



WARP PREPARATION

SMH *i*-Sizing®

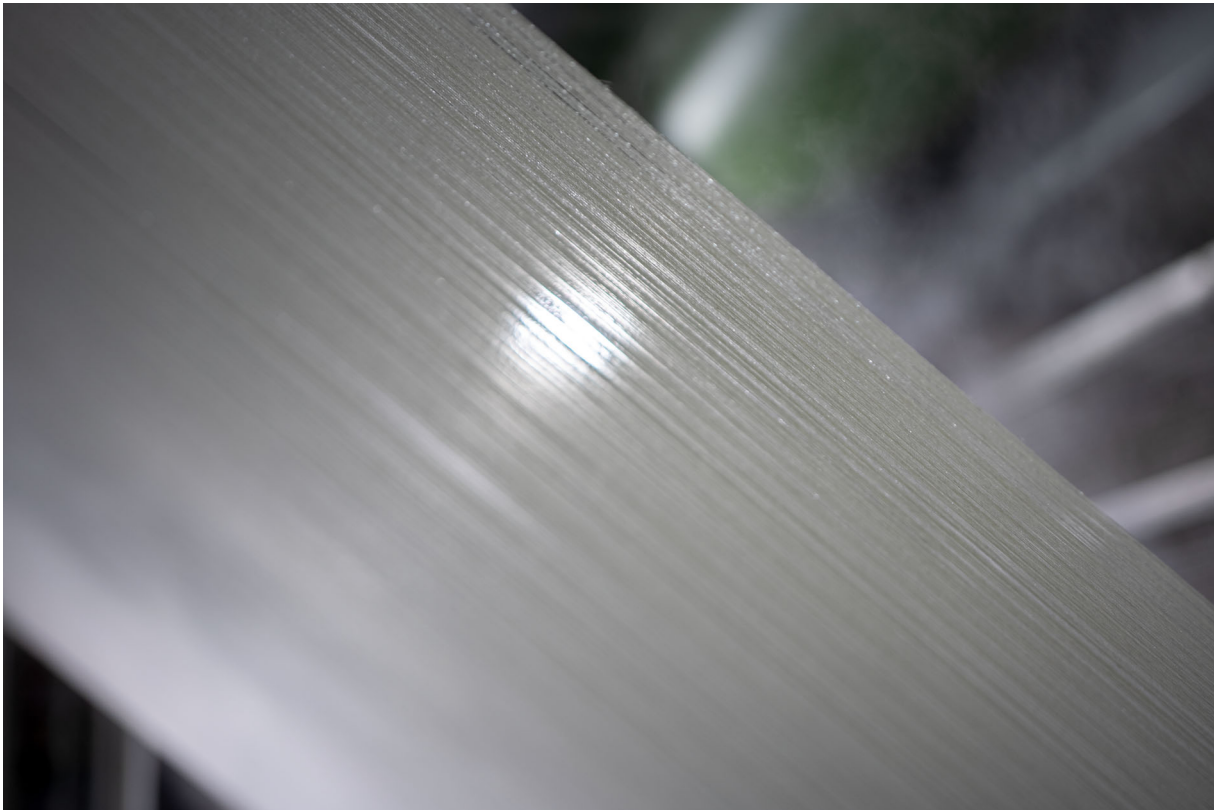
sizing machine  
sizing machine  
Schichtmaschine  
hasıl makinası  
l'encollage  
sizing machine  
sizing machine  
sizing machine  
簡單機械器  
简单机械器

## SMH *i* - Sizing®

Today's high-performance weaving machines require an absolutely perfect and reproducible warp quality. Due to the immense increase in weft insertion rates, the sizing process is increasingly becoming the key to success in weaving.

With its range of **SMH *i* - Sizing®** sizing machines, PRO-SMH offers the user a tool that meets even the highest needs of weavers in an outstanding way. The machines meet the highest quality standards and guarantee the highest possible availability for your production.

SMH *i* - Sizing® is setting new standards.....



