

WEAVING PREPARATION

PRO-GLAS®

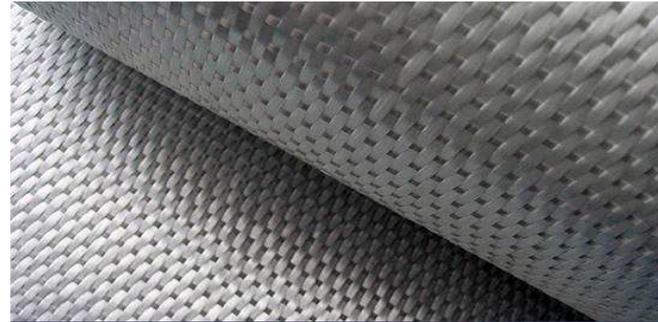
filo di vetro  
fil de verre  
glass fiber  
Glasfaser  
cam elyaf  
fite vidre  
hilose

## FIBERGLASS

Perfect Sizing is a key-passage in the glass weaving industry, where the regularity, efficiency and accuracy of machines reflect in the quality standards of industrial and electronic fabrics.

PRO-SMH knows what glass weavers need and has designed the perfect machines to fit the requirements of each, where all parts are perfectly combined in a process to achieve top-quality results.

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



WEAVING PREPARATION

**PRO-GLAS®**

## FIBERGLASS-RANGES



WEAVING PREPARATION

**PRO-MULTISIZE®**

efficient & accurate for a wide range of counts



WEAVING PREPARATION

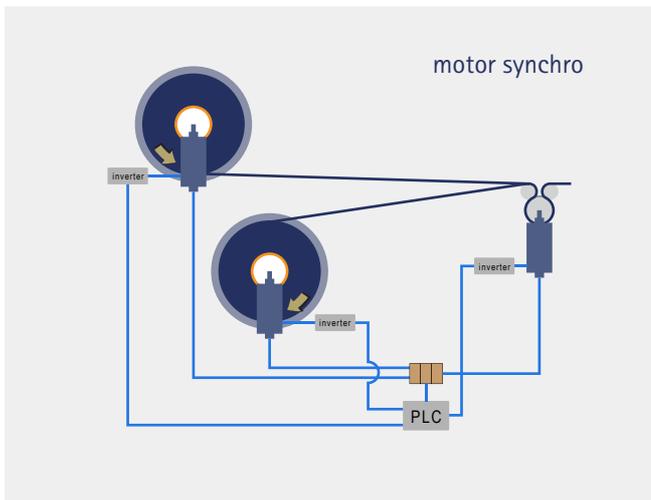
**PRO-SINGLESIZE®**

smooth process for thin, zero-twist yarns

## PRO-GLAS

The adjustment of yarns tension is crucial for the quality of the warps, particularly with delicate and anelastic fiberglass filaments.

PRO-GLAS machines accurately regulate to obtain a smooth yet fast passage of the yarns along the process, by synchronization of the different motors of the machines. Latest generation inverters swiftly control the unwinding and winding motors, in a 'closed loop', with tension setting and control by onboard computer.



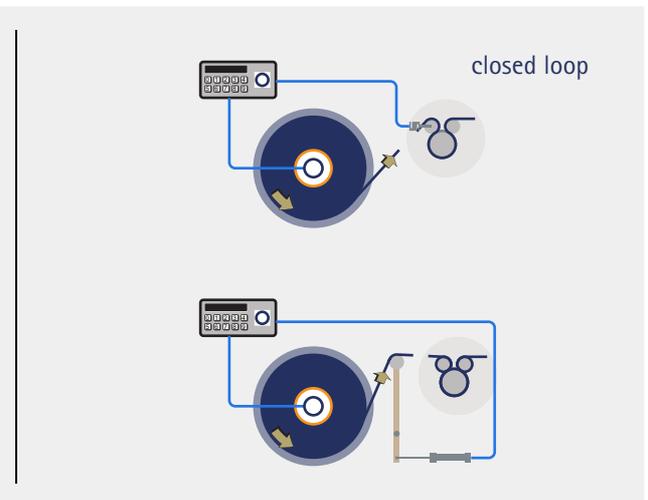
The two dryers of the machine (one with hot air flow and one with driven hot-cylinders) can be designed for operation either with steam or with diathermal oil, to match customer's production needs.

For higher temperatures of 200°C or more, a gas-heated air-chamber is also available: an even higher thermal efficient and energy-saving technology.

