen.

The thread guide electronic control allows to set winding angle, traverse stroke, position on the package tube and the yarn distribution over the package. All above improves design and formation of the package, optimizing all the downstream processes, thus allowing customers to obtain the best results.



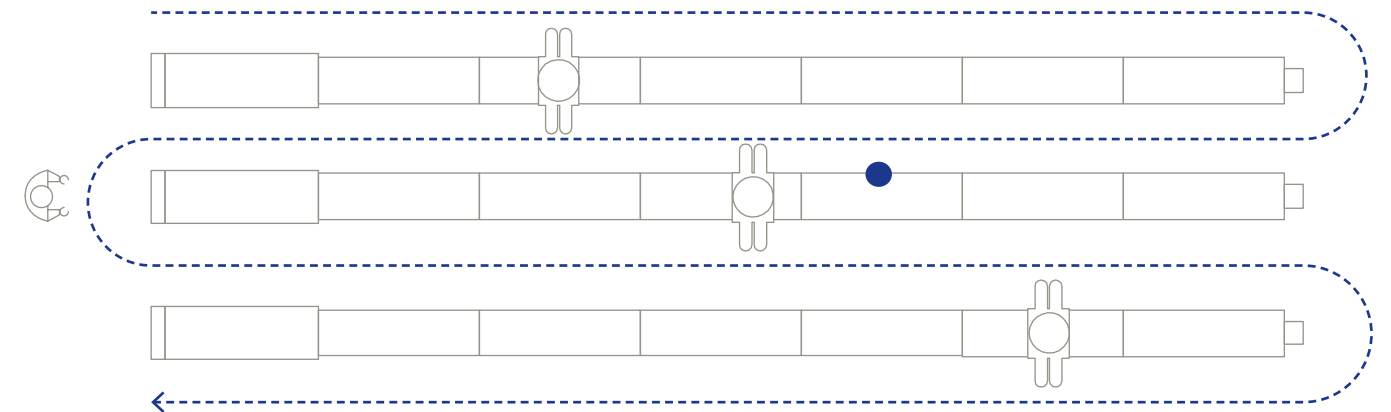
SMART PATROL SYSTEM

Individual optical sensor with LED Lamp indicator, monitors the presence yarn by the movement of the yarn along the traverse.

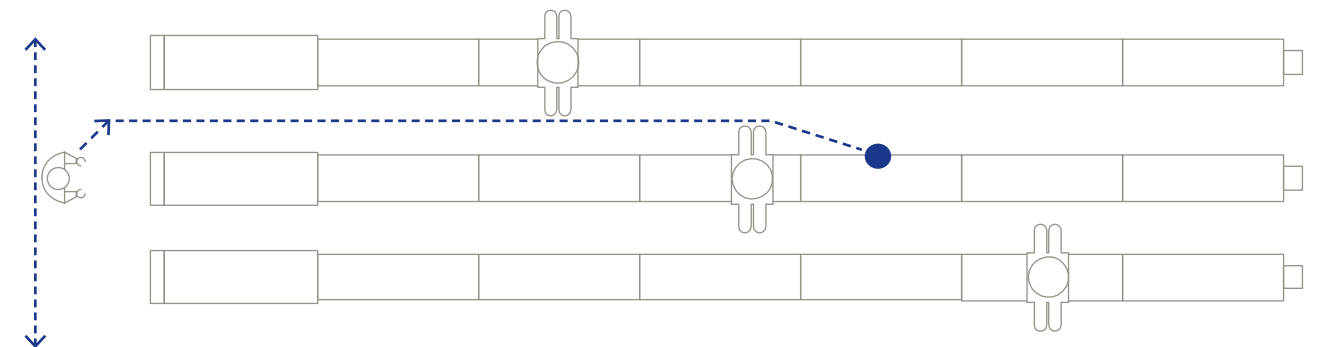
In the event of the yarn break the LED glow will guide operator directly to the spindle for end mending. This LED is visible from long distance, ensuring smart movements of the operator.



Conventional Patrolling



Smart Patrolling



In the event of yarn break, Individual spindle light indicator guides the operator directly to the spindles.

