

# LEDINEK

# CROTOLES

## System

The other way of planing



Autopositionierung		MENÜ
	Sollwert mm	Istwert mm
Dicke	000,0	000,0
Breite	000,0	000,0
Abnahme Tisch	000,0	000,0
Abnahme RVW	000,0	000,0
Einganggröße	000,0	000,0
Säge Horizontal	000,0	000,0
Sägeleiste	000,0	000,0
Start	Vorschub: 000 m/min	Stopp



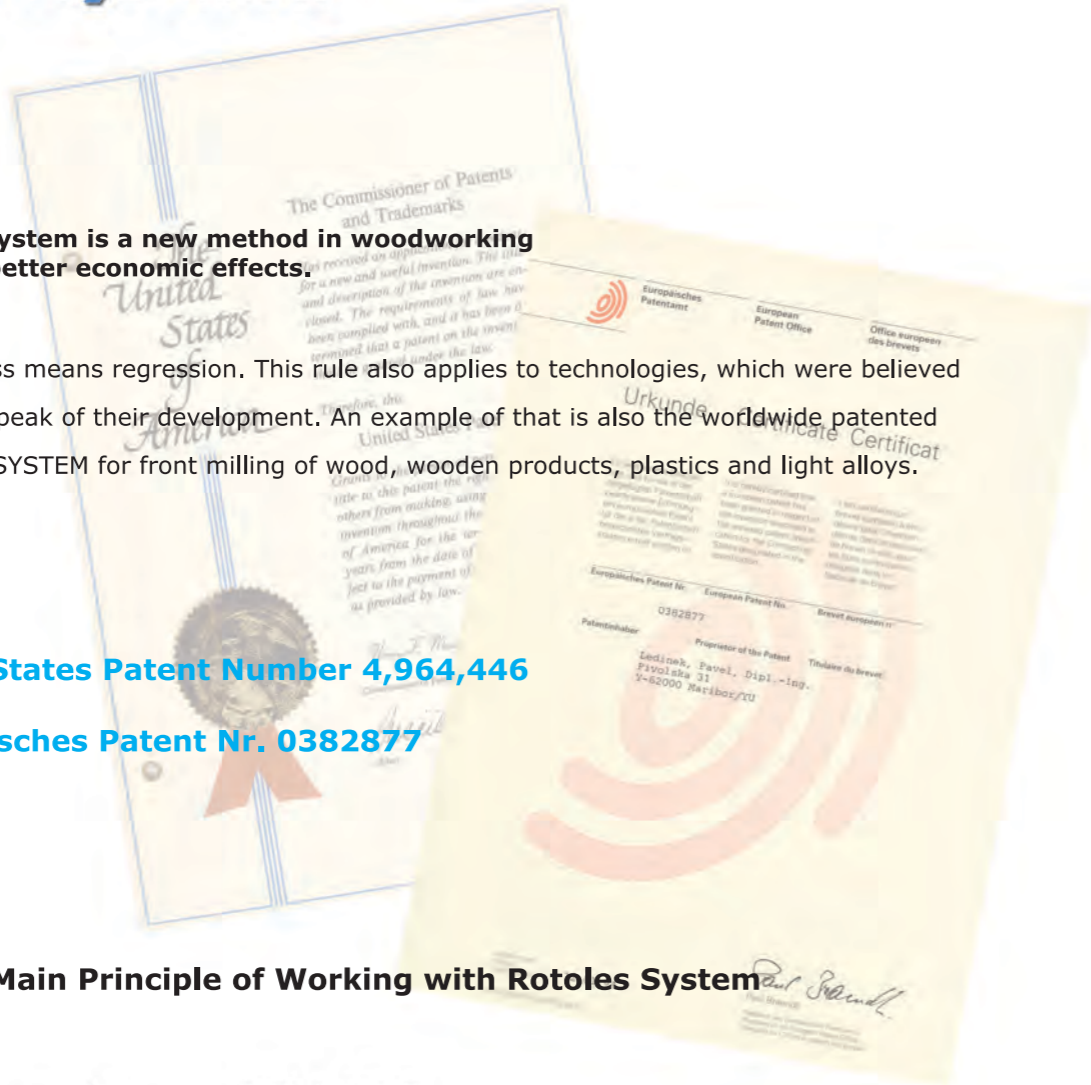
# Rotoles System

**Rotoles System is a new method in woodworking offering better economic effects.**

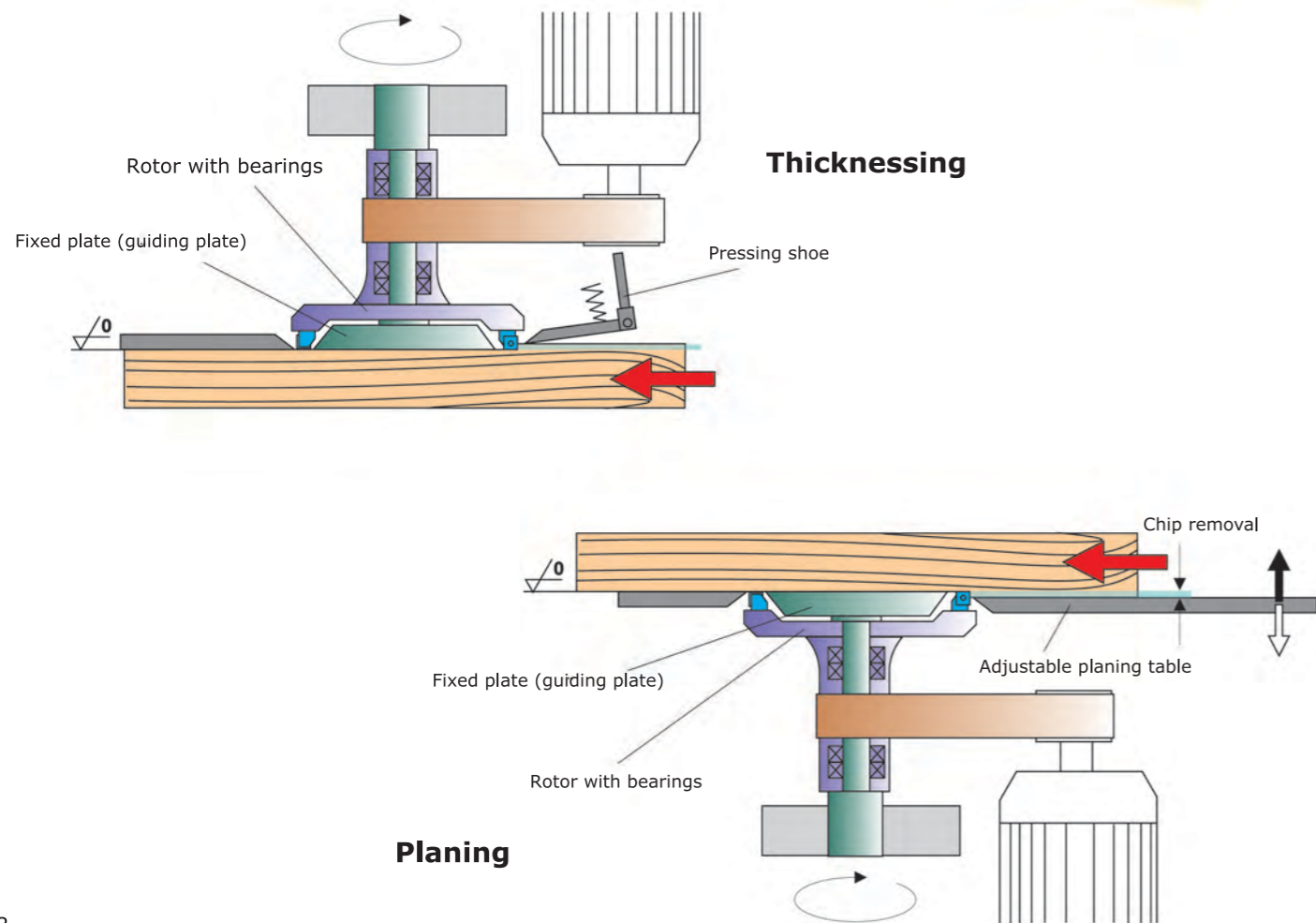
No progress means regression. This rule also applies to technologies, which were believed to be at a peak of their development. An example of that is also the worldwide patented ROTOLES SYSTEM for front milling of wood, wooden products, plastics and light alloys.

