AUTOMATIC WINDER

Polar Evolution

AUTOMATIC BOBBIN FEEDING TYPE
MACHINE MODELS:
POLAR EVOLUTION E
automatic bobbin feeding and doffing (Stand-alone system)
POLAR EVOLUTION E PREMIUM
automatic bobbin feeding and doffing (Stand-alone system).
Freestanding winder provided with new features to process bobbins produced by ring frames not equipped with automatic doffing device.
POLAR EVOLUTION I/Direct Link System
automatic bobbin feeding and doffing (Link system)

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

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.
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.

New Evo drums for improving package-unwinding performance
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.
Upgraded splicing solutions - Duo Air Feeding system

Air and Moistair® splicers boast 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 kinds 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

Air and Moistair® splicers boast 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.
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
- 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 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

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.
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.

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 online 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.
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 clearer PC is totally integrated.

Clearing logic
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.

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
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/cm³).

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 ±0.5%.

Premium package quality

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.
Savio has responded to the increasing requirements of automation by implementing fully automatic winding machines. Savio offers a wide range of winders with different levels of automated devices to overcome the shortage of labor, cut running costs and enhance the quality of the yarn product.

**AUTOMATED SOLUTIONS**

The Savio Direct Link System (I/DLS) solution, for linking the ring spinning frames (RSF) to the winders, enables a fast and efficient direct feeding of bobbins, along with the full interfacing flexibility with all kind of RSF (single or multistep). The Polar Evo/I DLS boasts an unique spinning frame to winder close loop feeding system, the winder being an extension of the same, ensuring total free flow if the materials. From RSF bobbin to the final package, the yarn is processed untouched, ensuring maximum quality, less material handling and no chances of contamination.

The incoming bobbins are guided to the yarn end finder station to be prepared for the following winding process, and then delivered to the winding heads. Each winding head has two spare bobbins in addition to the one under process, with straight vertical yarn path. Upon request, machine can be also equipped with additional single automatic magazine for refilling empty ring frame tube (optional).

**Intelligent bobbin distribution**

Intelligent bobbins distribution: balanced feeding of all spindles
- Independent single End Finder Station feeds the allotted winding section.
- Up to N°3 End Finder Stations to serve longer machines.

This layout solution allows:
- The highest balanced flow rate of fresh bobbins for allotted sections (no idle spindles).
- Total reduction of bobbins traffic jam.
- Automatic removal of technological alarms and rejected bobbins, thanks to the “Backup Station” (optional).
- Minimization of the operator intervention.
Multi Link Solution

Multi Link - Classic or Underground Solutions
The requirement for integrated automation in the spinning process is increasing, leading Savio to offer customers new bespoke link solutions, compared to the classic 1-to-1 configuration, to increase this direct feeding flexibility to/from winder. Each winder can so be predisposed to process 2 or 3 different yarn counts.
The latest solution from Savio is the Multi Link, which connects multiple ring spinning frames to one Savio winder, becoming a tailor-made circuit to link two or three RSFs to one winding machine. A special iPeg tray guarantees the circulation of RSF bobbing to/from winder. This solution optimizes space, reduces energy-consumption and production costs. This automatic bobbin transport shortens servicing paths for the operators and allows an ergonomic material flow. The costs for production, space and energy are reduced, while keeping the quality consistent even with long and multi-connected machines.

iPeg
A special iPeg, with embedded tag, guarantees the circulation of RSF bobbing to/from winder. Each winder can be predisposed to process 2 or 3 different yarn counts. Tag readers automatically select the proper bobbins to be delivered to the correct winder section and to be returned to the proper RSF. The spindle tag reader prevents to process wrong yarn count in the wrong section, so avoiding a potential bobbin pollution.

End Finder Station of Polar Evo I/DLS
Yarn bobbins coming from the ring frame are automatically delivered to the end finder stations located along the machine. Each end finder station is positioned along the spindle housing, allowing a complete operator monitoring and friendly intervention. The machine can be equipped with different numbers of end finder stations depending on capacity of longer ring frames. Their position being placed separately from the main bobbin/pegs belts path, do not affect at all the efficiency of the system.
Customized end finder stations are available in compliance with particular yarns and material under process especially with elastomeric yarns.
Particularly, because of core and double core yarn construction technology, it is required a customized “lycra kit” configuration to reach the same efficiency as per standard yarns, no matter the elasticity of the threads.
With “lycra kit” configuration, the end finder becomes “universal” for both standard yarns and core yarns bobbins.