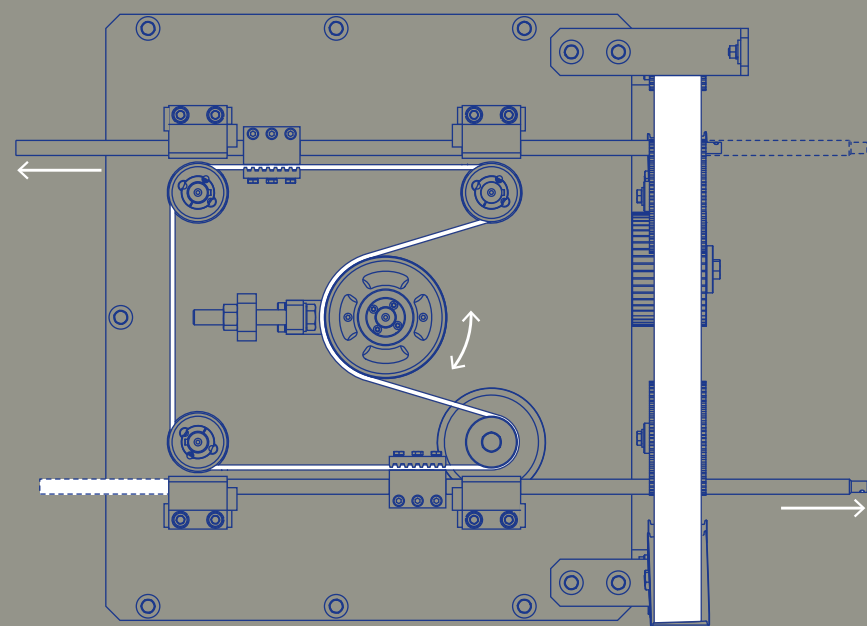
Un-necessary monitoring checks are avoided.
Less operator fatigue.
Quick end mending time.
Better productivity.



FLEXIBILITY

FLEXIBILITY

The Electronic Drive System allows setting via PC any working parameter, introducing an important flexibility element.



ELECTRONIC DRIVE SYSTEM (EDS)

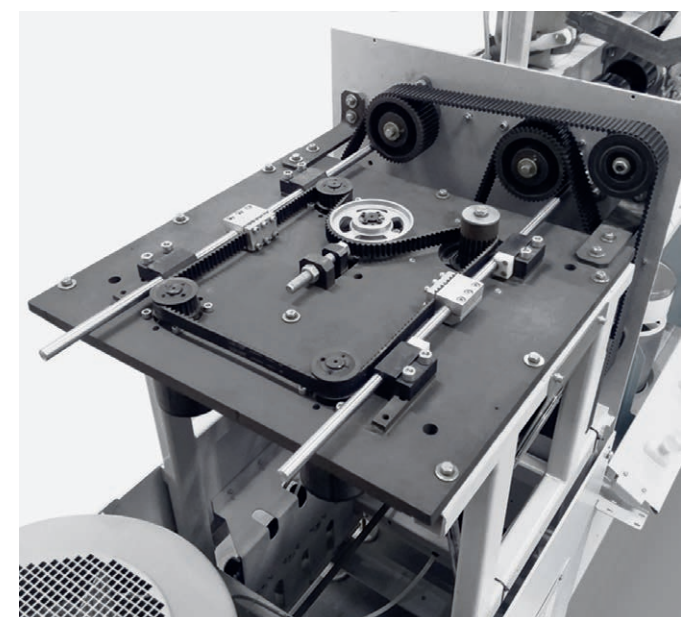
The Electronic Drive System allows setting via PC any working parameter, introducing an important flexibility element. In particular, is possible to set:

- Spindle Speed;
- Twist number and direction (S/Z);
- Winding angle;
- Modulation (antiribboning);
- Thread-guide traverse;
- Axial displacement;
- Variable bunching length.

Moreover, Electronic Drive System allows customers to choose, among the diverse package shape:

- Standard packages;
- "Pineapple" packages;
- Rounded-edge packages.

This system includes axial displacement, realized by the electronic thread-guide control, which allows the yarn distribution over package edges, to obtain a "Customized" Package design. The bunching length is settable by the PC, as well as its position on the package tube. The working parameters can be varied flexibly, there are no more pre-set ranges, this allows our customers to obtain the best results, both in terms of working speed and package formation.



Many optionals available to reach the maximum technological flexibility:

1 PACKAGE LIFTING DEVICE AND FEELER LOCK

PACKAGE LIFTING:

- The new electro-pneumatic package-lifting device operates with:
- A lifting delay independent from the package weight;
 - A cradle that locks in its position and remains lifted also during feeler rearm.

FEELER LOCK:

A centralized control, located inside the headstock, locks all the yarn feelers avoiding their fall, upon the machine is stopped. When the machine is restarted, the feeler lock is disconnected only when the balloon has reached the optimal tension.

