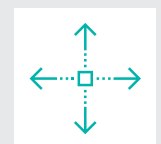
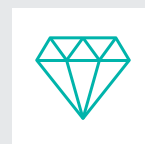
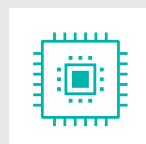
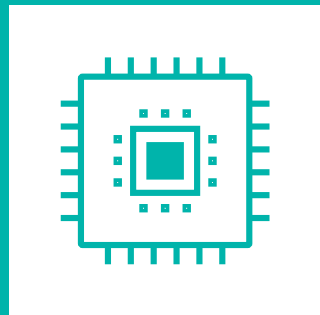
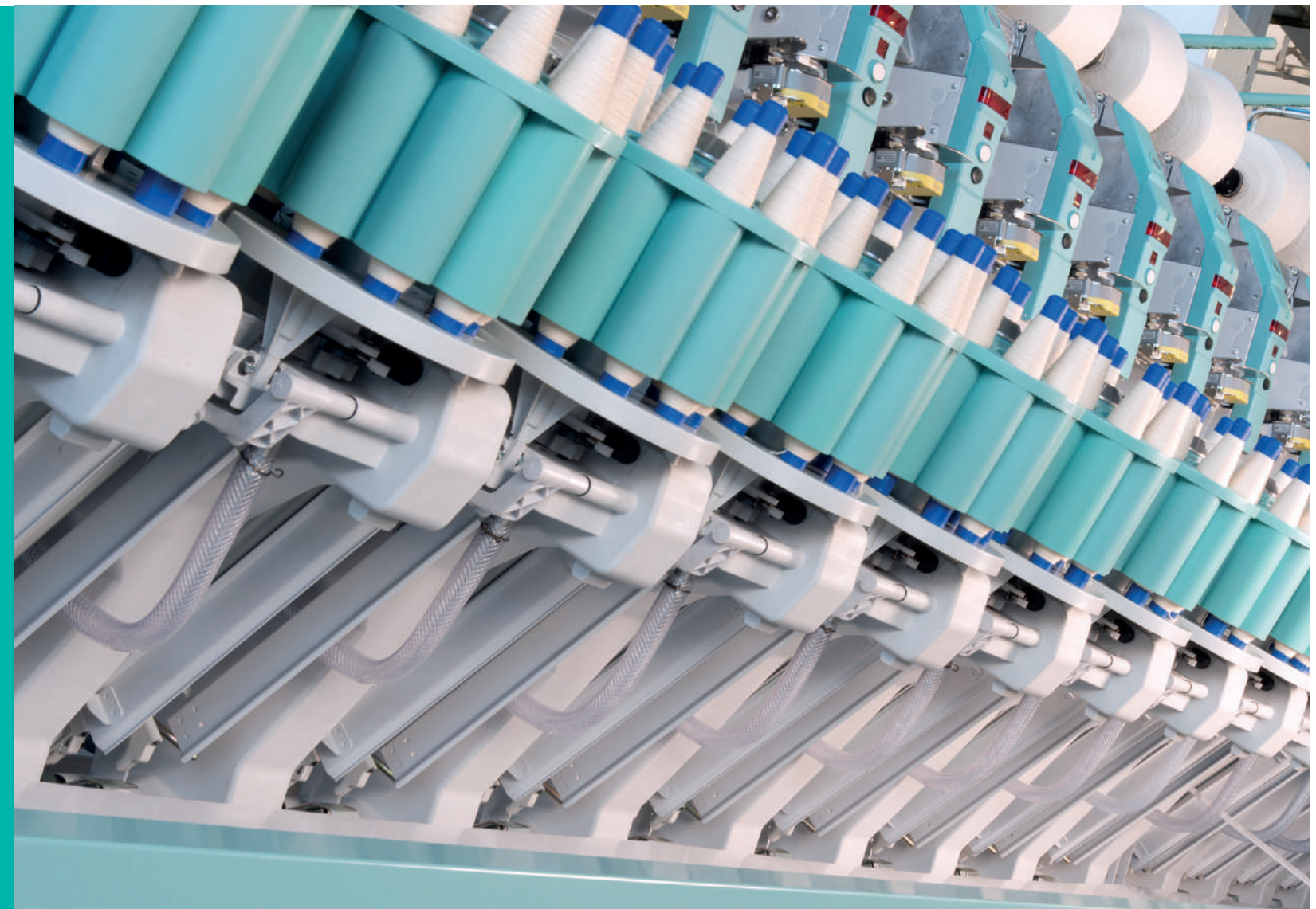




AUTOMATIC WINDER  
**Polar Evolution**  
ROUND MAGAZINE TYPE

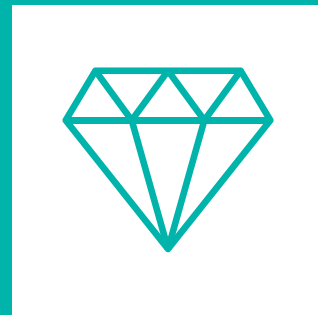




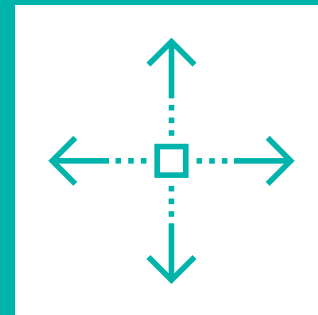
TECHNOLOGY



EFFICIENCY



QUALITY OUTPUT



FLEXIBILITY

AUTOMATIC WINDER

## Polar Evolution

ROUND MAGAZINE TYPE

**Savio's well proven and the bestselling automatic winder, still the #1 winder in many world markets.** Extremely popular all over the countries, Polar model has been recently developed to the **Evolution** series, gathering all the innovative solutions in terms of technology, efficiency, quality output and maintenance.

**MACHINE MODELS:**

**POLAR EVOLUTION M**

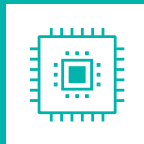
round magazine feeding (manual doffing)

**POLAR EVOLUTION L**

round magazine feeding (automatic doffing)

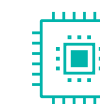
**BENEFITS:**

- Greater productivity
- Flexible production planning
- Consistent package quality
- Power and compressed air savings because unnecessary splicing cycle are avoided
- Minimum yarn waste
- User friendly
- Proven reliability



**TECHNOLOGY**

A further step for Polar family to catch the world of IT applications and the new textile synthetic and artificial fibers applications.

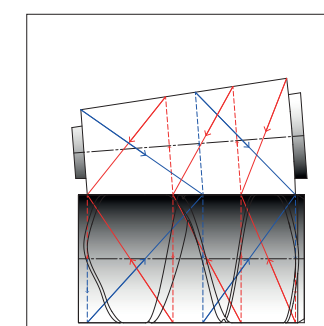


**New Evo drums for improving package-unwinding performance**

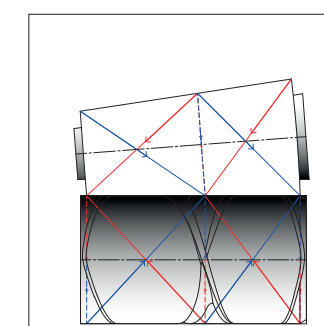


Yarn quality and costs are decisive criteria in the highly competitive textile market. In downstream processing, the unwinding behavior of the package and the take-up speed facilitate process to be more efficient and geared to benefit. The EVO drums offer new capabilities to optimize both the unwinding speed of the packages and the package yarn content, through variable number of turns with different winding angles.

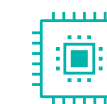
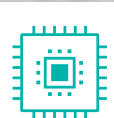
The technological developments of MMF yarns for following fashion trends require constant innovations on the machinery technology too. Savio has now a full range of grooved drums to cover all yarn types, counts and downstream processes. The package shape is optimized in order to obtain advantages for a better unwinding ratio in the downstream process, for homogeneous package density and for lower rewinding breaks.



**3/2 EVO**  
**ALL STAPLE FIBERS MEDIUM AND FINE COUNTS**  
 FEATURES & TEST RESULTS  
 Lower rewinding breaks -30%  
 Homogeneous package density

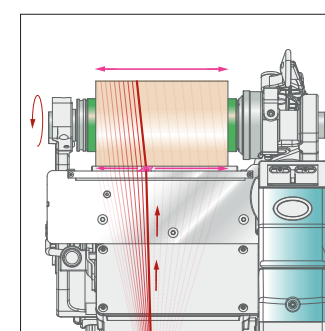


**2 EVO**  
**ALL STAPLE FIBERS COARSE MEDIUM COUNTS**  
 FEATURES & TEST RESULTS:  
 Higher package content  
 Even Hardness performance  
 Wider winding angle to fit better coarse yarns



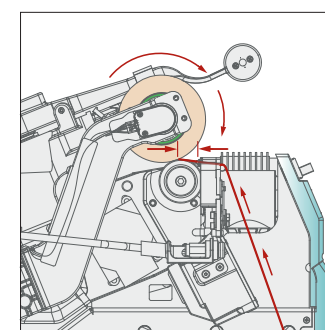
## Multicone: the digital yarn layering technology

The different downstream processes require a wide flexibility in the wound package building, in order to optimize the specific efficiency. Packages for dyeing, warping, weft, knitting, double twisting, require a different and flexible package formation in terms of geometry, edges shape and density. "Multicone" system, the digital yarn layering technology (drumless) represents today the proper solution to achieve this kind of flexibility in the package formation.



**Straight path layering system**  
The only one that allows a precise and controlled yarn deposit on the format, being the thread guide movement much closer to the package than any other "pendulum" system, keeping also a fixed distance delivery point. This guarantee a precise control of the thread during the whole traverse stroke and mainly of the package edges area, where the yarn dynamics is critical, because of the stroke inversion effect. Savio's thread guide system can easily prevent any possible yarn fall and package bad shape, which more frequently occur in the "pendulum" system.

**Tension control** The C.A.T. (Computer Aided Tension) and Tensorflex directly interact with the Multicone digital system in order to even the winding tension during the whole process, with any yarn count and material type (including single /double core, siro spun, etc).



Much closer to the package than any other pendulum system

**Density** In case of very fine single cotton yarn or finest wool for dyeing purposes, the machine can be equipped with the optional C.A.D. (Computer Aided Density).