**United States Patent Number 4,964,446**

**Europäisches Patent Nr. 0382877**



## Main Principle of Working with Rotoles System

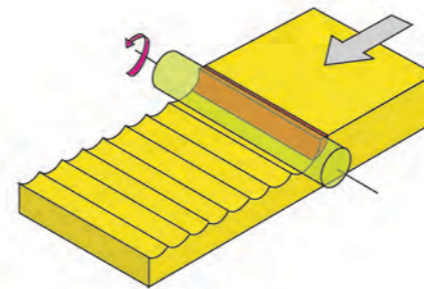


# Rotoles Advantages

**Working with the Rotoles System has following advantages:**

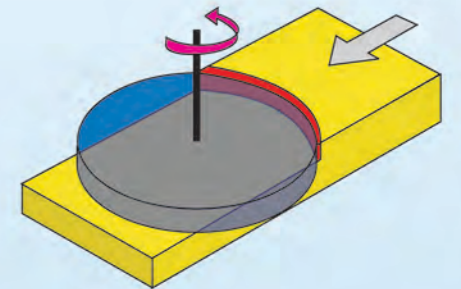
## Straightness of Planing Surface

### Conventional Planing



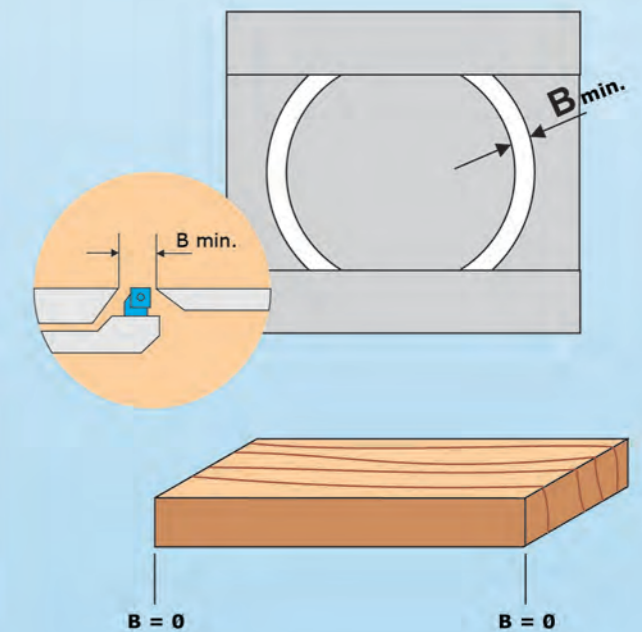
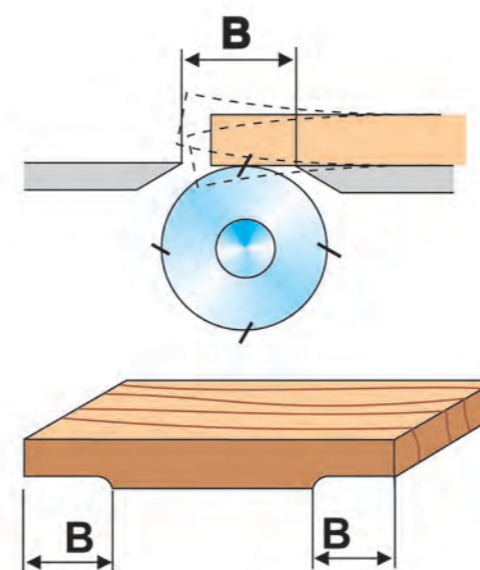
### Rotoles System

No shaft marks, perfectly flat surface.



## Curved guiding across the tool

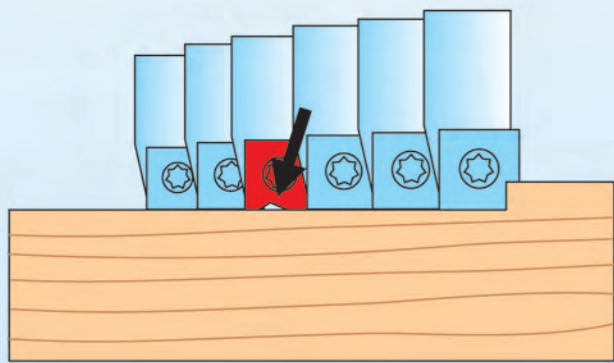
No planer marks on both ends of a woodpiece.



# Surface Straightness Independent of Tool Wear Out

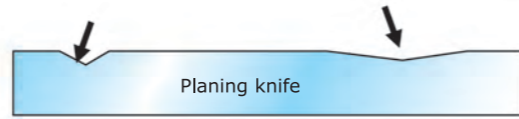
## Rotoles System

One worn out knife does not affect the surface regularity, because each cut is overlapped in width and length by the following knives.