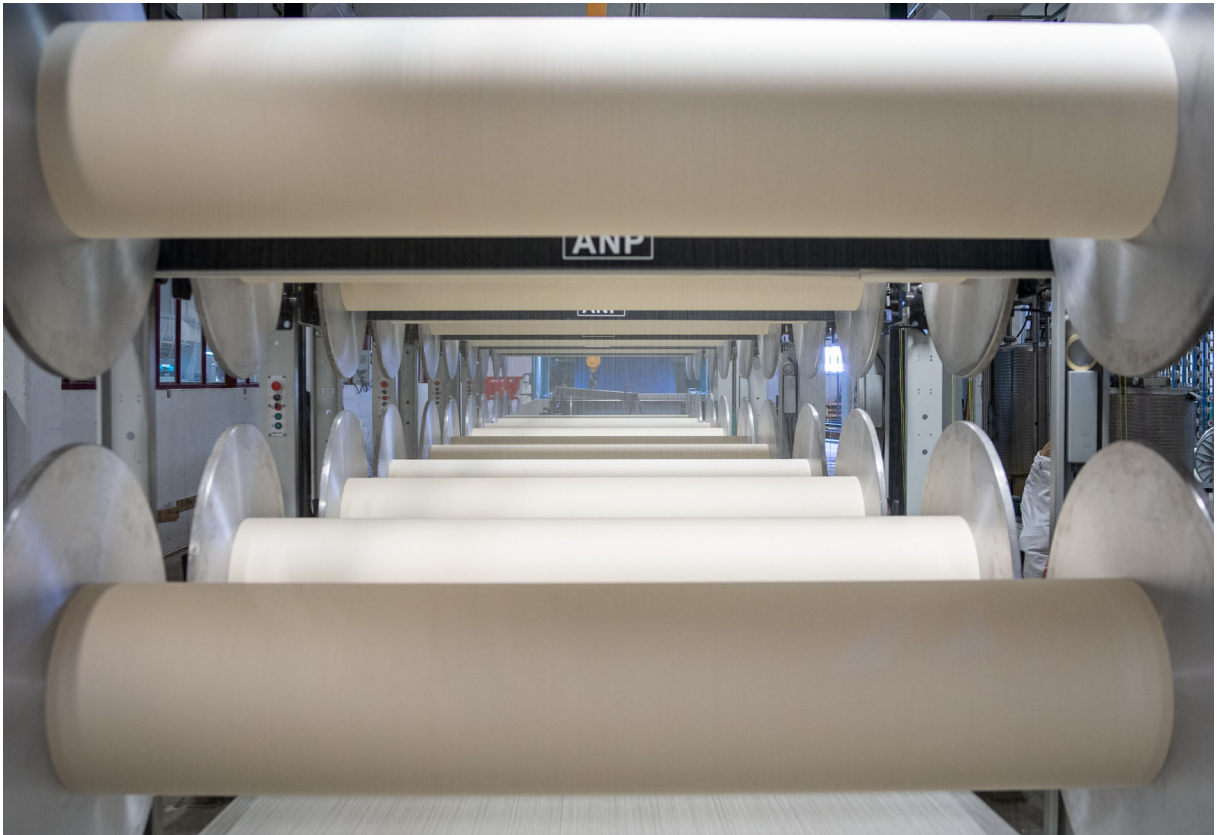


SMH *i* - Sizing® sizing machines with intelligent computer system produce weaving beams

- without yarn brakes
- with constant size application
- with constant residual moisture without sticking
- with high residual elongation of the threads
- with non-crossing threads
- with little hairiness and no tendency to cling
- with impeccably wrapped edges

With the optionally available **PRO-TELECOLL®** sizing control, the system can be optimized further as an option.

## WARP BEAM CREEL



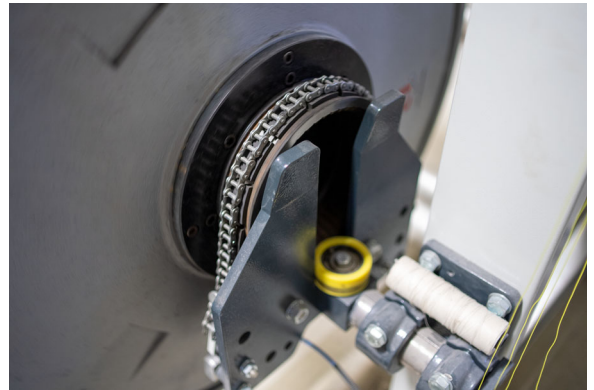
When unwinding the heavy warp beams with a diameter of up to 1400 mm- often with few threads- it is important to keep the thread tension constant during stop, acceleration or production speed.



