



WEAVING PREPARATION

PRO-KONUS®

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## SECTIONAL WARPING

Easy, compact and versatile machine, PRO-SMH sectional warpers present various technological innovations to be able to face nowadays work, when success in business is a matter of flexibility for quick production-changes.

The decennial experience of our team in the field makes PRO-SMH a skilled and reliable partner for weaving mills, while offering new and innovating machines as well as prompt and competent Service for trouble-shooting, modification and spare parts.

Pro-SMH offers a flexible complete range for wide warps with coarse yarns (at higher tension) to narrow warps with few thinner yarns (at low tension)



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## SECTIONAL WARPERS-RANGES



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**PRO-SMARTCON**<sup>®</sup>

efficient & accurate for a wide range of counts

## PRO-KONUS

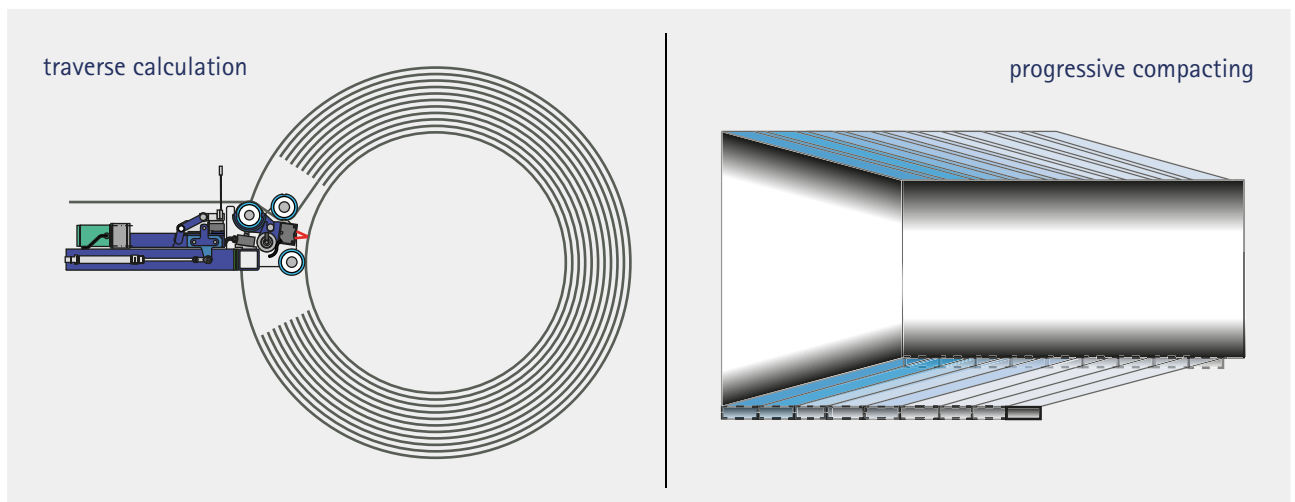
The **Laser sensor** accurately controls the warped diameter, while a **Compacting roller** acts a smoothly adjusted compression of the warping band.

**Precise measurement** of the traverse is then accompanied by the pressure immediately exerted to keep the yarn build-up and **band flatness** on the first section and subsequent sections lower than with free run-on, thereby reliably eliminating differences in the build-up. All rollers for are equipped by magnetic brakes

