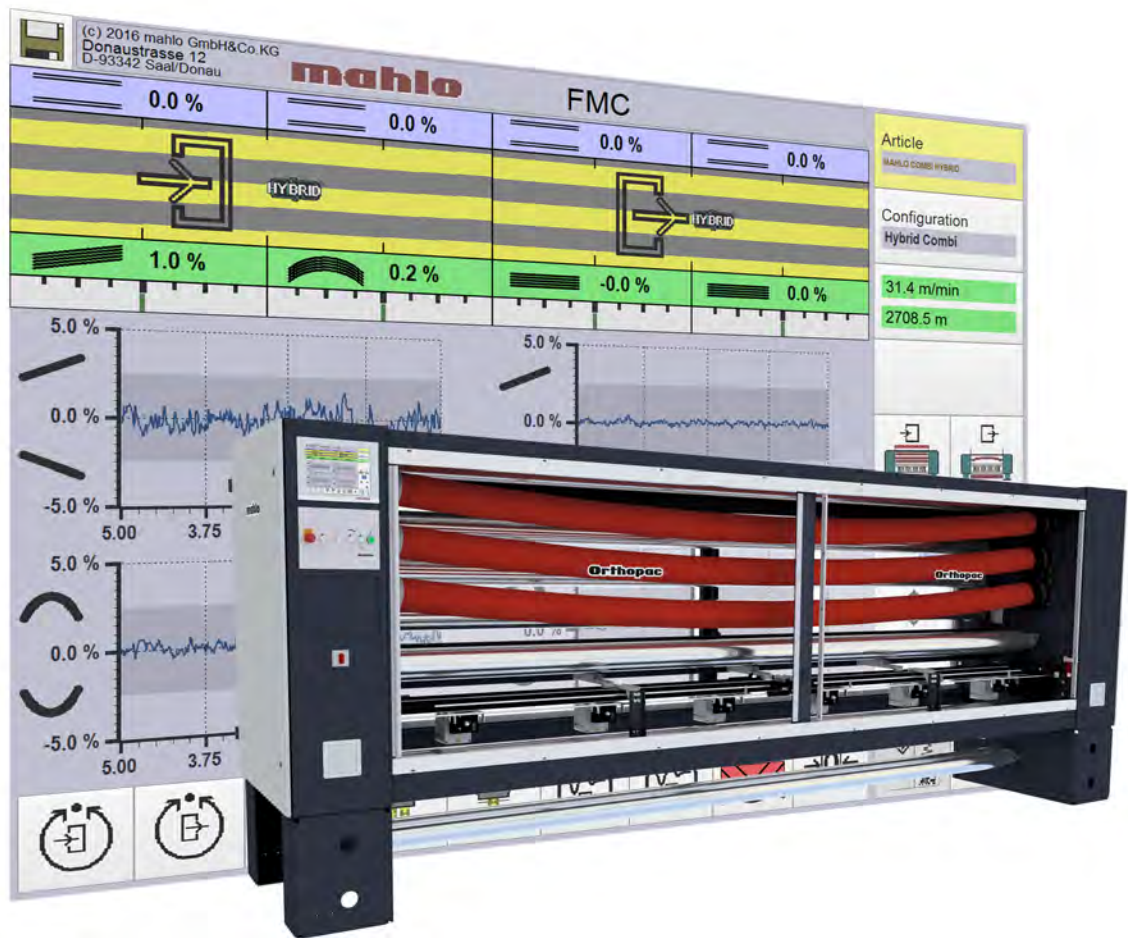


# ORTHOPAC GRVMC/GMFRC-15

Modular straightening and process control system



ORTHOPAC GRVMC/  
GMFRC-15



Quality made  
in Germany



TEXTILE



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COATING &  
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PAPER