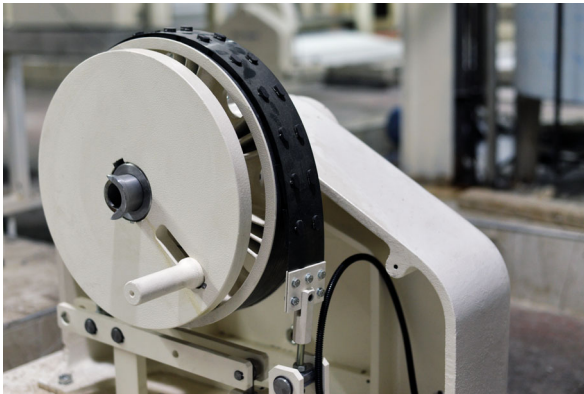
And this, of course, from the first to the last meter of yarn on the respective warp beam. With the types **ANP**<sup>®</sup>, **ANV**<sup>®</sup> and **AM**<sup>®</sup>, PRO-SMH offers beam creels that are optimally tailored to the needs of the user and fully meet the requirements described before.

## WARP BEAM CREEL

By permanently calculating the current stopping pressure for the respective beam diameter, the warping beams can also be braked immediately with an emergency stop if a thread breaks. The short stopping distance prevents further yarn breaks or kinking.



## BEAM UNWINDER AP®



The **AP**® unwinder is used to feed warp beams from sectional warping machines to the sizing machine. Of course, while maintaining perfect tension regulation from the first to the last meter.

The unit can also be installed in the splitting zone for re-beaming of faulty weaving beams.

## SIZE BOXES PS-N® and PS-P®

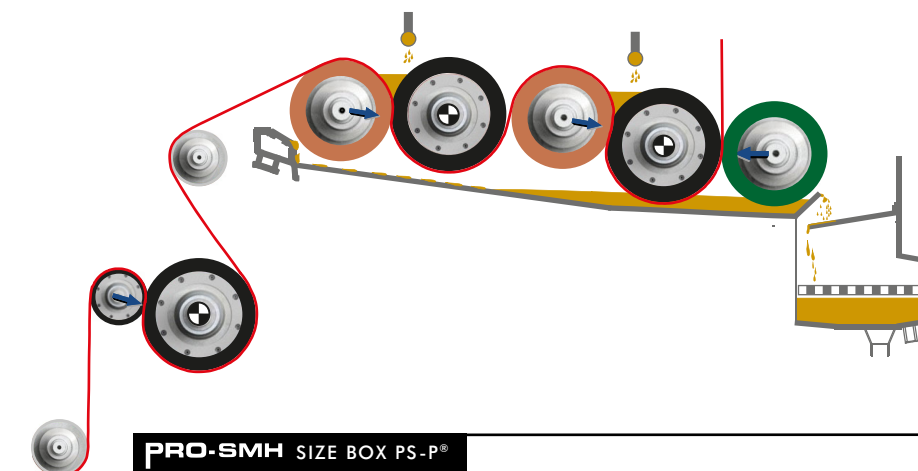
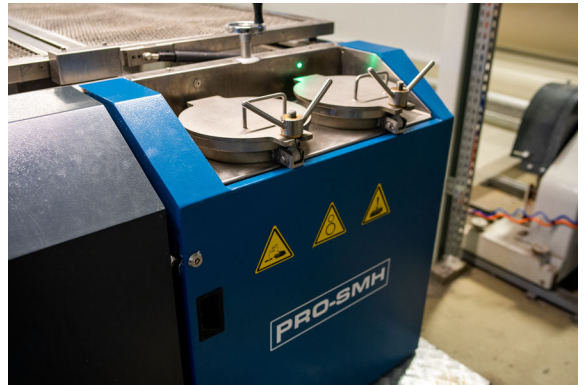
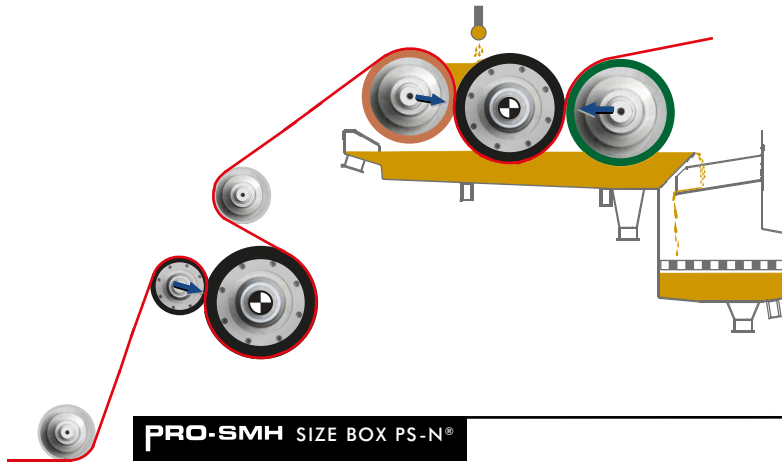
With these size boxes, PRO-SMH offers the demanding weaver highly efficient and highly economical tools. They are characterized by the shortest possible yarn passage and perfect tension control. This combined with a cover factor of up to 105% for the **PS-N®** and revolutionary up to 150% with the **PS-P®**.