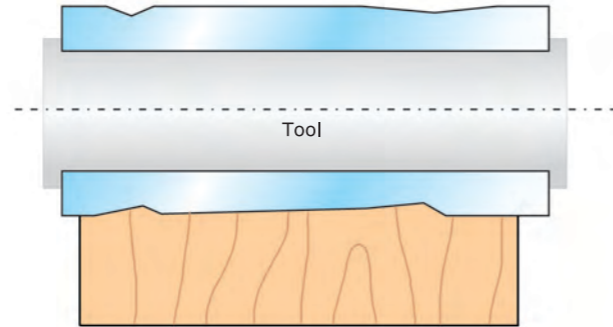


## Conventional Planing

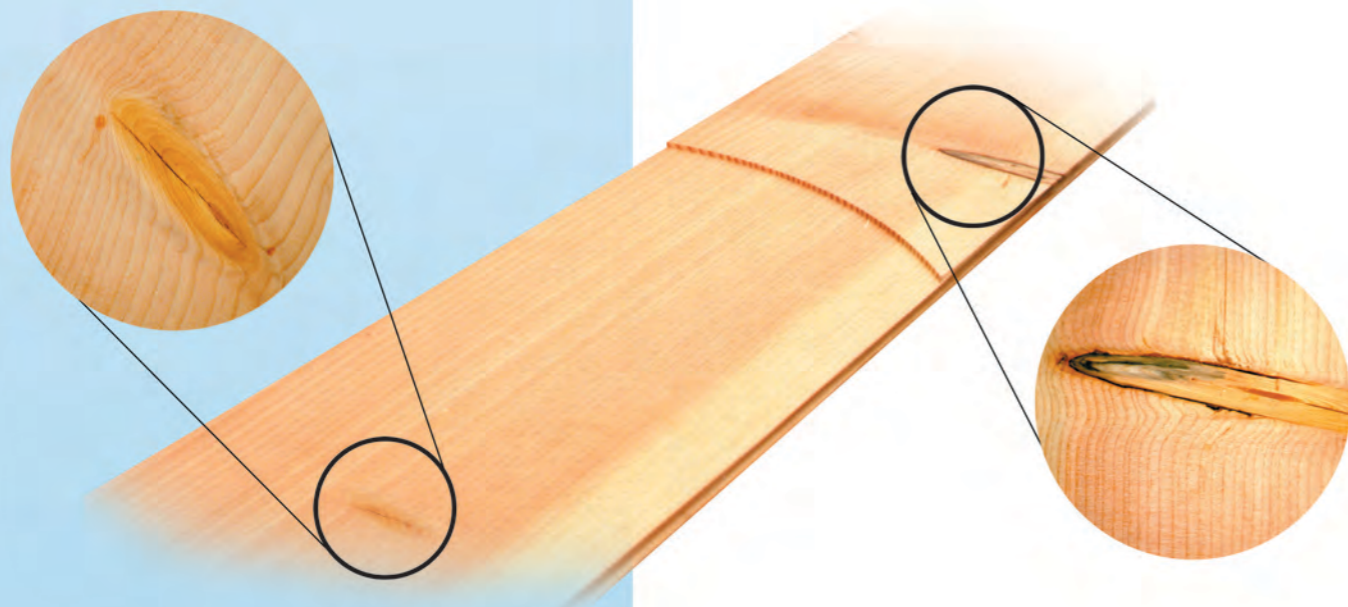
Assymetrical knife wear or damage



result in uneven surface

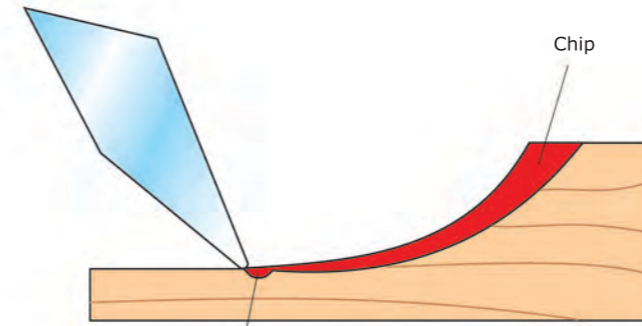


# Excellent machining of wood knots and their edges without tear out.



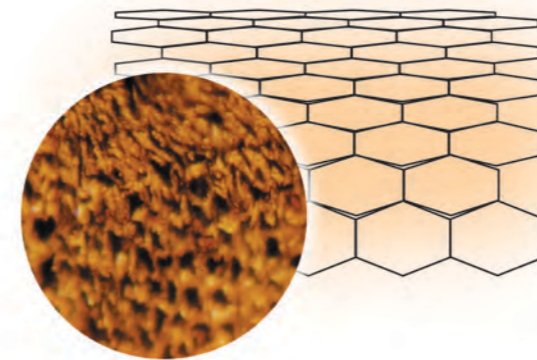
# Open Pore Surface

## Conventional Planing

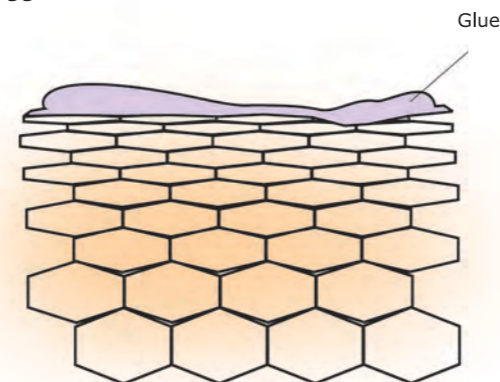


- Deformation of cell structure
- Crystallized resin

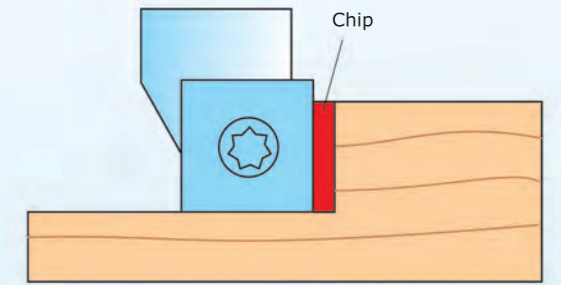
Closed cell structure



Poor agglutination

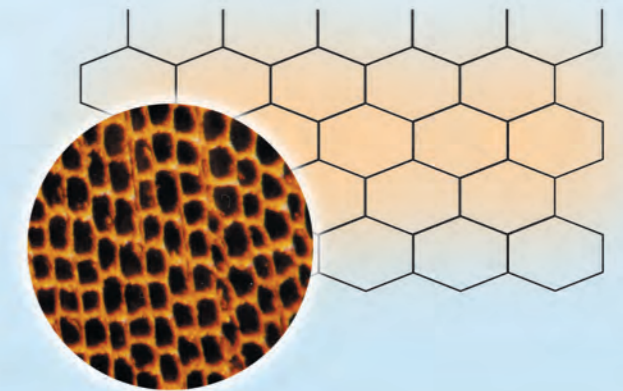


## Rotoles System

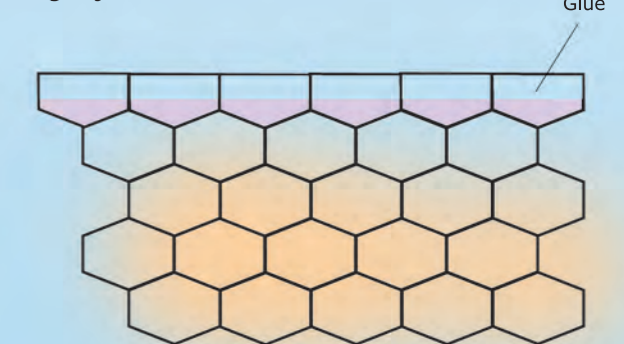


- No deformation of cell structure
- No crystallization of resin

Open cell structure

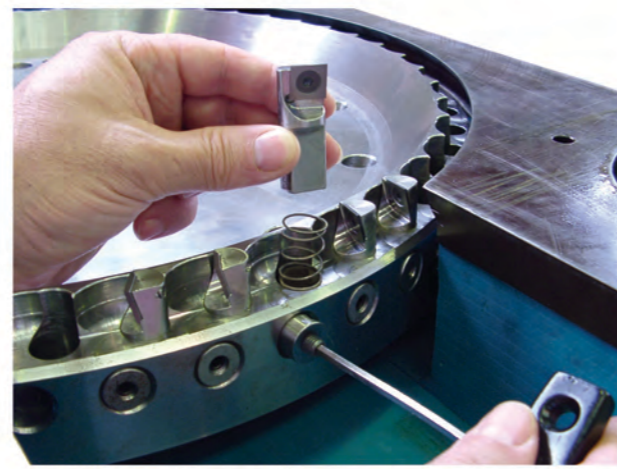


Stronger joint



Reduced consumption of glue

# Rotoles Tools



The ROTOLES tools (rotary heads) are mounted parallel to the machining surface. On multi-side machines, rotary heads are positioned directly above each other, resp. directly opposed for vertical machining. A number of single cutting knife plates arranged around the rim of the rotor enable very small chip thickness from 0,1 to 0,5 mm per knife. The machining is steady and smooth due to lower cutting force and pressure from a single knife against the workpiece. The result is a perfectly machined surface of a workpiece.