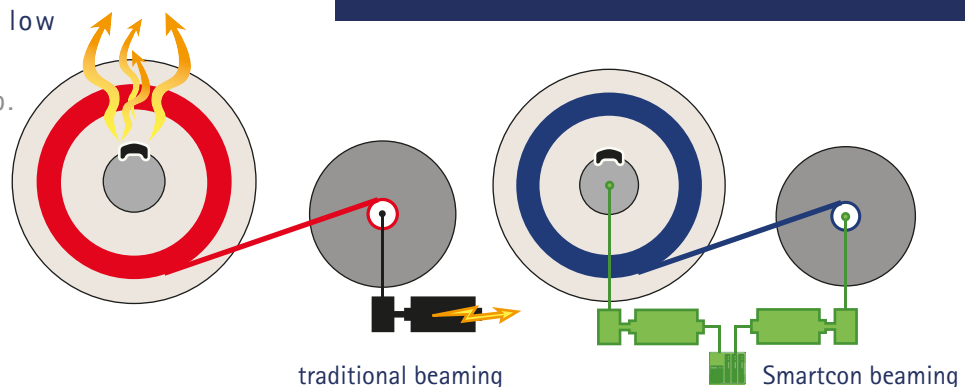
### WEAVING PREPARATION

## ACCURATE PROCESS

- the compacting roller has kick-back movement at stops.
- brushless motors controlled by machine computer operate the system
- the system acts on accurate ReCirculating Ball Screw.



**Beaming tension** is adjusted by motors, using the motor of the warping machine as brake, with electronic control of the torque. The system operates **without any mechanical friction** and with **constant tension**, avoiding the wear of the stop disc brakes. A wide range of tension is possible, with smooth adjustment. **No limits in low tension** and no extra-tension at start and stop. Extra benefit: **recovery of electric energy** (with economic saving during production).



### WEAVING PREPARATION

## MOTOR TENSION CONTROL

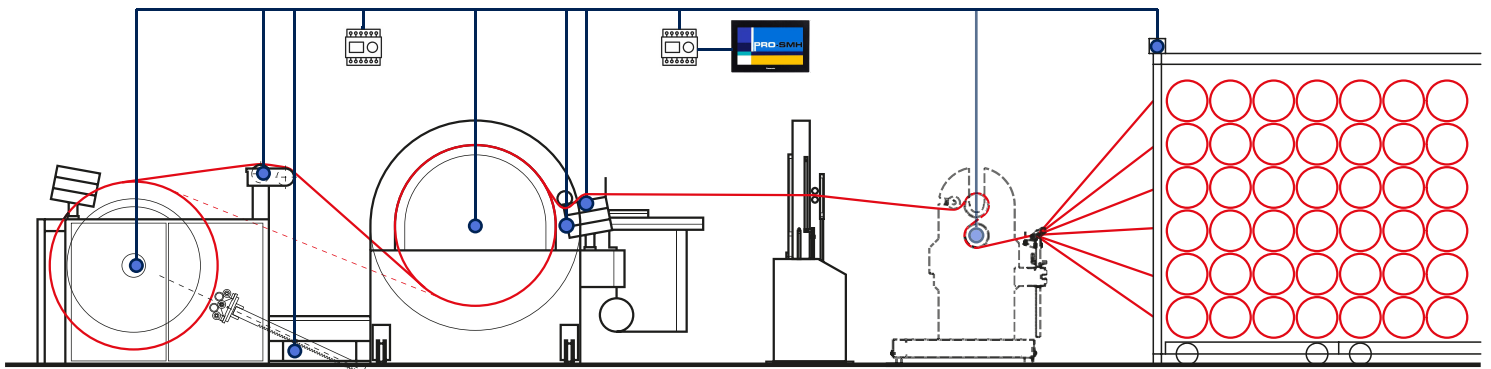
## TENSOMAT

For Total Newton Control, in yarns tension and pressure on the warp band, PRO-Tensomat system provides a complete "control&adjust" system:



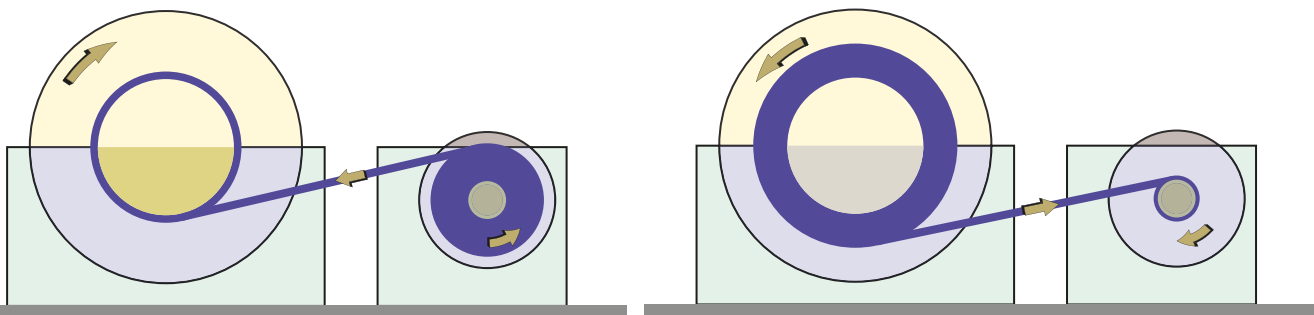
- from the yarns in the creel, adjusted by smart tension units and controlled by proper load cell equipping a threading roller of the warping table;
- to the smoothly adjusted pressure roller of the warping table;
- the beaming tension is adjusted by smooth regulation of motors (optionally even controlled by proper load cell of the beamer)
- the accurately calibrated zero-gravity pressure rollers perform the final required hardness of the beam.

Optionally an S-Roller motorised between the creel and the warper, perfectly equalise the tension regardless fiber, speed, shape and diameter of the bobbins



## REBEAMING PACK

The "Rebeaming pack" allows unwinding of already warped beams on the drum and rewind on the beam itself: it is useful for reparation of warps or changing in warp's tension parameters. This is a feature exclusive to Smartcon, thanks to its perfectly motorized tension control.

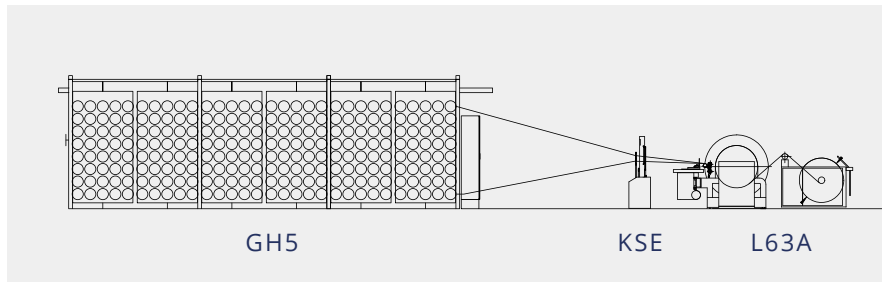


rewinding on the drum

rebeaming the new beam

## PRO-SMARTCON AGGREGATES

SMARTCON has been designed for accurate tension control and efficient and comfortable production. The line is composed of a creel, eyelets or bars table for precise guidance, leasing device, warper and beamer, with computer controlled motorization. Ancillaries for quality check complete the installation



WEAVING PREPARATION

**PRO-SMARTCON®**

sectional warping line

Made of Structural and Carbon Steel, a laser-cut, accurately weld, GRP-surfaced warping drum of honeycomb design permits extremely high pressure loads with high warp lengths and working widths. The heavy structure of this drum is a great advantage for Smartcon, as its active motor-controlled beaming makes the drum virtually weightless despite its huge mass.

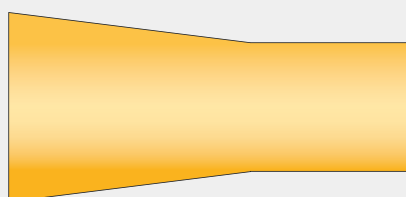


WEAVING PREPARATION

**DRUM and TRAVERSE**

strong design

An extremely accurate ReCirculating Balls Screw system with two Servomotors, smoothly synchronously displace the warping table and the sectional warper with extreme precision in accordance with the traverse values.



