PRO-SMH

GERMAN TECHNOLOGY
designed & developed in Germany

WEAVING PREPARATION

SMH *i* - Indigo®

indigo dyei

Indigo-Färbeanlag

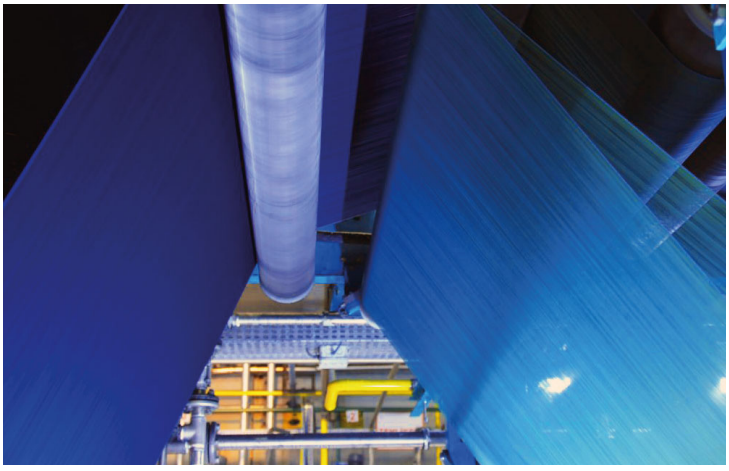
indigo boya makinasi

indigo boya maki

indigo dyeing-range

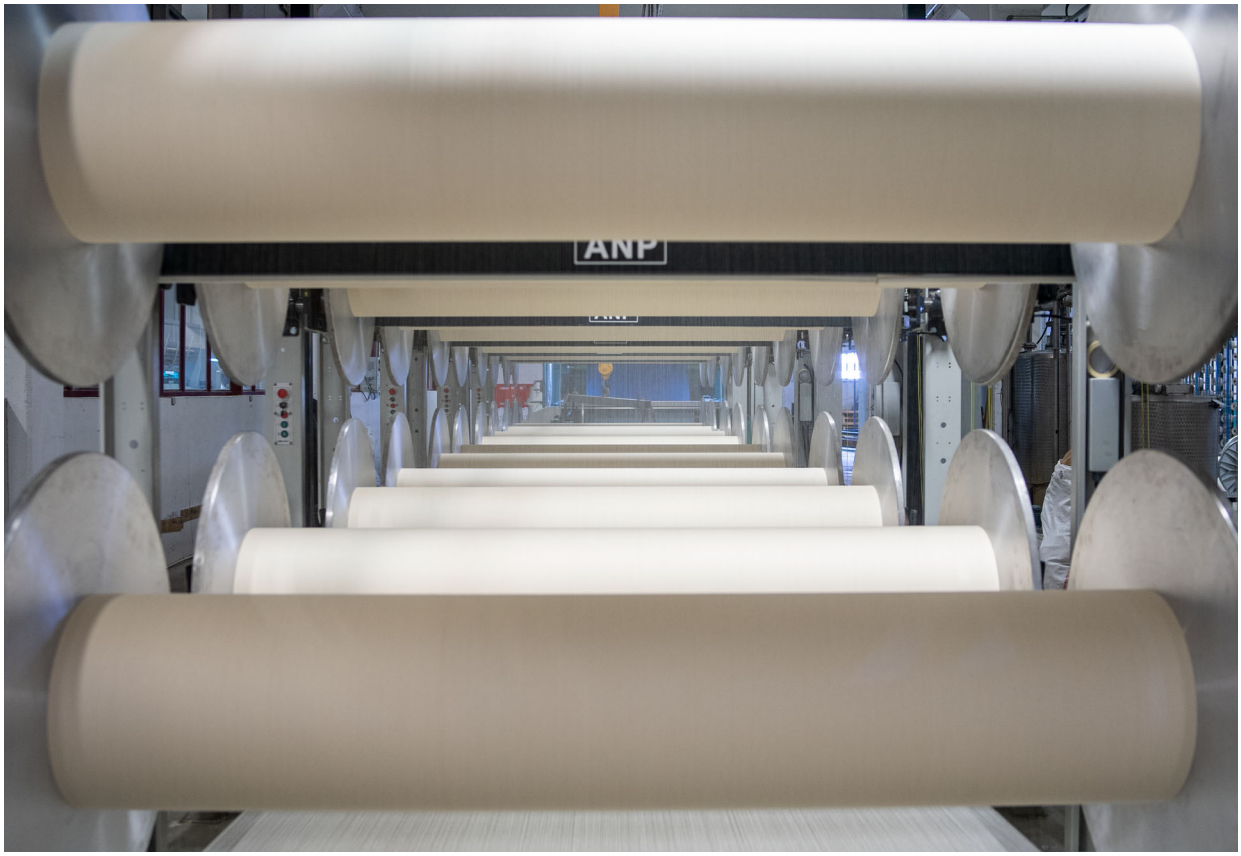
SLASHER DYEING PROCESS

In continuous slasher dyeing and sizing machine, direct warping beams are used, instead of ball warping logs in case of Indigo rope dyeing system. The Slasher Dyeing machine is capable of handling Ne count form 9/s to 30/s (OE and Slub both). At the back end of the slasher dyeing range, the direct warping beams are creeled. The yarns sheet from each beam is pulled over and combined with the yarns from the other beams so that multiple sheets of yarns can be made. In sheet dyeing range, the total No of required ends fora weavers beam are dyed, dried, sized and dried simultaneously. The back direct warping beam contains 380- 420 ends, similar to rope, but the ends are distributed evenly over the width of the flanges and the end lay parallel to each other. This continuous slasher dyeing range eliminates a few intermediate processes of the rope dyeing, such as re-beaming, sizing. The yarn sheet from the back beam passes through wash boxes, where it is treated with caustic and subsequently washed with normal water. After squeezing the excess water; the yarn sheet passes through Dye baths and skied for oxidation as in the case of rope dyeing. This develops the indigo coating on the yarn.