The tool turns in horizontal level from left to right and works like a milling cutter. It is possible to work with very short workpieces without planer marks on both ends. The tool is equipped with carbide inserts. After they are worn off on one side they can be turned. An insert can be turned up to 4 times, after that it must be replaced.

The blade holders are fixed in the rotor by clamping wedges

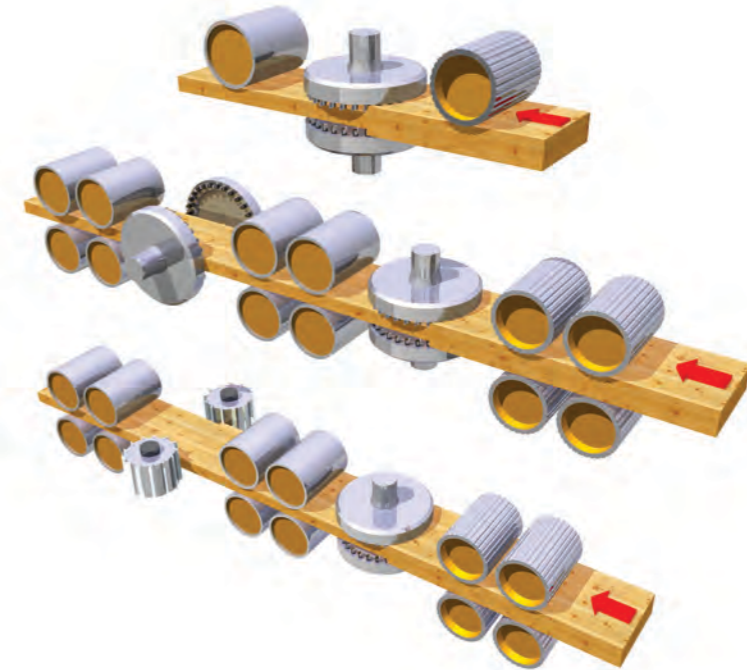


# Rotoles Program

Excellent machining of wood knots and their edges. Suitable for extremely dry saw timber; recycled timber as well as large solid panels can be machined precise and with ease.

## ROTOLES machines with roll feed

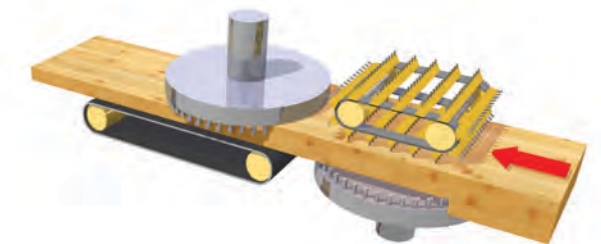
**Multi- sided calibrating milling machines - moulders**  
Working width from 200 up to 600 mm



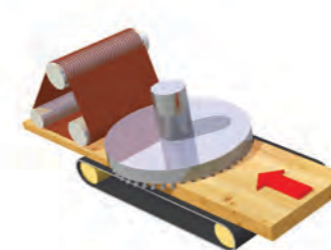
## ROTOLES machines with band and/or chain feed



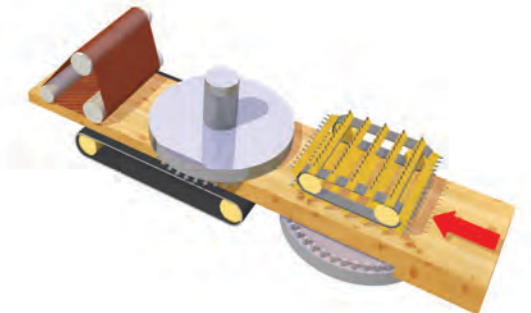
**One-side calibrating milling machines**  
Working width from 300 up to 2100 mm



**Double-side calibrating milling machines**  
Working width from 200 up to 1350 mm



**One-side calibrating milling machines with sanding aggregate**  
Working width from 400 bis 1350 mm



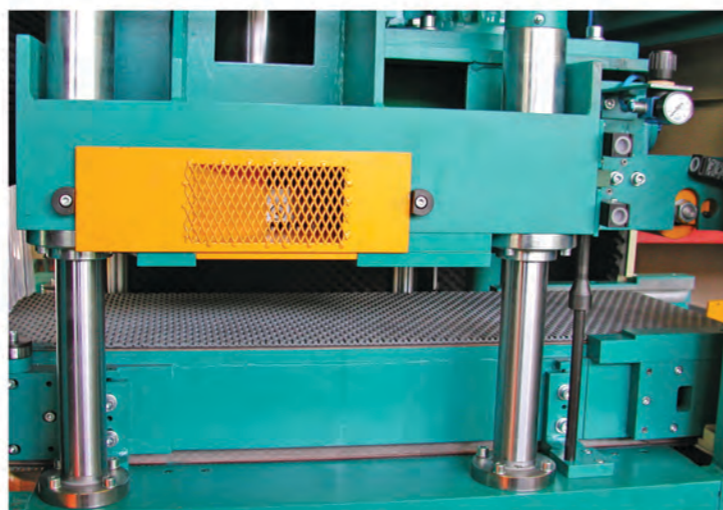
**Double-side calibrating milling machines with sanding aggregate**  
Working width from 400 up to 1350 mm

# Rotoles machines with band or chain feed

Pressure segments before the top rotor hold down the workpiece.



A cleaning brush sweeps the surface before final processing.

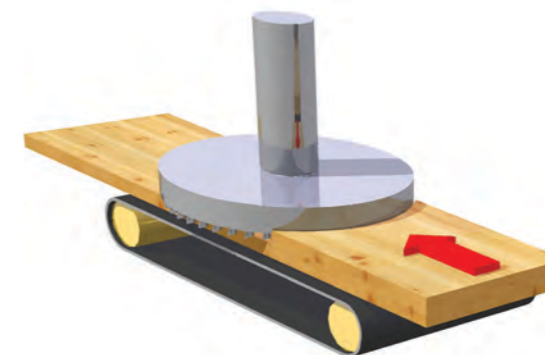


The friction between rubber conveyor and workpiece secures a perfect feed motion.



