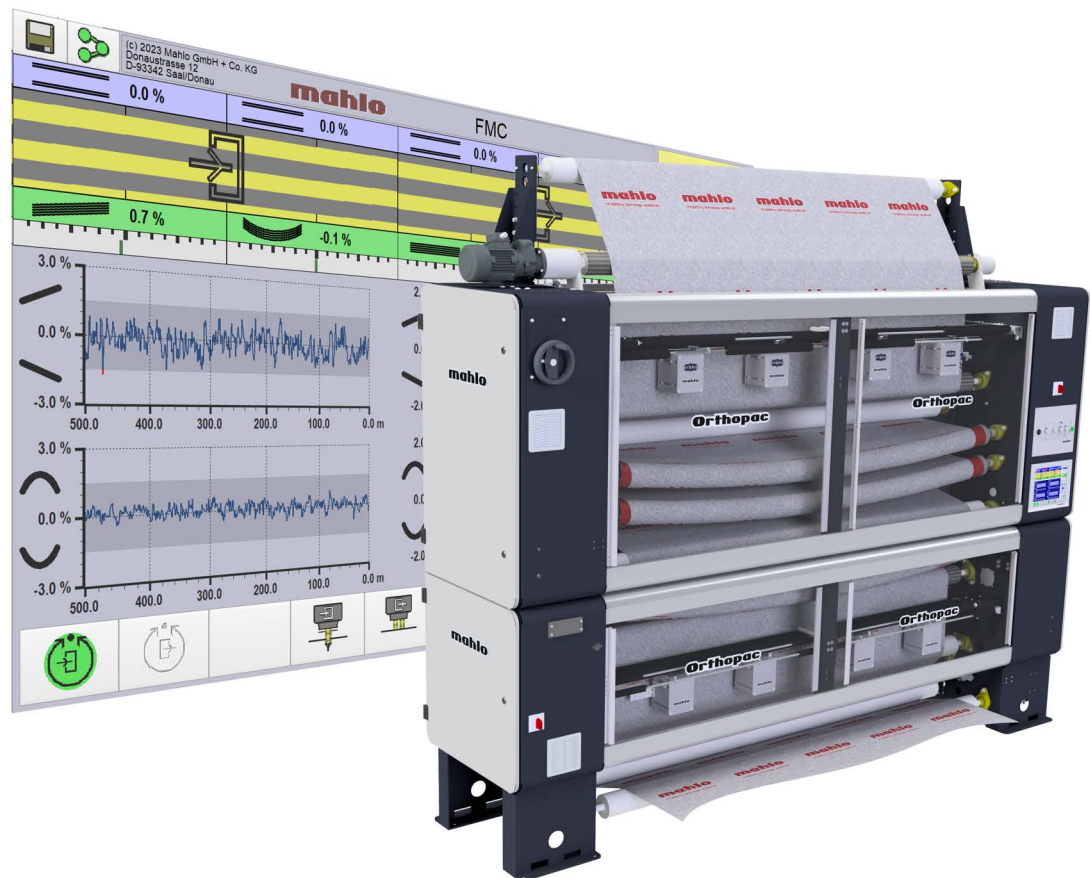


Orthopac RXVMC-20

High-end straightening and process control system



Orthopac RXVMC-20

MECHANICS

Orthopac RXVMC

THE NEXT GENERATION

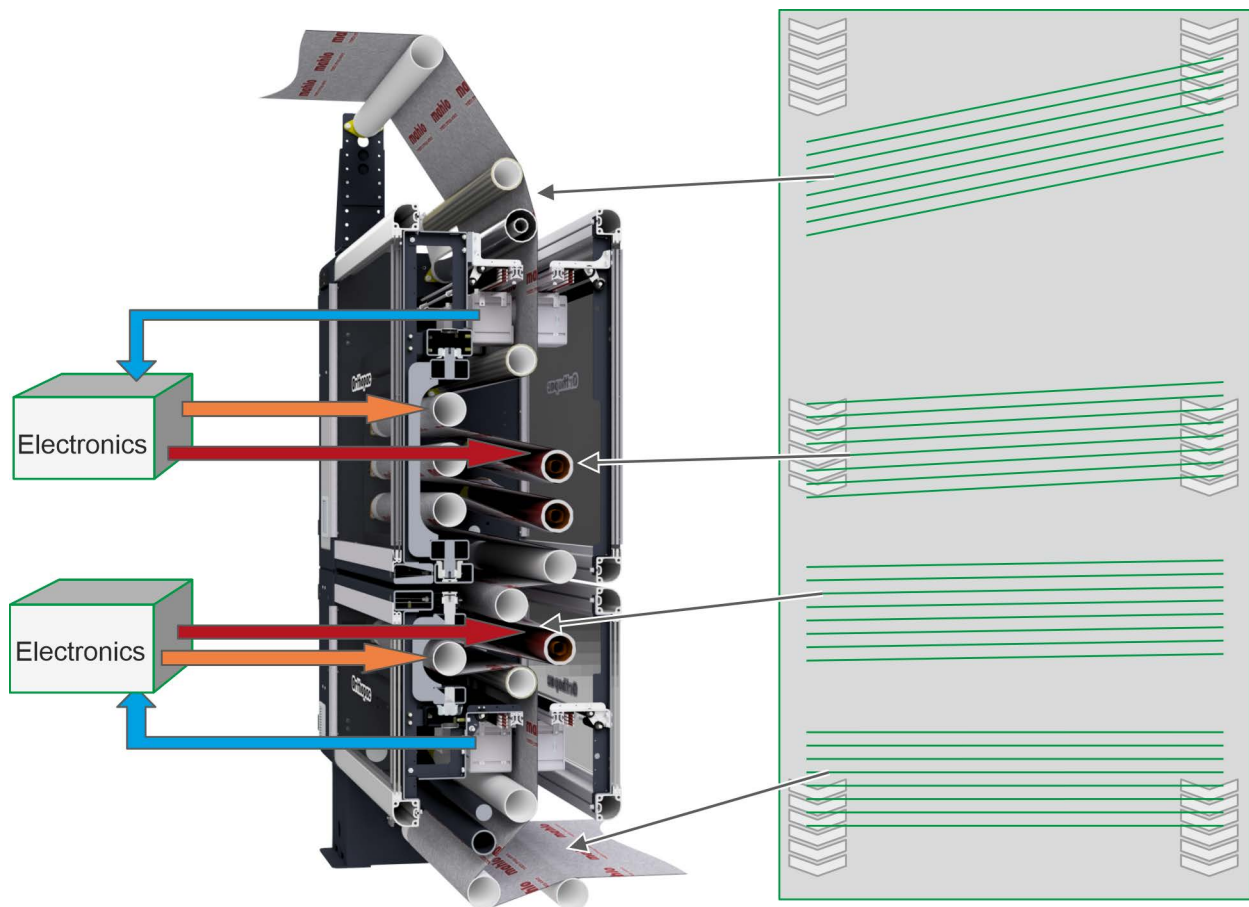
Control and actuation at the same time! Orthopac RXVMC is the only straightening system to offer this unique combination. This concept was developed for processing textiles with widely fluctuating distortions (= high distortion dynamic). The independently controllable straightening modules guarantee maximum possible control of the straightening process.

Area of application

Confronted by the most stringent demands with respect to permissible levels of residual distortion, as experienced by most suppliers, a completely new kind of straightening concept has been developed.

The new Orthopac RXVMC straightening concept placed special emphasis on the realigning mechanics and its interaction with the analytical electronics of the scanning system. The intelligent combination of control and actuation accelerated correction of the measured distortion to a previously unattained level.

Manufacturers of textiles for both traditional sectors (clothing, domestic and automotive textiles) and new technical applications are most enthusiastic about the performance of and straightening results attainable by the Orthopac RXVMC straightening concept.



Actuation principle of the Orthopac RXVMC

Fundamentals



INNOVATIONS

We love being technology leaders. And our development team works every day to make sure it remains so. Innovations, inventive talent and future-oriented thinking – to guarantee your success.



Customer benefits

- ✓ Maintains tightest distortion-related tolerances
- ✓ Helps avoiding complaints
- ✓ Improves customer relationship
- ✓ High standards of repeatability
- ✓ Short payback times
- ✓ High reliability / long service life



Product highlights

- ✓ Smart feed-forward control concept
- ✓ Minimum possible product content
- ✓ Combination of control and actuation
- ✓ Quick-reacting servo-controller
- ✓ Dual-function straightening roller

The Orthopac RXVMC weft straightener features two individually controlled and driven straightening modules. The first straightening module at the fabric inlet is equipped with three skew and two bow rollers. The second one at the outlet incorporates one bow and one skew roller. Due to the number of correction rollers the adjustment of bow and skew can be accomplished in small increments. This enables a very fine and precise straightening procedure.