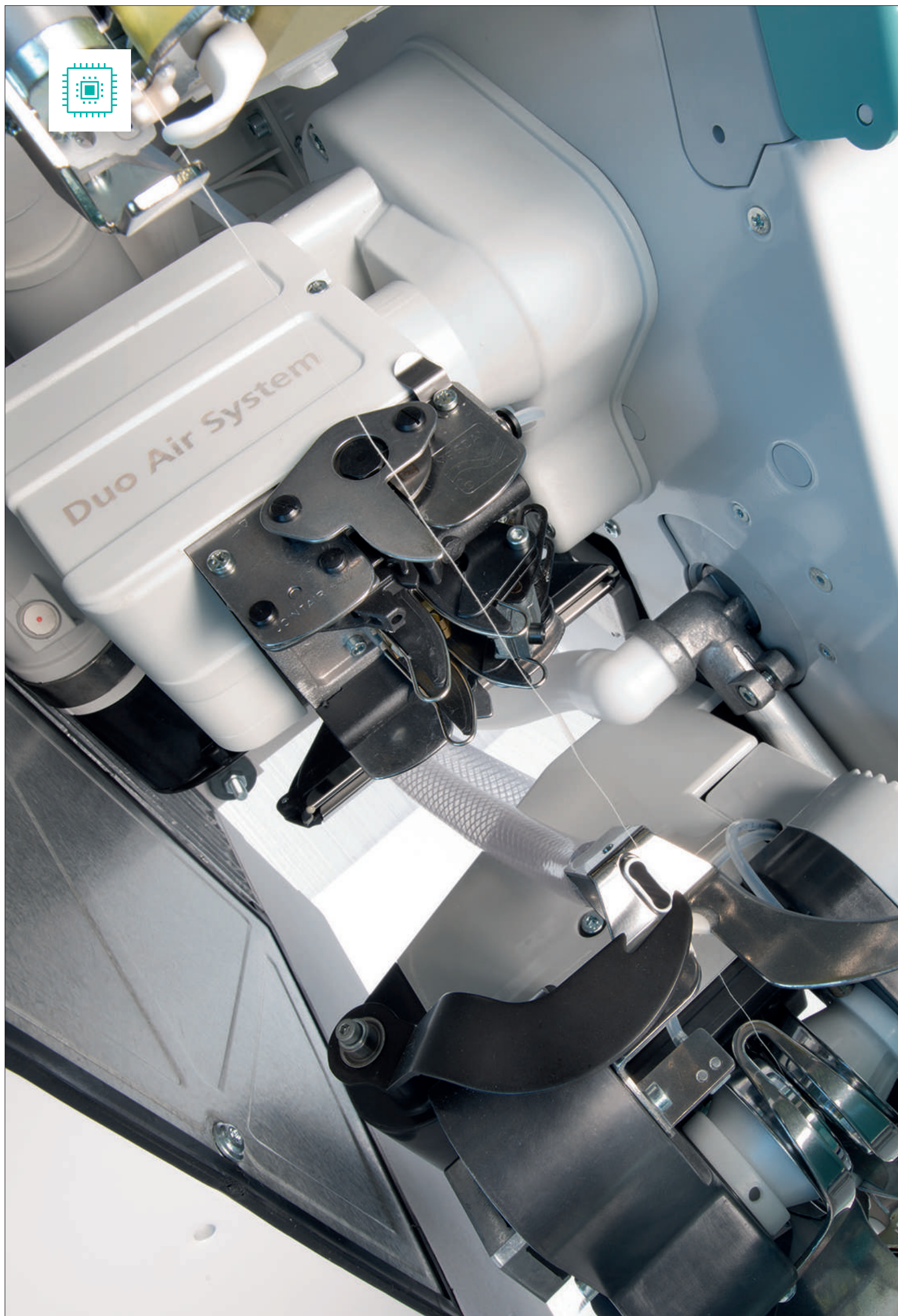
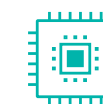
**THE WINDING MODE AND PACKAGE SHAPES**  
**Step-Precision winding** Step variation of the winding angle at different diameters to control the distance between yarn layers through all the package building, assuring a consistent density and avoiding any possible ribboning effect. A precision winding mode can also be selected. We recommend using this mode in case of small package diameter in order to keep the full consistency of the building.

**Traverse stroke** Infinite variation deposit modes permit the building of the package with any individual geometrical design (tapered- cylindrical-round edges-pineapple). Relatively to the take-

up tube, symmetrical, left/right wise asymmetrical building.

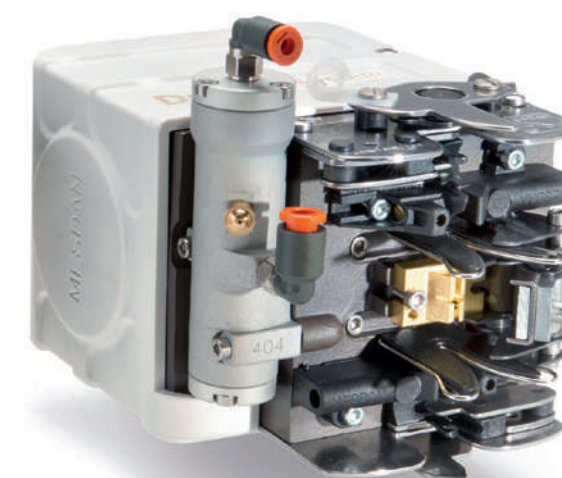
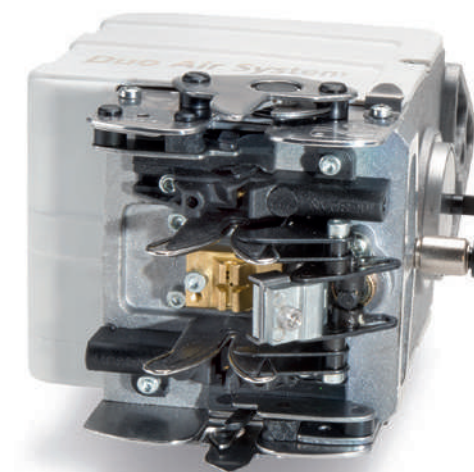
**Package edges** Soft edges values ensured by different stroke length. Several edges shapes (taper or round) ensured by linear or curvilinear reduction stroke ratio.

**Controlling the winding process**  
The simplified PC interface allows to easily program with few settings the working parameters and can be easily selected by any mill operator; this flexibility allows reducing setup times. 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.



## Upgraded splicing solutions - Duo Air Feeding system

Air and Moistair® splicers boasts a **Duo Air Feeding system**, for yarn tail preparation and splicing. This splitting allows the individual setting of the most appropriate value of air pressure, and makes these splicers able to easily process any different fibers and blends combination.



### Air splicer

Settings are completely centralized in the PC:

- Fast and simple change
- Consistent uniformity of splice in each different spindle

### Main application range:

- Cotton 100% and blends
- Cotton Compact yarns
- Fancy yarns
- Core yarns
- Synthetic and artificial yarns
- Wool 100% and blends
- Silk



### Moistair® splicer (optional)

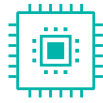
Moistair® is an innovative air splicer using a very small quantity of water (spray). It is endowed with a water valve with dosage setting to moisturize the splice. Suitable for almost all kind of short and long spun yarns. The Moistair® has delivered superior performances on TENCEL® and fine counts.

Settings are completely centralized in the PC:

- Fast and simple change
- Consistent uniformity of splice in each different spindle

### Main application range:

- Short and long spun yarns
- TENCEL®
- Elastic core yarns (single core, dual core)
- Very fine cotton yarns
- Coarse and slub yarns



## Splicer library

Settings of air and water parameters are individually adjusted per each winding head.

### Water splicer (optional)

The splicing operation is made under vacuum while the water is injected (Duo-Stage). All the splicer parts are located in a "water proof" housing to avoid dangerous spray of water outside.

#### Main application range:

- Cotton 100% coarse counts (flat and fancy yarns)
- Cotton 100% compact yarns
- Mercerized/singed yarns
- Elastomeric yarns
- Two ply yarns
- Open End yarns
- Synthetic yarns
- Linen yarns



### Heat-Splicer (optional)

The consolidated experience on the splicer air technology in combination with the use of the heat, guarantees a final joint with excellent appearance, high and consistent strength even with, difficult yarn structures, different blended materials and high twisted yarns.

#### Main application range:

- Carded wool coarse counts
- Mule spun yarn
- High twist yarns
- Wool 100% and blends



### Twinsplicer (optional)

The way the splice is prepared and made, ranks the Twinsplicer at the top among all other splicing devices. The splicer strength is always above 95% keeping the appearance same as the parent yarn. The splicer on compact yarns, beside the strength, needs an extremely good appearance not to create a visible defect on the finest fabrics. The Twinsplicer for core yarns preserves the elastomeric filament entirely inside the joints.

#### Main application range:

- Cotton 100%
- Cotton 100% Effect yarns
- Compact Yarns
- Elastomeric yarns
- Cotton and blends

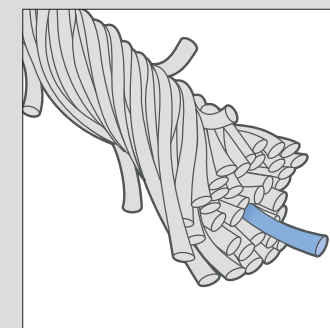


## Core yarns

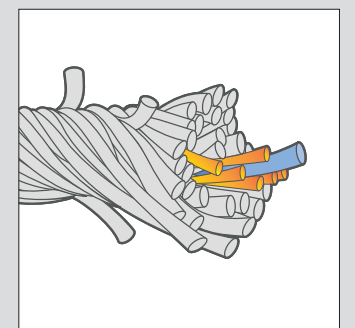


The demand for yarns with elastomeric core is expanding, and plays an important role because of fashion versatility and flexibility. Stretch garments are playing an important role inside this scenario, denim jeans and leggings are highly requested, especially for womenswear. Keeping up this trend of stretch denim, many yarn & fabric manufacturers are offering duo core yarns with improved recovery and strength, while retaining the comfort of cotton next to the skin. Dual core spun yarns are consisting of three components: a core filament - mainly Lycra®, a polyester multifilament as T-400® and a staple fiber- mainly cotton. This special yarn offers improved recovery and strength compared to traditional core spun technology.

Savio Polar Evolution can easily process special and challenging yarns. Savio winding unit is equipped with splicing and tension control devices for ensuring perfect joints and perfect package shape. A common problem faced by the stretch fabric manufacturers is the breakage of the yarns during downstream process. The well-known Savio Twinsplicer still represents the solution to achieve the best performance of a "perfect joint" on Core Yarns, mainly "single core" with cotton, but also positive results have been achieved with Dual Core Yarns. In this field, Savio can also offer the new splicing technology combining air and water, Moistair®, which represents the most flexible solution of any kind of yarn.



**Core spun yarn** is created by twisting staple fibers around a central elastomeric filament core, usually made of LYCRA® fiber. Different basic fibers (short and long staple) are commonly used: cotton, viscose, siro, woolen blends.