CONE LENGTH and angle

DRUM DIAMETER Ø	mm	956
CONE LENGTH angle 7°	mm	1800
CONE LENGTH angle 11°	mm	1200
BEAM DIAMETER Ø	mm	1016

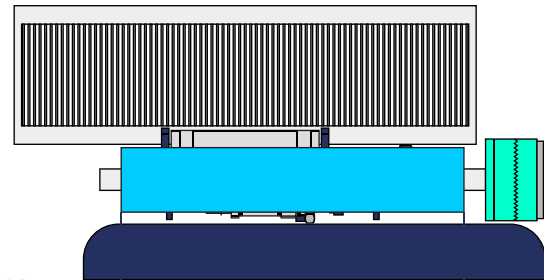
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**DRUM DIMENSIONS**

more on demand

## PRO-SMARTCON AGGREGATES

Equipped with three rollers for perfect guiding and warping of the yarns. The rollers are equipped with suitable sensors and magnetic brakes, for immediate stop. Warping reed holder in straight or V design, finely adjustable for quick set-up of the section width. A special design for light and narrow bands such as cashmere and silk is available. The real command post of the warping operations, the table is equipped with a **Control panel** with main pushbuttons, such as start-stop, bidirectional switch, zero point pushbutton for automatic set-up of the sectional warper, memory pushbuttons for automatic lease formation as well as for the recording of thread breaks leading to an automatic beaming stop. A large, full color and graphics touch-screen HMI post complete the installation. The movement of the table is controlled and operated by brushless servomotors and high-quality linear guideways.



### WARPING ROLLERS WIDTH:

Special Silk	mm 200
Standard	mm 500
Large	mm 750

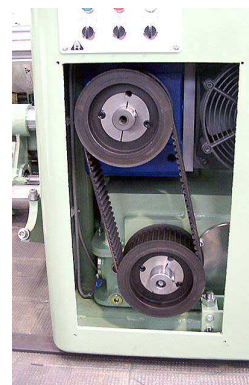


### WEAVING PREPARATION

## WARPING TABLE

robust and accurate

For fast and comfortable mounting and processing of the warp beam, both beaming heads can be separately displaced by motor. A safety-locking system ensures the perfect mounting in any condition. A fine adjustment mechanism immediately aligns the edge threads of the warp with the beam flanges; the **adjustable traverse** device ensures optimum warp laying and a supreme warp quality. The AC drive is mounted in the moving structure, for short and **effective movement transmission**, suitable for motor-brake. Thus, beaming tension and beaming speed are **perfectly controlled**. The structure of the machine is designed for beaming with and without deviation roller.



### WEAVING PREPARATION

## BEAMER

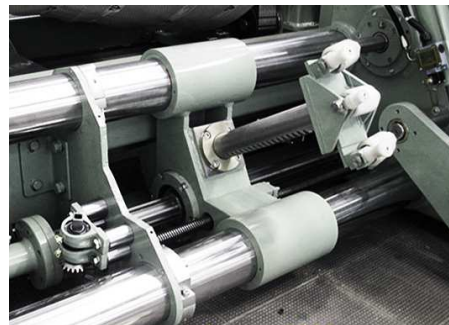
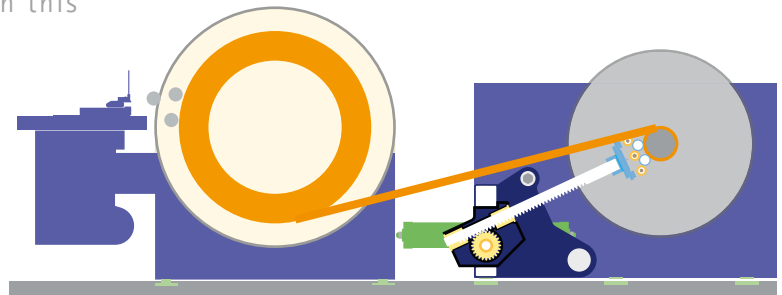
comfort and efficiency

## PRO-SMARTCON AGGREGATES

The pressure rollers assembly is used to obtain the desired hardness of the warp on the beam. The pressure roller assembly is positioned in the middle of the beaming machine; the centering with the processed beam is obtained by the individual shifting of the beam-holding shoulders.

The pneumatic linear drive of the pressure rollers assembly ensures the regularity of the applied force and the possibility to change it according to a pre-set program.

The weight of the roller itself, in this case, does not affect the compressive action, as in 'angular' pressure rollers devices. It has a taper-tension device for yarn beaming at decreasing tension and pressure (if required).