A feeding chain with spring loaded pins will transport concave or pieces with variable thickness reliably over the bottom rotor.

The combined sanding unit with a contact roller and a sanding shoe is an optimal solution for precise and fast changeover between calibrating and finishing operation.



## One-side calibrating milling machines Working width 300, 400 mm

For perfect calibration without damage at high speed. These machines are especially suitable for machining thin woodpieces, for example saw-cut veneer.



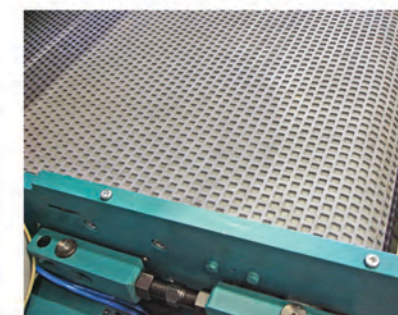
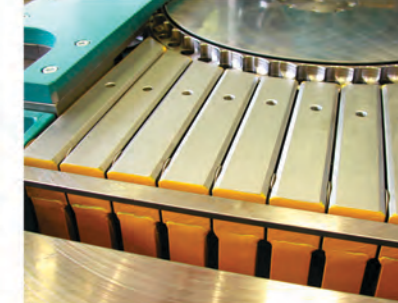
**Rotoles 300 D-L**  
 Workpiece width (mm): 30 - 300  
 Workpiece height (mm): 2 - 150  
 Workpiece length "min" (mm): 80  
 Feed speed "up to" (m/min): 25  
 Weight "approx." (kg): 900

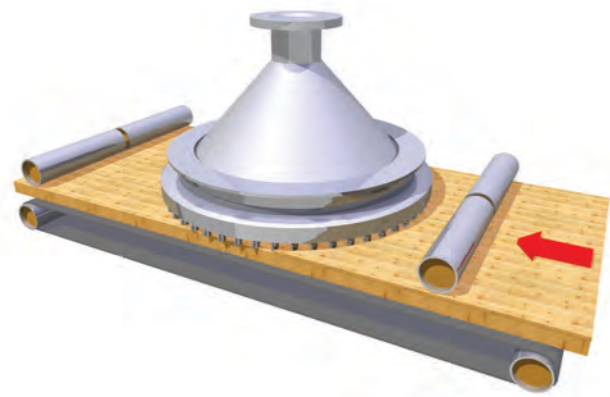


**Rotoles 400 D**  
 Workpiece width (mm): 40 - 400  
 Workpiece height (mm): 2 - 150  
 Workpiece length "min" (mm): 150  
 Feed speed "up to" (m/min): 45  
 Weight "approx." (kg): 1.800



**Rotoles 400 PD-SV**  
 Workpiece width (mm): 60 - 400  
 Workpiece height (mm): 3 - 30  
 Workpiece length "min" (mm): 350  
 Feed speed "up to" (m/min): 45  
 Weight "approx." (kg): 4.500





**One-side calibrating milling machines**  
Working width 600, 900, 1300, 2100 mm



**Rotoles 600 D-L**  
Workpiece width (mm): 40 - 600  
Workpiece height (mm): 2 - 150  
Workpiece length "min" (mm): 80  
Feed speed "up to" (m/min): 25  
Weight "approx." (kg): 2.000



**Rotoles 600 D**  
Workpiece width (mm): 40 - 600  
Workpiece height (mm): 2 - 150  
Workpiece length "min" (mm): 150  
Feed speed "up to" (m/min): 30  
Weight "approx." (kg): 5.400



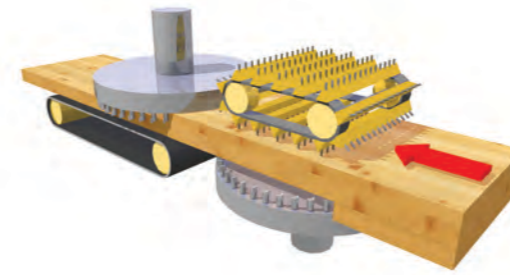
**Rotoles 900 D**  
Workpiece width (mm): 60 - 900  
Workpiece height (mm): 2 - 150  
Workpiece length "min" (mm): 150  
Feed speed "up to" (m/min): 36  
Weight "approx." (kg): 8.500



**Rotoles 2100 D**  
Workpiece width (mm): 100 - 2100  
Workpiece height (mm): 2 - 150  
Workpiece length "min" (mm): 150  
Feed speed "up to" (m/min): 36  
Weight "approx." (kg): 30.000

**Double-side calibrating milling machines**

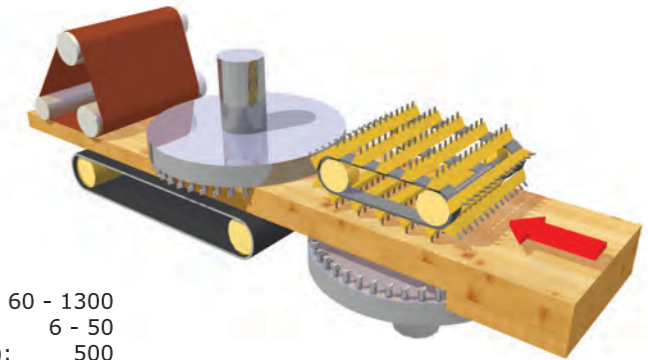
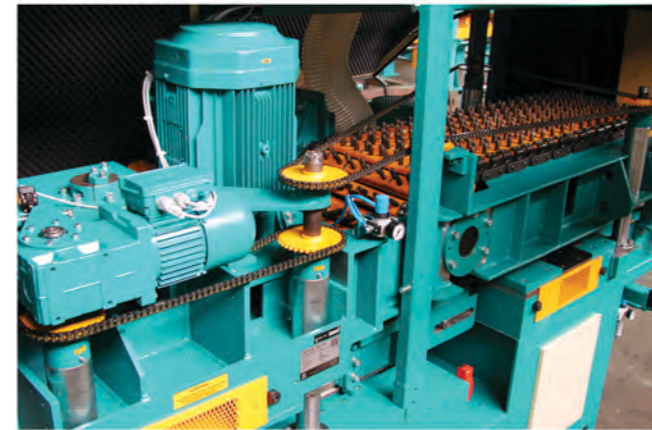
Special machines for multiple operations in one pass. Combinations of various units for machining of different materials and for different applications.