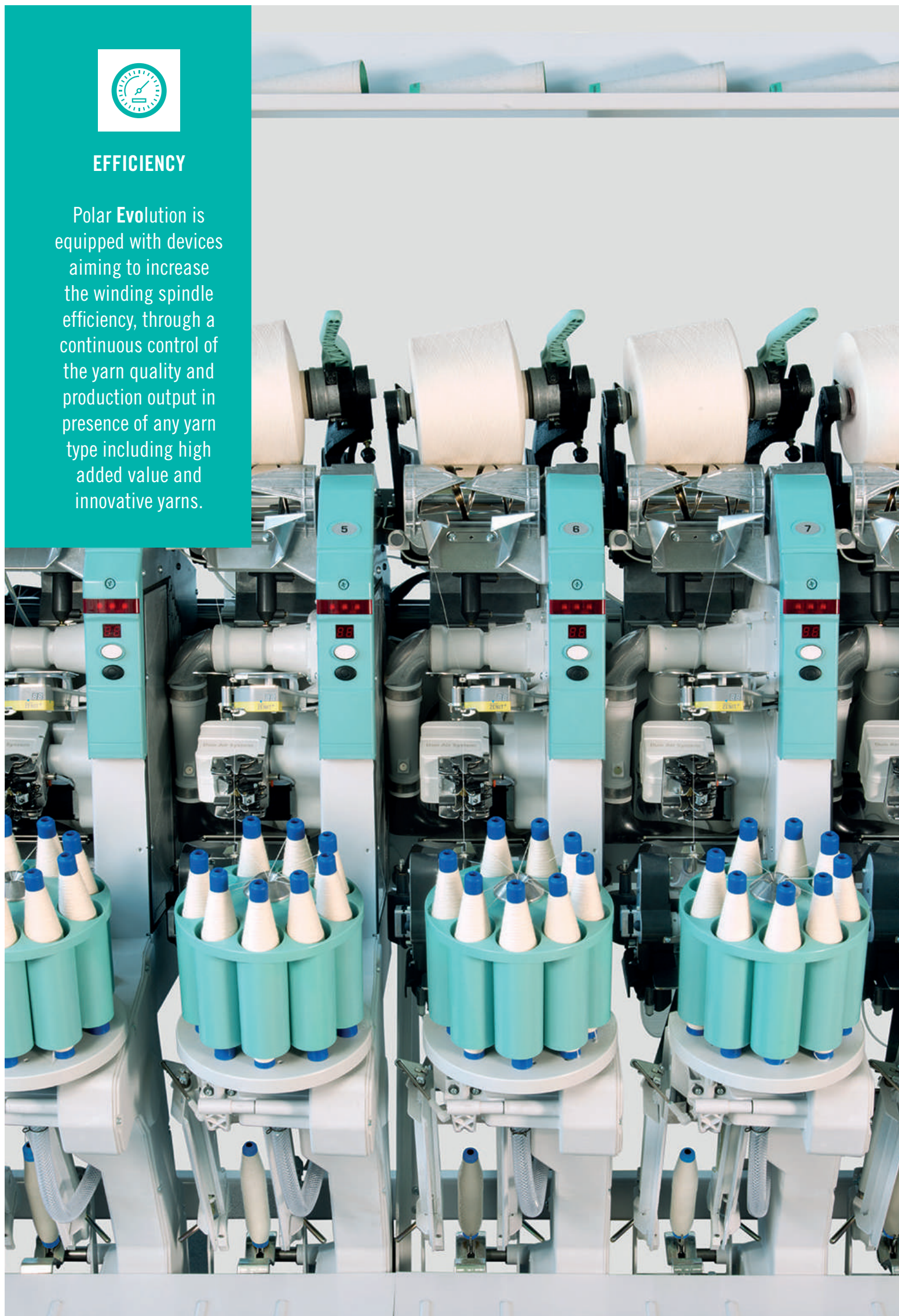


**Dual core spun yarns** are made of three components: a core filament - mainly LYCRA®, a polyester multifilament as T-400® and a cotton fiber. This special yarn offers improved recovery and strength compared to traditional core spun technology.

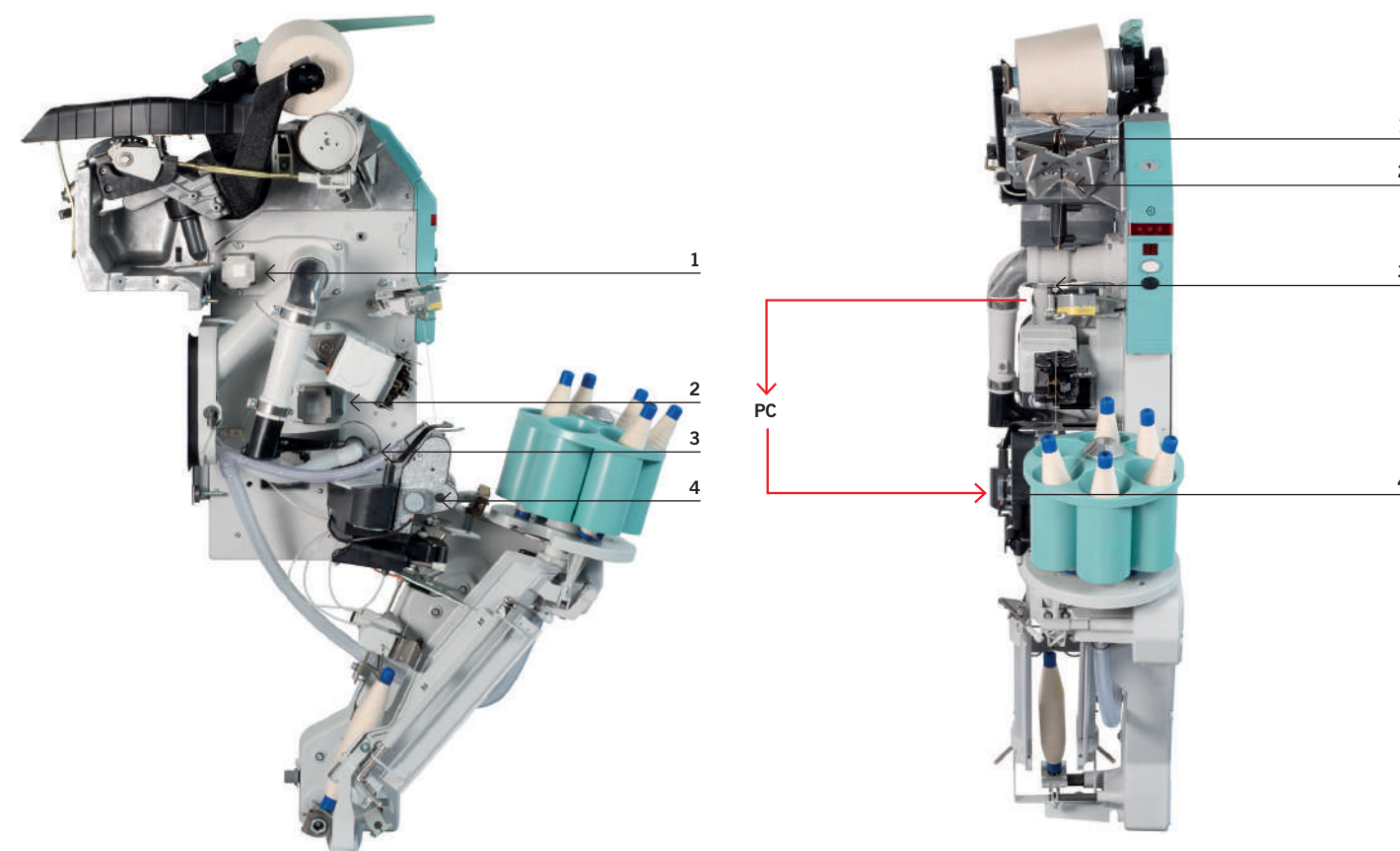


## EFFICIENCY

Polar Evolution is equipped with devices aiming to increase the winding spindle efficiency, through a continuous control of the yarn quality and production output in presence of any yarn type including high added value and innovative yarns.



## Flexible cycle for increased efficiency



The package and the bobbin suction arms along with the splicer are individually driven by independent motors in order to reduce the splicer cycle time. Splice occurs only when both arms bring the yarns into position. Consequently:

- Greater productivity
- Consistent package quality
- Power and compressed air savings because unnecessary splicing cycle are avoided
- Minimum wear of the parts
- Minimum yarn waste

Independent motors also drive yarn tensioner, waxing device (optional), drum and cradle.

- 1 Independent movement of the package yarn suction nozzle
- 2 Independent movement of the splicer
- 3 Independent movement of the bobbin yarn suction nozzle
- 4 Independent movement of the yarn tensioner device

### C.A.T.

#### Computer Aided Tension

The winding tension is detected continuously by the Tensor, which interacts with the yarn tensioner device, through the machine PC, in order to adjust the load on the yarn as required. The Tensor, being positioned just before the drum detects on line the real winding tension. The sensor does not have any movable parts and performs as "antiwrap system".

#### Tensorflex (standard)

In presence of elastomeric yarn blended with wool/cotton the tension values must be diversified during the package formation to ensure a perfect shape.

- 1 Drum
- 2 Traverse
- 3 Tension sensor TENSOR
- 4 Yarn tensioner



## Simplified PC monitoring



The simplified PC interface allows an easily programming with few settings the working parameters and can be easily selected by mill operators, reducing set up time. Furthermore, all the clearers of the last generation are totally integrated with the Polar Evolution process logic. The main PC display for winder and electronic clearers setting & control are totally integrated.

### Spindle Monitoring System

Each winding head is equipped with an alarm monitoring system. The operator is notified in real time of the ongoing alarm. Each spindle indicates technological as well as functional alarm.

### Clearing logic

All the clearers of the last generation are totally integrated with the Polar Evolution process logic. Each single spindle becomes a technological laboratory to ensure the production of a faultless package. In addition to the control of the main single or repetitive yarn defects, splice included, the system foresees the possibility to remove from the package all technological defects communicated by the clearer. The spindle provides automatically to remove from the package the faulty portion of the yarn. The clearer PC is totally integrated.



## Energy Saving



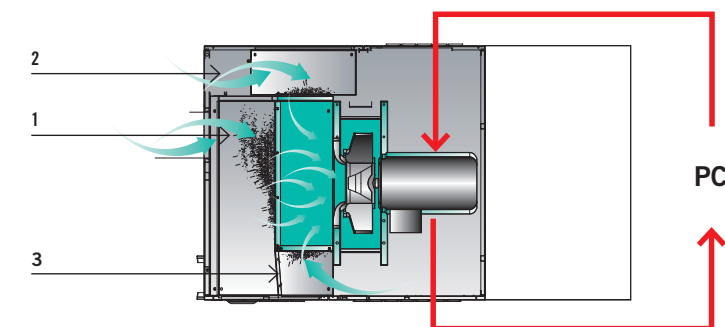
Particular attention has been given to the suction system, which represents the highest portion of the energy in the winding process. The motor fan adjusts its speed automatically in accordance with the actual working conditions and parameters. The yarn waste is collected in a separate filter box located in the machine headstock.

The same fan provides also the vacuum to unload the travelling blower waste, once the blower reaches the proper discharge pipe also located in the headstock. The travelling blower waste is collected in a second separate filter box. In case of the "Dust collection system" device, the waste is unloaded in a third separated filter box.

### Dust collection system

A single suction unit for each head, located at the height of the balloon breaker, captures fibrils and dust produced when the bobbin is being unwound. A fan, that serves two sections of heads, creates suction. A filter collects the impurities and dust.

