



# Opti-Kap

Optimizing cross-cut systems

Opti-Kap 1000

Opti-Kap 3000

Opti-Kap 5100



**Optimization of staff and wood resources**

# Table of content

---

**03**     **Optimizing cross-cut saw series**

---

**04**     **Opti-Kap 1000 series**

---

**08**     **Opti-Kap 3000 series**

---

**12**     **Opti-Kap 5100 series**

---

**16**     **Cutting methods**

---

**18**     **Technical data**

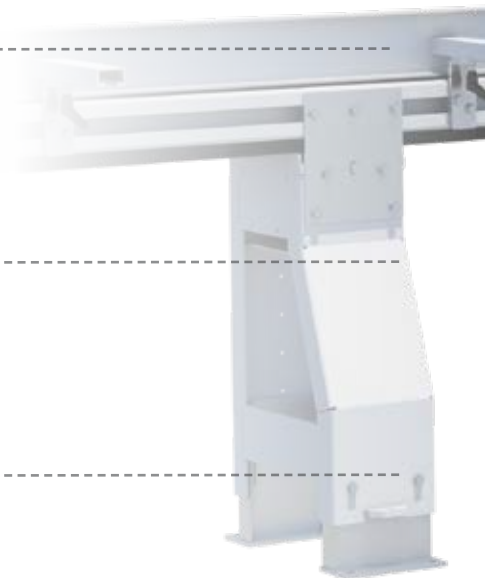
---

**20**     **Additional products**

---

**22**     **System TM service**

---



# Optimizing cross-cut saw series

- Opti-Kap 1000, 3000 and 5100

## Optimizing cross-cut saw series

An optimizing cross-cut system ensures optimal utilization of staff and wood resources with minimum waste. This provides a high yield and excellent production efficiency.

Characterized by its user-friendly design, the Opti-Kap 1000, 3000 and 5100 series offers simple, fast and reliable operation. Its highly flexible saw automatically measures, optimizes and cuts incoming timber into components.



► **Make a wise move**

- Let an Opti-Kap cross-cut saw increase your lumber utilization and capacity!

## Push feed cross-cut saw with high cut accuracy and performance

High cut accuracy, durable construction, as well as easy, fast and reliable operation is what characterizes the Opti-Kap 1000 series.

The Opti-Kap 1000 series automatically recognizes lengths marked or scanned defects and cuts them into components with high accuracy. The clamping unit combines the benefits of through-feed efficiency with the accuracy of a push-feed cross-cut saw. The Opti-Kap 1000 has a positioning accuracy of  $\pm 0.1$  mm (0.004").

Designed to meet your production requirements, Opti-Kap 1000 can be mixed and matched with a wide range of infeed (Opti-Feed) and outfeed (Opti-Stack) solutions.