Characteristic of these size boxes is the combination of introducing the size agent into the nip via a spray bar, combined with a classic dipping session. This ensures that there are no restrictions on the yarn count to be treated, from fine yarns to heavy qualities. Other solutions available on the market noticeably limit the area of application here.



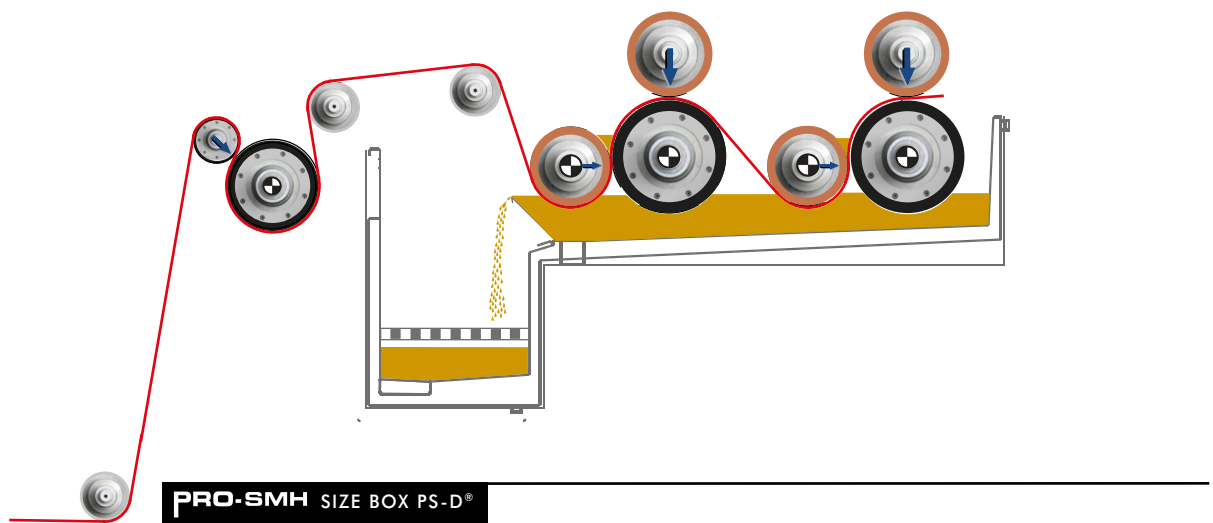
Both size boxes are designed for the application of dress shirt fabrics, mattresses and bedding, bathroom and cleaning textiles, terry towelling and suit fabrics.