- 1 Yarn waste filter box
- 2 Dust removal system filter box
- 3 Travelling blower filter box

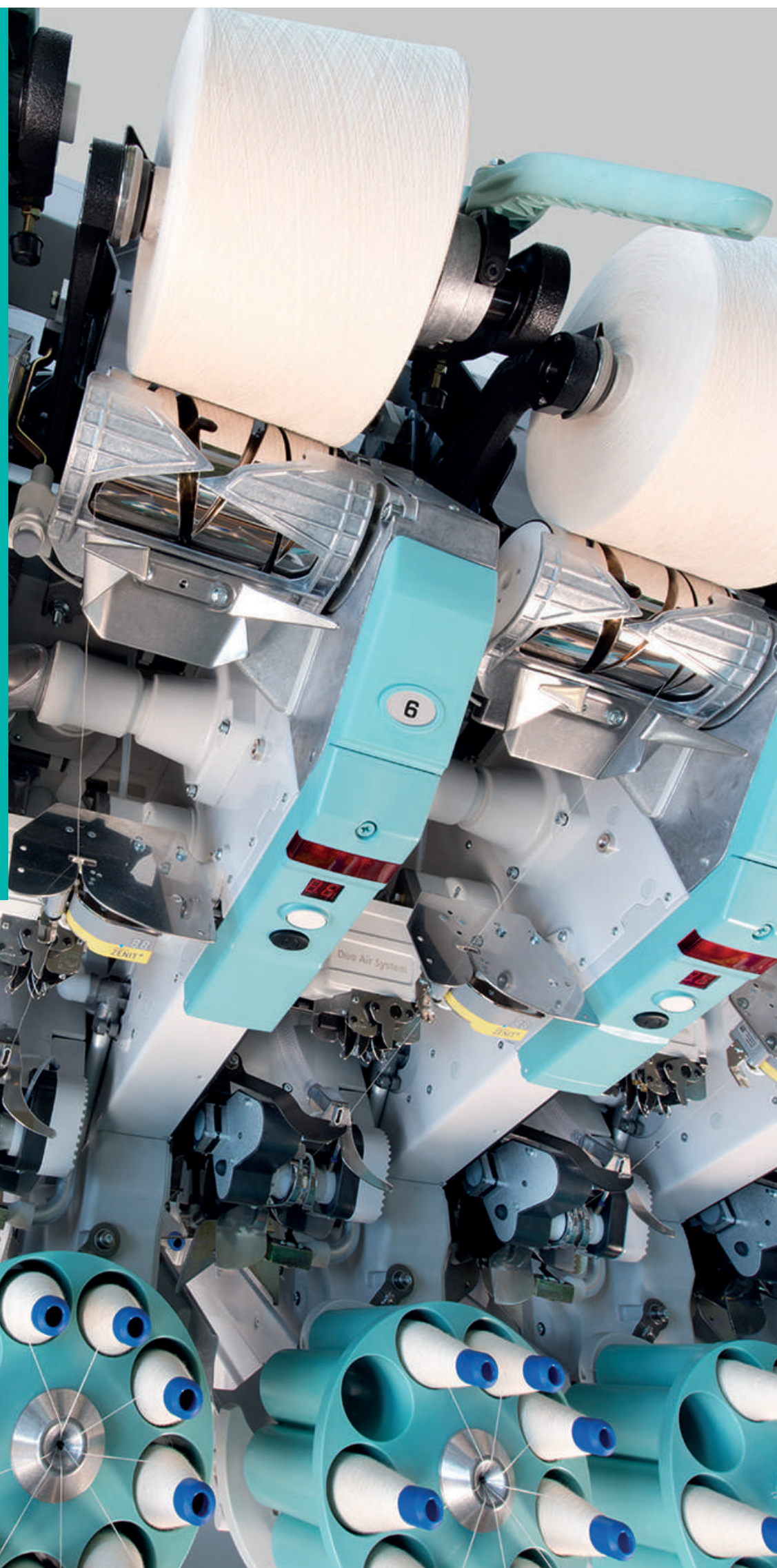




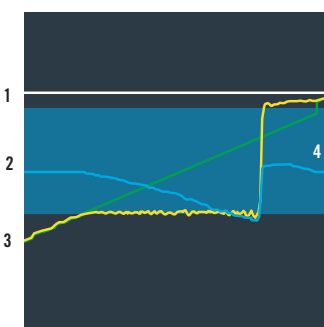
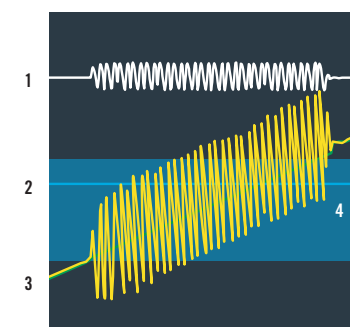


### QUALITY OUTPUT

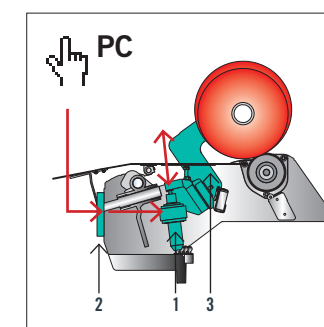
The Savio winding unit is equipped with control devices for ensuring perfect density, metering and perfect package shape. These unique devices contribute to produce packages without ribbon and ensure the minimum possibility of breakage, slough-off during unwinding at a very high speed, particularly in fine count, results into higher efficiency in Weaving & Warping department.



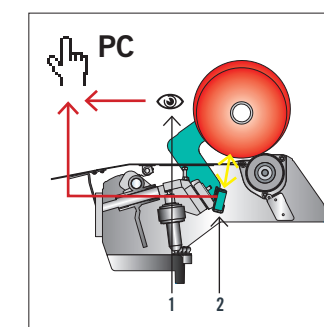
### Premium package quality



1 Drum speed  
2 Package holder position  
3 Ratio between package/drum diameter drive in actual time  
4 Ribboning zone



1 Piston  
2 Electronic/pneumatic valve  
3 Cradle



1 Package and drum speed sensor  
2 Laser detector signal

#### Electronic anti patterning system

On/Off modulation operates at critical diameters only. In the On/Off system, all the critical rates between package and drum diameters are memorized by the computer and consequently the drum is accelerated and decelerated, according to variable ramps, when there are possibility of ribboning formation. The system operates also during the acceleration after the splicing cycle.

#### C.A.P - Computer Aided Package® (Optional)

It gives a perfect package, without ribboning and without changing the drum's speed. The computer checks the distance between two consecutive layers, and modifies the ratio between package and drum diameters by micrometric variation of the inclination of the package cradle, and consequently of the driving point.

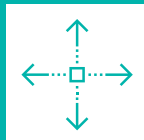
#### C.A.D. - Computer Aided Density (Optional)

- Control of the package load on the drum.
- The package weight increase is detected by the length metering; consequently, the "electronic/pneumatic valve" is activated.
- Customized package load curve.
- The relevant parameters are programmable and stored in the machine PC.

The system is especially studied to process compact yarn producing soft packages for Dyeing (0.32 / 0.35 g/cm<sup>3</sup>).

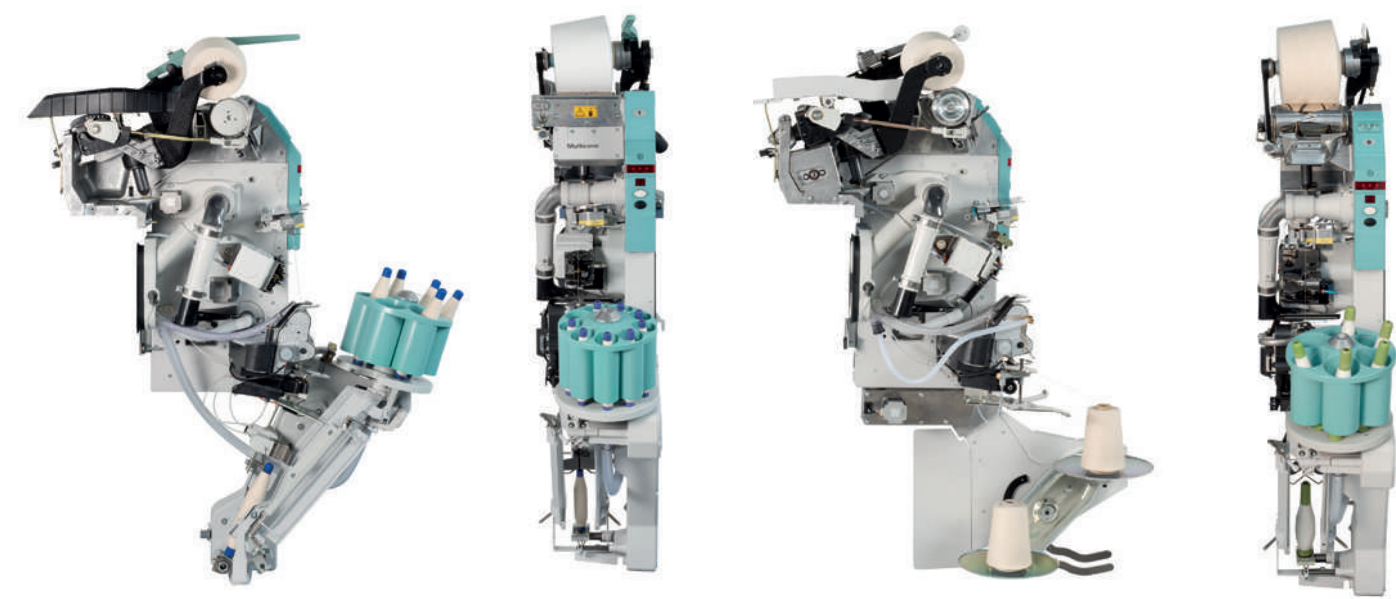
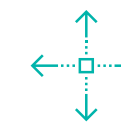
#### C.A.M. - Computer Aided Metering (Optional)

- The combination of the laser detector beam with the package and drum speed sensor, is elaborated by the machine PC software.
- The system allows a metering high precision repetitiveness  $\pm 0,5\%$ .



**FLEXIBILITY**

In terms of flexibility, the manual feeding winder can easily process different yarns and counts, allowing a very flexible production planning, since there's no rigid assignment of yarn allotments from ring spinning frames. Furthermore, PolarEvo round magazine model is so flexible that can be customized according to feeding requirements and to special spun yarns.