Backup Station (Optional)
A great help to ensure the highest efficiency of the winding process is given by the “Backup Station” which shall take care of all bobbins rejected by the spinners for different reasons:
- Bad shaped bobbins
- Bobbin with yarn remnants
- Bobbins with technological alarms (off-standard quality yarn values)
The station is able to prepare again the bobbin, with a high efficiency rate, because of the slow moving speed, and to remove the faulty yarn portion, in case of a technological alarm. The diversified and specific movements are possible thanks to the “identification system” embedded on the spindle and peg tray. The result is also significant in terms of operator reduction, since no intervention is requested to the personnel.
Automatic bobbin loader
Ring spinning bobbins are unloaded into a hopper, with a capacity of 3000 cycles/hr. A self-adjusting vibration frequency device ensures the consistent delivery. A collector guarantees a safe and even flow of the bobbins movement. Bobbins are then placed on the Flexitray to be transferred to the preparation station. The peculiar Flexitray design allows:
- Precise centring of the bobbin on the peg and perfect positioning with the yarn path.
- Flexibility to process different bobbin tube sizes and dimensions.

Bobbin preparation station (side suction system)
Simple, efficient and reliable even with the most difficult yarns and bad shaped bobbins.
An additional “under winding cleaning” device removes the yarn reserve, left over on the bobbin tube.

Free standing system - Polar Evolution E
Ring spinning frame bobbins are loaded into the hopper box and then placed on the Flexitray (peg) to be transferred to the preparation station. Each bobbin placed on Flexitray is automatically moved to the yarn “end finder station”, in order to prepare it for the following winding process.

S.I.S. - Savio Identification System (optional)
Since 1999, the market most successful identification system of the RSF spindle and control of bobbin quality
The development of special yarns requires an adequate and accurate monitoring of bobbin quality during the winding phase, and the identification of the position of the “faulty spindle” in the ring frame. Each bobbin delivered by the ring frame is tagged and recorded in the PC. The winding head reads the code of the Bobbin iPeg on process and identifies the position of the spinning spindle, which has generated it. The S.I.S. system beside the identification of the ring spinning frame spindle, gives also the possibility of handling the flow of the rejected “off standard bobbins” with the following different options:
- Bobbins delivered to a dedicated technological parking area.
- Bobbins delivered to a selected winding head, and wound on B-Grade packages.
- Bobbins delivered to Back Up station (if present) for defects removal, and returned to winding head.
- Bobbins delivered to OBS station to be unloaded in a separate box.

Package B-Grade System - Manual (optional)
Machine can be provided from one up to three “B-Grade” spindles to process off-standard bobbins rejected by winding heads or Backup Station.

Bobbin preparation station (side suction system)
Simple, efficient and reliable even with the most difficult yarns and bad shaped bobbins.
An additional “under winding cleaning” device removes the yarn reserve, left over on the bobbin tube.
Free standing system - Polar Evolution E Premium

“Premium” freestanding winder is provided with new additional features to process bobbins produced by ring frames not equipped with automatic doffing device.

This winder is an alternative solution for all those mills where mainly existing ring frames are without automatic doffing; it has been designed to evenly process those yarn bobbins, whose formation is not originally “favourable” to reach efficiency, keeping also the minimum number of operators. The bobbin capacity has been increased thanks to the “double alternate” loading system on the peg; this higher loading rate is able to cover winding heads up to 72 spindles.

**Hopper**
The capacity has been increased thanks to the “double alternate” bobbin loading system. To achieve the full efficient peg loading rate, bobbins are mechanically spaced, bobbin shape identified by the “optical profile scanner” and properly oriented by the “cross shaped” rotating device. The “optical profile scanner” detects also the empty tube and diverts it into a separate dedicated collecting box. The enhanced hopper capacity and efficiency, allows a feeding rate to cover the demand for longest winder.

**Peg Feeding System**
An efficient loading system requires that:
- the oriented bobbins before be loaded on the relevant peg, are cleaned from any flying attached yarn by an air suction located in each of the two coupling sleeves.