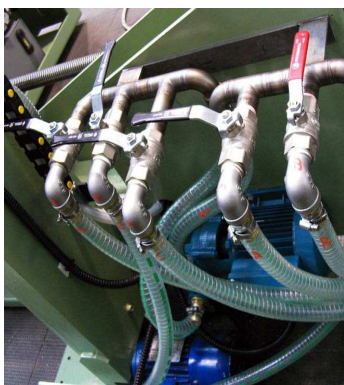
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### PRESSURE ROLLERS

zero gravity

During beaming, the warp can have a lubricant or antistatic oil applied to it to smoothen its surface and behavior, while improving its running properties in the loom.

The quantity applied is determined by the speed of rotation of the roller immersed in the lubricant, which is accurately adjusted to the machine's speed. The warp waxing unit is equipped with a sophisticated system of recirculation, washing and levelling.

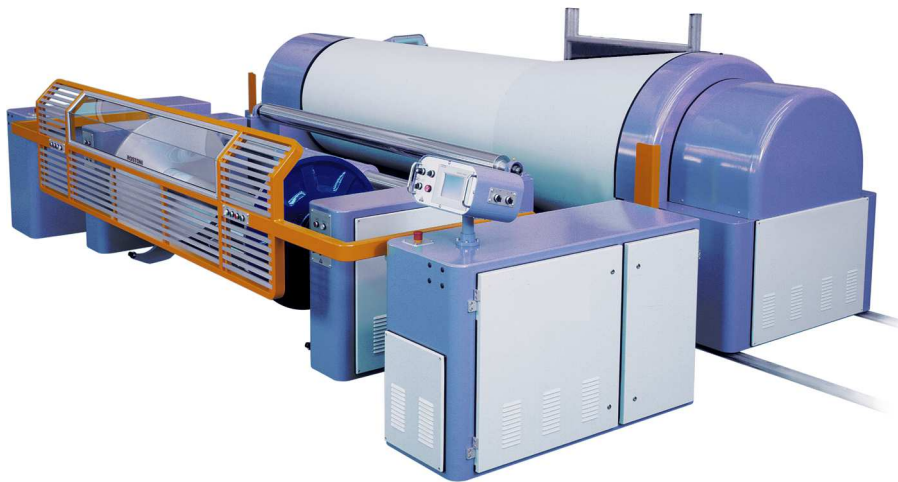


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### WAXING DEVICE

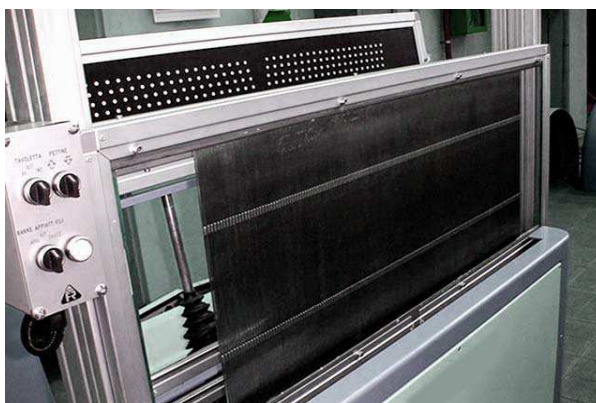
with automatic recirculation

## PRO-SMARTCON AGGREGATES



SMARTCON, ergonomic, efficient, smooth and full automatic.

The automatic leasing device contributes to productivity and warp quality, assisting the operator in its work and automatically dividing the running threads into decks, to avoid thread breaks or automatically opening and closing for shed formation. The leasing reed has a swift anti-wear movement to protect it and avoid the formation of lint.



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**LEASING DEVICE**  
type KSE<sup>®</sup>

All along, PRO-KONUS machinery keeps the whole process under constant control, by suitable devices, such as Fluff detector and End-break laser-sensor. The machinery will stop and keep memory of every fault of the warp. For yarns sensitive to static electricity, a very effective system of Ionising bars with or without blowing device, is available wherever necessary for the best quality of work.