## WEAVING PREPARATION

### TENSION CONTROL

- especially designed for delicate yarns for the lowest tension
- stepless control in increments, accelerations and deceleration
- complete reproducible quality due to automatic process control
- real tension adjustments by loadcell systems
- dancing roll system available as control and compensator



## WEAVING PREPARATION

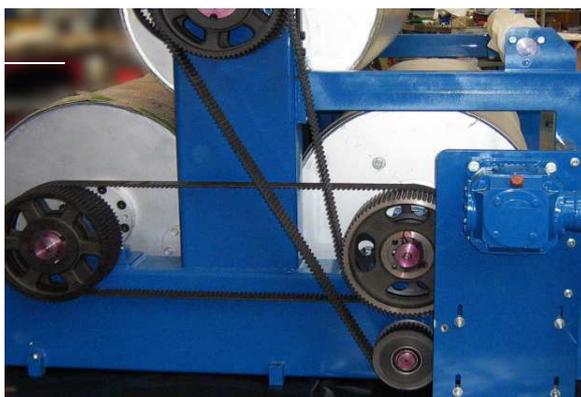
### HEATING FLUIDS



WEAVING PREPARATION

## SMOOTH & EFFICIENT

The size box has been fully motorized and provided with double tank with interspace for heating (steam or oil) and filter overflow; special sensors allow a smooth regulation.



PRO-SMH has taken up the challenge to design a machine for the ultra-fine yarns and the most efficient process.

The drying cylinders are driven by short toothed belts, for compact and reliable control.



Entry and exit rollers, with pneumatic activation, allow accurate adjustment of the motors as well as a damping system to keep the yarns guided without any stress.

WEAVING PREPARATION

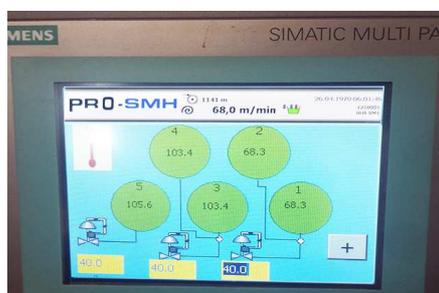
## TEMPERATURE CONTROL



Size is kept at the best temperature for yarn's impregnation and reaction to the pre drying units.

The temperature of the dryers is constantly checked and kept at the required level (hot-chamber, normally 150 - 160°C for high speed operation and 120 - 130°C for low speed operation) by the onboard automatic system.

The drying cylinders can also reach a temperature exceeding 130°C with steam and 180°C with diathermal oil. Each cylinder will have its own individual adjustment.



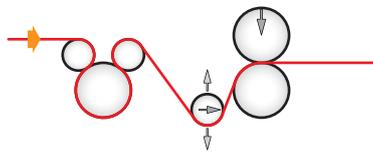
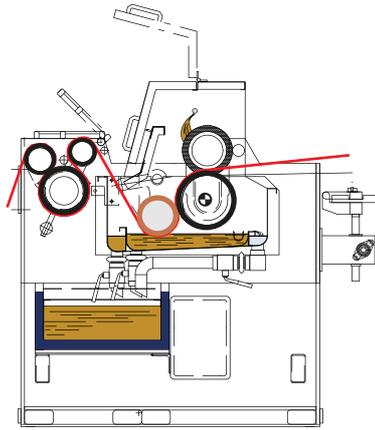
## PRO-GLAS FEATURES

WEAVING PREPARATION

# SIZE BOX

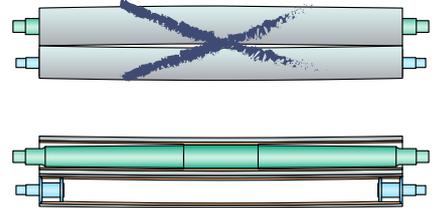
An excellent process requires a perfect size application:

Also by incorporated **spray bar** the size circulation constantly renews the size in the tank; the vat is designed for **minimum foaming** and exceeding size eliminated by squeezing and washed-out, is returned to the reserve tank are the right temperature. Eventually, the degree of sizing is calculated by derivation from the exact measurement of **liquor consumption**.



## PRO-GLAS FEATURES

The squeezing pressure is adjusted also with automatic stepless control depending on yarn speeds, thanks to the rapid reaction of pneumatic cylinders to changes in speed. Constant sizing left - centre - right is ensured by a **constant pressure roller** with special core.