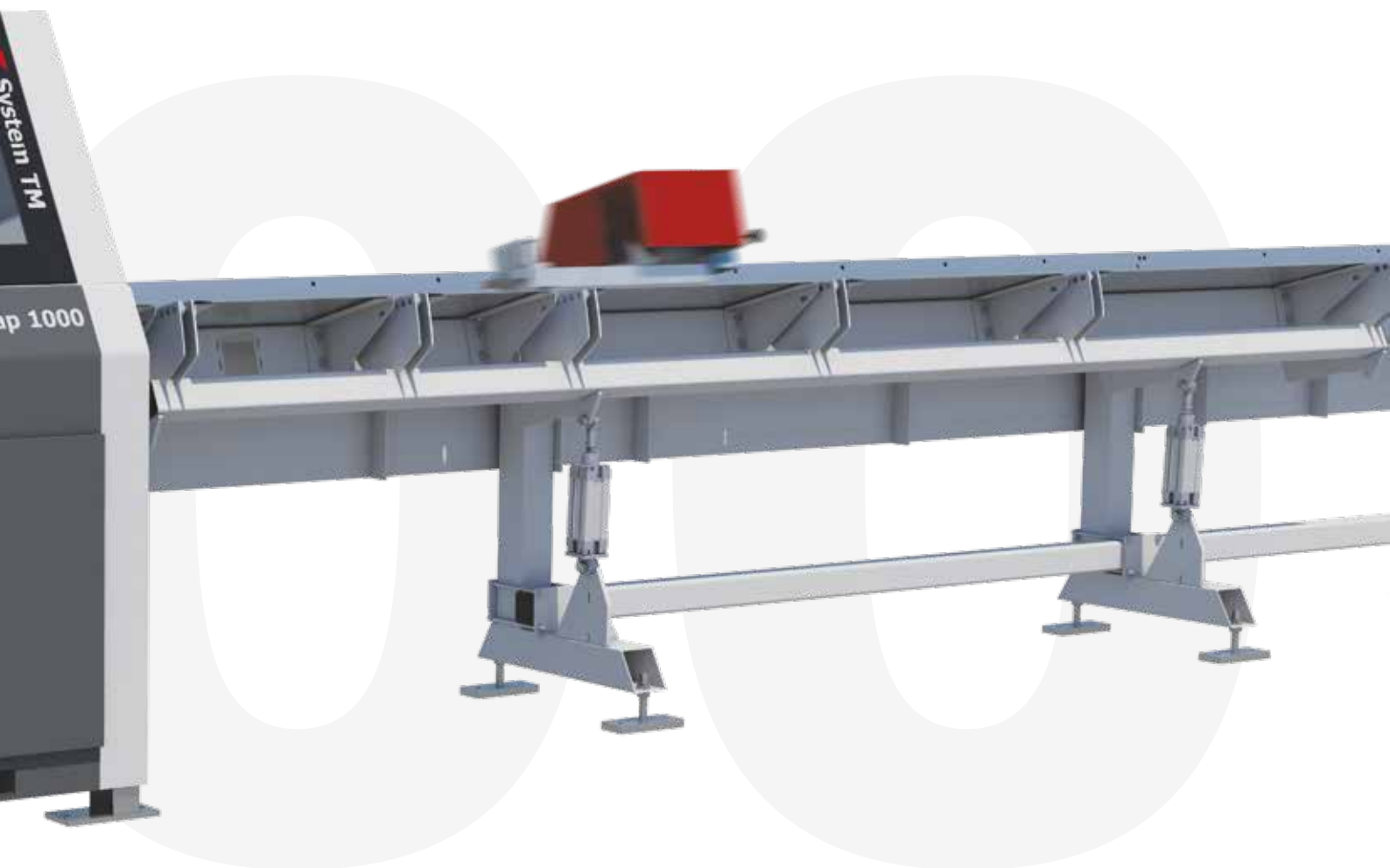
Opti-Kap 1000 is an optimizing cross-cut solution that provides optimal utilization of staff and wood resources with minimum waste. This provides both a higher yield and increased production efficiency.





## Why choose System TM's Opti-Kap 1000 cross-cut saw?

- ▶ The most heavy-duty and durable push feed cross-cut saw on the market
- ▶ Excellent for production where the final cut and length accuracy is of utmost importance; for example kitchen cabinet manufacturers and architectural mouldings.
- ▶ Automatic registration of boards
- ▶ Computer network with integrated optimizing software
- ▶ Can be upgraded to work with automatic infeed (Opti-Feed), stacking (Opti-Stack) and scanning technology
- ▶ High focus on operator safety and machine reliability