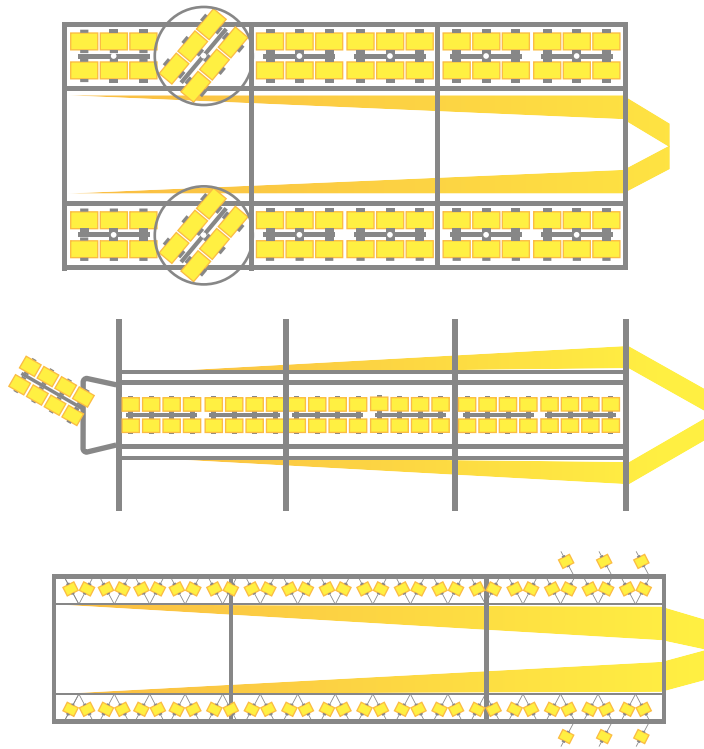
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**ANTISTATIC  
FLUFF DETECTOR**

yarn quality



## PRO-KONUS AGGREGATES



SMARTCON runs at a speed of 800 mt/min., consequently the warping creels must be provided with tensioners and stop-motion devices suitable to such working conditions and, at the same time, must be easy to use and extremely efficient.

Creels are designed with suitable layout according to specific own need and requirement.

The customised design is developed on basic models:

- SINGLE END · SWIVEL FRAMES
- SINGLE-END · MOVABLE TRUCKS
- DOUBLE-END · SWIVEL SPINDLES

Every kind of tensioner, stop-motion device and optional device can be mounted on all our creel models.



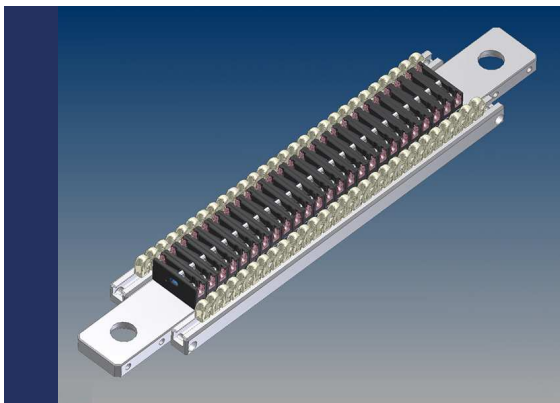
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**CREEL**  
**type GH5<sup>®</sup>**

with tailor-made design

The Optical Stop motion acts swiftly and quickly to prevent lost ends.

A standard layout checks by photocell layer by layer and alerts immediately any broken end. A special layout provides to all yarns an individual check of movement and tension. All passages are made of sintered ceramic to avoid wearing and damages to the yarns.



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**STOP MOTION**  
**type Optobar<sup>®</sup>**

quick action

## PRO-KONUS AGGREGATES

Having a completely **automatic** installation, **self adjusting** to perform the best process is nowadays a real possibility with PRO SMH Smartcon.

The Total Newton Control system **TENSOMAT** can drive the creel equipped with individually set and automatically controlled and adjusted **motorised tension units**, suitable for any kind of fibers and counts. The tension units accurately count and record event the yarn length, for more accurate production records.