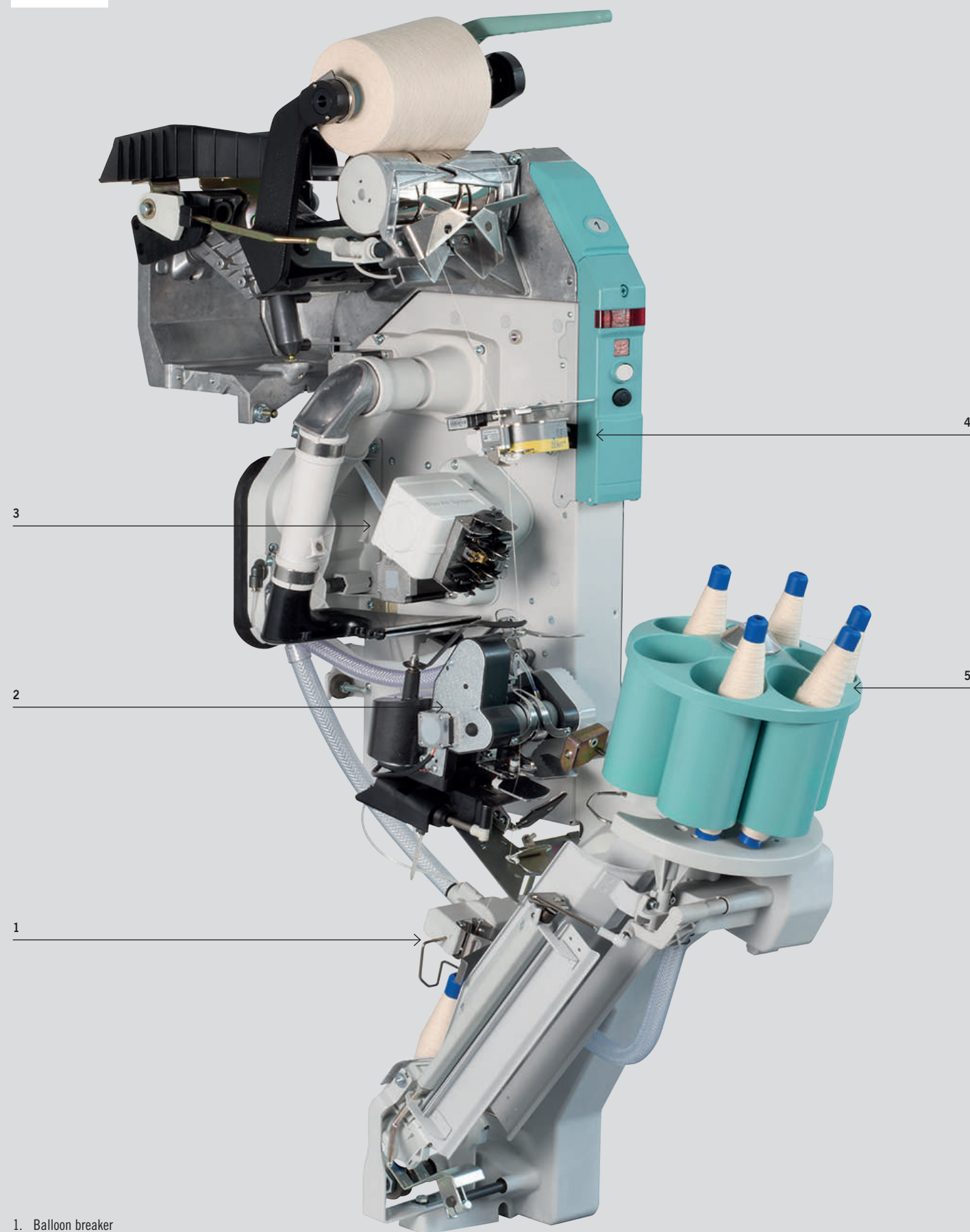
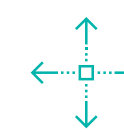
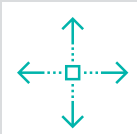


- **M/L version:** the reliable round magazine bobbin feeding to cover all needs of industry.

- **Multicone technology:** drumless thread guide technology for a flexible package formation in terms of geometry, edges shape and density.

- **R version** with package feeding allowing the rewinding of packages of any taper.

- **F version** for processing wet spun flax yarns.



1. Balloon breaker
2. Yarn tensioner/waxing unit (optional)
3. Splicer
4. Electronic clearer
5. 6 or 9 pockets magazine is available

## M/L version: round magazine bobbin feeding

The manual feeding winder is available with manual package doffing (M) or automatic package doffing (L), remarkable for the following features:

- Cast iron drum with nickel coating
- Yarn path with reduced points of contact on the yarn
- Take-up packages with different taper ratios with electronic on/off anti-patterning system
- Complete range of splicers to cover all yarn needs
- Various types of bobbin feeding from 180 to 450 mm
- 6 or 9 pocket round magazine



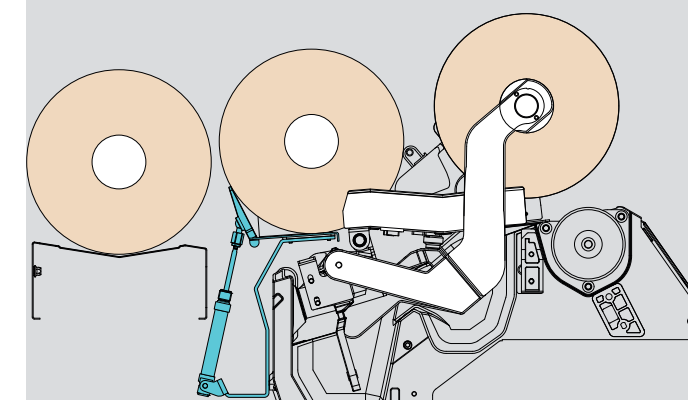
### Efficient and fast automatic doffer

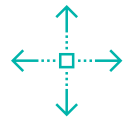
The doffer trolley is electronically integrated with the winding heads and the machine PC.

- All the moving parts are driven by individual independent motors so to reduce the doffing cycle time to 13,5 seconds.
- The universal clamp is able to handle a certain different range of empty tubes conicity simultaneously without parts change.
- A new designed basket geometry to store different tubes conicity with no parts change, and to allow the easy tube color recognition when different yarns are processed on same machine.
- The reserve yarn length is adjustable by the machine PC in order to meet any end user request.
- A fast patrolling speed up to 60 mt/min. in order to increase the doffing efficiency.
- The laser technology ensures the precise positioning of the doffer with the winding heads.

### Flexible package unload (optional)

The package is unloaded in a “stand by position” to optimize the winding efficiency, while the spindle will keep on running. Being the unloading area individual and independent per each winding position, customized regrouping of packages can be delivered to the discharge conveyor belt. Unloading mode is managed by PC software, with high level of flexibility.





## R version: package feeding

R version allows rewinding of packages of any taper, producing packages ideal for any subsequent use.

The main fields of use of Polar Evolution MR/LR are rewinding packages coming from the dyeing process, packages of different shapes and contents, packages coming from Open End spinning frames and packages remains. The machine equipped with automatic feeding package change is available with (LR) or without (MR) automatic doffing trolley. A simplified version is also available with a fix single peg.

### Technical features

Count range: natural, synthetic and blended staple yarns from Ne 2 to 147, from Nm 3.5 to 250.

Feeding packages: cylindrical or tapered packages max. 250mm, winding traverse ≤152mm / max 220mm, winding traverse = 200mm.

### Automatic feeding package change device

With the Polar Evolution MR/LR the feeding packages are changed automatically. The operator intervention is limited to load the package located in an ergonomically favorable position.

### Special Functions

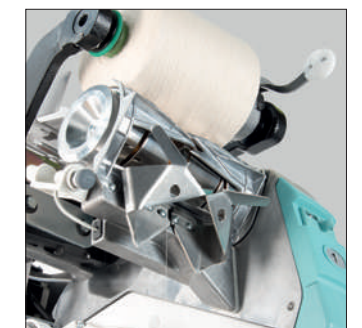
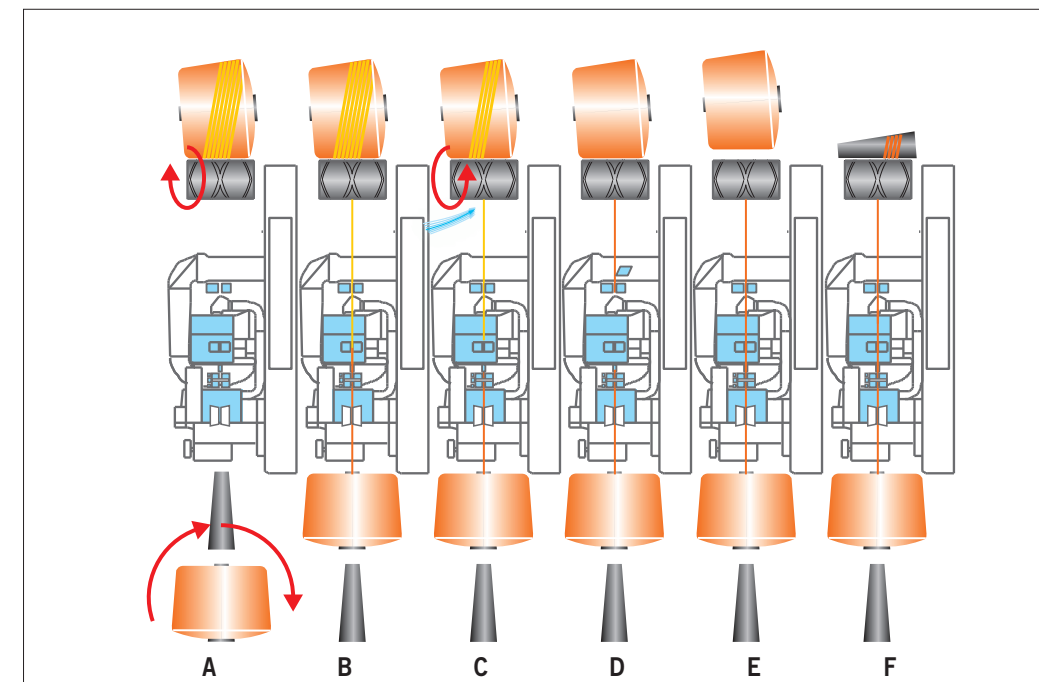
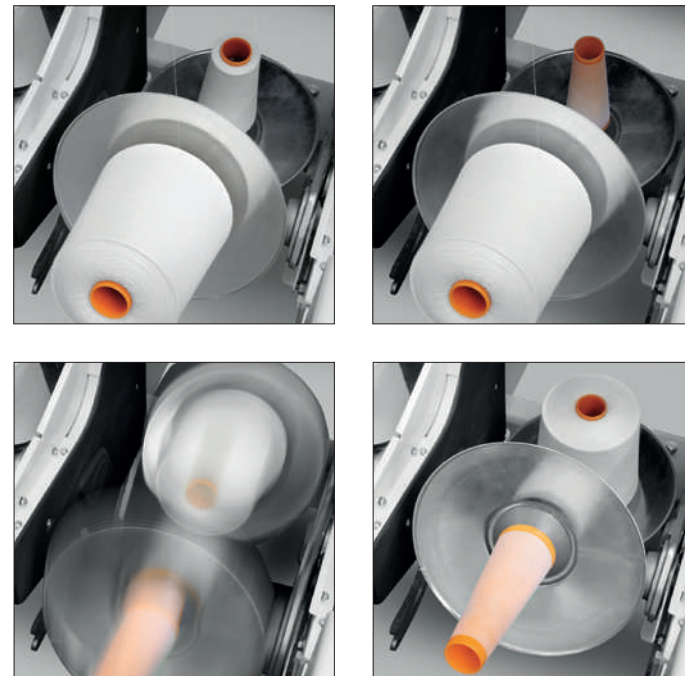
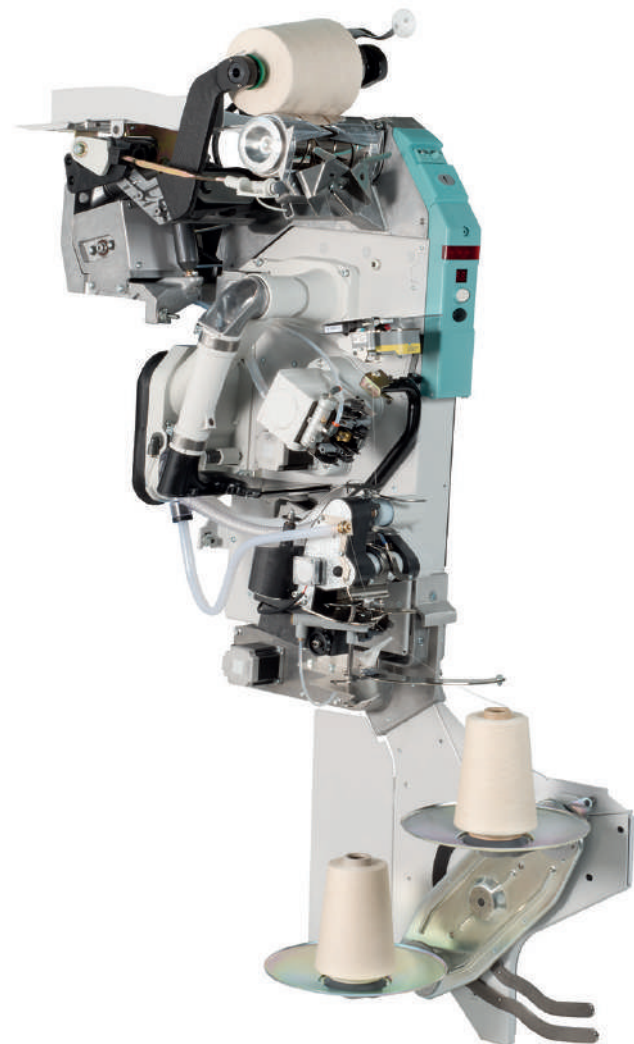
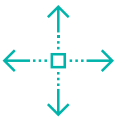
With the computer the following functions can be programmed:

#### Winding of a feeding package onto a take/up package

- With “sock” removal;
- With manual removal of the “sock”;
- With automatic removal of the “sock”;

#### Winding of two feeding package onto one take/up package

- Without “sock” removal;
- With automatic removal of the “sock”;
- Splice dispersion without removing the “sock”;
- Splice dispersion and automatic removal of the “sock”.

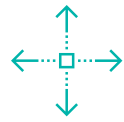


### Automatic removal of the “sock”

- A Feeding package change
- B Splicing

C The yarn is cut and the winding drum reversed for a set time to unwind the “sock” from the package, and remove it by means of the package suction nozzle.

- D Cutting of the yarn
- E Splicing
- F Package doffing



## F version: processing wet spun flax yarns

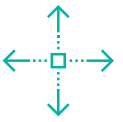
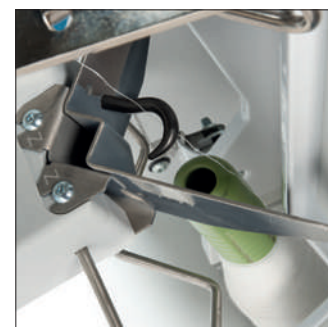
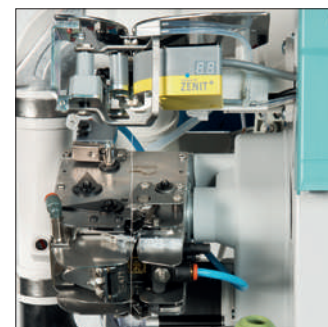
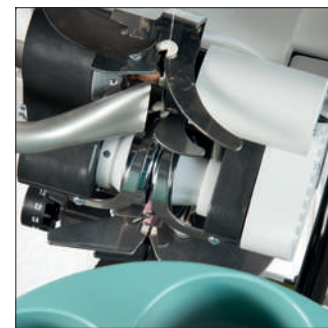
The Polar Evolution winder for wet spun flax yarns is equipped with a special “flax kit” able to overcome the low content of yarn in the bobbin, the high percentage of defects in the yarn and fiber stiffness.

### Flax kit along the yarn path

- Ceramic devices: to control flax yarn which is commonly known to be very stiff and highly abrasive, effective ceramic devices have been embedded to protect against wear.
- Duo-stage water splicing: quality, resistance and splicing appearance have reached extraordinary levels, thanks to Water splicer, the only water splicer on the market where splicing is firstly done in a watertight chamber, and secondly with adequate vacuum in the splicing chamber, thus allowing top quality joint.
- Yarn-trap-gate on clearer: to optimize yarn reading in the optical electronic clearer.
- Treated balloon breaker: a new shape and position for the balloon breaker allows less pressure on the yarn and therefore greater productivity and quality.

### Technical features

Count range: wet spun flax yarns from Nm 6 to 80.  
Feeding bobbins: tube length from 180 to 350 mm, with a bobbin diameter of 32 to 72mm.



## Special version with feeding from large bobbins Special version with feeding from remnants cones

### Special version with feeding from large bobbins

While maintaining the same performance, flexibility and reliability features of the round magazine type machine, this winder can process large and medium yarns at high speed in the carded, worsted and self acting fields.

### Technical features of feeding from large bobbins:

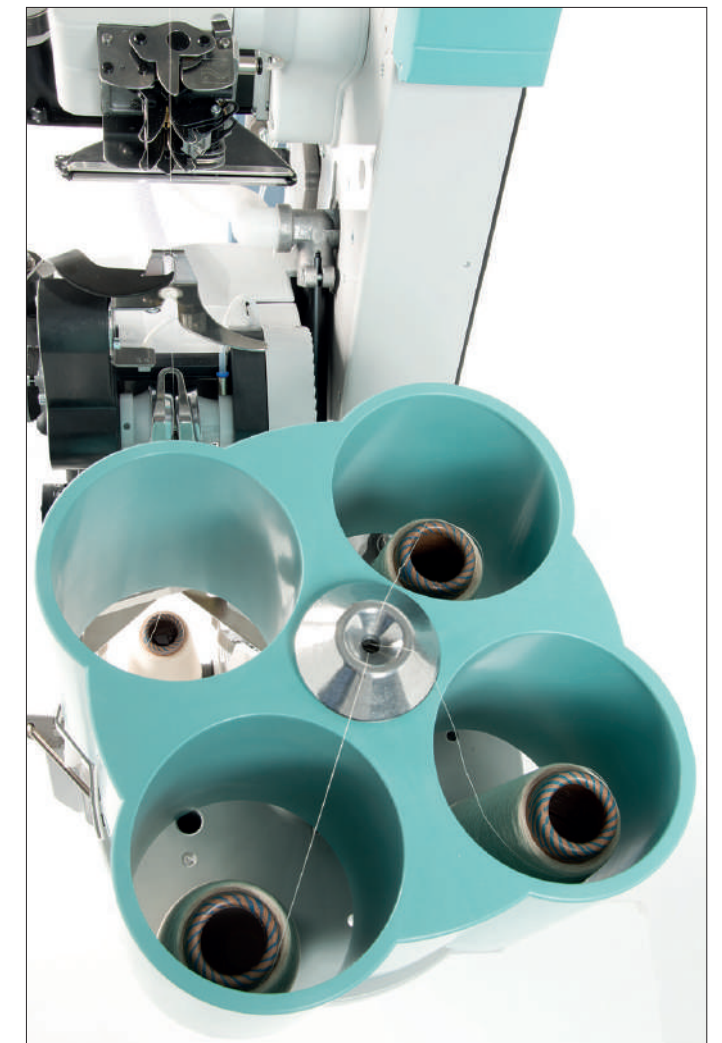
Loading capacity: 1 feeding bobbin, 3 in reserve. Features of the feeding bobbins: maximum diameter 95mm, max. length 450 mm.

### Special version with feeding from remnants cones

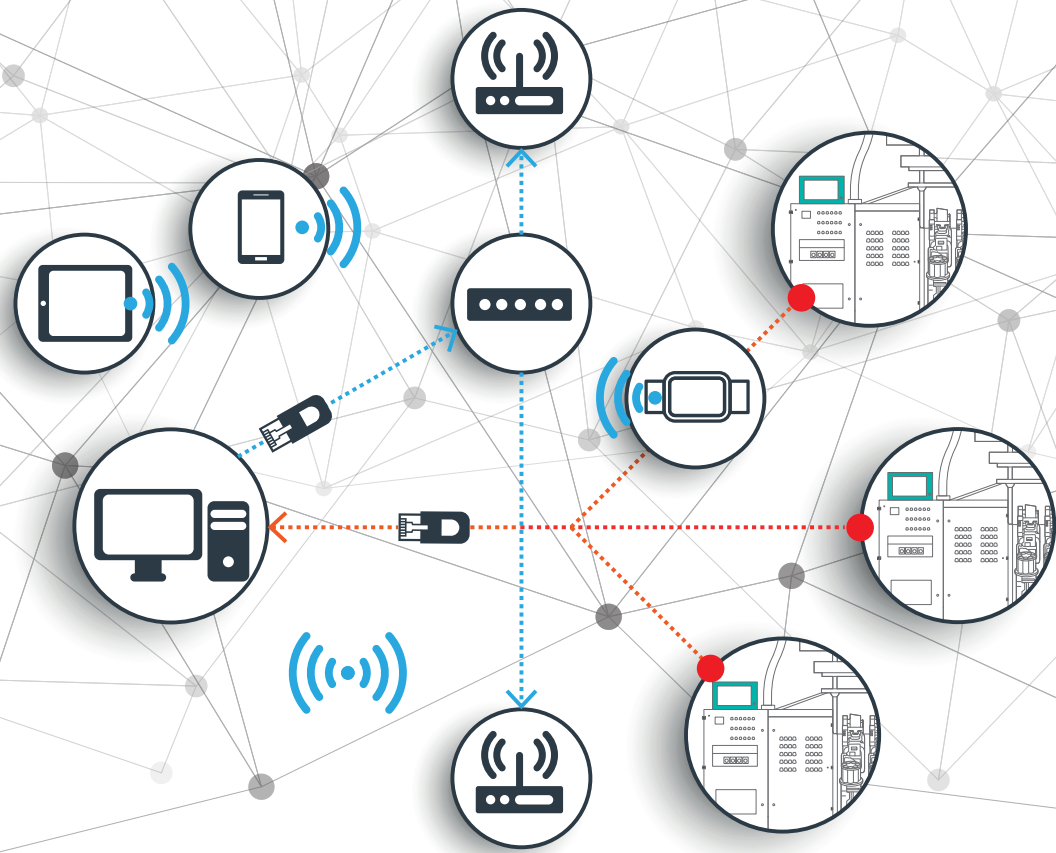
To provide a valid solution to remnants cone related problems, Savio has perfected on the Polar Evolution winder an application that allows feeding from remnants cones with diameters up to 110 mm.

### Technical features of feeding from remnants cones:

Loading capacity: 1 feeding package, 3 in reserve. Features of the feeding package: winding traverse 110, taper 0°-9°15'.