The drive of the correction rollers is available with stepless, hydraulic or electric actuators. The customer receives competent advice and can select the best system for his application. The intelligent, self-optimizing and with AI boosted control algorithm ensures an ultra-precise and fast response to measured distortions.

The separation and individual positioning of the respective straightening modules has brought about an entirely new kind of actuation concept. A scanner assembly (TK12, CK15 or Hybrid) located at the inlet of the weft straightener detects variations in distortion even before they reach the correcting rollers. The evaluation electronics moves the rollers of the first straightening unit to a calculated position immediately after the distortion change occurs. The incoming distortion is thus realigned from the very first centimetre of product.

A scanner assembly (TK12, CK15 or Hybrid) located at the outlet of the straightener detects any possible residual distortion in the product, and this is corrected with absolute reliability by the correction rollers of the second straightening module.

This newly developed actuation concept – a combination of control and actuation – enables an even more precise and faster response to distortions. The use of proven standard components of Mahlo straightening technology ensures high reliability and easy maintenance.

The major advantage of Orthopac RXVMC is demonstrated in particular when it is confronted by products with high distortion dynamics.

OPERATING SOFTWARE

Visualization

Everything at a glance



Visualization and operation per touchscreen



Customer benefits

- ✓ All key data at a glance
- ✓ Menu guide in all common languages
- ✓ Ergonomic user prompting
- ✓ Simple operation

All entries are made directly on the touchscreen using large, ergonomic buttons. Operation is simple and intuitive. All the key information is visible at a glance.

Orthopac RXVMC offers all setting capabilities and options:

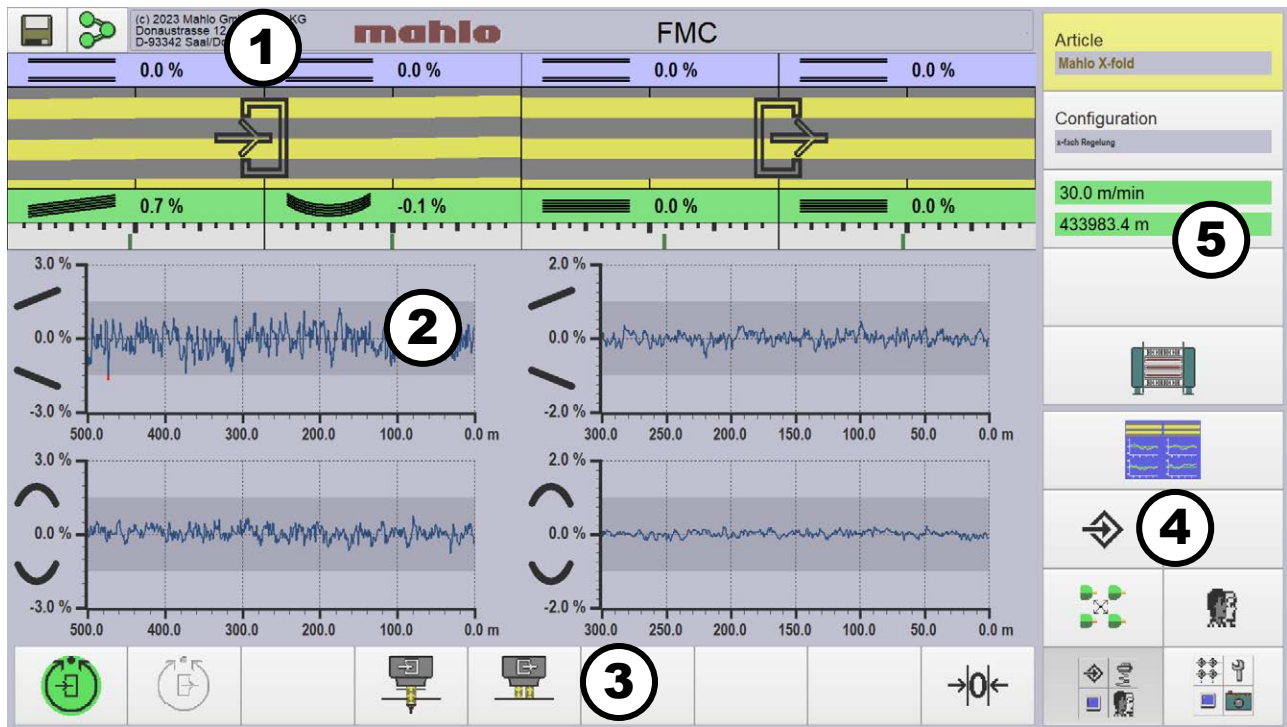
- serves as common platform for straightening and process control system
- free configuration of main pages and button bar for display and operation
- job management (recipe combination, sequential recipe switching, job queue)
- WebView Client for PLC diagnostics
- linear meter reset
- alarm display and alarm history
- user administration (synchronization between Mahlo systems / login / password management)