## SIZE BOXES PS-N<sup>®</sup> and PS-P<sup>®</sup>



## SIZE BOX PS-D<sup>®</sup>

Sizing troughs using the traditional double-dip-double-nip method are still very popular with processors of particularly heavy yarns. With the sizing box **PS-D<sup>®</sup>**, PRO-SMH also provides the user with an optimal tool here. In addition, this box is also suitable for processing shirt fabrics, mattresses and bed linen, bath and cleaning textiles, terry toweling and suit fabrics and delivers excellent results.



## Use of the size boxes

All the size boxes presented can be used without restrictions in both single and double trough systems. Depending on the requirements of the following dryer, the yarn outlet can be designed either horizontally or diagonally upwards.

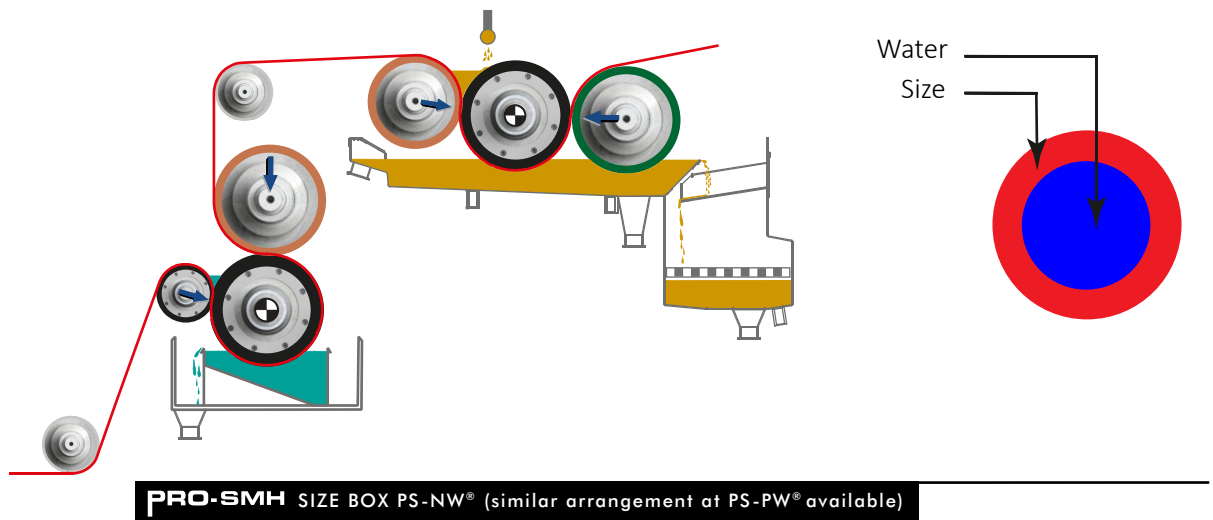
Since all PRO-SMH sizing systems have a pro-active system for tension control, it is guaranteed that there are no differences in the tension of the yarn in the two sizing boxes. This prevents different levels of pick-up of the size in the two boxes.



## WET-ON-WET SIZING

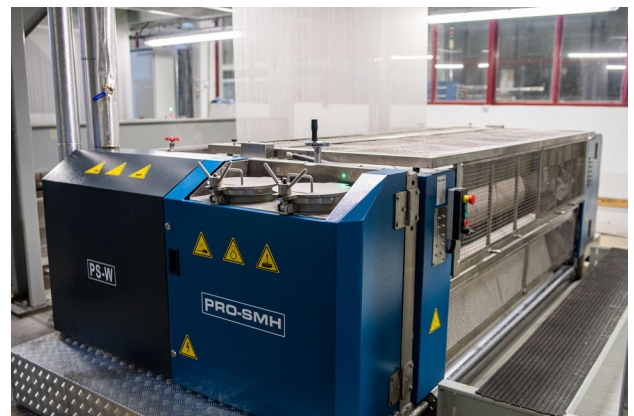
The size boxes **PS-N**<sup>®</sup> and **PS-P**<sup>®</sup> can optionally be equipped with an upstream pre-wetting trough (type designation **PS-NW**<sup>®</sup> and **PS-PW**<sup>®</sup>), which enables a wet-on-wet sizing process.