EXTRUSION

# Orthopac GRVMC-15

The jumbo of straighteners

## ORTHOPAC GRVMC-15

### The jumbo of straighteners



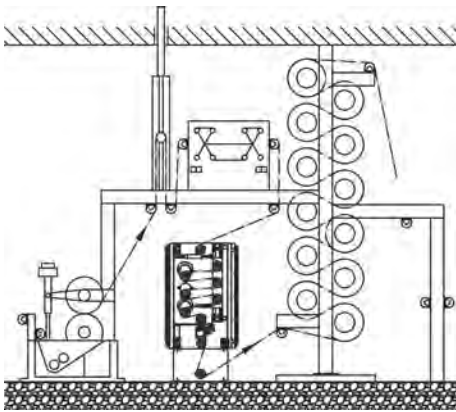
The Orthopac GRVMC is especially designed to withstand high mechanical loads. Thanks to reinforced components, it is ideal for processing really wide, heavyweight materials such as carpeting and denim.



#### Innovations

- ✓ New fabric running concept (suitable for pile fabrics)
- ✓ Speed-controlled servo hydraulics
- ✓ Driven bow rollers (3 pieces without differential possible)
- ✓ Adjustable scroll roller at inlet (option)
- ✓ Display and operating station can be integrated in the side panel

#### Area of application



Typical installation on a denim application

Distortions impair a product's visual features and practical value, both of which are of particular significance in the case of decorative or industrial materials. Orthopac GRVMC straighteners are used wherever products are likely to subject machinery to exceedingly high tensional stress.

**Denim:** Heavyweight denim qualities ( $> 350 \text{ g/m}^2$ ), on account of their dimensional stability, and the need to apply skew bias (to counteract a denim's tendency to twist). In this case, a back-tension of up to 400 kg is often required.

**Carpeting:** Owing to the pattern join at the beginning and end of each roll, wall-to-wall carpeting requires a high degree of straightness. If the tight tolerance requirements are not met, the result is either costly claims or debarred access to a more lucrative market segment.



Use on industrial fabric

**Technical textiles:** Extra-wide industrial fabric (= 3400 mm product width).

**Raschel curtaining:** Wide Raschel curtaining (= 3400 mm product width)

**Glass-/carbon fibre wovens:** Woven constructions of glass or carbon fibre. To prevent damage to the individual filaments, rollers with a diameter of 150 mm are required.

Owing to the often special nature of the applications, we would advise you to consult our sales and applications engineers.

## Principle of operation



### Customer benefits

- ✓ *Maintaining tight distortion tolerances*
- ✓ *Documentation of residual distortions*
- ✓ *Avoiding complaints*
- ✓ *Improved customer relationship*
- ✓ *High repeatability*
- ✓ *Short amortisation times*
- ✓ *High reliability / Service life*

The Orthopac GRVMC is specifically constructed to withstand high mechanical loads. In particular, the specially reinforced hydraulic units for positioning the rollers ensure perfect straightening even under maximum tension-induced loading. The straightener also features a solid, reinforced frame, reinforced roller bearings and larger diameter bow and skew rollers - a jumbo among straighteners. The scanners, electronics, control and display station, etc. correspond to the configuration of an Orthopac RVMC.

Also in that variant, all the scanners are still laterally adjustable. Processing speeds range from approx. 3 m/min (carpeting) to 250 m/min (industrial fabric). The unit is available for use in conjunction with a PCS Pattern Control System either as a manually controlled straightener, or with provision for the addition of a retrofit scanning system. As with the standard Orthopac RVMC, it can be supplied in all forms of combi-systems. The Orthopac GRVMC is available in working widths of 800 to 5400 mm.



### Product highlights

- ✓ *Heavy-duty construction*
- ✓ *Working widths of up to 5400 mm*
- ✓ *Suitable for tensional forces up to 400 kg*
- ✓ *Compact construction*
- ✓ *Low product content*

Compact, precise and strong

## ORTHOPAC GMFRC-15

Compact, precise and strong



The special strength of the Orthopac GMFRC is the extremely high straightening accuracy at relatively small distortions. Thanks to reinforced components, it is ideal for processing really wide, heavy-weight materials such as denim.



