

HI-TECH SOLUTIONS  
FOR THE TEXTILE INDUSTRY



## RE-FLEX W

Precision **winding** machines  
cone-to-cone for soft or hard package

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# RE-FLEX W

## Precision **winding** machines cone-to-cone for soft or hard package

A winding solution with all the features of the Re-Flex range: high-quality shape of packages, no variation of density between bobbins, electronic yarn-tension control, minimum number of breakages on the winding process, extremely precise metering of the bobbins and high performances in the dyeing processes.

### INTRODUCTION

Re-Flex range with electronic thread guide with precision crossing angle represent the maximum expression of RTE winding technology, on which the latest technology has been applied in order to achieve **quality, productivity and flexibility** such as:

- Electronic thread guide system
- Direct control of the package motor
- Brushless motor technology
- Pneumatic control of counterweight (soft packaging) pressure
- Precision digital meter counter
- Electronic yarn winding tension control with resolution of 0,1 gr.

**Re-Flex W** machines in both versions for soft winding, rewinding are studied to process all types of yarns, staple fiber and monofilament yarn.

### TOUCH SCREEN

On Re-Flex range of winding/assembly winder machines all functions are controlled by a touch screen placed on the machine's headstock, which controls all the single winding units. On the touch screen, the operator can set up all the winding parameters regarding the package, yarn feeding and production details as:

- Type of winding (Isoangle, Precycone, Densycone)
- Crossing angle
- Coil distance
- Packing pressure
- Yarn winding tension
- Package traverse
- Rounding of the edges
- Tapering
- Winding speed
- Package diameter
- Soft edges
- Anti-patterning
- Tailing device
- Acceleration/Deceleration ramp
- Package metering
- Production sectors
- Number of packages to produce
- Waxing device speed
- Package density
- Feeding roller over speed percentage
- Oiling/waxing device speed/for winding machine
- Shift/days/working hours

#### Memory

It is possible to **save all working programs**, each time it is requested to process the same item, it is sufficient to recall the code (or name) from the memory. The memorized items may be used for each single winding unit, for sections or for the entire machine. All data are repeatedly monitored by the touch screen where you can see all the spindle status. Optional: data storage on USB key

### STEPPER MOTOR TECHNOLOGY

On the Re-Flex range of winding machines, the electronic thread guide system uses the step motor technology, where the yarn guide is mounted on a very strong belt, which rotates on two pulleys, led by a step motor. This solution where the entire mass involved is so small, allows **to reach high working speed performances** and double stroke per minute, still maintaining under control the electric energy consumption. It also permits to work under dry solutions (without oil or grease) eliminating lubrication, shortening maintenance time.

The motor step technology used to lead the yarn guide motor, permits to choose the package traverse and shape directly from the touch screen, spindle by spindle, by sections or for the entire machine. This permits to produce packages with different features.

### FULL PRECISION WINDING MACHINE

The take up package, held in place by an arm with adaptors, is directly led by a brushless motor through a timing belt. This solution, along with the yarn guide system led by a free standing motor, determines the concept of **"Full Precision Winding Machine"** the **only winding machine** able to guarantee a perfect and controlled yarn laying without any ribbon problems or any different densities.

The fact that the take up tube is locked between two adaptors guarantees control and structural stability during the entire winding process, necessary in order to reach with Re-Flex W Winding Machines the highest levels in quality, production and efficiency. In each winding unit a pneumatic piston controls and sets the kinematics of the package holder, so as to be able to obtain different pressures during bobbin formation and the desired softness and density. You can also install the **"Individual Counterweight System"** where it is possible for each spindle to adjust the requested counterweight pressure, by individual manometers, instead of a single one that controls the entire winding units. This system allows more flexibility on the machine! **Automatic doffing** is available on cone- to-cone winder machines.