# Opti-Kap 1



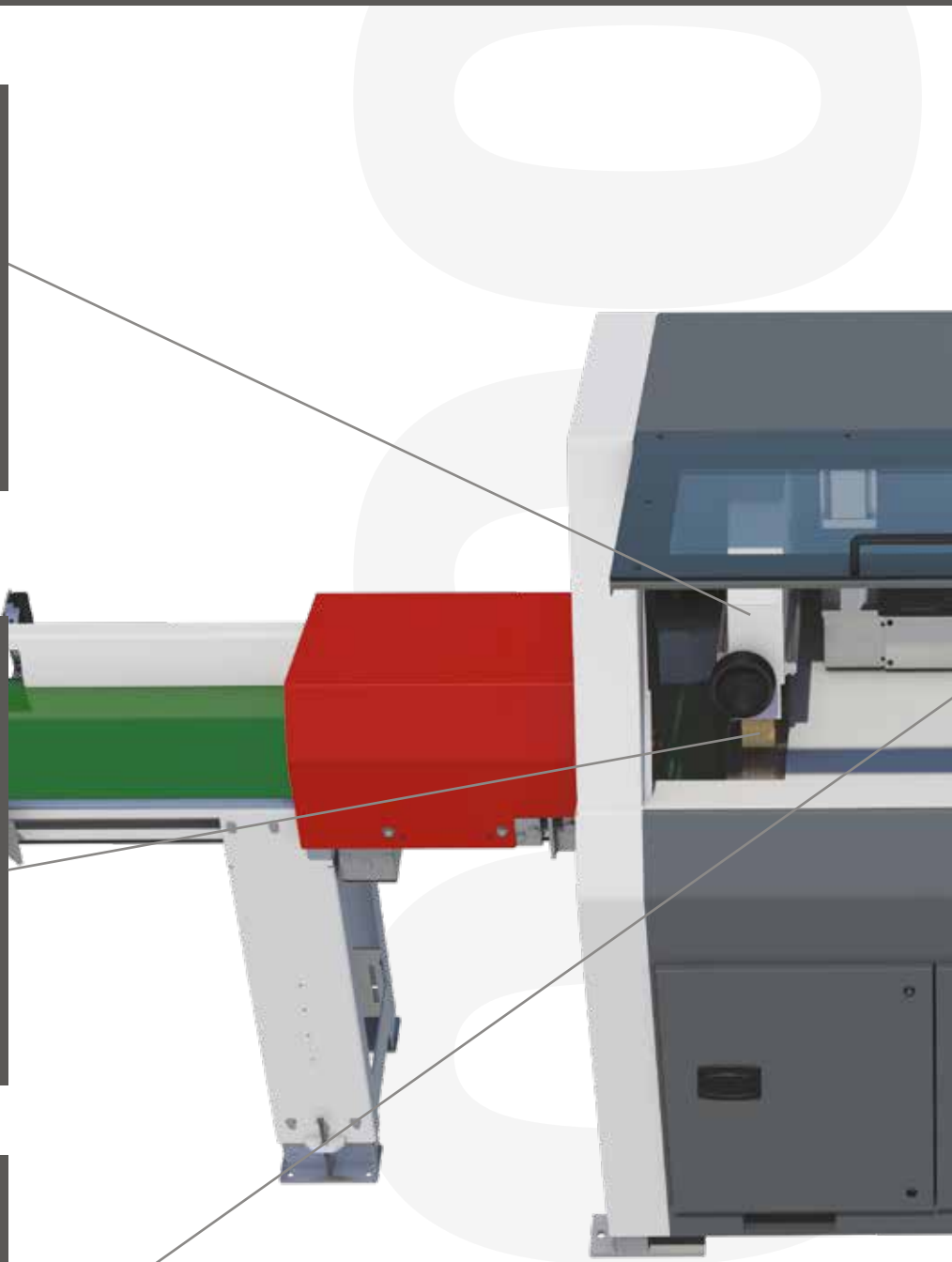
► High-precision cut accuracy. Push positioning accuracy of  $\pm 0.1$  mm (0.004").