2 PNEUMATIC THREADING

Both spindle brake and pneumatic threading are operated via the pedal at the bottom of the machine. When yarn breaks, the operator brakes the spindle pressing on the pedal, picks up the package yarn end and, by pressing the pedal right down, effects threading easily.

3 SECOND OVERFEED ROLLER

- Allows optimizing yarn path in any overfeeding condition.
- **Second counterweight spring for soft packages:** allows increasing the counterweight effect over the package.

4 WAXING DEVICE AND YARN RESERVE

WAXING DEVICE:

Thanks to magnetic compensation, waxing device grants a constant wax distribution over the yarn.

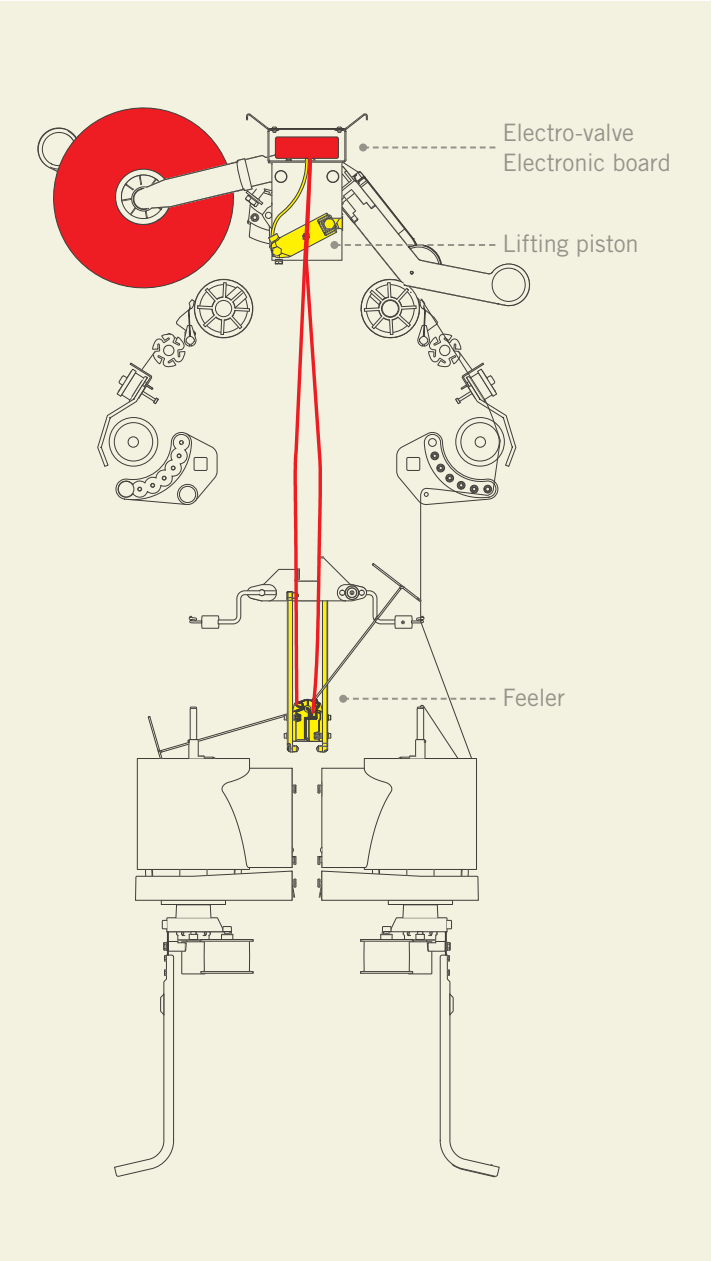
YARN RESERVE:

As required by down stream process like warping / weaving to enhance the running efficiency of the process, the bunching device can be installed to have reserve yarn (Tail end) at the base.