### TENSION UNITS

## ELECTRONIC Individual set (motorised)

motor activated

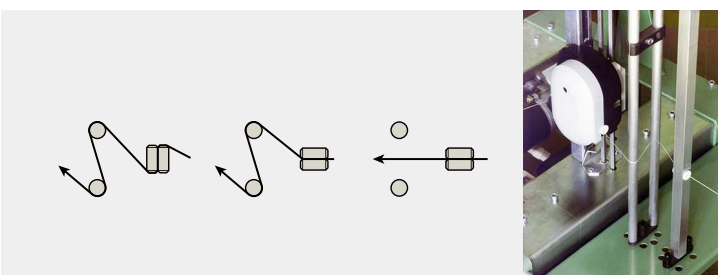
Mechanical, tension units are the best **cost-effective** choice for any production, thanks to the perfectly accurate choice of design and materials. Discs and ceramics surfaces are smooth and very resistant. A centralised system, optionally adjusted automatically by TENSOMAT, ensures the most efficient tensioning of the yarns.



### TENSION UNITS

## MECHANICAL Centralised auto-set

PRO SMH has a long experience in Creel design and knows that **high-twisted** and **fancy yarns** can be very nervous at warping, creating kinks and snarls during the work and at stops. An effective device such as our **Pre-tensioner** and **Kink-Preventer** allows an easier process with better results in the **quality of the warps**. This device is motorised and can be easily set by the operator from the main control panel.



### ACCESSORIES

## KINK PREVENTER PRE-TENSIONER

## PRO-KONUS NAVIGATOR

At PRO-SMH we are very keen on electronics and software for machine management. PRO KONUS machinery employs the computer control system with a full-color graphic display graphic for operating conditions, warnings and any malfunctions, as well as all machine parameter settings, which can be memorized for preparation of new articles parallel to the running process and immediate, quick activation at batch changes. After production, a report can be prepared with tracing of the production records by beam or lot.



CAM-SYSTEM

**PRO-NAVI**®

INDUSTRY 4.0 Ready

LAN communication (Ethernet) is possible from the machine, so such as operation check, production record, and monitoring can be easily made by managers in the office. This Navigation system is Industry 4.0 ready and makes your investment even more profitable.



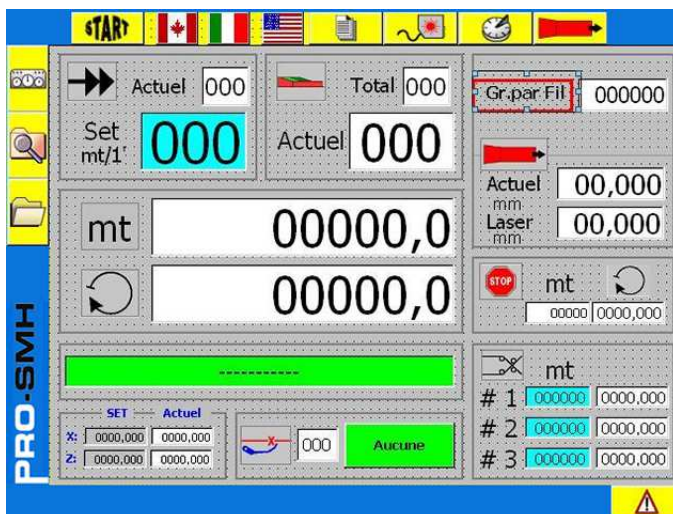
REMOTE ASSISTANCE

**GO-PRO**®

Safe-link

At any fault or problem, the machines minutely explain countermeasures to solve any warning or malfunction.

Anyway, by quick remote connection, our Service department can be asked for rapid assistance; PRO SMH will grant remote assistance by Teleservice as well as prompt shipment of spares, directly from our stock. We have a wide range of spare parts also for older machines.



A very well trained and skilled team of engineers will take care about your project from A to Z. We would be happy to help you overcome any problem: please feel free to contact us at any time.

# PRO-SMH

IN COOPERATION WITH