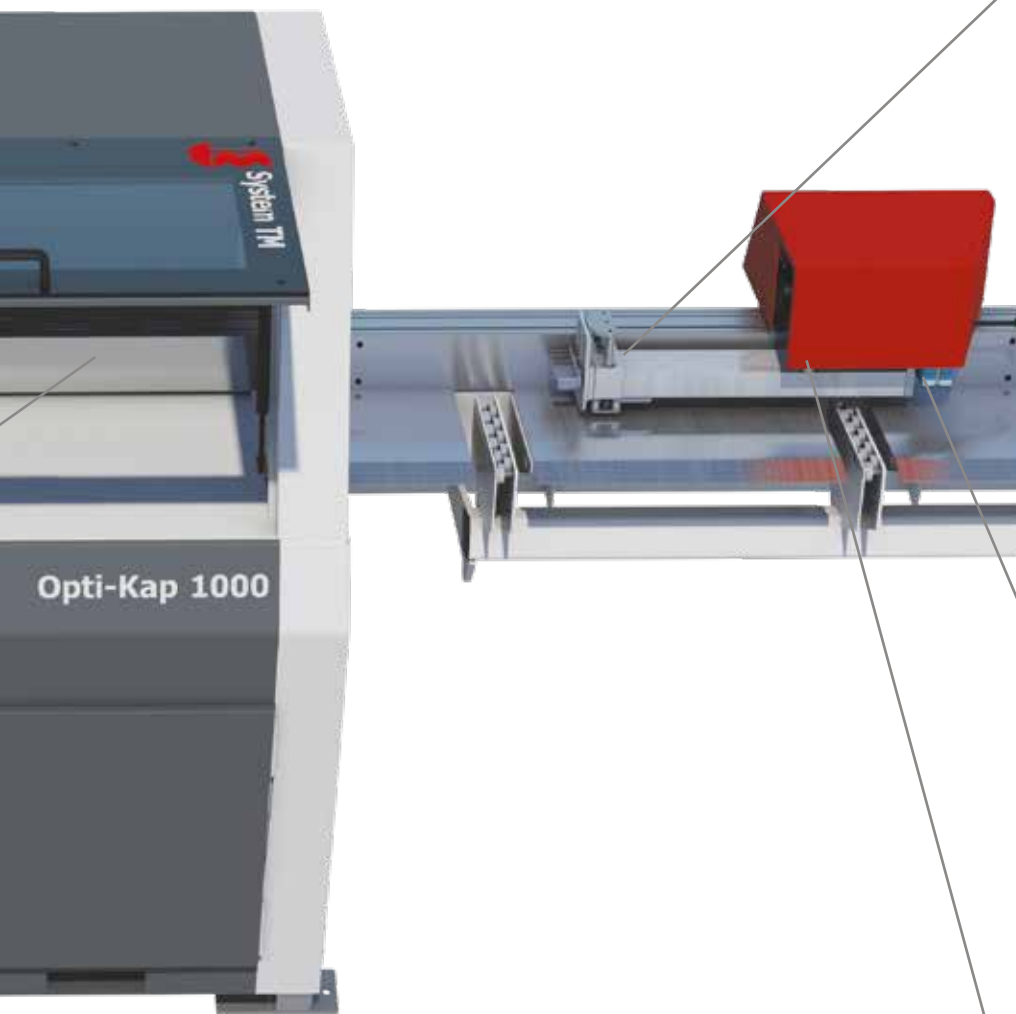
► Heavy-duty top pressure unit and intelligent side rollers ensure an exact cut and position of workpieces during cross-cutting.



► The push arm is controlled by a servo driven linear module for high capacity and cut accuracy with a minimum of maintenance.



# 000 Details



► Unique clamping unit secures exact workpiece position and cut accuracy at a high capacity.



► With a return speed of 310 m/min (1,017 ft/min) the sensors register defects and quality based on how the board is marked.



► High-speed push arm with a feeding speed of 140 m/min (460 ft/min) and return speed of 310 m/min (1,017 ft/min).

## Through-feed cross-cut saw for large workpiece dimensions

The Opti-Kap 3000 series features a heavy duty through-feed optimizing cross-cut saw, characterized by high production capacity regardless of workpiece dimension.

This heavy-duty optimizing cross-cut saw includes mechanical components of high quality. In order to achieve the accuracy and capacity required in large workpiece dimensions, the saw is equipped with 6 servo driven bottom rollers and 6 pneumatically activated top pressure rollers. Both the driven and the top pressure rollers are double supported to ensure maximum contact with the processed workpieces.