### *Innovations*

- ✓ *New fabric running concept (suitable for pile fabrics)*
- ✓ *Speed-controlled servo hydraulics*
- ✓ *Adjustable scroll roller at inlet (option)*
- ✓ *Simplified maintenance*
- ✓ *Display and operating station can be integrated in the side panel*

### Area of application

**Stenter delivery end:** With the MFRC straightener the residual distortions often occurring at the delivery end of the stenter are straightened after the drying processes (bow and skew distortion). This ensures maintaining even the slightest residual distortion tolerances.

**Sanforizing equipment:** Product with residual distortion needs to be straightened before sanforizing. If a sanforizer is not equipped with the Orthopac GMFRC, the product may have to be run through the stenter a second time. An Orthopac GMFRC upstream of the sanforizer can avoid this cost and guarantee a distortion-free product after sanforizing.

**Denim:** Heavyweight denim qualities ( $> 350 \text{ g/m}^2$ ), on account of their dimensional stability, and the need to apply skew bias (to counteract a denim's tendency to twist). In this case, a back-tension of up to 400 kg is often required.

**Technical textiles:** Extra-wide industrial fabric (= 3400 mm product width).

**Extra-wide textiles:** Wide fabric like bedclothes (= 3400 mm product width).

Owing to the often special nature of the applications, we would advise you to consult our sales and applications engineers.

## Principle of operation



### Customer benefits

- ✓ *Maintaining tight distortion tolerances*
- ✓ *Documentation of residual distortions*
- ✓ *Avoiding complaints*
- ✓ *Improved customer relationship*
- ✓ *High repeatability*
- ✓ *Short amortisation times*
- ✓ *High reliability / Service life*

The Orthopac GMFRC is specifically constructed to withstand high mechanical loads. In particular, the specially reinforced hydraulic units for positioning the rollers ensure perfect straightening even under maximum tension-induced loading. The straightener also features a solid, reinforced frame, reinforced roller bearings and larger diameter bow and skew rollers. The scanners, electronics, control and display station, etc. correspond to the configuration of an Orthopac RVMC.

The compact straightening unit is equipped with a skew and bow roller as standard. This arrangement allows for very fine adjustment of the straightening effect while permitting small device dimensions. Also in that variant, all the scanners are still laterally adjustable. Processing speeds range from approx. 3 m/min (carpeting) to 250 m/min (industrial fabric). The Orthopac GMFRC is available in working widths of 800 to 5400 mm.



### Product highlights

- ✓ *Heavy-duty construction*
- ✓ *Working widths of up to 5400 mm*
- ✓ *Suitable for tensional forces up to 400 kg*
- ✓ *Compact construction*
- ✓ *Fine-tuning of distortion*

## VISUALIZATION

### Everything at a glance



Visualization and operation per touchscreen

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



#### Customer benefits

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

Various versions of the operating software are available for individual use:

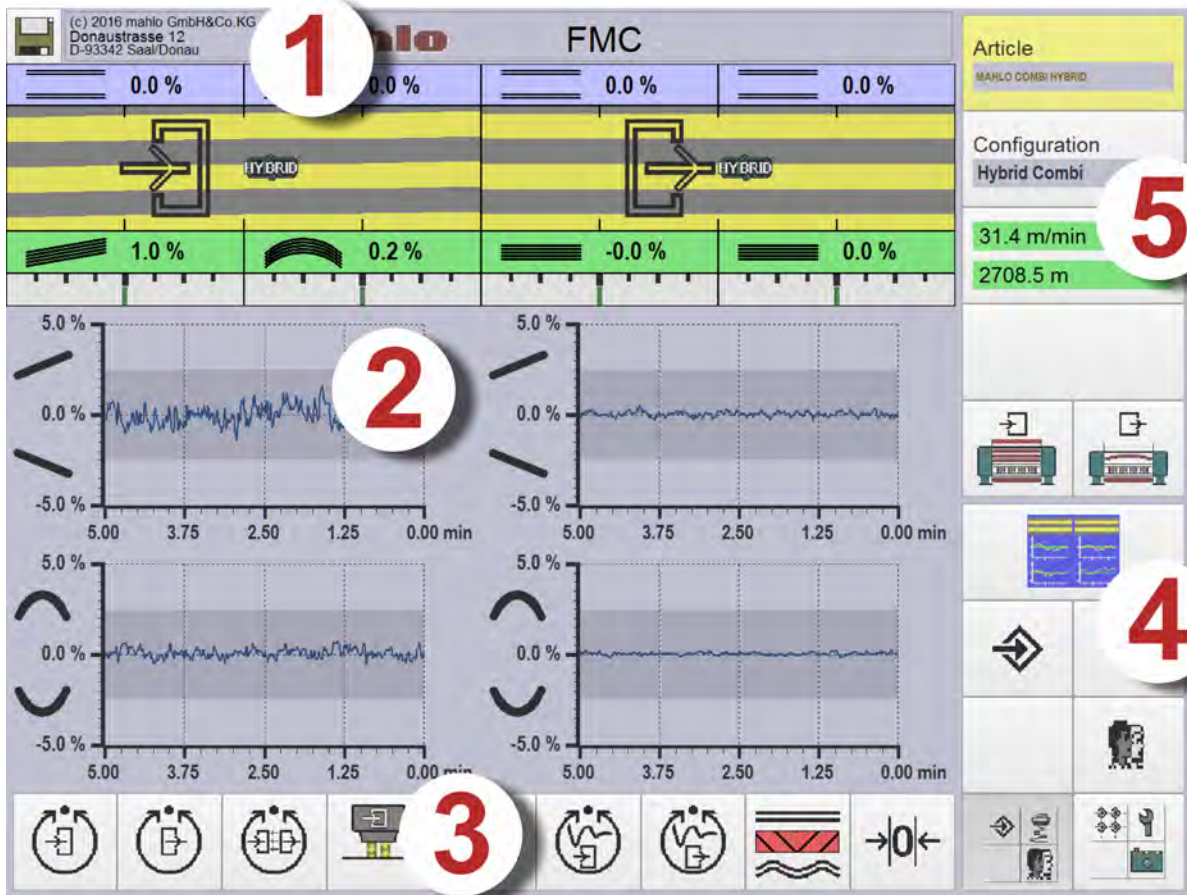
- The **FMC** full version offers all setting capabilities and options to the entire depth. The full potential of the straightening system can thus be utilized.
- The **FMC Base** version focuses on the essential functions of the system and offers a compact and simple overview for the control of the processes.



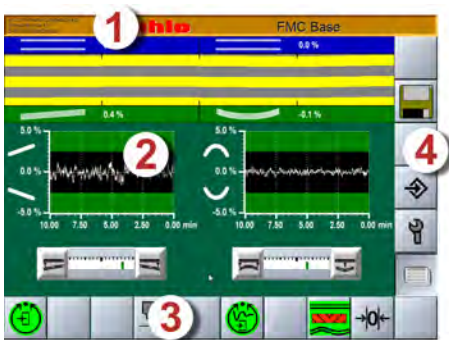
#### Product highlights

- ✓ 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 FMC full version



User interface FMC Base version (only 4 areas)

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

Orthopac GRVMC

## TECHNICAL DATA

### Orthopac GRVMC

Specification	Value
Straightener	2 skew rollers, 2 bow rollers (optional 3/2 or 3/3 )
Drive mechanism (roller adjustment)	Hydraulic: Selection via servomotor and reversing pump
Scanning system	Scanner bridge with 2 – 12 scanners, optional fully automatic scanner adjustment, motorised (2 – 8 scanners) with edge sensor or manually via high-quality linear guides with engagement points
Control and display station	12.1" TFT Touchscreen available as integrated, add-on or separate (with or without enclosure) unit