**Axial type End Finder Station**
The end finder device for “Polar Evo E Premium” has been carefully engineered to easily handle also those bobbins with bad shape and construction, unfriendly for the automation. A movable ring generates air blow to disentangle the trapped end. A bunch remover cleans any yarns reserve at the bottom of the tube. Each end finder station is located along the spindles housing, allowing a complete operator monitoring, friendly intervention and a complete a balanced distribution of the feeding capability. The machine can be equipped up to n° 4 end finder stations to serve machine up to n° 72 spindles.

**End finder for elastomeric yarns (Optional)**
The end finder device for “Polar Evo E Premium” is also available with an additional “lycra kit”, to grant the highest efficiency for the bobbin preparation, in presence of elastomeric single or dual core yarns.

**Back up station (Optional)**
The Backup Station takes care of all bobbins rejected by the winding heads for technological alarms, bad shape and yarn remnants. This station is able to prepare again the bobbin with high efficiency rate, and to remove the faulty yarn portion in case of technological alarm.

**OBS - Off Standard Bobbin Selector (optional)**
In alternative to the bobbin stripper, the OBS Off Standard Bobbin Station removes bobbins with residual yarns. In presence of iPeg, the OBS removes bobbins with technological alarms.
The flexibility to process on same machine contemporaneously different yarn lots and types has to be kept also in the automation process, in order to grant the customer this capability.

**Duo-Lot system (optional)**

**POLAR EVOLUTION E**
Each Flexitray carries an identification chip to control the feeding of the right bobbin to the right winding position. The electronic division of the spindle heads (i.e. 12+12 or 16+8) can be programmed by the Computer without any mechanical adjustment on the heads.

**POLAR EVOLUTION E PREMIUM**
- Capability to process two different yarn lots with same tube dimension;
- The availability of the highest number of winding heads per machine (max n° 72 positions);
- The highest feeding capacity of bobbins per each lot;
- The possibility of highest number of “end finder stations” (max n° 4);
- The even balancing of the winding heads allotment per each lot.

Double hoppers (one for each lot)
Loading rate for feeding up to 72 spindles. The “profile reader sensor” detects also the empty tube and diverts it into a separate dedicated collecting box.
Doffing System

Doffing trolley
- 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.

Empty cones centralized magazine (optional)
For the complete automation of the winding process, the machine can be equipped with a centralized magazine carrying all the empty tubes: the operator patrolling and intervention time is reduced. The empty cone is automatically delivered to the doffing trolley.

Flexible package unload
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.
Savio has responded to the increasing requirements of automation by implementing fully automatic winding machines. Savio offers a wide range of winders with different levels of automated devices to overcome the shortage of labor, cut running costs and enhance the quality of the yarn product.

### TECHNICAL SUMMARY

**Features**

<table>
<thead>
<tr>
<th>Features</th>
<th>E model</th>
<th>E PREMIUM model</th>
<th>DIRECT LINK SYSTEM model</th>
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</thead>
<tbody>
<tr>
<td>Free standing winder. Automatic bobbin feeding and doffing (Stand-alone system)</td>
<td>Free standing winder. Automatic bobbin feeding and doffing (Stand-alone system)</td>
<td>New features to process bobbins produced by ring frames not equipped with automatic doffing device</td>
<td>Automatic bobbin feeding and doffing (Link system)</td>
</tr>
<tr>
<td>Bobbin size: tube length from 180 to 280 mm with a bobbin diameter of 32 to 72 mm</td>
<td>Bobbin size: tube length from 180 to 280 mm with a bobbin diameter of 32 to 57 mm</td>
<td>Bobbin size: tube length from 180 to 280 mm with a bobbin diameter of 32 to 57 mm</td>
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</table>

**Materials**

- Natural, synthetic and blended staple yarns

**Count range**

- From tex 286 to tex 4, from Ne 2 to Ne 147, from Nm 3.5 to Nm 250

**Headstock**

- Right or left with respect to the working front

**Frame**

- Modular frame consisting of 6 or 8 head sections

**Number of heads/machine**

- From a minimum of 24 to a maximum of 72 in steps of 2

**Take-up**

- Crossed packages: winding traverse 150, 152 mm (3/2 EVO drum), 157 mm (2 EVO drum), taper 0°-0°57°, maximum diameter 320 mm