The Opti-Kap 3000 series automatically recognizes lengths, marked or scanned defects, and cuts them into components with an accuracy of  $\pm 1 \text{ mm}$  (0.039") in cross-cut lengths up to 1,000 mm (39").





# 000 series

## Why choose System TM's Opti-Kap 3000 cross-cut saw?

- ▶ Vertical saw blade movement controlled by a servo driven crank mechanism for a fast and smooth cut
- ▶ Adjustable cut speed to minimize tear-outs
- ▶ Can be upgraded to work with automatic infeed (Opti-Feed), stacking (Opti-Stack) and scanning technology
- ▶ 6 heavy duty, double side supported bottom and top rollers, to achieve high capacity with exact cut accuracy
- ▶ Fixed mechanical waste gate for optimal and fast removal of waste and defect workpieces
- ▶ Motorized adjustment for different wood dimensions
- ▶ Designed to meet your specific production requirements to provide quick return on investment
- ▶ High focus on operator safety and machine reliability



# Opti-Kap 3



► Heavy-duty design with strong double side supported top pressure rollers. This ensures maximum contact between workpieces and feed roller. Also, it enables reliable cut precision and high acceleration and deceleration.



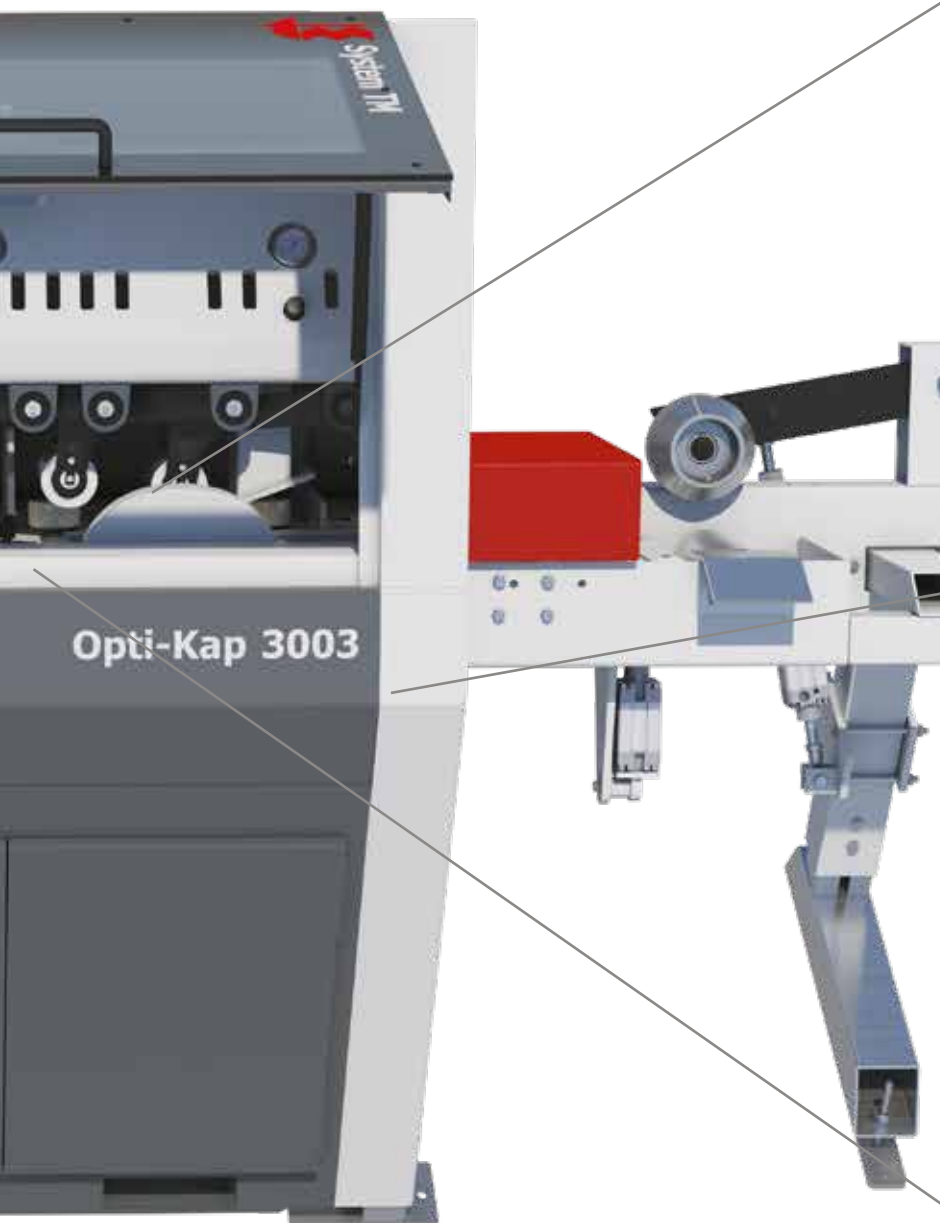
► The bottom feed rollers are placed high above the bed plate of the machine which allows feeding of bent or twisted timber, and ensures maximum productivity and accuracy.