Product highlights

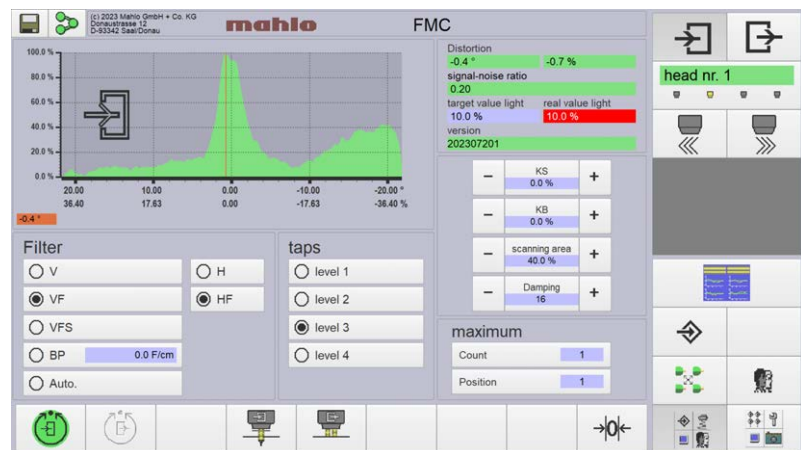
- ✓ Clearly arranged presentation of the distortion characteristic
- ✓ Menu-controlled service settings
- ✓ Two-part combination image for simultaneous monitoring of two scanner units
- ✓ Distortion default as percentage, adjustable (left: skew, right: bow)
- ✓ Direction of product flow and momentary characteristic of the weft
- ✓ Current web distortion as percentage (left: skew, right: bow)
- ✓ Trend diagrams (top: skew, bottom: bow) freely scalable
- ✓ Image scale of histogram selectable, e.g. -5...0...+5 (top: skew, bottom: bow)
- ✓ Password protection – unauthorised users are prevented from accessing the operating software
- ✓ Recipe management

The user interface consists of five areas:



User interface main screen

- ① **Title line:** General information (including alarm bar)
- ② **Display area:** Selectable screen pages (display forms)
- ③ **Horizontal block:** Operating buttons for basic functions and submenu
- ④ **Selection block:** Navigation within the operating software
- ⑤ **Vertical block:** Operating buttons for the menu selection



