CONSTANT TENSION AT HIGH PERFORMANCE

LEARN...

THE NEW INTELLIGENT DIGITAL FEEDING
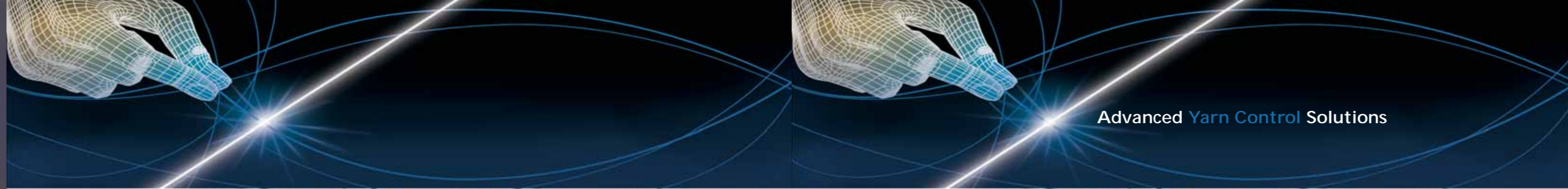
Advanced Yarn Control Solutions

YARN FEEDING CONTROL LINE

Total Digital Solutions for Yarn Constant Tension Feeding

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BEST TECHNOLOGIES
STUDY & RESEARCH

YARN FEEDING CONTROL LINE

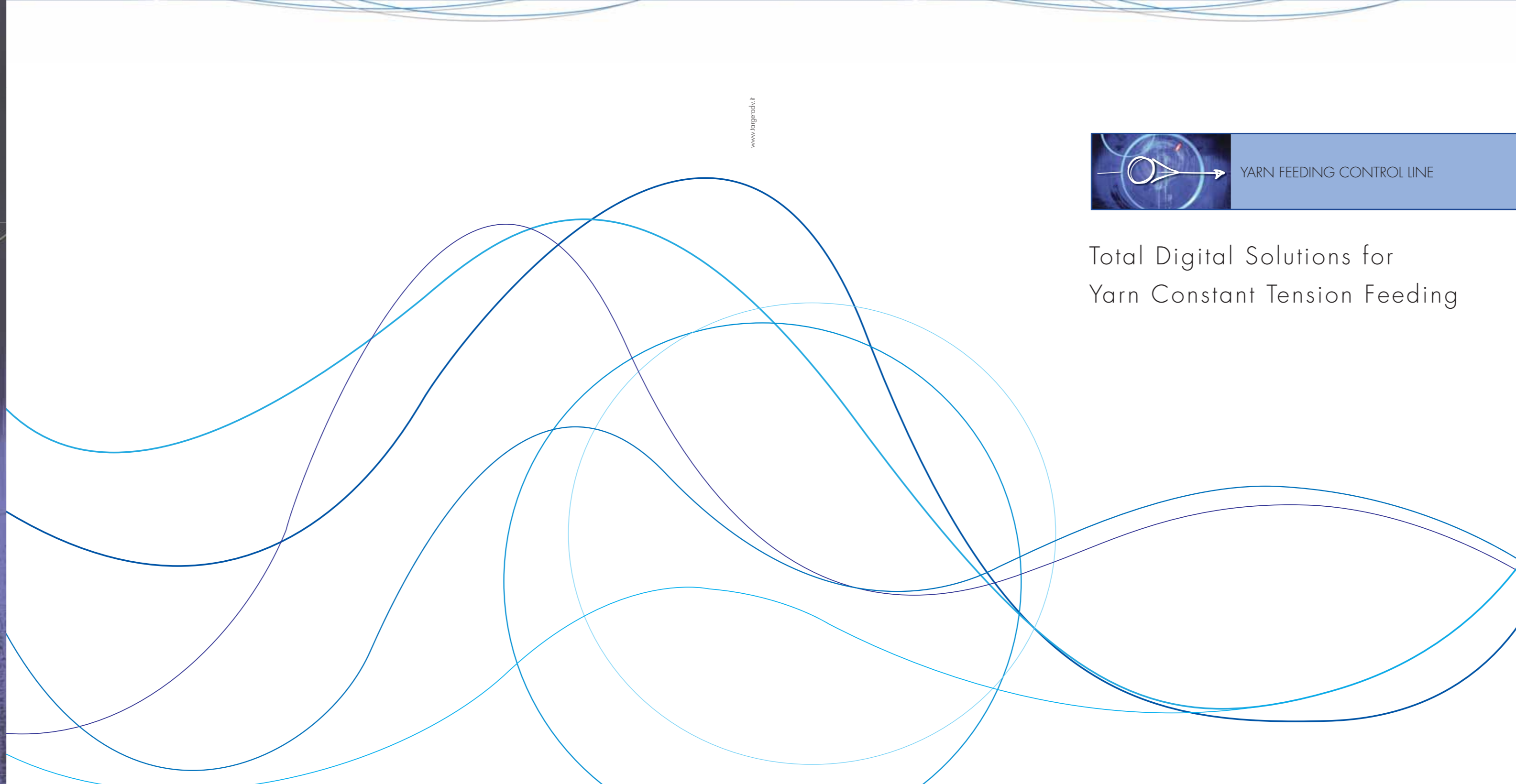## 'Full Digital Control' Technology for Constant Tension Feeding