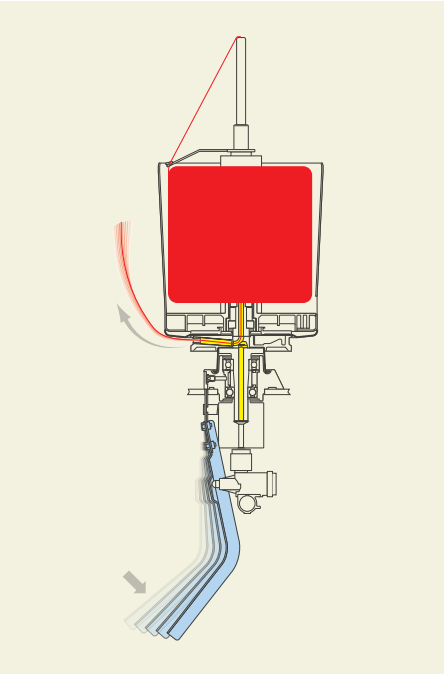
5 SPANDEX KIT

Specially designed flyer for processing blended yarns with spandex (eg. Lycra®, Roica™). Unique design flyer with ceramic eyelets and counterbalance for uniform unwinding of the feed package and also preserving the properties of the spandex. Due to specialized design, better speed & working on TFO can be achieved.

1



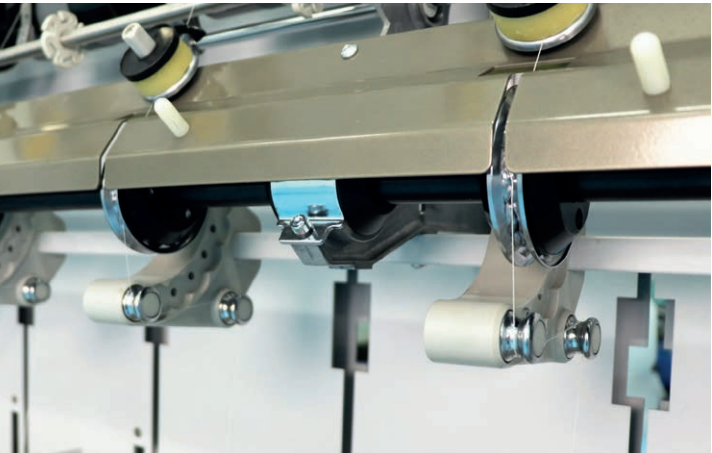
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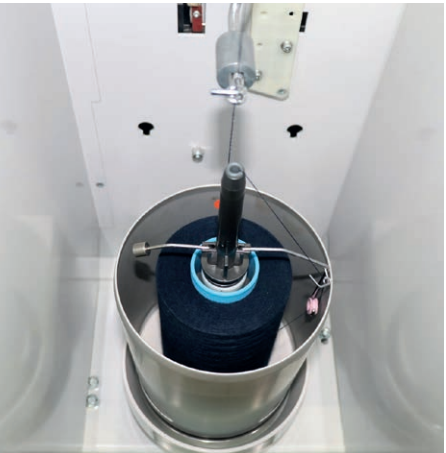
4



3



5



<div>6</div> <div>SPLICER WITH A.T.S.</div>
<p>System with trolley moved manually along the machines fronts. The following versions are available according yarn type:</p> <ul style="list-style-type: none">- Jointair® 115 A (Airsplicer);- AquaSplicer 4923B (Watersplicer);- Moistair® 6981A or 6982A (2 versions: “1” fine & medium counts, “2” wool coarse counts).
<div>7</div> <div>CONTINUOUS YARN OILING DEVICE</div>
<p>Lubricating the yarn before twisting, reduces the fly formation and noise, compared with free balloon twisting process. It is the most efficient method of lubricating the yarn. During twisting process by means of capillary action yarn continuously comes in contact with oil due to specially designed porous bush, which is wetted by oil from the container. It enables, low coefficient of friction, and thus controlled balloon working, and lower power consumption, lower fly, and noise generation, higher speeds and thus higher productivity.</p>
<div>8</div> <div>NOISE REDUCTION</div>
<p>A dampening modular panel placed on the bottom part of each spindle section reduces the noise, thus quieter work areas.</p>
<div>9</div> <div>EMERGENCY STOP PULL ROPE SWITCH</div>
<p>A secure and immediate way to stop machine in case of emergency, by pull of rope extending along the length of the machine on both sides. Reset is carried out manually ensuring safety.</p>
<div>10</div> <div>TRAVELLING BLOWER</div>
<p>Total programmable, customised travelling blower for removal of dust during process. Dust collection and automatic discharge in collection box, with option of with and without obstacle auto reversal mechanism.</p>
<div>OTHER OPTIONALS</div>
<ul style="list-style-type: none">- Inverter: allows varying spindle speed continuously.- Pulleys for complete speed range: allows using the complete speed range available for the chosen spindle.- Abrasive yarns feeler (ceramic): allows to process abrasive yarns avoiding damage on them.- Mechanic axial displacement: axial displacement offers the possibility to obtain dying soft packages by distributing the inversions on a wider space (up to 7 mm).