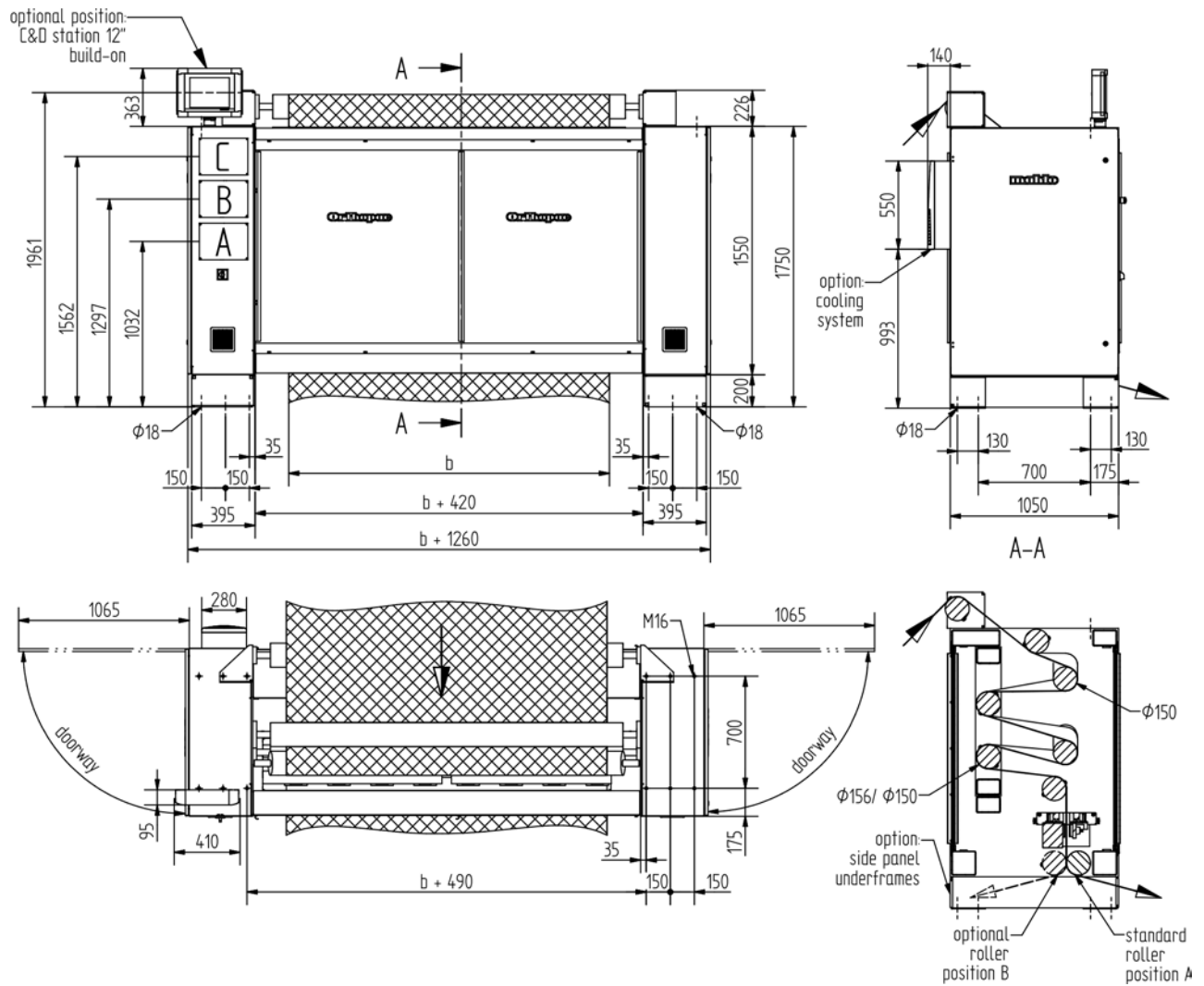
Specification		Value	Unit
Nominal product width		800 - 5400	mm
Product speed, maximum	without web tension control	250	m/min
	with web tension control	2 - 30	
		4 - 65 7 - 140	
Theoretically max. possible straightening effect (at full utilization of the nominal product width)	bow rollers	275 <sup>1</sup>	mm
	skew rollers	1000 <sup>1</sup>	
Length tension, maximum		4000	N
Fabric capacity (basic machine with scanning system, 2 skew / 2 bow rollers)		~ 3700	mm
Power supply		3 x 400 ±10 % <sup>2</sup>	VAC
Line frequency		50	Hz
Power consumption, maximum		4	kVA
Temperature range	without A/C unit	5 - 45	°C
	with A/C unit	5 - 55	