The recent textile market evolution is characterized by the use of more and more sophisticated row materials whose costs push organizations to adopt control systems able to guarantee a high product quality by minimizing the yarn used in the textile process.

BTSR Yarn Feeding Line represents an innovative package of unique solutions on the market, in terms of functionality and performance, capable of controlling and adjusting with utmost accuracy the tension of yarn fed in the course of production processes.
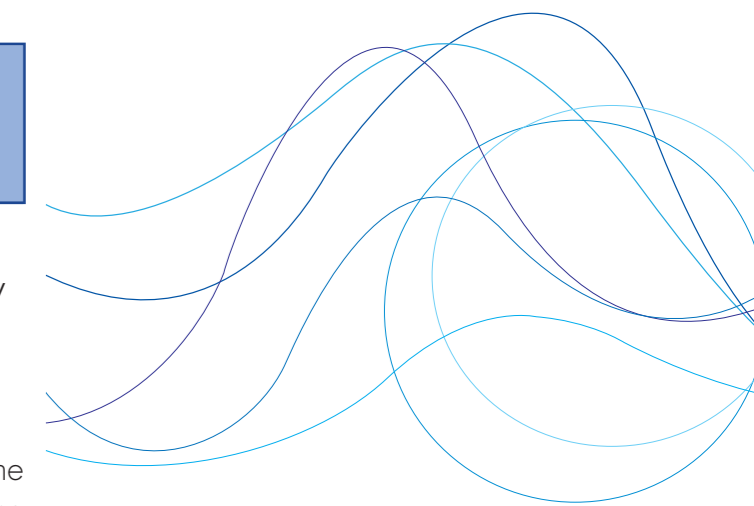
BTSR Constant Tension Feeders represent the best guarantee for your quality and production efficiency goals.

EXCELLENCE

TOP PERFORMANCES

MEASURABLE BENEFITS

Total Solutions for Yarn Tension Feeding and Control

Full Digital Core and Motor Technology

BTSR is proud to introduce new generation Solutions, which represent a radical innovative step in yarn feeding processes evolution.

Based on the new Full Digital Core & Motor Technology, BTSR Feeders feature no-limit performance dynamics, with an excellent motor control precision and a drastic reduction of energy consumption.

New innovative operational modes provide the possibility of feeding at both constant speed and constant tension and further enlarge the application possibilities in automated yarn processes.

BTSR Yarn Feeding Solutions represent a revolutionary step in Yarn Feeding concept.