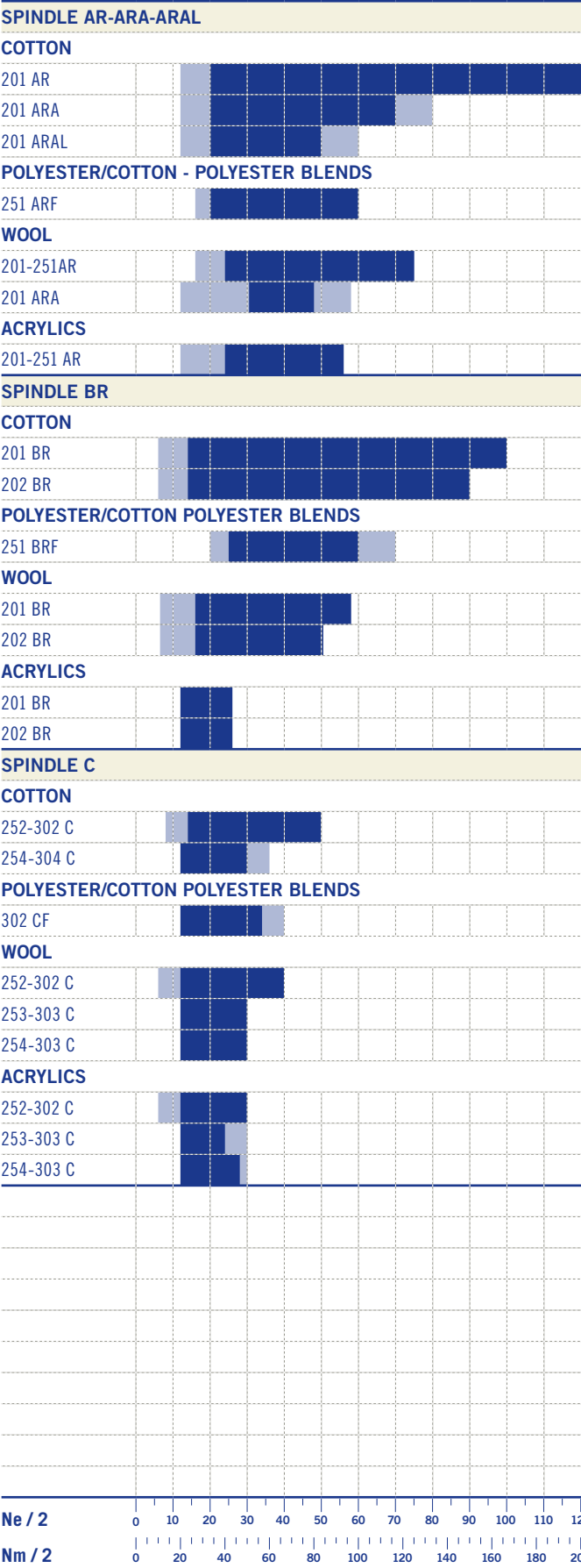
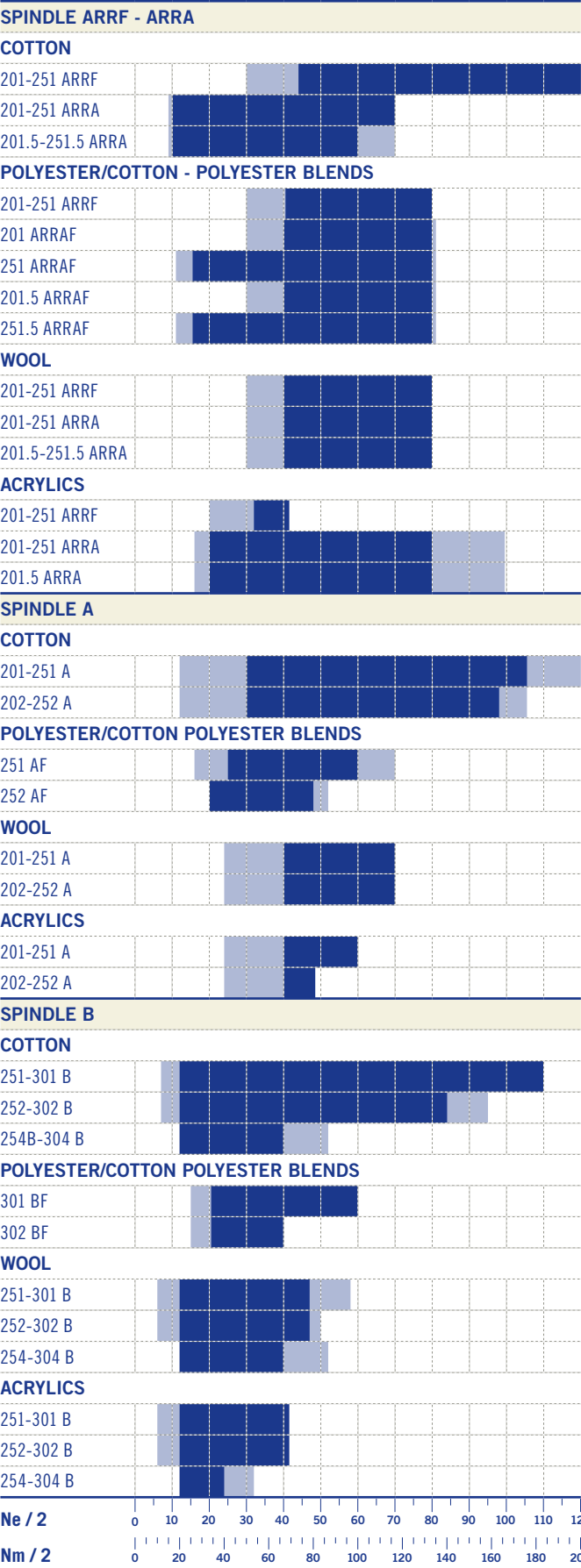
<div>6</div> <div></div>	<div>7</div> <div></div>
<div>8</div> <div></div>	<div>10</div> <div></div>
<div>8</div> <div></div>	
<div>9</div> <div></div>	