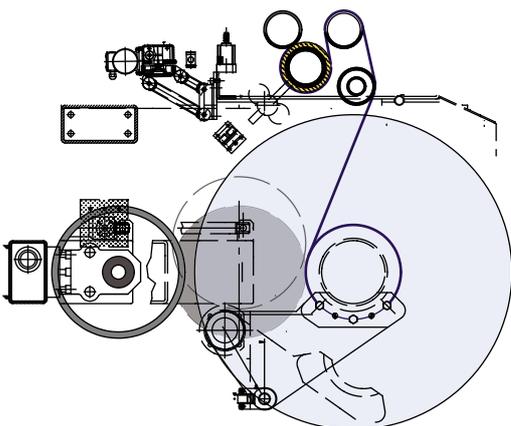
WEAVING PREPARATION

# ALWAYS REGULAR WARPS

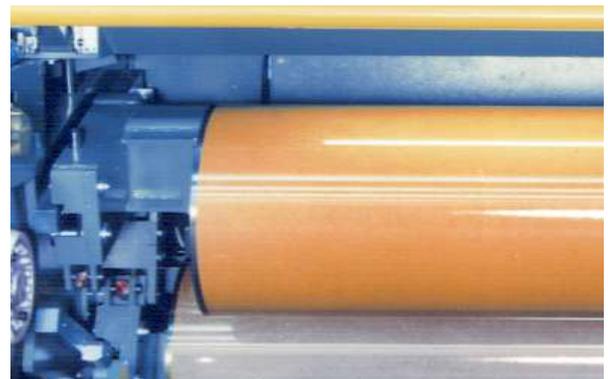


Constant warp laying on the beam is a key factor, particularly with anelastic yarns. Each individual filament passes through the machine with a clearance of 1 to 1.5 mm from the adjacent filament.

**Comb traverse** is accurately controlled, by the constant traverse motion over the traverse range and short dwell times at the reversing points. This creates a well-arranged winding shape that results in less tension fluctuation, which is especially efficient for fine yarns.

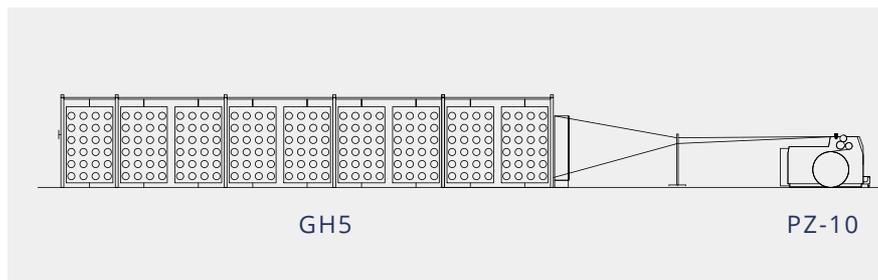


A pressure roller with smooth, glossy surface is available as an option.



## PRO-MULTISIZE AGGREGATES

Accurate tension control in **TWO** areas: from the bobbin to the transport roller, from the trio to the warp-beam. The line is composed of a creel, eyelets tables for precise guidance, ancillaries for quality check and a warper with double motorization.

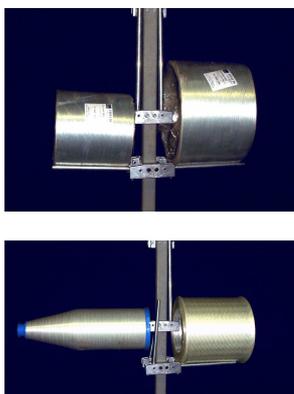


WEAVING PREPARATION

**PRO-MULTISIZE®**

warping line

A creel preferably with swivel-frames, equipped with spindles suitable for cops or roving. Accurate tensioning, with individual offset and centralized adjustment. Electronic or mechanical tension units according to the yarn specifications. Other creel constructions are available, with up-to-measure design. Active antistatic devices equip the creel.



WEAVING PREPARATION

**COPS /  
ROWING CREEL  
type GH5®**

glass tension unit

Winding headstock, equipped by transport rollers (three rollers). The motor that drives the tension rollers positively controls the tension. The beam has autonomous motorization synchronized by machine's computer. The computer keeps the tension constant or decreases it, with smooth "taper tension" control (controlled decreasing up to 50%).



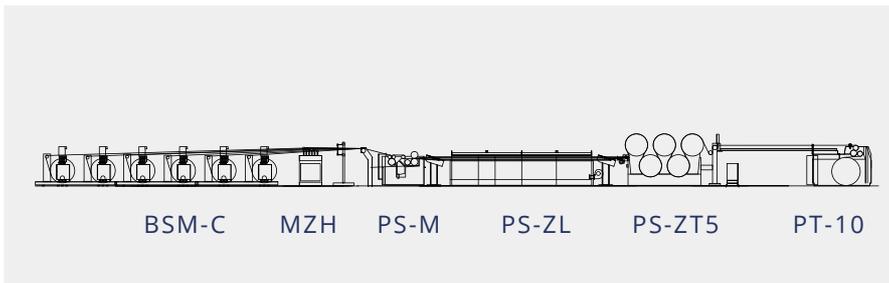
WEAVING PREPARATION

**DIRECT WARPERS  
type PZ-10®**

unit with 3 rollers

## PRO-MULTISIZE AGGREGATES

Accurate tension control in SIX areas: from the warp beam to the size-box; inside the size-box; from the size-box to the dryers; before the beamer; inside the beamer. The line is composed of a beams-creel, a leasing device, size-box, hot-air and contact hot-cylinders dryers, a beamer; ancillaries for quality check complete the installation.