► A saw blade stroke is carried out by a crank mechanism and servo motor. This provides high performance and cut accuracy.



# 000 Details



► Maintenance-free, mechanical waste gate ensures optimal and easy removal of small waste and defect pieces inside the saw unit, resulting in precise sorting of workpieces.



► The 30° angle design of the saw allows correct workpiece positioning during cross-cutting. Due to gravity along the 30° incline, waste and defect material can be removed with ease.



► The wide, servo-driven timing belt of the bottom rollers ensures accurate cutting. Its design has proven to be extremely durable, requiring only a minimum of maintenance.



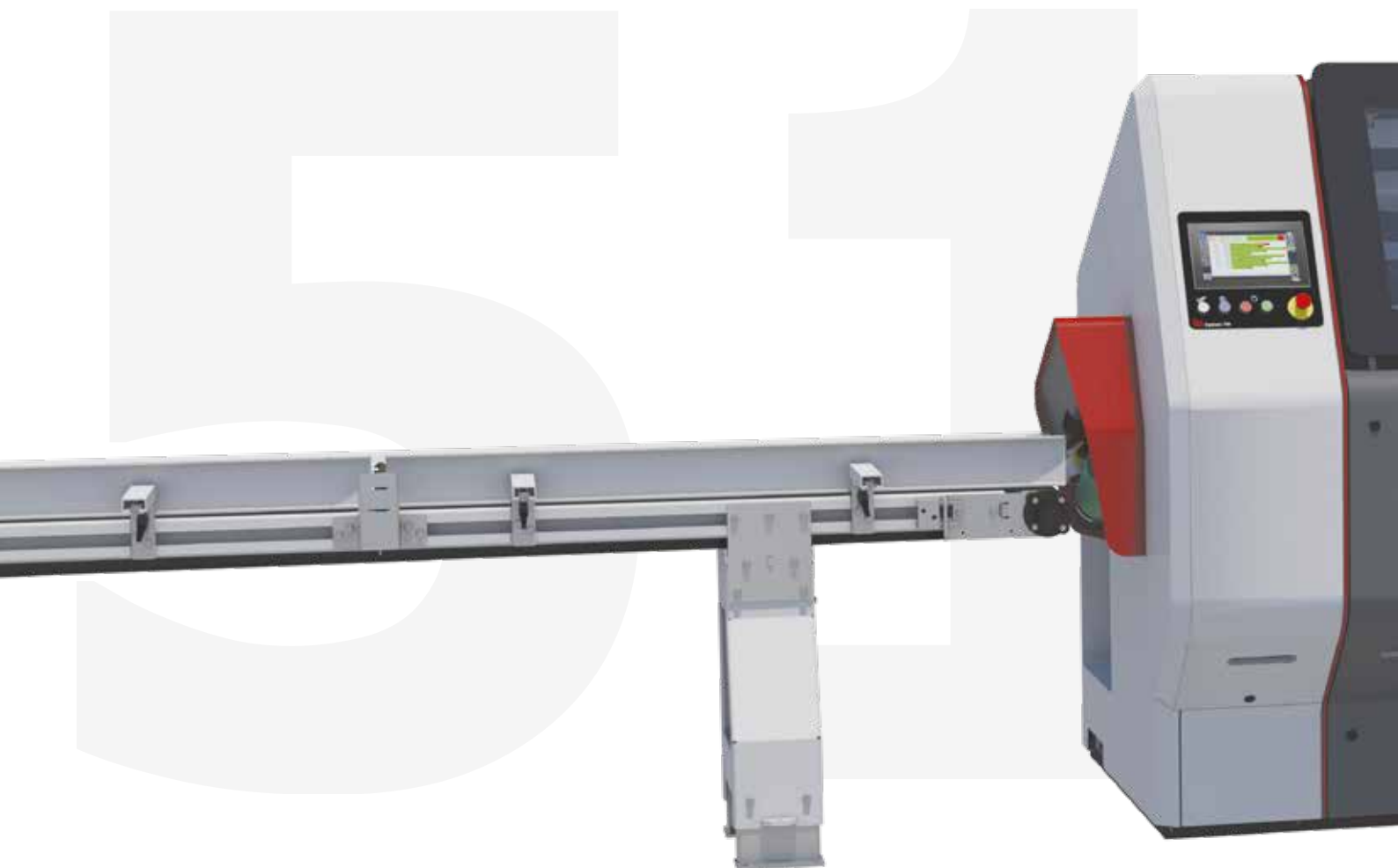
## Through feed cross-cut saw with high intelligence and unbeatable performance