BTSR® Patented Solutions

BTSR Feeding Solutions are provided with unique advanced functions, covered by international Patents in order to protect BTSR Intellectual Property:

- Self-learning LFA Function
- Automatic Regulation of Stitches "Cammes"
- Reverse Function for Constant Tension Recovery
- Constant LFA Pre-Tension Function
- Automatic Identification Function
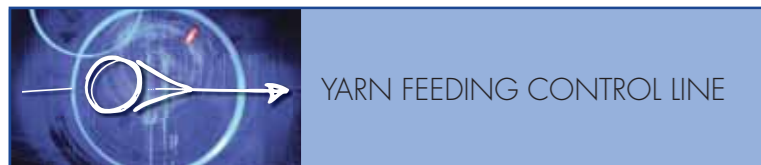- AUTO OFFSET Function for automatic calibration of the feeder tension sensor
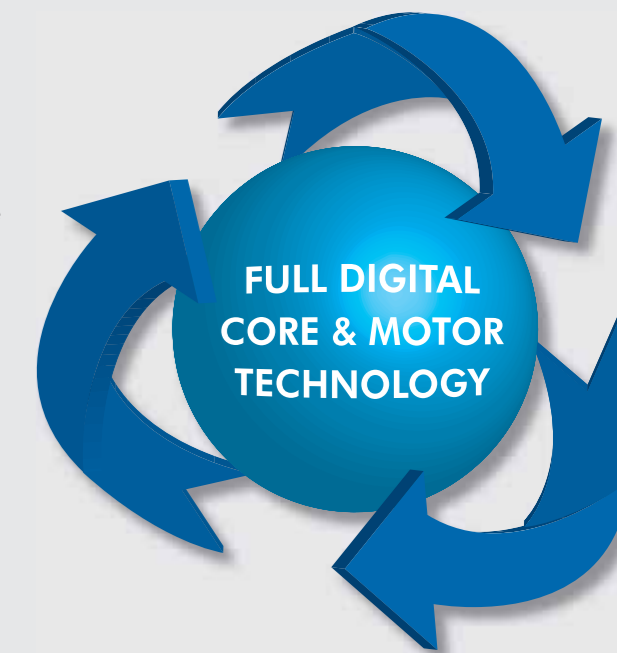
FULL DIGITAL CORE & MOTOR TECHNOLOGY

The next Yarn Constant Tension Feeders Generation

Programmable, Space Saving, OEM Integrable

Characterized by a design and ergonomics projected into the future, BTSR Yarn Feeding Solutions offer outstanding technical and operational performances, aimed at feeding with utmost precision any type of yarn with programmable tension ranges, depending on the reference application process.

BTSR has developed dedicated solutions for any kind of textile process, from yarn preparation to textile fabrics manufacturing (yarn treatment/preparation processes, hosiery and socks machines, large diameter and flat knitting machines, several types of looms - cotton, Raschel, label and ribbon production -, …).

When destined to the OEM market, BTSR feeders are suited to being easily integrated into textile machines (e.g. automatic regulation of stitches cammes adjustment, …)

Features and Benefits

• Possibility to work with any type of yarn types (including bare and covered elastomers, elasticized yarns either bare or covered, nylon, cotton and others).

• 'Highest acceleration and deceleration dynamics and possibility to feed yarns at very high tension even at very low speed.

• Multiple operational modes with the possibility of feeding at both constant speed and constant tension.

• Constant yarn tension both when the machine speed changes and when the yarn packages gradually get empty.

• Best efficiency by eliminating the yarn breakage (tears and extra-tensions).

• Drastic Reduction of energy consumptions.