After dyeing, the dyed yarn is washed by passing through 3-4 wash boxes and finally squeezed before allowing it to pass through drying cylinders. The dyed yarn then enters the sow box, where it is sized. Subsequently the yarn sheet is dried. The yarn sheets then passes through a set of stainless steel split rods, which separate them into individual sheets, equivalent to the number of section beams in the creel. The yarn sheets then passes through a set of stainless steel split rods, which separate them into individual sheets, equivalent to the number of section beams in the creel. After passing through the split rods, the yarn sheets are collected into single sheet and passed through expansion comb at the head stock, which separate individual yarns. The expansion comb can be adjusted to the desired loom beam width. Slasher dyeing range typically consists of 1-2 wetting vats, 4-8 dye baths and 3-4 rinsing troughs. The immersion and oxidation times lie between 10-20s or 45-60s. The Pre-treatment process in sheet dyeing consists of treatment of the cotton yarn sheet with caustic and wetting agent. Pre-wetting is carried out in order to get proper dyeing of the sheet. Pre-wetting is carried out with a Wetting agent, at room temperature. In some cases, if well penetration of the dye is required, the yarns are treated with strong caustic soda solution followed by hot wash and cold wash treatment prior to dyeing. The pH of the bath is 11.8-12.

WARP BEAM CREEL

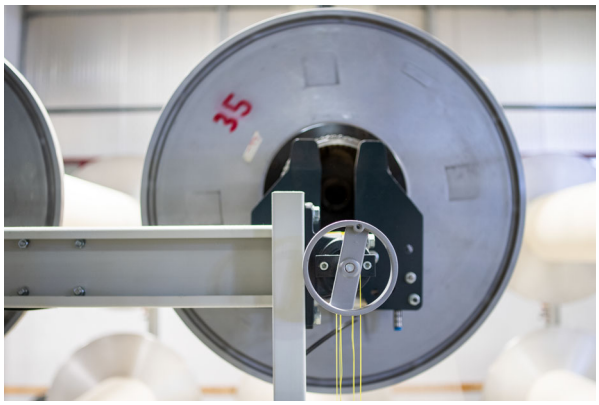


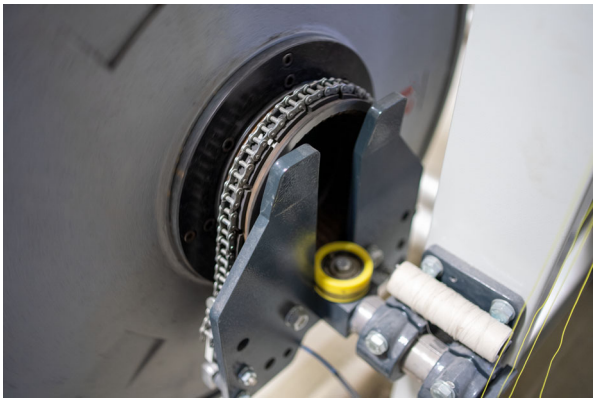
When unwinding the heavy warp beams with a diameter of up to 1400 mm- often with few threads- it is important to keep the thread tension constant during stop, acceleration or production speed.