## Smart Industry Solutions for Textile Mills Savio Winder 4.0

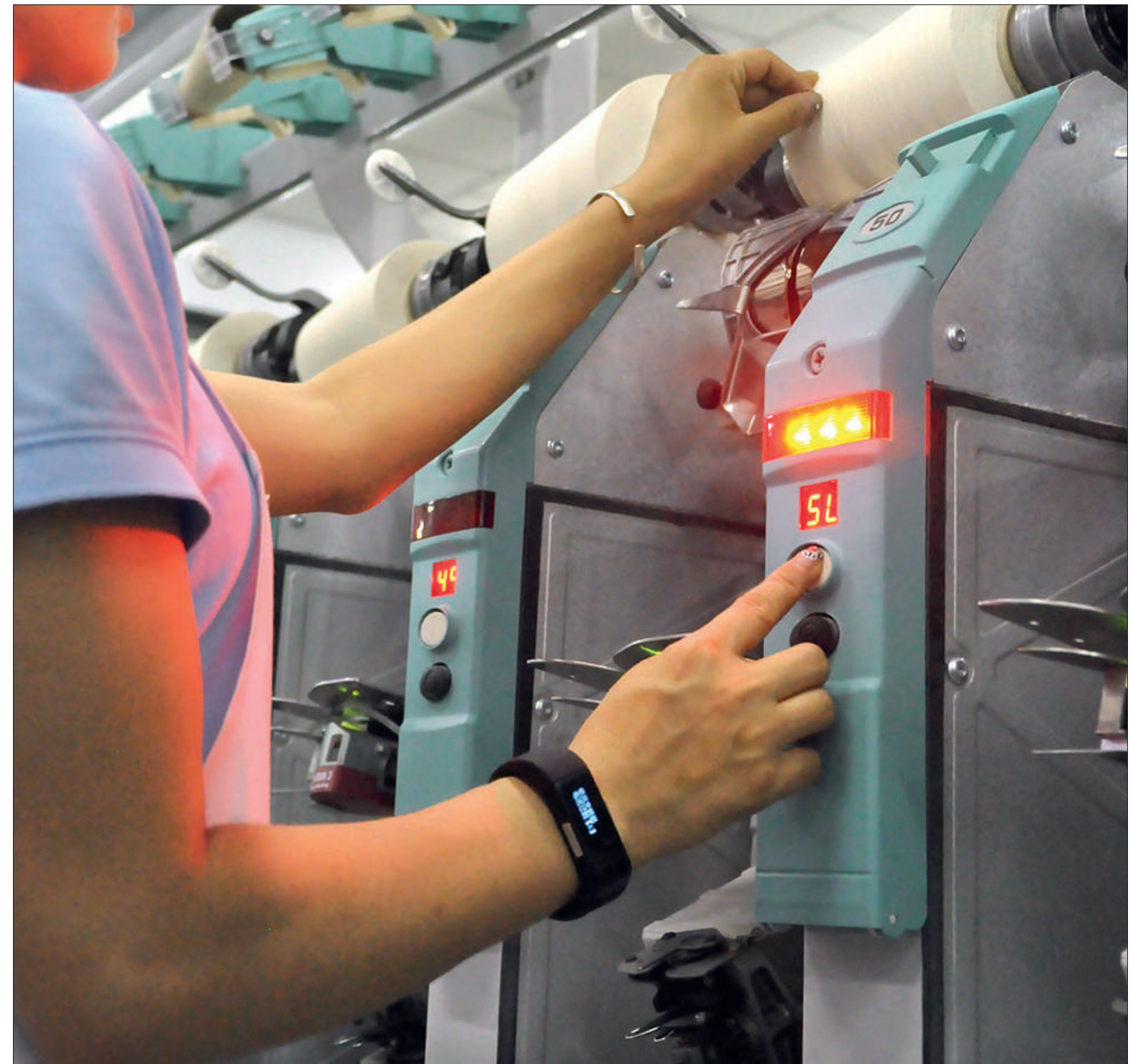


Industry 4.0 is the current trend of automation and data exchange in manufacturing technologies. It includes cyber-physical systems, the Internet of things and Cloud computing. Over the Internet of Things, systems communicate and cooperate with each other and with humans in real time. Some aspects that are summarized under the terms "Internet of Things" and "Industry 4.0" are not new for Savio and its textile machinery engineering. Electronics and remote services used for maintenance and process optimization have been applied for many years.

Connectivity, data management, remote machine set up and operator real-time interactivity: this is the Savio way for smart solutions for textile mills. Nowadays, Savio product development is focused on "smart" components that must transmit data online. Once composed solely by mechanical and electrical parts, now winding machines have become complex systems that combine hardware, sensors, data storage, microprocessors, software and connectivity. These smart machineries can increase the efficiency of the spinning mill and perform predictive maintenance avoiding breakdowns and downtimes.

Savio Winder 4.0 represents an important step towards a wide digitalization process, being a solution for intelligent networking of machines in the spinning/winding room. This data management system is a very modern and important management tool, relieving mill management staff of time-consuming routine work. The mill manager can have the winding room live monitoring directly from his/her desk. Thanks to data analytics, a wealth of data are available, allowing to manage the different production phases in the best possible way and to monitor all significant parameters anytime and anywhere, making use of mobile devices.

All these features enable Savio customers to control overall equipment effectiveness, increase workforce efficiency, and maximize quality and working time. Services are even going mobile. Savio Winder 4.0 is also meant as communication between machine operator and service specialist in case of need.



### Three different levels of winding control monitoring

**1. BASIC PACK  
SAVIO COMPUTER INTERFACE**  
Connectivity and data downloading

**2. BUSINESS PACK  
WINDER BROWSER**  
Data management, remote machine set up and monitoring

**3. EXECUTIVE PACK  
WINDER BROWSER + SAVIO  
SMART BRACELETES**  
Operators real-time interactivity



## TECHNICAL SUMMARY

The manual feeding winder is a reply to those spinning mills using ring spinning frames with different bobbin sizes, for different counts and fiber. This winder can easily process different yarns and counts, allowing a very flexible production planning, since there is no rigid assignment of yarn allotments from ring spinning frames. Furthermore, Polar Evolution round magazine model is so flexible that can be customized according to feeding requirements and to special spun yarns.



	M model	L model	R model	F model	Large bobbins model	Remnants cones model
<b>Features</b>	Manual bobbin feeding and manual package doffing	Manual bobbin feeding and automatic package doffing	Package feeding for the rewinding of packages of any taper	Processing wet spun flax yarns	Special version with feeding from large bobbins (M/L)	Special version with feeding from remnants cones
<b>Feeding formats</b>	Bobbin size: tube length from 180 to 350 mm with a bobbin diameter of 32 to 72 mm. Mule Cops: tube length 305 mm, bobbin diameter max 72 mm		Feeding packages: cylindrical or tapered packages max. 250mm, winding traverse ≤152mm / max 220mm, winding traverse = 200mm	Feeding bobbins: tube length from 180 to 350 mm, with a bobbin diameter of 32 to 72mm	Feeding from large bobbins: Loading capacity: 1 feeding bobbin, 3 in reserve. Features of the feeding bobbins: maximum diameter 95mm, max. length 450 mm	Feeding from remnants cones: Loading capacity: 1 feeding package, 3 in reserve. Features of the feeding package: winding traverse 110, taper 0°-5°57'
<b>Materials</b>	Natural, synthetic and blended staple yarns		Natural, synthetic and blended staple yarns	Wet spun flax yarns, linen	Natural, synthetic and blended staple yarns	Natural, synthetic and blended staple yarns
<b>Count range</b>	From tex 286 to tex 4, from Ne 2 to Ne 147, from Nm 3.5 to Nm 250		From Ne 2 to 147, from Nm 3.5 to 250	From Nm 6 to 80	From Ne 2 to 40	From tex 286 to tex 4, from Ne 2 to Ne 147, from Nm 3.5 to Nm 250
<b>Headstock</b>	Right or left with respect to the working front					
<b>Frame</b>	Modular frame consisting of 6, 8, 10 head sections					
<b>Number of heads/machine</b>	From a minimum of 12 to a maximum of 80 in steps of 2		From a minimum of 12 to a maximum of 50		From a minimum of 12 to a maximum of 80 in steps of 2	
<b>Take-up</b>	Crossed packages: winding traverse 110, 152 mm (3/2 EVO drum) 157 mm (2 EVO drum), taper 0°÷5°57', maximum diameter 320 mm.					
<b>Take-up speed</b>	400 ÷ 2200 m/min with step less setting					
<b>Pocket magazine</b>	6 or 9		6		4	