ULTRAFEEDER **MULTIFEEDER** **ROLLING FEEDER** **WINDING FEEDER**

HIGH TECH SOLUTIONS
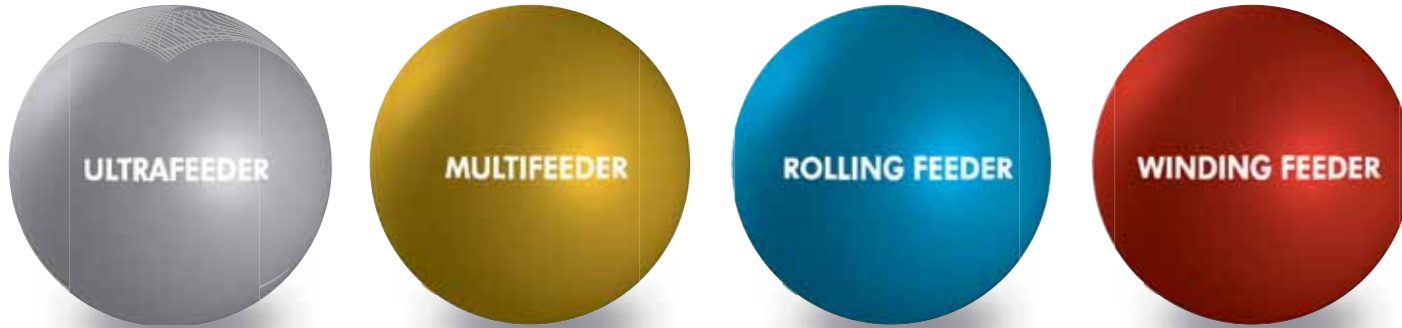
IN YARN FEEDING CONTROL

Advanced Production Analysis, Programming and Control

For an efficient centralized operation control of the individual feeders installed, these can be managed through a single SMART MATRIX FEEDER terminal, thus obtaining a complete system with a wide range of functions facilitating the practical use of the installed feeders.

By means of this on-board Terminal, the machine operator can immediately download and upload feeders identification data as well as programming yarn operating tensions and measure the amount of yarn fed on the individual positions.

Moreover, through the 'Self-learning' function, SMART MATRIX FEEDER Terminal brings the possibility to 'auto-learn' and subsequently control the programmed yarn consumption during the production process of a sample article, all extremely useful functions for knitting machines.
The SMART terminal also allows you to set programmable length targets for an accurate control of the collected yarn amount on each individual position, during the yarn preparation processes (Yarn Preparing Processes).

Main Advanced Terminal Functions

• Automatic Numbering Procedure
• Feeding Devices Centralized Programming
• 'Articles Database' Creation And Storage
• Control Function
• Target Function
• Yarn Consumption Self-Learning Function
• Graphs Stitches Cammes Adjustment Function
• Auto-LFA Function

Features and Benefits

• Easy and quick device identification (up to 200 feeders) thanks to the Automatic Numbering Procedure (BTSR Patent).

• Advanced Programming Features - program the feeder technical features according to your process quality control requirements.

• Real-time display - single feeder working status, graphs, analysis function.

• Data collection and storage of anomalies detected by each single feeder.

• Absolute flexibility - possibility of quickly changing the feeders's set-up according to the article to be processed.

Ultrafeeder Main Applications: Sock/Hosiery, Seamless, Flat Knitting Machines, Looms (Cotton, Raschel, label and ribbon production, …).

Multifeeder Main Applications: Large Diameter Knitting Machines, Warping Procedure.

ULTRAFEEDER and MULTIFEEDER represent the new generation BTSR solutions, designed to meet the most demanding "constant tension" yarn feeding needs on a wide range of machines and applications. Thanks to a new digital technology featuring a dual control on yarn feeding and yarn running speed, ULTRAFEEDER and MULTIFEEDER assure absolute performance in terms of system acceleration/deceleration dynamics, very high resolution measurement capability (0.1 mm) of the yarn fed amount, besides a drastic savings of energy consumption.