WEAVING PREPARATION

**PRO-MULTISIZE®**

sizing line

The tension is controlled by individual motor according to a load cell at guide rolls. The torque (tension) between the beam stands and the take-up rollers (size-box) is adjusted constantly at target value. In case of a power failure, a disk brake stops the beam and prevents loose yarns. Single deck or double deck arrangement is available, for shorter structure and reduced space.



WEAVING PREPARATION

**BEAM CREEL  
type BSM-C®**

with load cell

A highly reactive and smooth option is motor-driven beams creel with dancing roller control. The pneumatically activated and perfectly balanced roller system is useful at higher working speed as it allows quick deceleration and acceleration. It has been particularly designed for thin and delicate yarns.



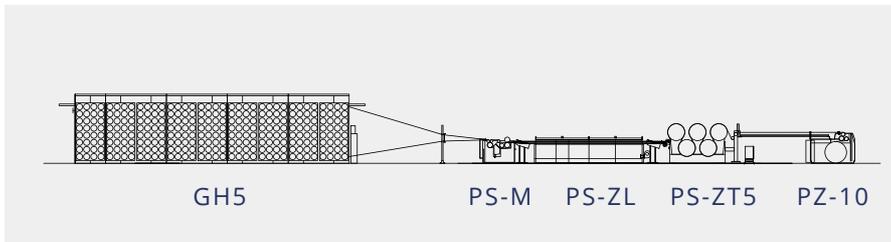
WEAVING PREPARATION

**BEAM CREEL  
type BSM-D®**

with dancing roller

## PRO-SINGLESIZE AGGREGATES

When full warp sizing is unlikely to achieve the required benefits of sizing (such as with zero-twist yarns) to avoid capillary breaks, PRO-SMH has designed PRO-Singlesize with two-steps process (Sizing and Assembling). Accurate tension control in both processes by motor-synchronization.

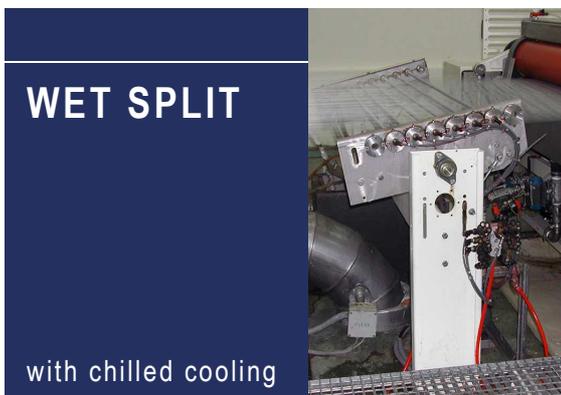


WEAVING PREPARATION

**PRO-SINGLESIZE®**

sizing line

Size-box is driven by **two motors**, accurately adjusted (by load cell) to obtain the required tension in the delicate operation of dipping and squeezing. During this operation, the sizing pickup is calculated from the first warp meter. After sizing, **splitting rods** divide the warp sheet up to 6 levels, to enter the hot-air dryer. The rods are cooled and moisturized to prevent size deposits.



**WET SPLIT**

with chilled cooling



WEAVING PREPARATION

**SIZE BOX  
type PS-M®**

with tension control

The Hot-air dryer works with counter-flow system controlled by **inverter** and flaps. Heat insulation has been accurately designed and tested, to reduce heat release as a way to cut steam consumption and **save energy costs**. As a further energy-saving option, a waste air moisture control system with waste air volume control can be employed.



WEAVING PREPARATION

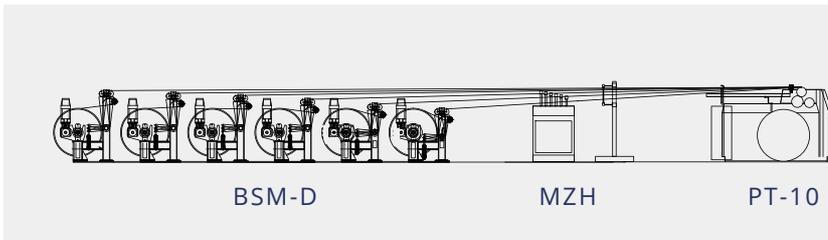
**HOT AIR CHAMBER  
type PS-ZL®**

with energy saving

## PRO-GLAS AGGREGATES

PRO-SingleSize second step: Assembling line.