<sup>1</sup>) Example: Nominal product width 2000 mm

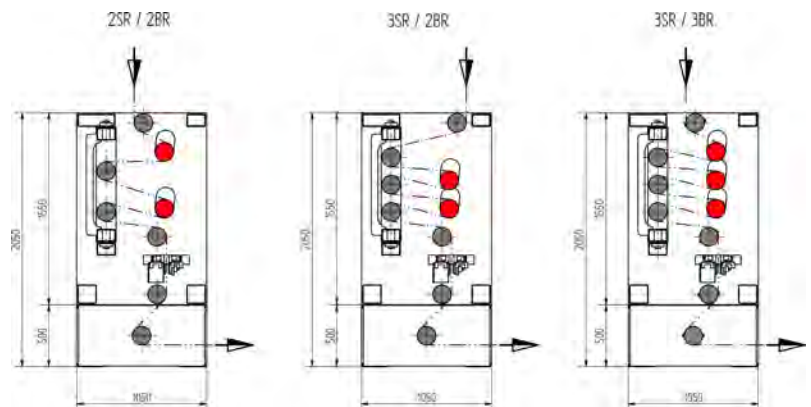
<sup>2</sup>) Special voltages available



**Dimensions**



Orthopac GRVMC-15 (91-019413-01)



Orthopac GRVMC-15 fabric running paths of different variants

## Technical data

Orthopac GMFRC

### Orthopac GMFRC

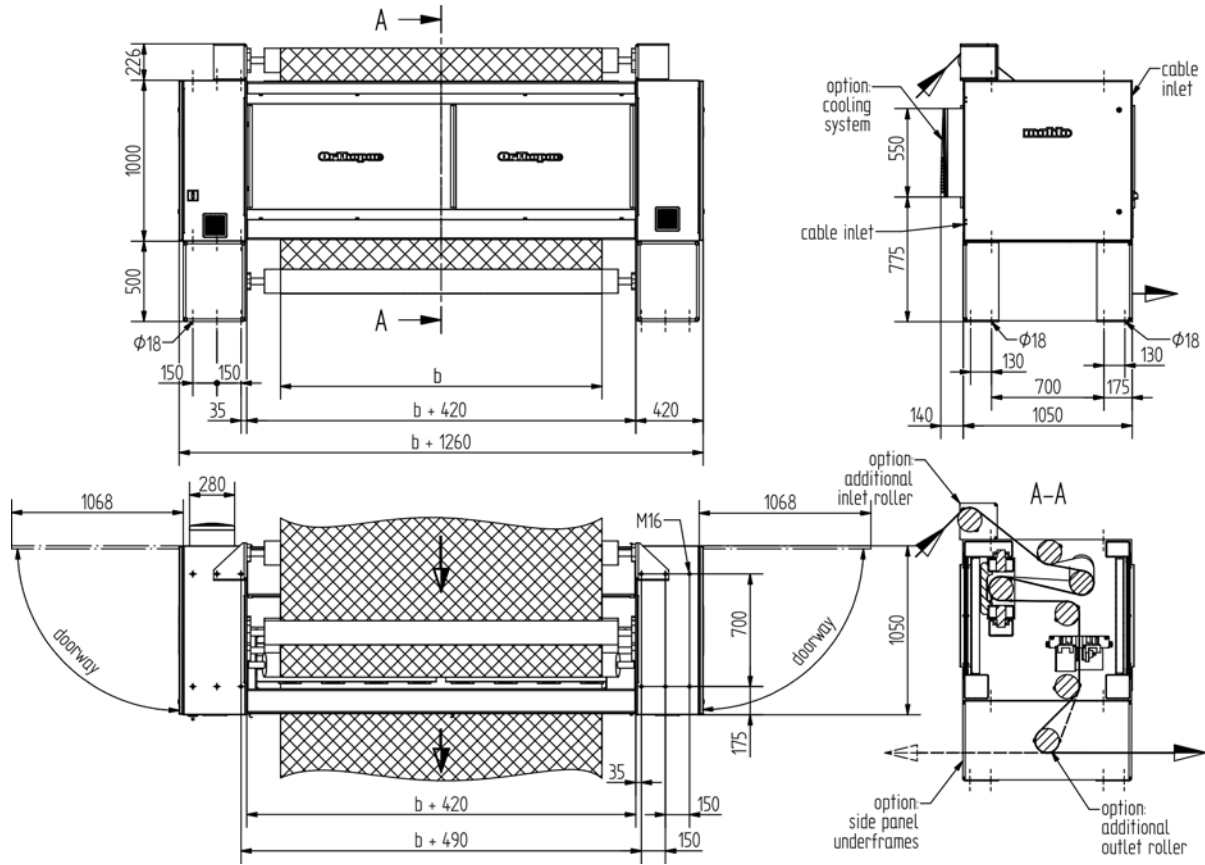
Specification	Value
Straightener	1 skew roller, 1bow roller
Drive mechanism (roller adjustment)	Hydraulic: Selection via servomotor and reversing pump
Scanning system	Scanner bridge with 2 – 12 scanners, optional fully automatic scanner adjustment, motorised (2 – 8 scanners) with edge sensor or manually via high-quality linear guides with engagement points
Control and display station	12.1" TFT Touchscreen available as separate unit (with or without enclosure)