TECHNICAL SUMMARY

Possible working range

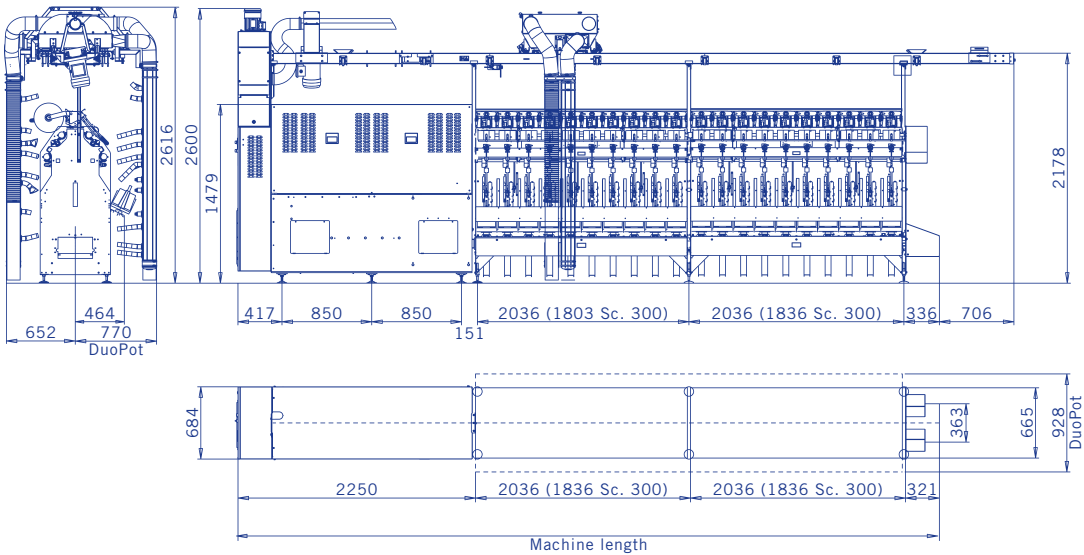
■ Recomendado working range
■ Possible working range