And this, of course, from the first to the last meter of yarn on the respective warp beam. With the types **ANP®**, **ANV®** and **AM®,** 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.



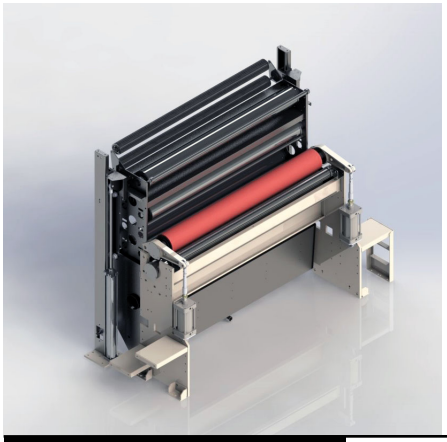


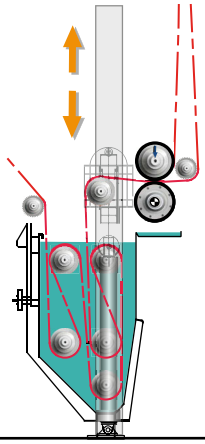
TECHNICAL DATA BEAM CREELS

type	beam dia. mm	suitable for Nm	type of brake	tension range	
				single sided	double sided
ANP	800 - 1.250	6-60	belt/chain	60-250N	100-500N
ANV	1.250 - 1400	6-60	belt/chain	60-250N	100-500N
AM	800 - 1250	5-100	brake shoes	60-300N	100-600N

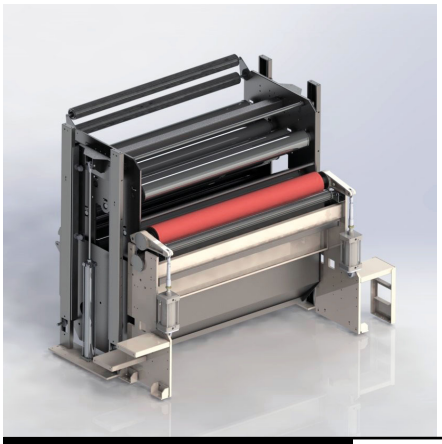
All types of beam creel are available as statonary and moveable execution.