In the pre-wetting trough, the warp is introduced into hot water with a temperature of approx. 80- 90°C. Waxes, oils and fats are rinsed off the yarn. It is then squeezed with high-pressure (at cotton to about 40%) and the warp then runs into the sizing area. Since the threads remain soaked with water in the core, the sizing can only be applied to the outer sheath, which makes it possible to save considerably on sizing agents. Special monitoring ensures that the sizing concentration is kept constant throughout the process and that any entry of small amounts of water is compensated for at any time.



Another advantage of wet-in-wet sizing arises during the subsequent drying process. The water evaporating from the core ensures better fixation of the sizing agent on the fiber and thus contributes to a further improvement in quality.

If required, it is also possible to use the size box in the conventional way without pre-wetting.



## PRO-TELECOLL®

With the **PRO-TELECOLL®** system, PRO-SMH offers a system for automatic control of the sizing process, which is based on the expert software SICAM from ITV Denkendorf (Germany) for the automatic calibration of the microwave measurement values. The size pick-up is specified directly as a percentage of the yarn weight as a target value in the machine control.

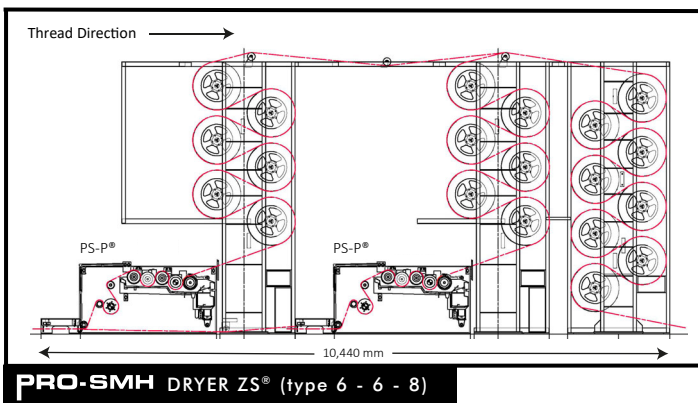
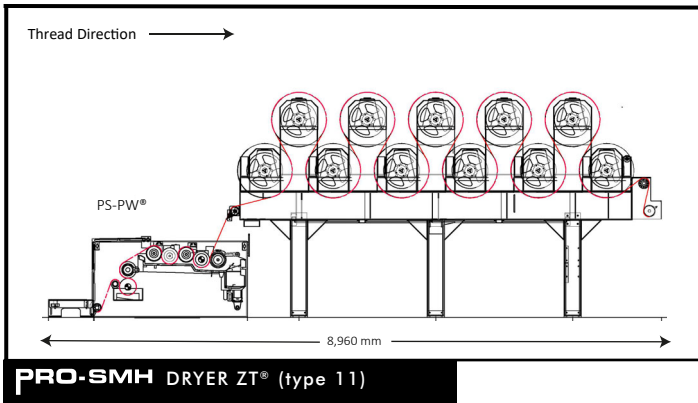
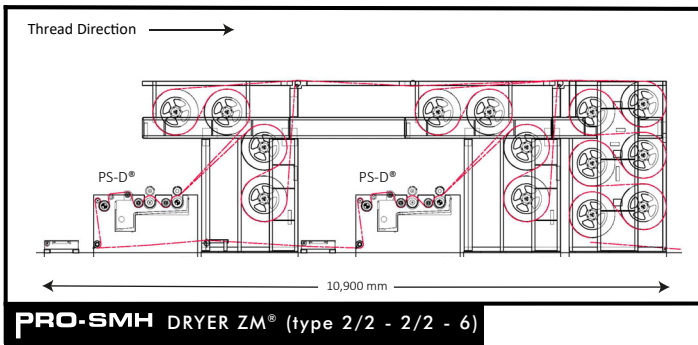
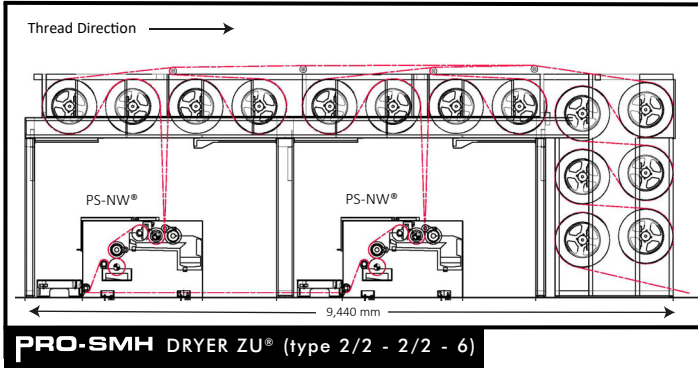