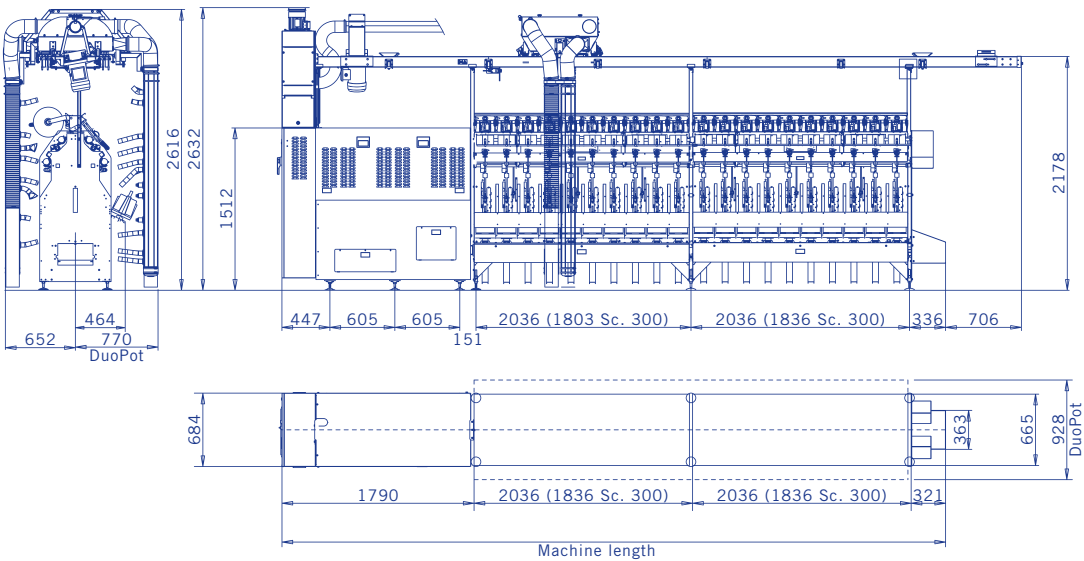
GAUGE	SPINDLES	BASKETS	FEEDING			MACHINE MODEL	
			DOUBLE	SUPER IMPOSED	DUO POT SYSTEM	CONTROLLED BALLOON	FREE BALLOON
200	ARRF	1	155 x 94				201 ARRF
	ARRA	1	155 x 115			201 ARRA	201 ARRAF
		1.5	178 x 115			201.5 ARRA	201.5 ARRAF
	AR	1	155 x 125			201 AR	
	ARA	1	155 x 135			201 ARA	
	ARAL	1	155 x 141			201 ARAL	
	A	1	155 x 141	2 x 85 x 140		201 A	
		2	178 x 141 200 x 141	2 x 110 x 145		202 A	
	BR	1	155 x 151			201 BR	
		2	178 x 151 200 x 151	2 x 110 x 155		202 BR	
250	ARRA	1	155 x 115				251 ARRAF
		1.5	178 x 115			251.5 ARRA	251.5 ARRAF
	AR	1	155 x 125			251 AR	251 ARF
	A	1	155 x 141	2 x 85 x 140		251 A	251 AF
		2	178 x 141 200 x 141	2 x 110 x 145		252 A	252 AF
	BR	1	155 x 151			251 BR	251 BRF
		2	178 x 151 200 x 151	2 x 110 x 155		252 BR	
	B	1	155 x 162	2 x 85 x 165		251 B	
		2	178 x 162 200 x 162	2 x 110 x 165		252 B	
	C	2	178 x 185 200 x 185	2 x 110 x 185		252 C	
		2.5	200 x 185 250 x 185			252.5 C	
250 LOW	B	4			2 x 4°20' x 160 2 x 5°57' x 160	254 B	
	C	3		2 x 150 x 185		253 C	
		4			2 x 4°20' x 185 2 x 5°57' x 185	254 C	
300	B	1	155 x 162	2 x 85 x 165		301 B	301 BF
		2	178 x 162 200 x 162	2 x 110 x 165		302 B	302 BF
	C	2	178 x 185 200 x 185	2 x 110 x 185		302 C	302 CF
		2.5	200 x 185 250 x 185			302.5 C	
300 LOW	B	4			2 x 4°20' x 160 2 x 5°57' x 160	304 B	304 BF
	C	3		2 x 150 x 185		303 C	303 CF
		4			2 x 4°20' x 185 2 x 5°57' x 185	304 C	304 CF