**Rotoles 400 PD**  
Workpiece width (mm): 40 - 400  
Workpiece height (mm): 6 - 150  
Workpiece length "min" (mm): 150  
Feed speed "up to" (m/min): 30  
Weight "approx." (kg): 4.500



**Rotoles 600 PD**  
Workpiece width (mm): 60 - 600  
Workpiece height (mm): 6 - 150  
Workpiece length "min" (mm): 250  
Feed speed "up to" (m/min): 30  
Weight "approx." (kg): 10.000



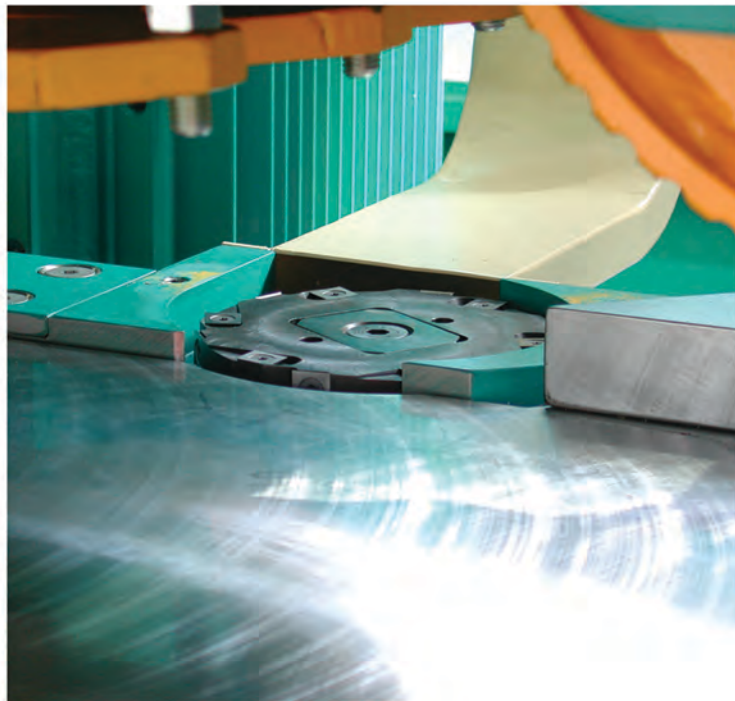
**Rotoles 1300 PD+B**  
Workpiece width (mm): 60 - 1300  
Workpiece height (mm): 6 - 50  
Workpiece length "min" (mm): 500  
Feed speed "up to" (m/min): 36  
Weight "approx." (kg): 21.500



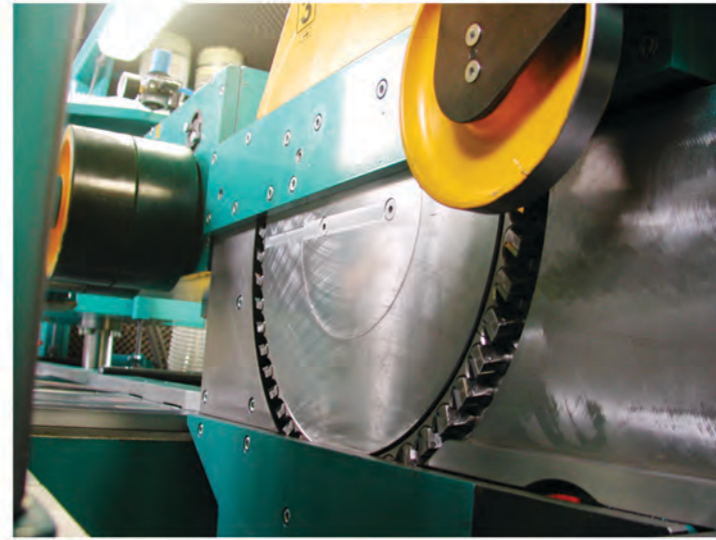
## Rotoles machines with roll feed



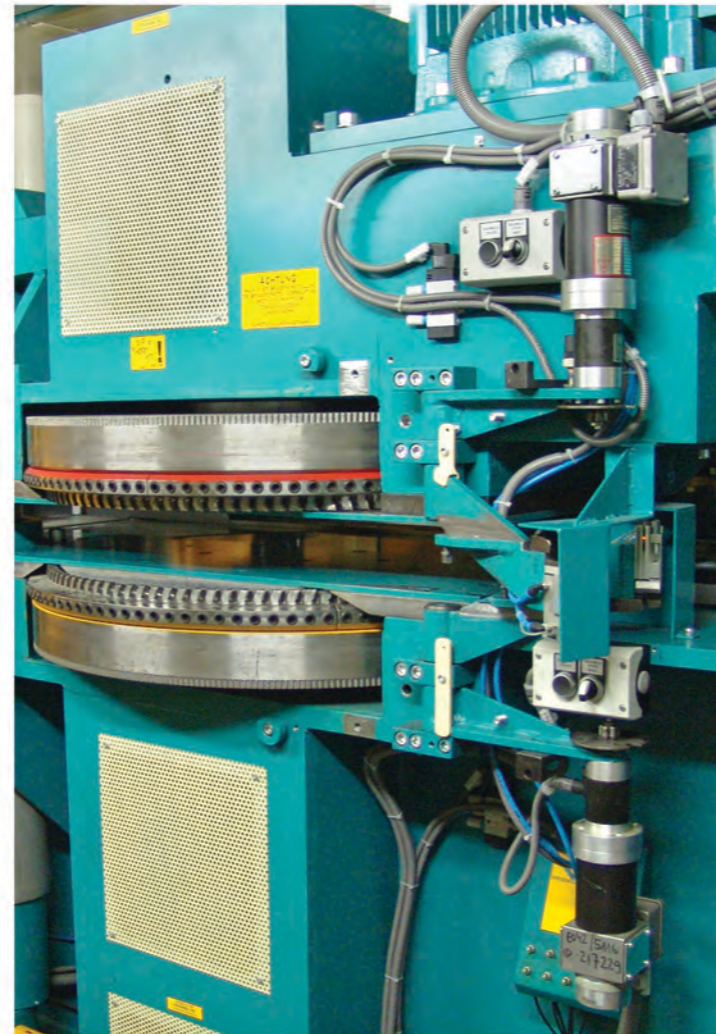
Vertical spindles can also be adapted for moulding.



A pre-cutter machines the edge of the workpiece to prevent tear out.



Opposite vertical rotors are the best choice for perfect calibration and excellent gluing performance.

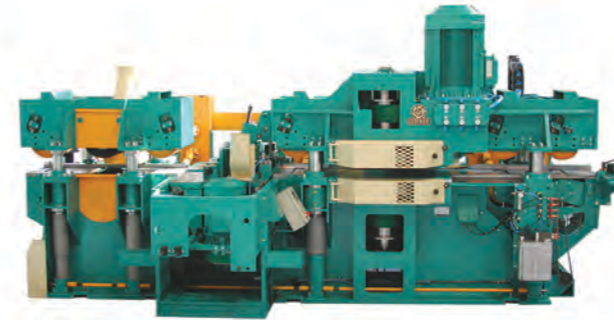


High precision of horizontal planing is achieved by a very short distance between the two rotors.

## Rotoles High Speed

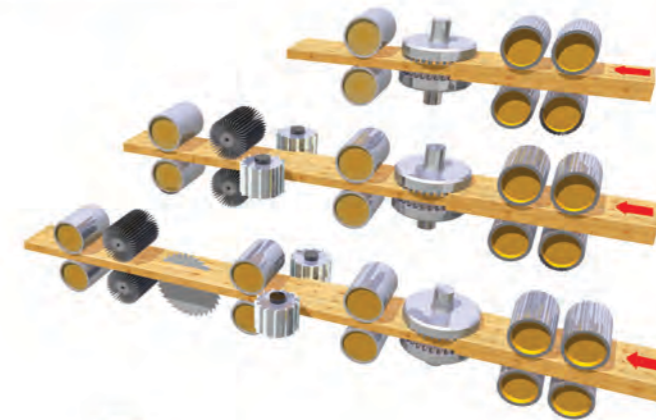
### Multi-side calibrating milling machines

A heavy-duty four-side combined calibrating milling machine with Rotoles system, vertical spindles, groove saw and a cleaning brush; for demanding calibration of glulam laminations.



