

## Straightener technology on a new level

### Mahlo Innovation with machine generation 15

Every day, several thousand kilometres of woven and knitted fabrics pass through the production facilities of textile manufacturers all over the world. And for every single centimetre of it, the quality has to be right. This means above all: straight-thread fabric. This poses great challenges for manufacturers of increasingly sophisticated textiles. Mahlo GmbH + Co. KG has been the perfect partner for over 70 years when it comes to straightening things out. The German machine builder has once again set standards in textile production and finishing with its generation 15 devices.



*Fig. 1: New Generation Orthopac RVMC-15 with drive station MMA (photo courtesy of Stamperia Olonia)*

Cost-efficient and quality-oriented textile finishing is foremost an operative matter; but often enough it is decisive in whether market share is even achieved or not. The use of suitable measuring and control systems in textile finishing, which are of fundamental importance for the optimisation and reproducibility of process parameters, is explained not least against this background.

In most applications, distorted products are one of the biggest problems to be solved for textile finishers. Distortions change the original structure of the product, reduce the quality and thus the prices to be achieved, and must be eliminated in order to preserve the present utilisation value of the product. Regardless of surface effects, this must be done fully automatically at today's commonly high product speeds. Not an easy task!

Since the introduction of the first automatic weft straightening system in 1959, Mahlo has been intensively involved in this subject and has become synonymous with fully automatic weft thread straightening. As inventor of automatic straightening, the German machine builder determines the world market until today. Based on many years of experience and systematic utilisation of state-of-the-art technology, the latest universal Mahlo machine generation 15 was developed and presented to a broad public for the first time at the ITMA in Milan in 2015. In the meantime, the system has proved its worth in the industry many times over, which is proven by around 800 units delivered and consistently very good reviews.

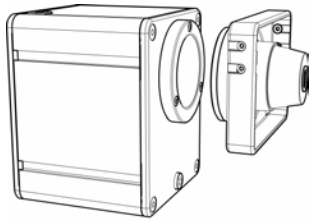
# Press release Straighteners Generation-15

Straightening and Process control systems from Mahlo

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## Straightening and regulating at a new level

With its device generation 15, Mahlo has once again set standards in textile production and finishing. For distortion detection Mahlo utilises sensors with oscillating lens or high-resolution camera. Often these sensors are combined to a so-called hybrid system and the respective advantages of both systems are combined. A self-optimising light source in robust design (IR LEDs) is also always on board and can be used in both transmitted and reflected light operation. A modular system is thus available which allows Mahlo to provide the right scanning system for almost any application.



*Fig. 2: Scanner for optoelectronic scanning*

Optoelectronic scanning with oscillating lens and DSP (digital signal processor) is probably the most sensitive and versatile system on the market. Arranged on a carrier bridge, several of these sensors simultaneously detect the position of the weft thread at different points. The scanning system detects and analyses the regular basic structure of the weft threads, courses or rows of tufting. It automatically adapts the control system to a wide variety of textiles, even with the most complicated fabric structures. Neither the variety of colours, printing and jacquard patterns that are common in textiles nor surface structures detract from this task.



*Fig. 3: Freely configurable touchscreen*

The modular design of the system allows for a custom-tailored machine that precisely meets the customer's requirements. Straight-thread product, fine straightening or process control of various parameters such as grammage, residual moisture or thread density - there is the right sensor and visualisation for every requirement. The further developed software - available as full or basic version - displays all relevant parameters on a freely configurable touchscreen. Always present: the skew and bow distortion of the product. The user alone decides where exactly on the 12-inch touchscreen the information is retrieved.

## State-of-the-art technology



Fig. 4: Orthopac RVMC 15

In order to correct the measured distortions, the textile user requires a sophisticated and universally applicable straightener with the highest possible customer benefit in terms of versatility and ease of use. The new device generation 15 has been developed especially for the requirements of the market and has been optimised for almost all applications.

In order to meet the requirements even better, the hardware of the Orthopac RVMC has also been revised and raised to a new level. Its particular strength is the extremely high straightening accuracy and progressive straightening speed. The highly compact mechanical straightener is equipped as standard with 3 skew and 2 bow rollers. The stepless positioning drive of the straightening rollers with the unique hydraulic unit or frequency-controlled electric motors combines the shortest positioning times with the highest precision and least amount of maintenance. The revised hydraulics work completely without the wear part pressure accumulator and stands out through maximum efficiency with minimum heat generation in the system.