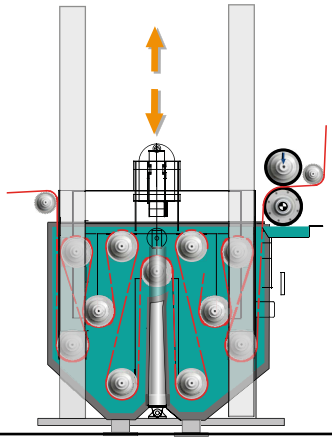
DYE BOXES





PRO-SMH PRO-DYE®



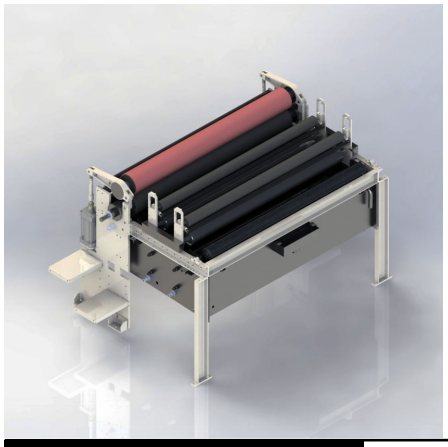


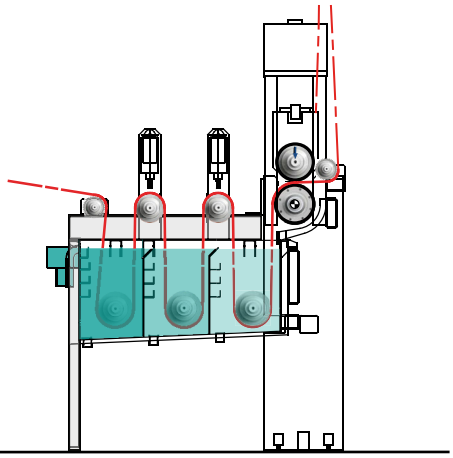
PRO-SMH PRO-POWERDYE®

PRO-POWERDYE®

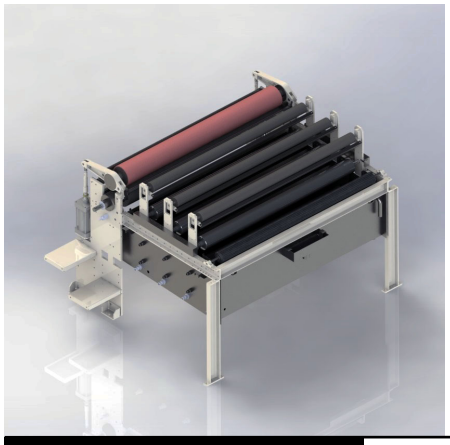
- longest dwelling time 11.8m
- integrated roller-lifting device
- easier yarn repairing
- better cleaning and maintenance
- perfect bath circulation with cross-flow system