**Take-up speed**

- 400 ÷ 2200 m/min with step less setting

### Industry 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.

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.
## Winding unit

<table>
<thead>
<tr>
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<th>E model</th>
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</thead>
<tbody>
<tr>
<td>Grooved drums</td>
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<tr>
<td>Electronic anti-pilling system</td>
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<tr>
<td>C.A.P.: Computerized control of the drum-package diameter ratio</td>
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<tr>
<td>Package taper increase: 0°÷3°, mechanical type, electronic only with C.A.P.</td>
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<tr>
<td>Axial displacement: with individual motor</td>
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<tr>
<td>Electronic cleaners: Uster, Longhi basic model with global and continuous yarn and splice control. Other manufacturers on request</td>
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<tr>
<td>Dust Air Splicer System: Junior type</td>
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<tr>
<td>Splicers: Water, Mustard®, Twosplicer, Heat-Splicer, knotters</td>
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<td>Yarn tensioner: a tension section, controlled by a single drive</td>
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<tr>
<td>Pre-cleaner: variable width</td>
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<tr>
<td>Junior - C.A.T. Computer Aided Tension</td>
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<tr>
<td>Winding unit, deflection type</td>
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<td>Max finished detection probe</td>
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<tr>
<td>Booster: tension reducer</td>
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<tr>
<td>C.A.M. Computer Aided Metering</td>
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<tr>
<td>Counterweights: standard pneumatic device or self-adjusting</td>
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<tr>
<td>C.A.D. Computer Aided Density</td>
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## Active back

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<tr>
<td>Package conveyor belt: single lot towards the headstock</td>
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<tr>
<td>Package conveyor belt: double lot</td>
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<tr>
<td>Lighting along the machine</td>
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<tr>
<td>Travelling bieater/suction unit: programmable control frequency and unloading at machine headstock or centralized</td>
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<tr>
<td>Duct removal system in the unwinding area consisting of single suction nozzles with a centralized dust collection box in the headstock</td>
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## Computer

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<tbody>
<tr>
<td>Centralised electronic adjustments: machine data, processing parameters, air splicer working parameters (Duo Air types only), yarn tensioner pressure, V.S.S., electronic modulation</td>
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<tr>
<td>Setting, collecting and displaying production data of winding units, bobbin loading station, drifting trolley, display of the peripheral alarms</td>
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<tr>
<td>Centralised pneumatic adjustments: package cradle counterweight, splicer air pressure</td>
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## Data management systems

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<td>Basic Pack: Savio Computer Interface: connectivity and data downloading</td>
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<tr>
<td>Business Pack: Savio Winder Browser: connectivity, data management, remote machine set up and monitoring</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Executive Pack: Savio Winder 4.0: connectivity, data management, remote machine set up, monitoring and operators real time interactivity</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Bobbin loading station

<table>
<thead>
<tr>
<th>Feature</th>
<th>E model</th>
<th>E PREMIUM model</th>
<th>I/DIRECT LINK SYSTEM model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional End finder station</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>End finder station for elastomeric yarns</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Backup station: to recover bad bobbins</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1.S.: Savio Identification System: Peg identification by on-board chip for identification of the RSF spindle and control of bobbin quality</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>OBS - OF Standard Bobbin Selector</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tube cleaner</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Bobbin feeding

<table>
<thead>
<tr>
<th>Feature</th>
<th>E model</th>
<th>E PREMIUM model</th>
<th>I/DIRECT LINK SYSTEM model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bobbin loading: upper located along the machine’s axis and vibration system to thin out bobbins</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bobbin loading: link belt connection, direct bobbin feeding from RSF</td>
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<tr>
<td>Bobbin loading: Multi Link connection, a tailor-made circuit to link two or three RSFs to one winding machines</td>
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<tr>
<td>Does not bobbin feeding system</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Double hopper (one for each lot)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Package unloading system

<table>
<thead>
<tr>
<th>Feature</th>
<th>E model</th>
<th>E PREMIUM model</th>
<th>I/DIRECT LINK SYSTEM model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doffing trolley: automatic package doffing, insertion of the cone on the spindle head</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Double doffing trolley</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comes feeding: individual cradle on each winding unit</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Controlled cone magazine</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Double controlled magazine</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Flexible package unload: stand-by unloading position independent for each winding unit</td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

- Standard
- Optional
Overall dimensions
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.