Specification		Value	Unit
Nominal product width		800 - 5400	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	108 <sup>1</sup>	mm
	skew rollers	333 <sup>1</sup>	
Length tension, maximum		4000	N
Fabric capacity (basic machine with scanning system, 2 skew / 2 bow rollers)		~ 2300	mm
Power supply		3 x 400 ±10 % <sup>2</sup>	VAC
Line frequency		50	Hz
Power consumption, maximum		4	kVA
Temperature range	without A/C unit	5 - 45	°C
	with A/C unit	5 - 55	

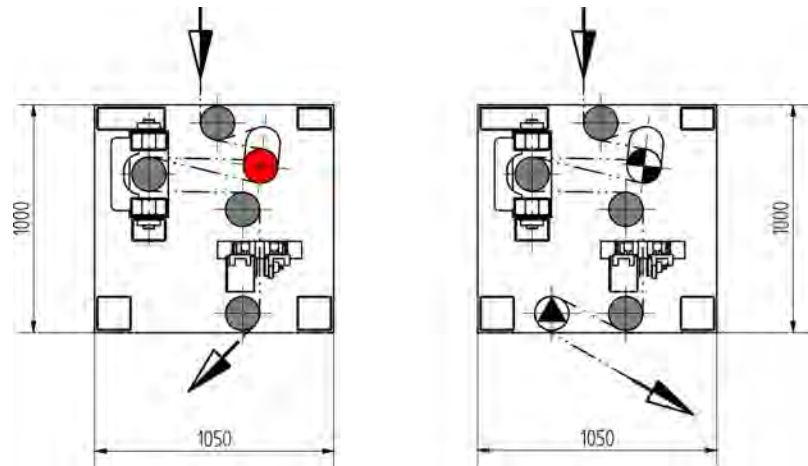
<sup>1</sup>) Example: Nominal product width 2000 mm

<sup>2</sup>) Special voltages available

Dimensions



Orthopac GMFRC-15 (91-019427-01)



Orthopac GMFRC-15 fabric running paths of different variants

Monitoring and control systems, automation

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