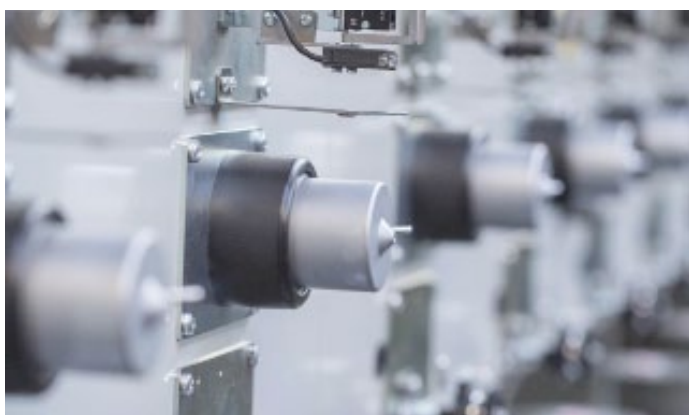
### COMPUTERIZED ACTIVE ROLLER

RITE yarn electronic tension controller called **"Computerized Active Roller"** gives the key advantage to constantly control and set the winding yarn tension, with a resolution of 0,1 grams during the entire winding process, independently from the variation of tension coming from the feeding bobbin. On the headstock touch screen, the operator sets the desired yarn winding tension, which is constantly controlled by an electronic sensor, put on each single winding spindle. The sensor is linked to a motorized feed roller, its rotation speed is continuously synchronized and adjusted by the yarn tension controller in order to maintain the



same tension in output.

**This carried on auto-regulation keeps unvaried the winding tension of the yarn, it guarantees the production of packages with unvarying tension and therefore with the same density inside and outside, from one package to the next and from spindle to spindle.**



**MOTORIZED WAXING DEVICE**

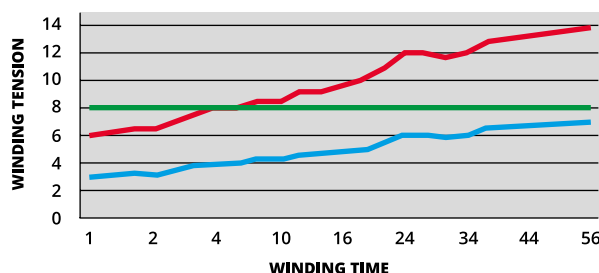
All spindles have individual motorized waxing device where both rotation sense (clockwise/counter clockwise) and rotation speed can be selected for each spindle, each section or for the entire machine, from the touch screen. When the winding unit stops a pneumatic piston keeps the wax far from the yarn passage point, making it easier for the operator to reintroduce the yarn.

**MOTORIZED OILING DEVICE**

All spindles have individual oiling device where the rotation speed can be selected, for each spindle, each section of for the entire machine, from the touch screen. The device is composed of an individual roller oiling device with individual carter to collect the remaining oil. The oil supplying comes from a main hydraulic pump with filter.



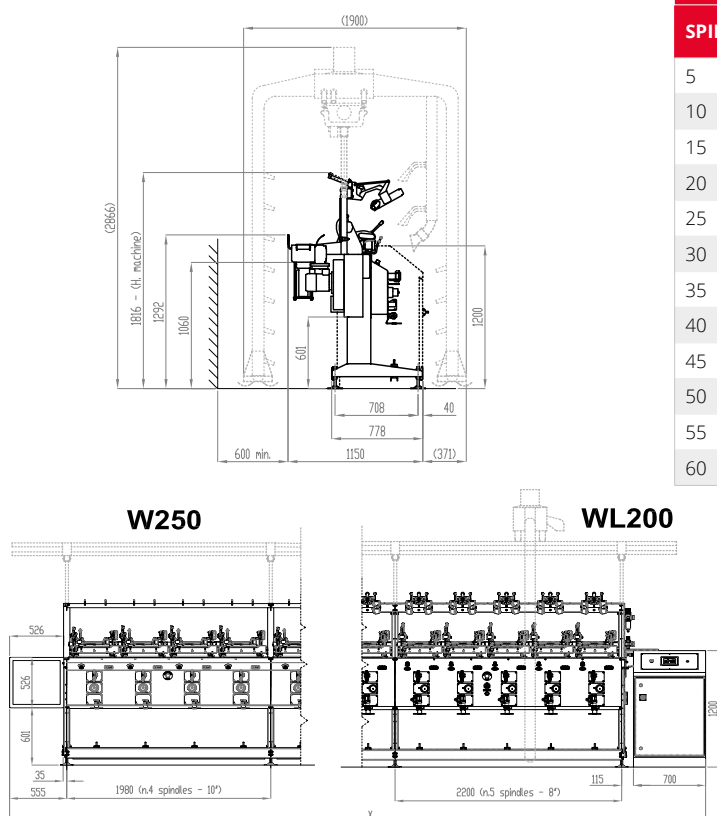
- UNWINDING TENSION FROM THE FEEDING PACKAGE
- WINDING TENSION BY A TRADITIONAL TENSION DEVICE
- WINDING TENSION BY COMPUTERIZED ACTIVE ROLLER®