### Tempo 230 m/min

<b>Rotoles 300 4V-KS</b>	
Workpiece width (mm):	70 - 320
Workpiece height (mm):	19 - 120
Workpiece length "min" (mm):	3.000
Feed speed "up to" (m/min):	230
Weight "approx." (kg):	19.500



**Rotoles 300 2V-KS**

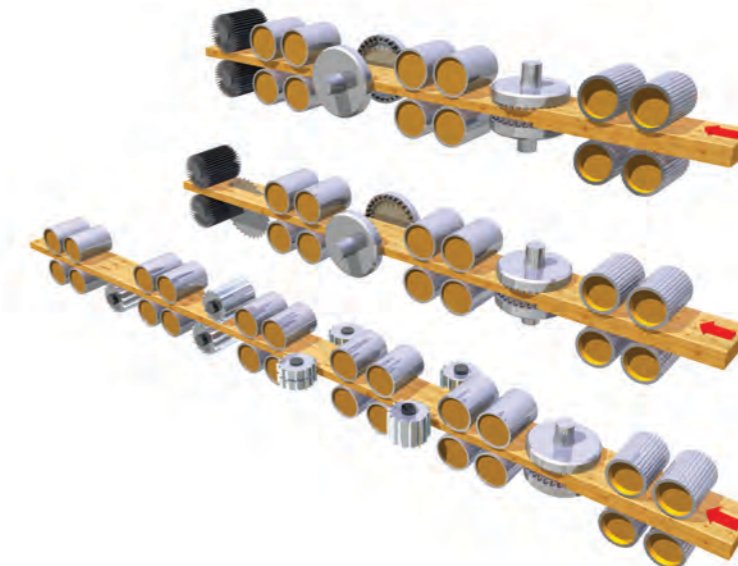
**Rotoles 300 4V-KS**

**Rotoles 300 5V-KS**



### Tempo 80 m/min

<b>Rotoles 300 4V-KS</b>	
Workpiece width (mm):	30 - 300
Workpiece height (mm):	14 - 150
Workpiece length "min" (mm):	1.500
Feed speed "up to" (m/min):	80
Weight "approx." (kg):	11.000



**Rotoles 300 4VR**

**Rotoles 300 5VR**

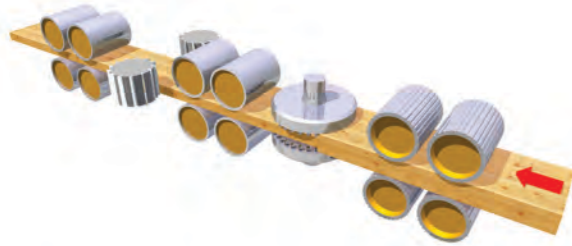
**Rotoles 300 9V**

## Multi-sided milling machines - moulders

Depending on purpose, the wood can be calibrated on two or four sides with the Rotoles system, further processing is made by conventional spindles in various arrangements.

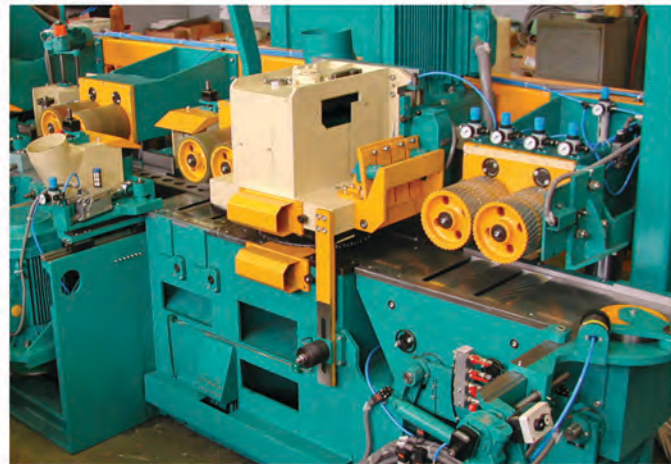
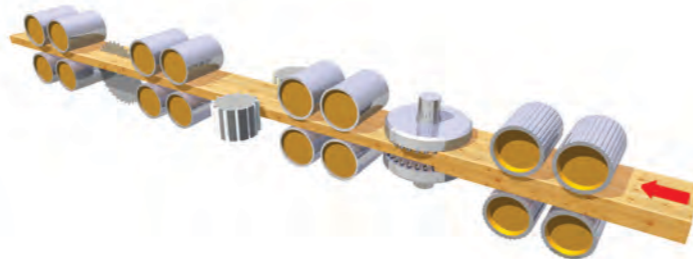
### Rotoles 200 4V

Workpiece width (mm): 20 - 200  
 Workpiece height (mm): 8 - 150  
 Workpiece length "min" (mm): 800  
 Feed speed "up to" (m/min): 30  
 Weight "approx." (kg): 4.000



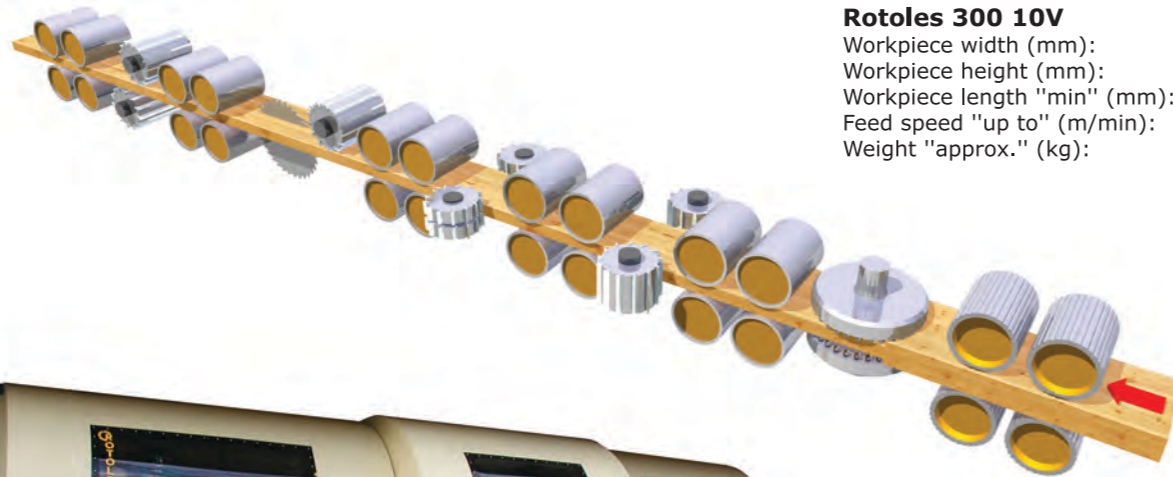
### Rotoles 300 5V

Workpiece width (mm): 30 - 300  
 Workpiece height (mm): 14 - 150  
 Workpiece length "min" (mm): 1.200  
 Feed speed "up to" (m/min): 60  
 Weight "approx." (kg): 7.500