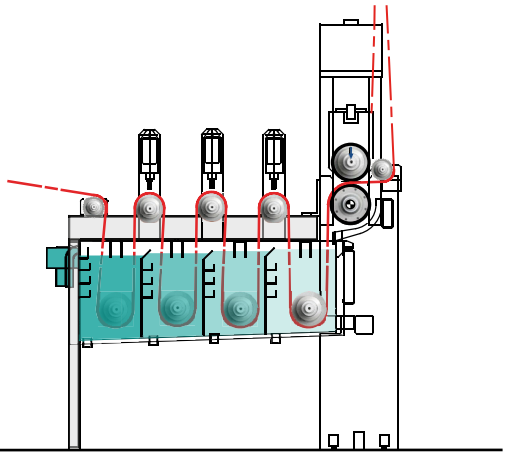
WASH BOXES



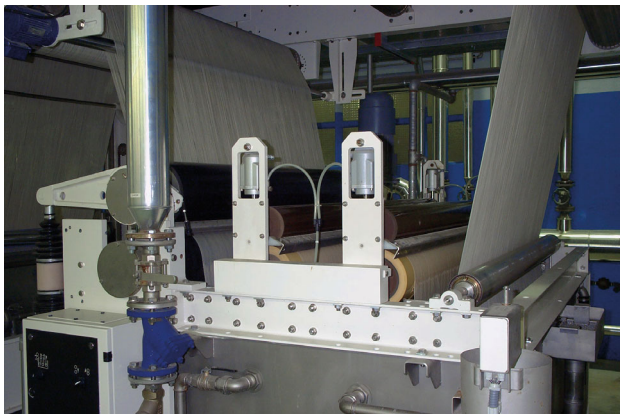


PRO-SMH PRO-OPTIWASH®-3





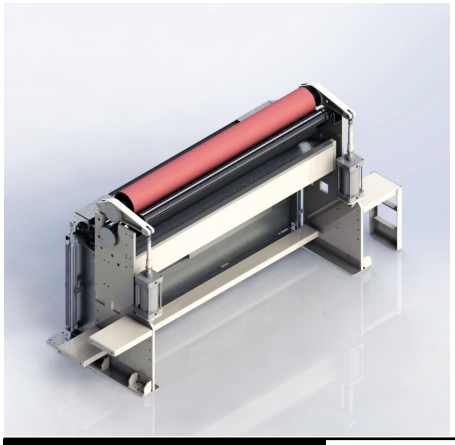
PRO-SMH PRO-OPTIWASH®-4

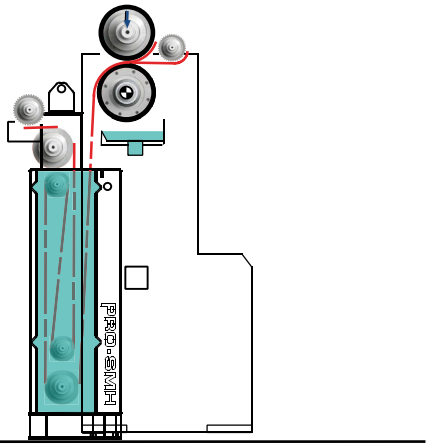


PRO-POWERWASH®

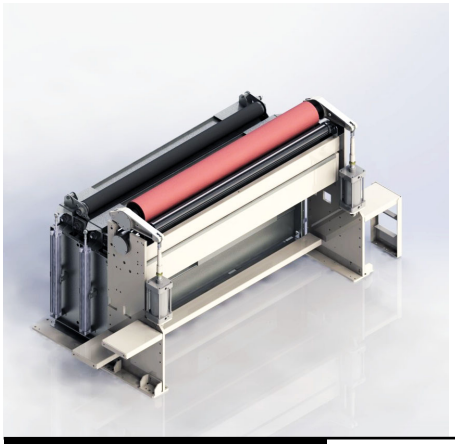
- superior washing performance with counter flow
- circulation system for chemical treatment
- up to 35% reduction in water consumption
- available with 3 or 4 compartments

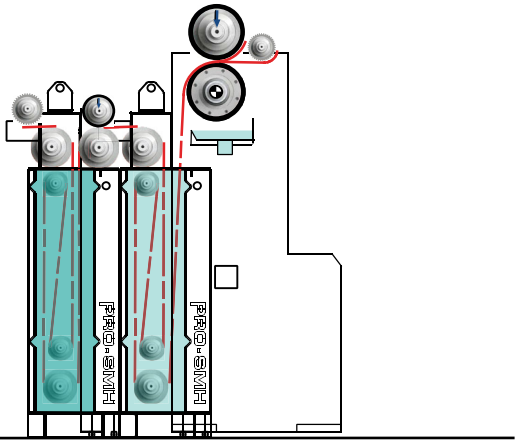
WASH BOXES





PRO-SMH PRO-SONIC®-1





PRO-SMH PRO-SONIC®-2

PRO-SONIC®

- superior washing effect by means of ultrasonic technology
- space saving design
- available with 1 or 2 compartments

OXIDATION

- conventional oxidation via air passage
- total length 31 m
- warp guiding with special riffle rollers
- smooth warp guidance

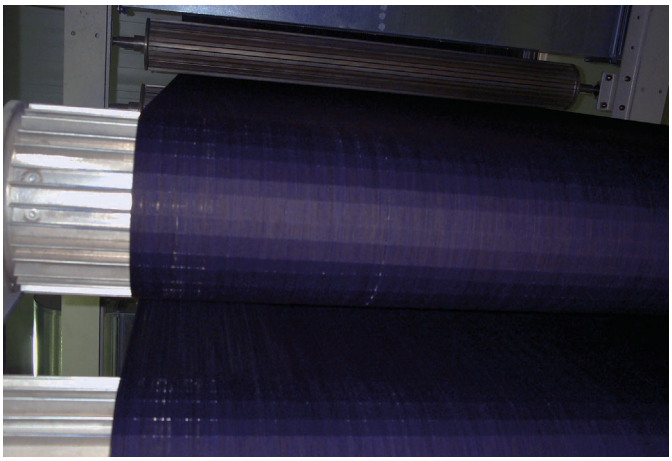
QUICK OXIDATION

The oxidation process is accelerated by exposure to hot air and the dye absorption is increased. The process section is 24 m, i.e. shorter than the classic oxidation section. With this system, less yarn waste and better tone uniformity of the warp sheet can be achieved.

STEAMER

By using a steamer, the machine can also be used for reactive dyeing, including bottoming and topping processes. The steamer is designed as standard with a 35 or 45 m fabric capacity. The steamer can also be used as an air passage.