ULTRAFEEDER and MULTIFEEDER may operate with any type of yarn in a large number of applications, with thin bare and covered elastomers (11,17 Dtex), nylon, cotton and technical fibers, for manufacturing of traditional and technical articles (e.g. medical socks, body, etc.).

ULTRAFEEDER and MULTIFEEDER optimize and reduces yarn consumption and at the same time ensures better quality of manufactured product (defect free) and drastic drop of second choice production.

Features and Benefits

• The highest precision & stability.
• 'High Torque at Zero Speed' feature - utmost control precision even at very low. yarn feeding speed (0.1 m/min) and simultaneous high yarn tension values (100 gr), without the need of using pretensioning devices.
• Free from yarn torsion influence.
• Unlimited graduation compression.
• New Multi-Function Graphic display for extremely easy working settings and controlling.

ULTRAFEEDER

MULTIFEEDER

Main Advanced Functions

• NEW 'APPLICATIONS' Function - possibility to view and directly select the desired application from a navigation menu (socks, elastic, seamless, medical, Raschel, …), without having to manually setup the relevant parameters.
• NEW AUTO OFFSET Function - automatic calibration of the feeder tension sensor (BTSR® patent).
• INC/DEC Function - possibility to either INCrease or DECrease gradually the yarn tension with 0.1 gr.
• LFA Function - exact measurement of yarn consumption (Absorbed Yarn Length) with 0.1mt resolution.
• LFA Self-learning Function - self-learning and control of consumed yarn with subsequent automatic machine stop, in case of LFA error exceeding the programmed tolerance (BTSR® patent).
• TARGET Function - possibility to setup a production target (in m) with subsequent automatic machine stop.

Main Applications: Seamless and Knitting machines

ROLLING FEEDER represents a breakthrough innovative solution devised to impact seamless and knitting sector habits and trends tied to bare elastomeric yarns applications.

A unique device guaranteeing Top Quality garment, minimized labor and the most demanding production efficiency and repeatability goals achievement.

Features and Benefits

• Self-Adaptive Technology - run at constant tension yarn feeding (during 'start/stop' phases or strong yarn pattern selections) and automatically shift at constant LFA/speed feeding (during garment production) BTSR Patent.
• Derulè Yarn Reeling-Off System - yarn 'twisting effect' elimination (flat section yarns).
• 'MASTER-SLAVE' Double Modality Working System (constant tension/constant LFA) - possibility to select a group of units as masters and a group as slaves (BTSR Patent Pending).
• Top Stitch Matching for Top Quality product.
• Yarn Plating Faults Elimination in vanisè process.
• 'Stretch Ratio' Control - combined with ULTRAFEEDER devices (masters), ROLLING FEEDER (slaves) are able to work at a constant programmable 'stretch ratio'.

Main Applications: Yarn Preparing Processes (Winding, Doubling, Copsing, Twisting, Texturing, Interlacing, …), Weaving Preparation Processes (Creels, Warping, …), Diapers Machines

WINDING FEEDER is the BTSR Yarn Control Feeding solution able to satisfy the most demanding yarn preparation operators applicative needs and to ensure top performances independently of the speed at which the textile machine is running (either very high or very low speed).
Yarn feeding tension is kept constant even in case of yarn package tension changes due to environmental conditions such as humidity, temperature, etc. or when the yarn packages are gradually emptying during the normal working process.

A compact solution for very easy installation featuring high versatility and all yarns types feeding capability (bare and covered elastomers, glass and carbon fibers, technical fibers, very thick yarns).

Features and Benefits

• High Productivity - Yarn feeding speed up to 2500 mt/min.
• TOP Product Quality - Excellent package density and homogeneity/soft winding low tension capability
• METER COUNTER Function - Yarn waste reduction and breakage prevention.
• Top Efficiency - Capability to operate in "head and tail" modality in 'continuous way' (no machinery stops) as yarn packages get empty.
• Perfect Yarn Package Measurement thanks to the precise Meter Counter Function and Target Function.