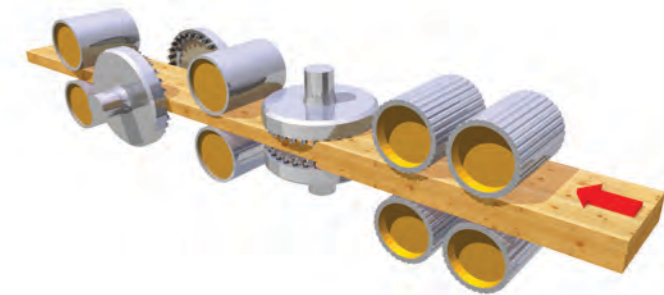
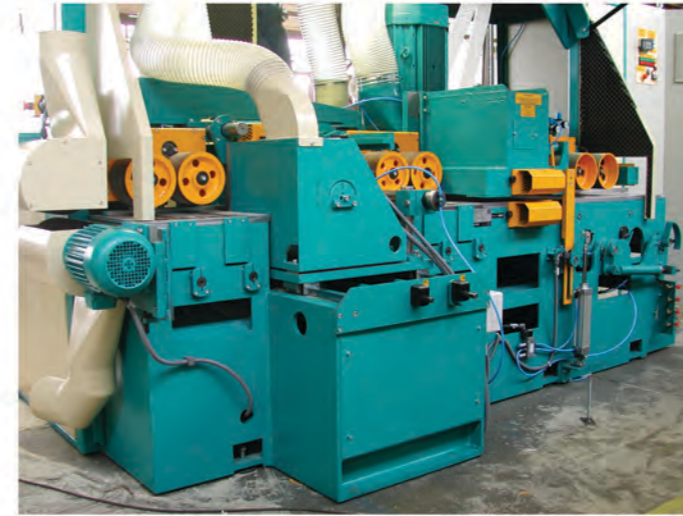
### Rotoles 300 10V

Workpiece width (mm): 30 - 300  
 Workpiece height (mm): 14 - 150  
 Workpiece length "min" (mm): 1.200  
 Feed speed "up to" (m/min): 60  
 Weight "approx." (kg): 16.500



## Double- and multi-side calibrating milling machines

Double- or four-side machines with Rotoles system for demanding calibration of single workpieces. The surface is machined evenly, regardless of fibre orientation and growth rings.

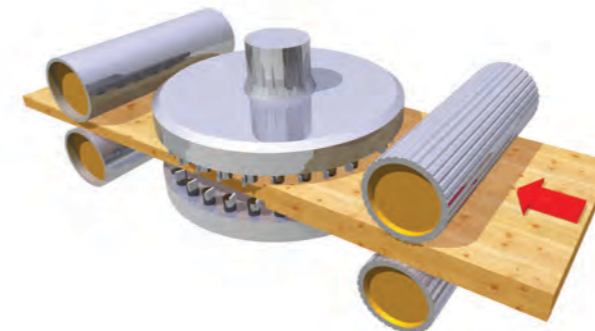
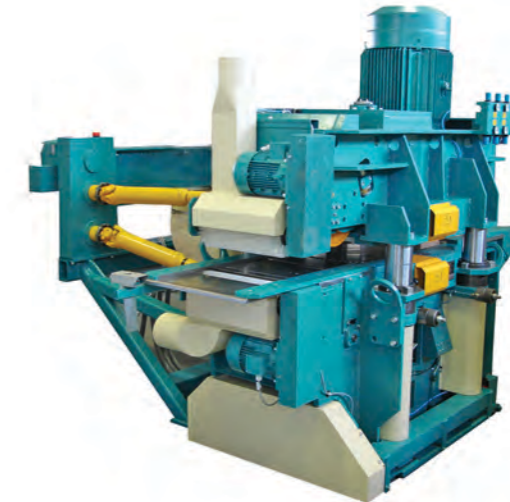


### Rotoles 300 4VR

Workpiece width (mm): 30 - 300  
 Workpiece height (mm): 14 - 150  
 Workpiece length "min" (mm): 1.200  
 Feed speed "up to" (m/min): 30  
 Weight "approx." (kg): 6.500

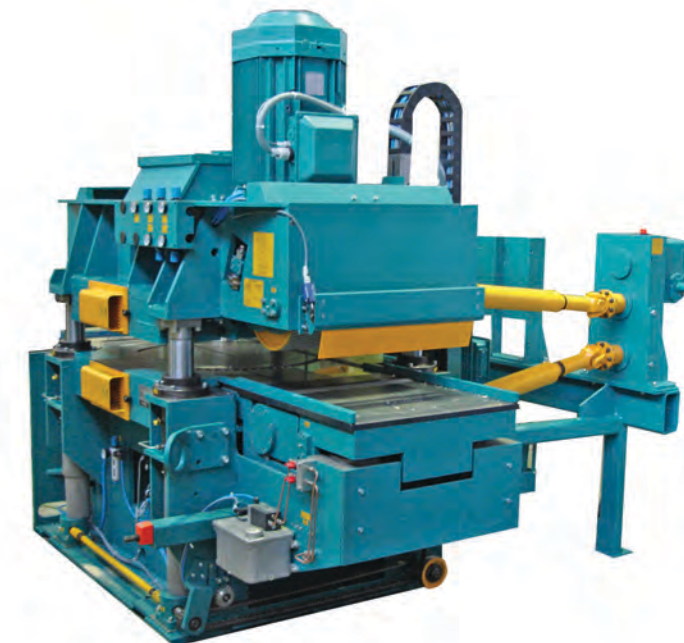
### Rotoles 400 2V

Workpiece width (mm): 40 - 400  
 Workpiece height (mm): 15 - 150  
 Workpiece length "min" (mm): 1.200  
 Feed speed "up to" (m/min): 60  
 Weight "approx." (kg): 4.800



### Rotoles 600 2V

Workpiece width (mm): 40 - 600  
 Workpiece height (mm): 15 - 150  
 Workpiece length "min" (mm): 1.600  
 Feed speed "up to" (m/min): 30  
 Weight "approx." (kg): 7.000







# STOP PLANING START MILLING

The ROTOLES face milling method offers improved quality of machining compared to conventional planing: no planer marks, higher calibrating precision, perfect machining of wood knots and their edges, no deformation of structure therefore smooth and open pore surface. These features present significant advantages for certain following processing steps, for instance lower consumption of glue for glulam beams, panels and parquet, or better penetration of wood stain, oil or wax into the wood structure.

## INNOVATIVE • POWERFUL • DURABLE

The cutting knives of the ROTOLES machines are industrially manufactured 'cemented carbide turnover knives'. Special PCD diamond tipped exchangeable tools are also available for applications, where extreme durability is required. The disposable tips are fixed on a quickly exchangeable holder, thus allowing very short down time for retooling. Additional time saving method on high speed machines are the tooling segments, which are equipped with preset new knife holders. The holders can be exchanged outside of the machine, only a lower number of segments have to be exchanged on the machine itself.



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