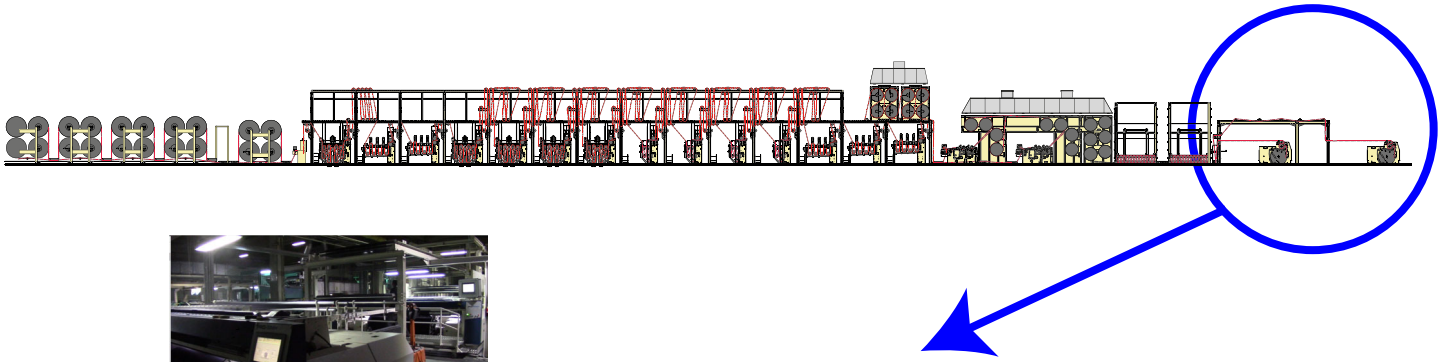
FLUTED ROLLERS

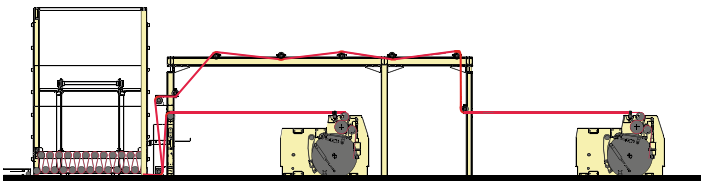


To prevent a drift off of the warps and to prevent therefore unequal dye faults, it is quite necessary to guide the warps in that way, that the single warps will not overlap on each other. Due to that fact, PRO-SMH uses without exception stainless steel fluted guide rollers. These special guide rollers ensure an absolute even fabric guidance without drift off or overlap of the warps. At the same time, the single warps are opened and become smooth.

DOUBLE HEADSTOCK SYSTEM

Based on a working width of 2200 mm, the PRO-SMH double-headstock system offers an increase in efficiency of up to 70% at comparatively low additional investment costs. Two weaving beams are produced simultaneously.





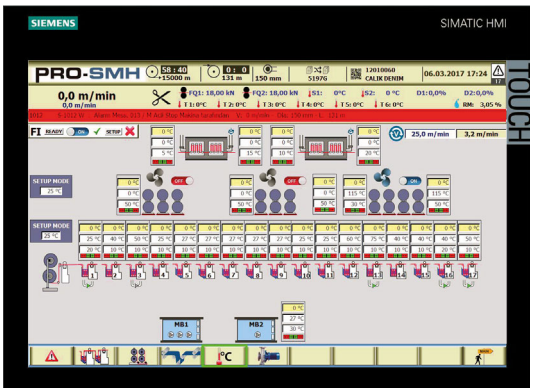
DOSING SYSTEM

The computer-controlled dyestuff & chemical dosing system for dyestuffs and chemicals is the heart of the Indigo-Dyeing-Range. Indigo vat, hydrosulphite and caustic soda is continuously added according to the calculated quantity indications and depending on the machine speed. Colour unlevelness owing to fluctuations in the bath concentration does no longer occur.

Owing to the high circulation rate of the dye liquor in 2 circuits.in 2 circuits, local bath concentration differences are avoided. The metering control stores the requireda high level of process reliability and reproducibility. The dye liquor is metered continuously by a special variable-frequency controlled pump by means of precise intermediated batching. The intervals depend on the desired indigo concentration which is determined by the warp pass and liquor loss in the dyeing machine.

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 important production machine.



All machine functions can be accessed via HMI, helping the operator to supervise and execute all operations in the safest condition, keeping the whole process under control.

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-SMH

PROSMH MAKINA PAZARLAMA SAN. VE TIC A.S.

sales & distribution

PRO SMH Germany GmbH
Hochstr. 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 Gölcük-Kocaeli/TR
T +90.262.343 30 90
F +90.262.343 30 90
E info@prosmh.com

www.prosmh.com