Sensitive product tension control with differential gear and dancer control keeps product tension as low as possible, but still as high as necessary for straightening. A comfortable, innovative configuration tool enables very fast integration and synchronization with the production system.

Shorter product content ensures faster response times with distortions and thus less waste. The arrangement of skew and bow rollers was reconsidered and modified. Highly dynamic skew and bow distortions can be corrected much faster in conjunction with a self-optimizing controller.

A modular system with many additional options enables each system to be adapted to the specific requirements of the customer and his products.

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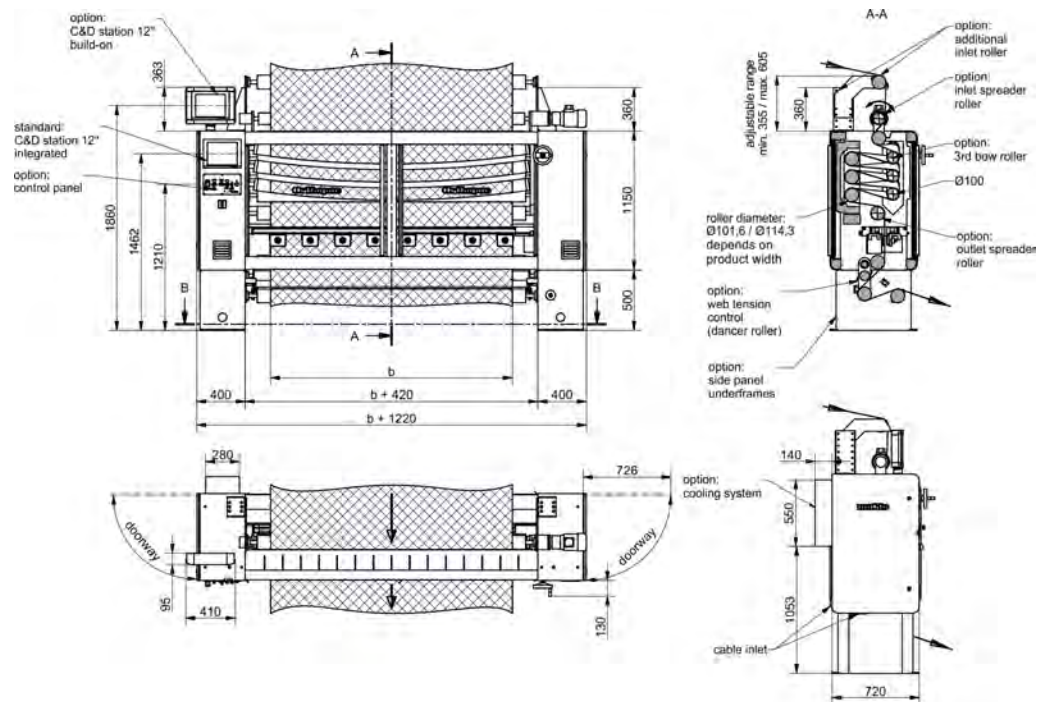


Fig. 5: Orthopac RVMC-15 dimensions

## Ready for Industry 4.0

Mahlo always incorporates the latest developments and market requirements into its developments. The new freely configurable HMI with flat interfaces makes the new generation of devices fit for future requirements. The buzzword Industry 4.0, the vision of interconnected and interacting machines, is currently on everyone's lips. In order to enable the interaction of machines, data must be exchanged reliably and easily configurable via secure communication. The new generation of Mahlo straighteners, sensors and control loops is just a mouse click away from the individual data of existing machines. If a customer uses suitable sensor technology and the appropriate networking, he can access the machine not only from everywhere, provided he has an Internet connection. He also has the option of connecting any machine to the network via an OPC UA server - i. e. an interface for software from different manufacturers - with the fitting connectivity.

With these standards, the generation 15 Mahlo machines are not only optimally equipped for the future. They also help to save costs and raw materials and improve product quality. This in turn results in satisfied customers and ultimately end consumers. The Mahlo straightener generation 15 has brought straightening and control to a new level.