The **PRO-TELECOLL®** system achieves constant sizing right from the first warp meter

- regardless of the production speed
- independent of the wetting capacity of the yarns
- independent of the viscosity of the sizing
- independent of the roller quality or the temperature of the rollers (e.g. at the restart after the weekend)
- regardless of yarn count

When using the system, the weaving efficiency can be increased by up to 3% while at the same time saving up to 20% in sizing agent. All of this is accompanied by safer and better product quality, no start-up losses for new articles and lower costs for process and waste water when washing out the fabric.

# STANDARD DRYERS

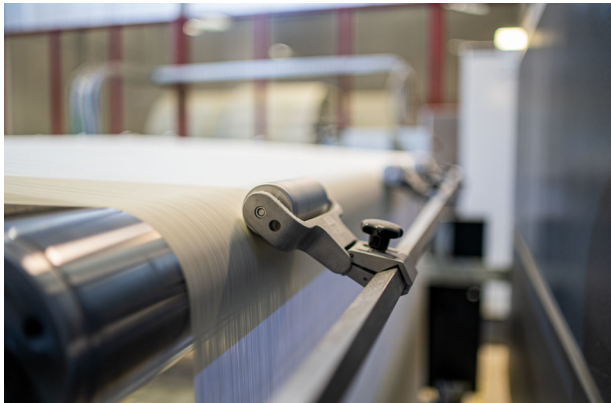


## PRO-SMH DRYER CONCEPT

PRO-SMH dryers as a standard have a drive for each pre-dryer unit and for the final dryer. This ensures that the tension and elongation of the yarn can always be kept in the desired range after leaving the sizing box.

The design of the dryer is always perfectly tailored to the needs of the user and the desired process speed. In addition to the standard configurations presented here, alternative versions can be implemented if required.

## RESIDUAL MOISTURE CONTROL



The speed of the system is controlled by maintaining a constant, adjustable residual moisture content in the yarn. This unit is integrated and operated completely via the machine control of our system.

## WAXING & SPLITTING ZONE



The **PVD**<sup>®</sup> wax device has a driven synchronized applicator roller. Waxes and oils used are permanently kept at the desired temperature by indirect heating.

The yarn is fed to the winder in a controlled manner via the system- specific splitting zone.

## HEADSTOCK



One of the core elements of every sizing system is the headstock. An absolutely even and controlled structure of the warp with exact maintenance of the desired tension is a key to effective and trouble-free work in the weaving department.



Depending on the desired diameter of the weaving beam, the beaming machines **PT-10**<sup>®</sup> (ø 1,000 mm), **PT-11**<sup>®</sup> (ø 1,110 mm) and **PT-12**<sup>®</sup> (ø 1,250 mm) provide the operator with the ideal and reliable tool. The working range can be selected in the range from 800 to 4,600 mm.

For particularly large widths and/or high winding tensions, a specially designed **PT-WS**<sup>®</sup> beaming machine is also available. This beaming machine allows weaving beam diameters of up to 1,600 mm.

## DRIVE & CONTROL SYSTEM

Drive and control systems from PRO-SMH are built exclusively using the highest quality devices and components (Siemens, Lenze and other first-class German and Western European manufacturers). Together with the completely in-house developed software, this forms the basis for PRO-SMH systems guaranteeing the user not only the highest quality standards but also extremely high availability of this most important production machine.



The system is operated via several redundantly working HMIs, via which all machine functions can be accessed, helping the operator to supervise and execute all operations in the safest condition, keeping the whole process under control. This also has the advantage that if one HMI fails, the system can continue to be used at any time via the other devices, thus avoiding machine stops.