Overall dimensions and installation layout

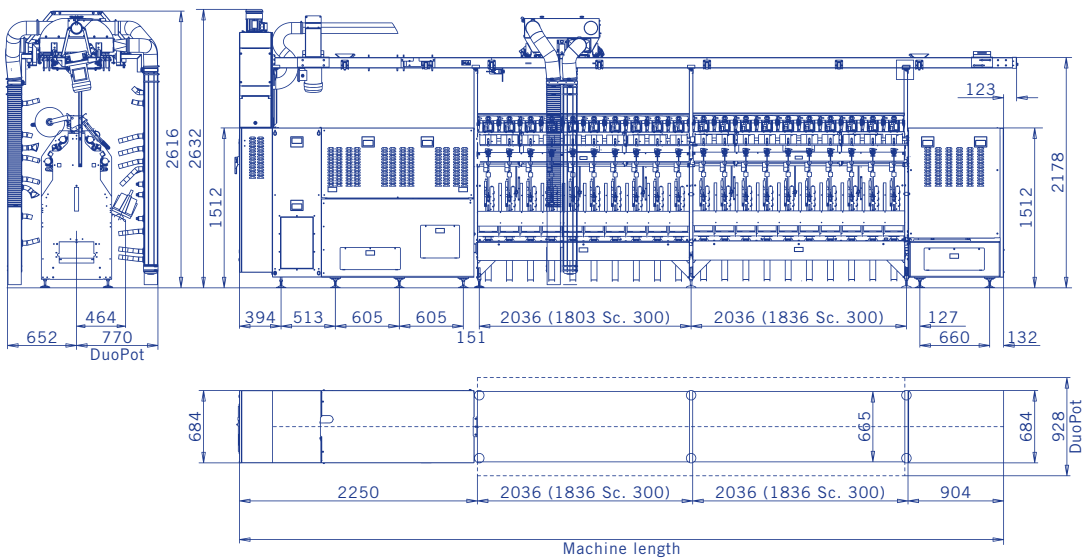
Mechanical headstock version with 1 motor



EDS headstock versions with 1 motor



EDS headstock version with 2 motors



MACHINE LENGTH (mm)											
Sections	GAUGE 200 mm			GAUGE 250 mm					GAUGE 300 mm		
	SPINDLES	ARRF ARRAF AR - ARA ARAL - A	BR	SPINDLES	ARF - AF BRF 1/2 B	4 B	2 C	3/4 C	SPINDLES	B	C
1	20	4.607	4.607	16	4.607	4.607	4.607	4.607	12	4.407	4.407
2	40	6.643	6.643	32	6.643	6.643	6.643	6.643	24	6.243	6.243
3	60	8.679	8.679	48	8.679	8.679	8.679	8.679	36	8.079	8.079
4	80	10.715	10.715	64	10.715	10.715	10.715	10.715	48	9.915	9.915
5	100	12.751	12.751	80	12.751	12.751	12.751	12.751	60	11.751	11.751
6	120	14.787	14.787	96	14.787	14.787	14.787	14.787	72	13.587	13.587
7	140	16.823	16.823	112	16.823	16.823	16.823	16.823	84	15.423	15.423
8	160	18.859	18.859	128	18.859	18.859	18.859	18.859	96	17.259	17.259
9	180	20.895	20.895	144	20.895	20.895	20.895	20.895	108	19.095	19.095
10	200	22.931	22.931	160	22.931	22.931	23.514	22.931	120	20.931	20.931
11	220	24.967	25.550	176	24.967	24.967	25.550	25.550	132	22.767	22.767
12	240	27.003	27.586	192	27.003	27.586	27.586	27.586	144	24.603	24.603
13	260	29.622	29.622	208	29.622	29.622	29.622	29.622	156	26.439	27.022
14	280	31.658	31.658	224	31.658	31.658	31.658	31.658	168	28.275	28.858
15	300	33.694	33.694	240	33.694	33.694	33.694	33.694	180	30.111	30.694
16	320	35.730	35.730	256	35.730	35.730			192	31.947	32.530
17	340	37.766	37.766	272	37.766	37.766			204	33.783	34.366

Mechanical headstock version with 1 motor
EDS headstock versions with 1 motor = - 460 mm

EDS headstock version with 2 motors

TEXTILE SOLUTIONS TOGETHER

Textile Solutions Together:
this is the distinctive formula that makes Savio one of the largest manufacturers in the world of textile machines for staple fibres. Not a simple supply, but co-creation of value for the textile industry: Savio has always developed and implemented technological solutions in close partnership with its customers. Cutting-edge solutions and services, customized to the specific needs of each customer with an excellent value-for-money proposition. Expertise and innovation in yarn finishing, widely present on international markets since 1911.



COMPANY WITH
MANAGEMENT SYSTEM
CERTIFIED BY DNV GL
= ISO 9001 =
= ISO 14001 =



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E-mail: mail@savioindia.in

We reserve the right to modify the characteristics of the machines described herein without prior notice. The data given in this brochure are not intended as a guarantee. Savio machines are equipped with safety devices in compliance with existing regulations.