Single curve of a scanner

TECHNICAL DATA

Orthopac RXVMC

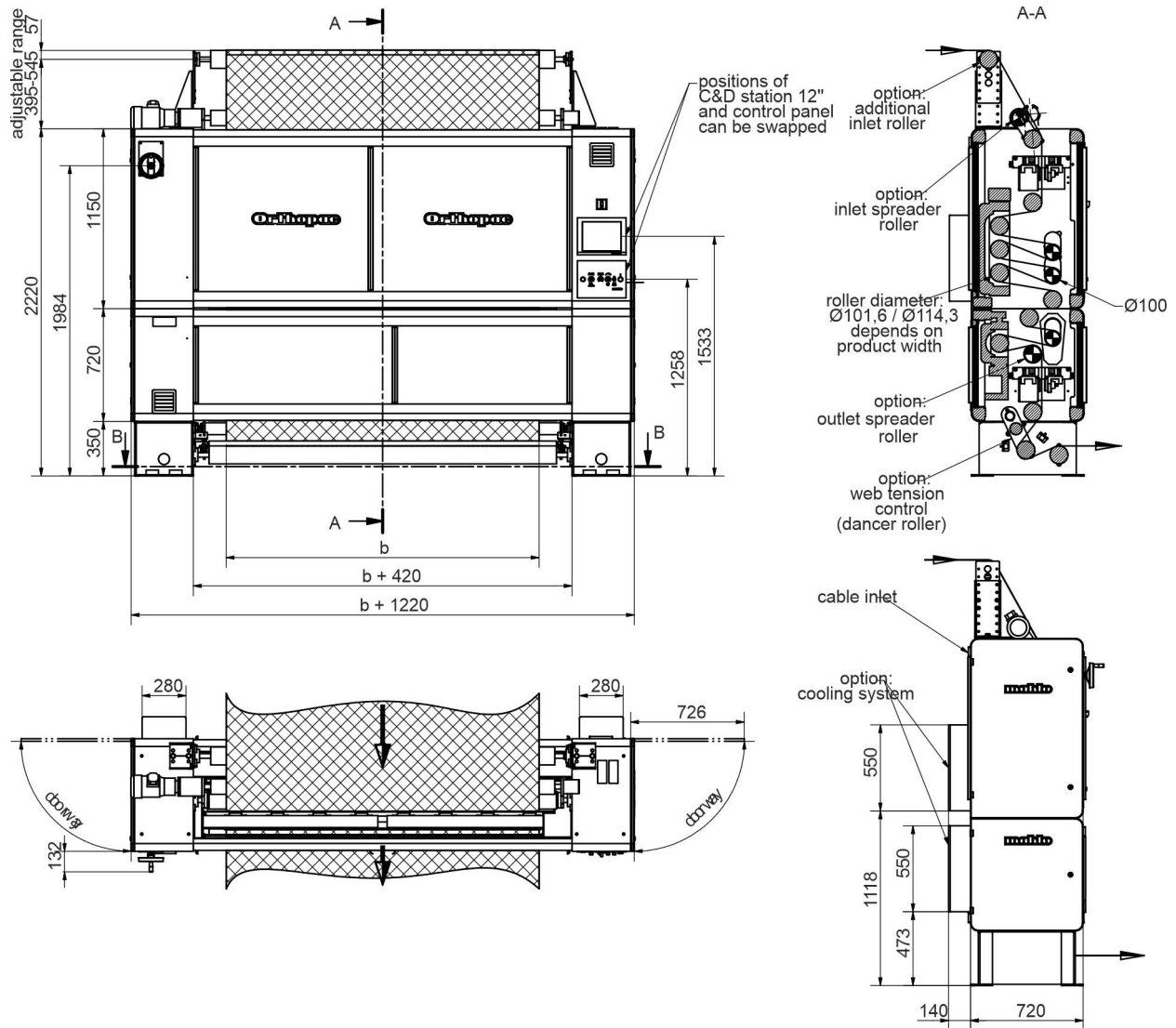
Specification	Value	
Straightener (2 pieces)	Straightening module inlet	3 skew rollers, 2 bow rollers
	Straightening module outlet	1 skew, 1 bow roller
Drive mechanism (roller adjustment)	Hydraulic	controlled by a servo system
	Electric	inverter-controlled, optimized kinematics without play
Scanning system (2 pieces)	Scanner assembly inlet	4 – 8 scanners, scanners positioned optimally by autocontrolled motor and edge sensors or manually positioned via high-grade linear guides with lock-in points
	Scanner assembly outlet	
Control and display station	12.1" TFT Touchscreen available as integrated, add-on or separate (with or without enclosure) unit	

Specification		Value	Unit
Nominal product width		1000 - 3400	mm
Product speed, maximum	without web tension control	250	m/min
	with web tension control	2 - 30	
		4 - 65	
		7 - 140	
Theoretically max. possible straightening effect (at full utilization of the nominal product width)	bow rollers	326 ¹	mm
	skew rollers	1000 ¹	
Length tension, maximum		1200	N
Fabric capacity		~ 4900	mm
Power supply		3 x 400 ±10 % ²	VAC
Line frequency		50	Hz
Power consumption, maximum		6	kVA
Temperature range	without A/C unit	5 - 45	°C
	with A/C unit	5 - 55	

¹) Example: Nominal product width 2000 mm

²) Special voltages available

Dimensions



Dimensional drawing Orthopac RXVMC (91-021621-01)

Monitoring and control systems, automation

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