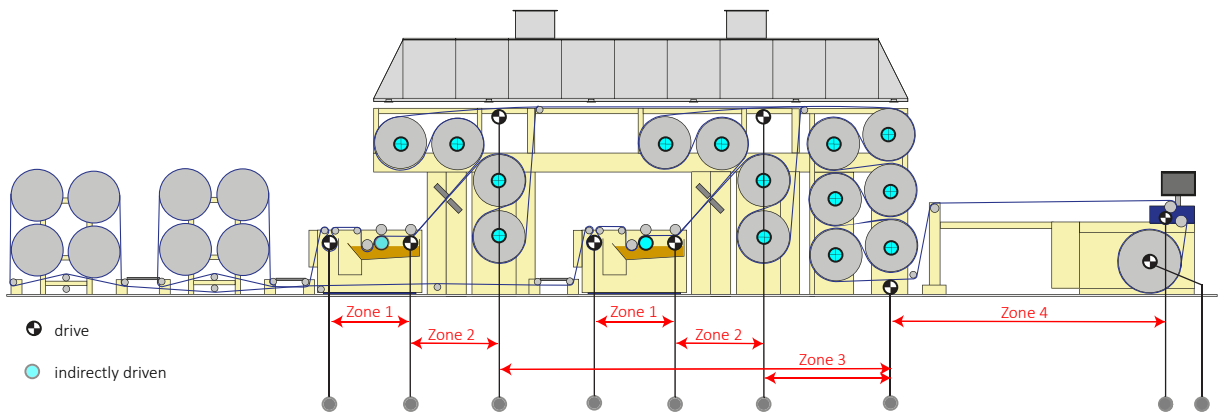


A sophisticated fault management system provides the operator with precise information in plain text in the event of any disruption, so that fault clearance can be carried out quickly and easily. In addition, every PRO-SMH system is equipped with a tele-service module that enables our specialists to help you competently and quickly if necessary.

Our machines are Industry 4.0 ready and enable full connection to the digital future. Of course, all our machines comply with the applicable CE regulations and the high standards of other European machine directives.

## PRO-ACTIVE DRIVE AND TENSION CONTROL

SMH *i*-Sizing® sizing machines have a sophisticated drive technology that ensures that both the tension and stretching behavior of staple as well as filament fibers can be kept within the desired range at all times. For example, it is possible to optimally size two warp halves with completely different shrinkage behavior on a double trough system, e.g. when viscose staple fiber yarn and acetate filament yarn are mixed in one warp and have to be sized with two different recipes on two troughs. The shrinkage behavior of the yarns, which depends on the dwell time, can be simulated exactly in order to enable constant stretching of the yarns overall without overstretching or loss of tension in individual zones.



## SIZE KITCHEN



By the PLC-control it is possible to charge cooker and sizing machine automatically. Working according to the provisions of the ISO-standard is guaranteed.

Operation of the cooker and the sizing equipment is facilitated by the specification of the formula. Pulverized and liquid components such as water, size, recycled size, wash water or additives are automatically filled in.

By the activation of start and target, the size is automatically transferred to the sizing machine and the individual size boxes. Recirculation of the size into the storage tanks is also guaranteed by the control unit. All settings are done by means of a separate HMI directly linked to the size kitchen.

# PRO-SMH

## PROSMH MAKINA PAZARLAMA SAN. VE TIC A.S.

### sales & distribution

PRO SMH Germany GmbH  
HochstraÙe 42  
52078 Aachen / Germany  
T +49.241.560 002 87  
F +49.321.234 010 37  
E info@prosmh.de

### factory I

Osmangazi Mahallesi  
Küçükyazma Cad. No:13/2  
Esenyurt-Istanbul/TR  
T +90.212.858 08 08  
F +90.212.858 00 70  
E info@prosmh.com

### factory II

Yazlik Yenimahalle  
D-130 Karayolu Cad. No:87/A  
41650 Gölçük-Kocaeli/TR  
T +90.262.343 30 90  
F +90.262.343 30 90  
E info@prosmh.com