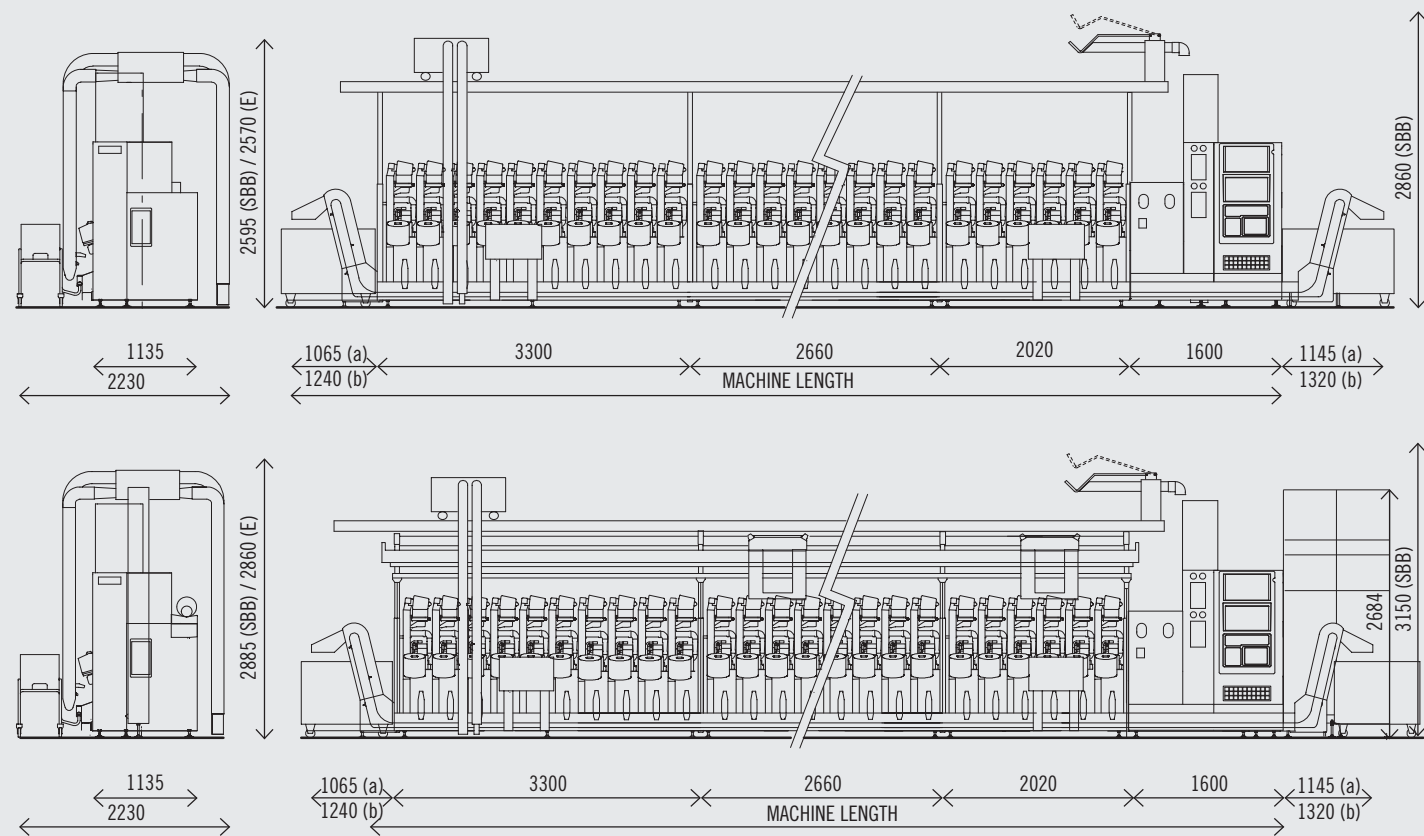
	M model	L model	R model	F model	Large bobbins model	Remnants cones model
<b>Winding unit</b>						
Grooved drums	■	■	■	■	■	■
Electronic anti patterning system	■	■	■	■	■	■
C.A.P. Computerized control of the drum-package diameter ratio	□	□	□	□	□	□
Package taper increase: 0°÷5°, mechanical type, electronic only with C.A.P.	□	□	□	□	□	□
Axial displacement: with individual motor	□	□	□	□	□	□
Electronic clearers: Uster, Loeffe basic model with global and continuous yarn and splice control. Other manufacturers on request.	■	■	■	■	■	■
Duo Air Splicer System: Jointair type	■	■	■		■	■
Splicers: Water, Moistair®, Twinsplicer, Heat-Splicer, knotters	□	□	□	□	□	□
Yarn tensioner: a tension section, controlled by a single drive	■	■	■	■	■	■
Pre-cleaver: variable width	■	■	■	■	■	■
Tensor - C.A.T. Computer Aided Tension	■	■	■	■	■	■
Waxing unit, deflection type	□	□	□	□	□	□
Wax finished detection probe	□	□	□	□	□	□
Booster: tension reducer	■	■	■	■	■	■
C.A.M. Computer Aided Metering	□	□	□	□	□	□
Counterweigh: standard pneumatic device or self-adjusting	■	■	■	■	■	■
C.A.D. Computer Aided Density	□	□	□	□	□	□
<b>Machine body</b>						
Package conveyor belt: towards the headstock, or towards the tail or split for two lots	□	□	□	□	□	□
Tube unload belt: towards the tail end of the machine, or towards the head of the machine or split for 2 lots.	□	□	□	□	□	□
Lighting along the machine	□	□	□	□	□	□
Travelling blower/suction unit: programmable control frequency and unloading at machine headstock or centralized	■	■	■	■	■	■
Dust removal system in the unwinding area consisting of single suction nozzles with a centralized dust collection box in the headstock	□	□	□	□	□	□
<b>Computer</b>						
Centralised electronic adjustments: machine data, processing parameters, air splicer working parameters (Duo Air types only), yarn tensioner pressure, V.S.S., electronic modulation	■	■	■	■	■	■
Setting, collecting and displaying production data: of winding units, bobbin loading station, doffing trolley, display of the peripheral alarms	■	■	■	■	■	■
Centralized pneumatic adjustments: package cradle counterweight, splicer air pressure	■	■	■	■	■	■
<b>Data management systems</b>						
<b>Basic Pack</b> Savio Computer Interface: connectivity and data downloading	■	■	■	■	■	■
<b>Business Pack</b> Savio Winder Browser: connectivity, data management, remote machine set up and monitoring	□	□	□	□	□	□
<b>Executive Pack</b> Savio Winder 4.0: connectivity, data management, remote machine set up, monitoring and operators real time interactivity	□	□	□	□	□	□
<b>Package unloading system</b>						
Doffing trolley: automatic package doffing, insertion of the cone on the spindle head	-	■	□	□	□	□
Double doffing trolley	-	□	□	□	□	□
Cones feeding: individual cradle on each winding unit	□	■	□	□	□	□
Centralized cone magazine	-	□	□	□	□	□
Double centralized magazine	-	□	□	□	□	□
Flexible package unload: stand-by unloading position independent for each winding unit	-	□	□	□	□	□

■ Standard

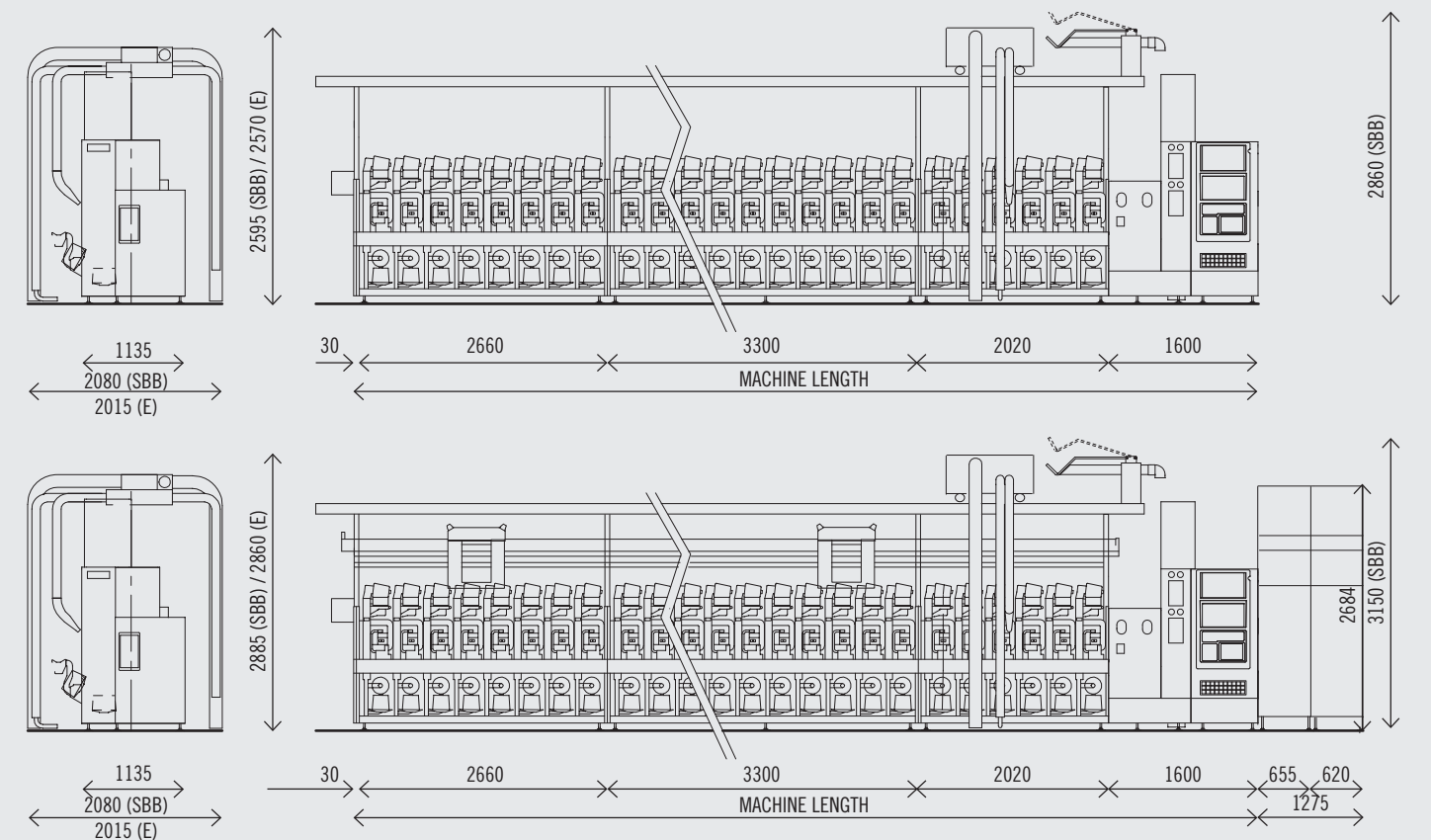
□ Optional

## Overall dimensions

### Polar Evolution M - MF Polar Evolution L - LF



### Polar Evolution MR Polar Evolution LR



N. HEADS	SECTIONS			LENGTH MM
	6	8	10	
12	2	0	0	6880
14	1	1	0	7520
16	0	2	0	8160
18	3	0	0	8900
20	2	1	0	9540
22	1	2	0	10180
24	0	3	0	10820
26	3	1	0	11560
28	2	2	0	12200
30	1	3	0	12840
32	0	4	0	13480
34	3	1	0	14220
36	2	3	0	14860
38	1	4	0	15500
40	0	5	0	16140
42	3	3	0	16880

N. HEADS	SECTIONS			LENGTH MM
	6	8	10	
44	2	4	0	17520
46	1	5	0	18160
48	0	6	0	18800
50	3	4	0	19540
52	2	5	0	20180
54	1	6	0	20820
56	0	7	0	21460
58	3	5	0	22200
60	0	0	6	22640
64	0	3	4	24020
66	0	2	5	24660
68	0	1	6	25300
70	0	0	7	25940
72	0	4	4	26680
80	0	0	8	29240

N. HEADS	SECTIONS			LENGTH MM
	6	8	10	
12	2	0	0	5670
14	1	1	0	6310
16	0	2	0	6950
18	3	0	0	7690
20	2	1	0	8330
22	1	2	0	8970
24	0	3	0	9610
26	3	1	0	10350
28	2	2	0	10990
30	1	3	0	11630
32	0	4	0	12270
34	3	1	0	13010
36	2	3	0	13650
38	1	4	0	14290
40	0	5	0	14930
42	3	3	0	15670

N. HEADS	SECTIONS			LENGTH MM
	6	8	10	
44	2	4	0	16310
46	1	5	0	16950
48	0	6	0	17590
50	3	4	0	18330
52	2	5	0	18970
54	1	6	0	19610
56	0	7	0	20250
58	3	5	0	20990
60	0	0	6	21430
64	0	3	4	22810
66	0	2	5	23410
68	0	1	6	24090
70	0	0	7	24730
72	0	4	4	25470
80	0	0	8	28030

(a) Side discharge  
(b) Lateral discharge

SBB = SAVIO BELT BLOWER  
E = ELECTROJET

Centralized cone magazine (L) + 655 mm  
Double centralized magazine (L) +1275 mm



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

**SAVIO MACCHINE TESSILI S.P.A.**

33170 PORDENONE (Italy)  
Via Udine, 105  
Tel. +39 0434 3971  
Fax +39 0434 397599  
E-mail: [order@saviospa.it](mailto:order@saviospa.it)  
[www.saviospa.com](http://www.saviospa.com)

**SAVIO (SHANDONG) TEXTILE MACHINERY CO., LTD.**

No.6 Torch Industry Park,  
No. 2166 Chongwen Dadao, High&New Tech Industry Development Zone, Jining,  
Shandong, P.R. China 272000  
Tel. +86 0537 2395206/101  
Fax +86 0537 2395216  
E-mail: [info@saviochina.com](mailto:info@saviochina.com)

**SAVIO INDIA LTD.**

Nallattipalayam, Tamaraiikulam - Post  
Pollachi, Coimbatore - 642109  
Tamil Nadu, India  
Tel. +91 4259 304555  
Fax +91 4259 304567  
E-mail: [mail@savioindia.in](mailto:mail@savioindia.in)

**SAVIOTECHNICS S.R.O.**

Lhota 427, 549 41 Červený Kostelec  
Czech Republic  
Tel. +420 499451466  
E-mail: [info@saviotechnics.com](mailto:info@saviotechnics.com)



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.

SAVIO ADVERTISING DPT.  
FOTO: RICCARDO MARIA MORETTI - PN  
ED. 06/2019 - EN