## TECHNICAL DATA RE-FLEX W

<b>YARNS PROCESSED</b>	Natural fibers, synthetics or blended. Staples fibers and continuous filament.	<b>AIR COMPRESSED CONSUMPTION (PRESSURE 4 BAR)</b>	With centralized counterweight system: < 5 NI/min per machine. With individual counterweight system: 1 NI/min per winding unit.
<b>RANGE OF COUNTS</b>	<ul style="list-style-type: none"> <li>• From 5 to 4.500 Dtex</li> <li>• From 1 to 250 Nm</li> <li>• From 0,5 to 200 Ne</li> </ul>	<b>CONTROL HEAD</b>	<ul style="list-style-type: none"> <li>• Computerized terminal</li> <li>• Main switch</li> <li>• Emergency and switches</li> <li>• Transformer</li> </ul>
<b>WORKING PROCESS</b>	Soft winders and hard winders	<b>STANDARD CONFIGURATION</b>	<ul style="list-style-type: none"> <li>• Internal feeding creel for packages or cops</li> <li>• Balloon controller</li> <li>• Yarn clutch device or by deviation</li> <li>• Yarn sensor</li> <li>• Electronic yarn guide</li> <li>• Motorized holder arm</li> <li>• Centralized counterweight device</li> <li>• Precision metercounter</li> </ul>
<b>MECHANICAL SPEED</b>	Up to 1.700 mt/min	<b>EXTRA DEVICE AVAILABLE</b>	<ul style="list-style-type: none"> <li>• Computerized Active Roller®</li> <li>• Driven waxing device</li> <li>• Driven oiling device for</li> <li>• Individual counterweight</li> <li>• Over head cleaner</li> <li>• Joint-air splicer and water splicer</li> <li>• Pre-arrangement for electronic clearers</li> <li>• Automatic doffing</li> <li>• Conveyor belt</li> </ul>
<b>WINDING SPEED</b>	Up to 1.500 mt/min	<b>DIMENSIONS</b>	Sections with 5 winding units, max 60 spindles per machine, single side, length of the section 2.200 mm. Version traverse 200 mm. Version with yarn-guide traverse up to 250 mm, sections with 4 winding units with section of 1980 mm.
<b>TRAVERSE SPEED</b>	Up to 900 ds/min		
<b>INSTALLED POWER</b>	250W per winding unit		
<b>ABSORBED POWER</b>	500mt/min – 37W 1.250 mt/min – 83W		
<b>YARN-GUIDE TRAVERSE</b>	From 25mm up to 250 mm (250 mm optional)		
<b>TAKE-UP ARM</b>	Holder arm with adaptors, driven by brushless motor		
<b>YARN-GUIDE</b>	Electronic yarn guided system by step motor		
<b>WINDING STYLE</b>	ISOANGLE: constant crossing angle for the whole process. PRECYCONE: constant pitch but decreasing crossing angle. DENSYCONE: variable pitch following the diameter and constant crossing angle (+/-1°)		
<b>TAKE-UP TUBES</b>	Cylindrical or conical tubes, plastic paper or spring (0° - 3°30' - 4°20' - 5°57')		
<b>PACKAGE COUNTER WEIGHT SYSTEM</b>	By pneumatic devices with a centralized manometer or by individual manometer one for each winding unit.		

## LAYOUT RE-FLEX W



TRAVERSE UP TO 8" 200 mm		TRAVERSE UP TO 10" 250 mm	
SPINDLES	X (mm)	SPINDLES	X (mm)
5	3.570	4	3.350
10	5.770	8	5.330
15	7.970	12	7.310
20	10.170	16	9.290
25	12.370	20	11.270
30	14.570	24	13.250
35	16.770	28	15.230
40	18.970	32	17.210
45	21.170	36	19.190
50	23.370	40	21.170
55	25.570	44	23.150
60	27.770	48	25.130
		52	27.110
		56	29.090
		60	31.070