Accurate tension control in **TWO** areas: from the warp beam to the transport roller, from the trio to the warp-beam. The line is composed of a beams-creel, a leasing device, ancillaries for quality check and a beamer with double motorization.

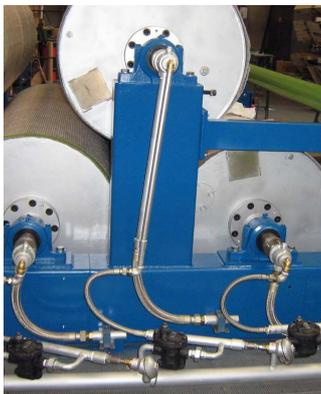


WEAVING PREPARATION

**PRO-A2<sup>®</sup>**

assembling line

Final drying takes place in a cylinder dryer on steam heated teflon-coated cylinders. Optionally, the cylinders can be heated by diathermal oil. The setting and adjusting of the temperature are accurately managed by PT-100 sensors and an automatic system. Inlet and outlet of the dryer is equipped with dampers for tension control.



WEAVING PREPARATION

**DRYING DRUMS  
type PS-ZT5<sup>®</sup>**

with smooth control

The design of the machine is **ergonomic**, to allow the user greatest productivity and quality of work and the optimal outlook of the beaming warp. Tension is adjusted by motors synchronization with the possibility of **degressive winding tension**. A precision yarn traverse on the warp is allowed by the reed accurate movement. A taping device and a pressure rollers device are also available.



WEAVING PREPARATION

**BEAMER  
type PT-10<sup>®</sup>**

accurate winding

## PRO-GLAS AGGREGATES

The Leasing device is placed between the beam stands and the take-up section. It accurately separates the yarns up and down alternately for leasing with its hook reed. As it is operated by buttons and motors, only one operator is required and the time expended is reduced. The complete stand moves on rail for more comfort of use.

Optional layout for leasing operation with ODD number of warp-beams (5 – 7 – 9 – 11 etc).



### LEASING UNIT

## LEASING UNIT type MZH<sup>®</sup>

motor activated

All along, PRO-GLAS machinery keep 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.



### YARN QUALITY

## END-BREAK SENSOR FLUFF DETECTOR

PRO SMH has designed own size-preparation set, with net capacity of 500, 1000 or 1500 liters. Indirect heating by introduction of steam into the tank jacket, as well as a propeller stirring device, allow constant and regular consistence size liquor. A control cabinet with temperature control and water meter complete the installation. Warp Beams suitable for PRO-FILAMENT machinery are available upon request; anyway, PRO-SMH machinery is designed to fit with any kind of beam



### ANCILLARIES

## SIZE PREPARATION WARP BEAMS

## PRO-GLAS NAVIGATOR

At PRO-SMH we are very keen on electronics and software for machine management. PRO GLAS 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.



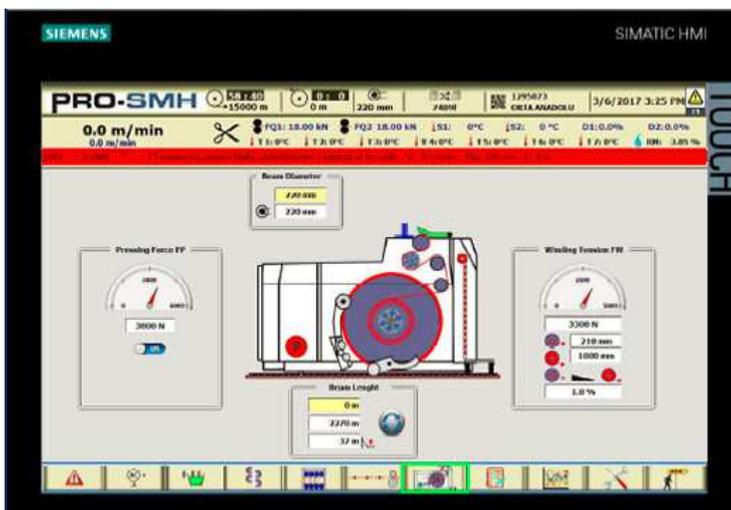
REMOTE ASSISTANCE

**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