The Opti-Kap 5100 series impressive power, intelligent performance and high level of safety has raised the bar for future optimizing cross-cutting.

The Opti-Kap 5100 is designed to meet maximum capacity performance and built as a powerful, robust cross-cut saw with mechanical components of high quality.

The forward motion of workpieces inside the saw is achieved as a result of 9 servo driven bottom rollers and 9 double pneumatically-activated top pressure rollers. Both the driven and top pressure rollers are double-supported to ensure maximum contact with workpieces and to guarantee excellent accuracy and capacity.

The saw blade has a circular movement driven by a servo motor, which ensures a smooth saw blade stroke for optimal kerfs and minimum tear-outs during cross-cutting. The Opti-Kap 5100 series automatically recognizes lengths and defects. It cuts workpieces into components with an accuracy of  $\pm 0.75$  mm (0.03") in cross-cut lengths up to 1,000 mm (39").



# 100 series

## Why choose System TM's Opti-Kap 5100 cross-cut saw?

- ▶ Integrated infeed rollers and outfeed belt for optimum handling of workpieces
- ▶ Smooth circular saw blade stroke for optimum kerfs to ensure minimum tear-outs during cross-cutting
- ▶ System TM's software control for high uptime and exceptional capacity
- ▶ Intelligent double top pressure rollers for precise and fast positioning of workpieces
- ▶ 9 heavy-duty, double side-supported bottom and top rollers to achieve high capacity with precise cut accuracy
- ▶ Motorized adjustment of various wood dimensions (optional)
- ▶ Fixed mechanical waste gateway for quick removal of waste and defect workpieces
- ▶ Integrated waste conveyor belt for optimum sawdust collection and removal.
- ▶ Central lubrication of all major ball bearings.
- ▶ Can be upgraded to operate with automatic infeed (Opti-Feed), stacking (Opti-Stack), finger-jointing (Opti-Joint) and scanning technology
- ▶ High attention to operator safety and machine reliability





# Opti-Kap 5



► *Integrated acceleration belt with driven fence for quick and exact positioning of workpieces that exit the saw.*



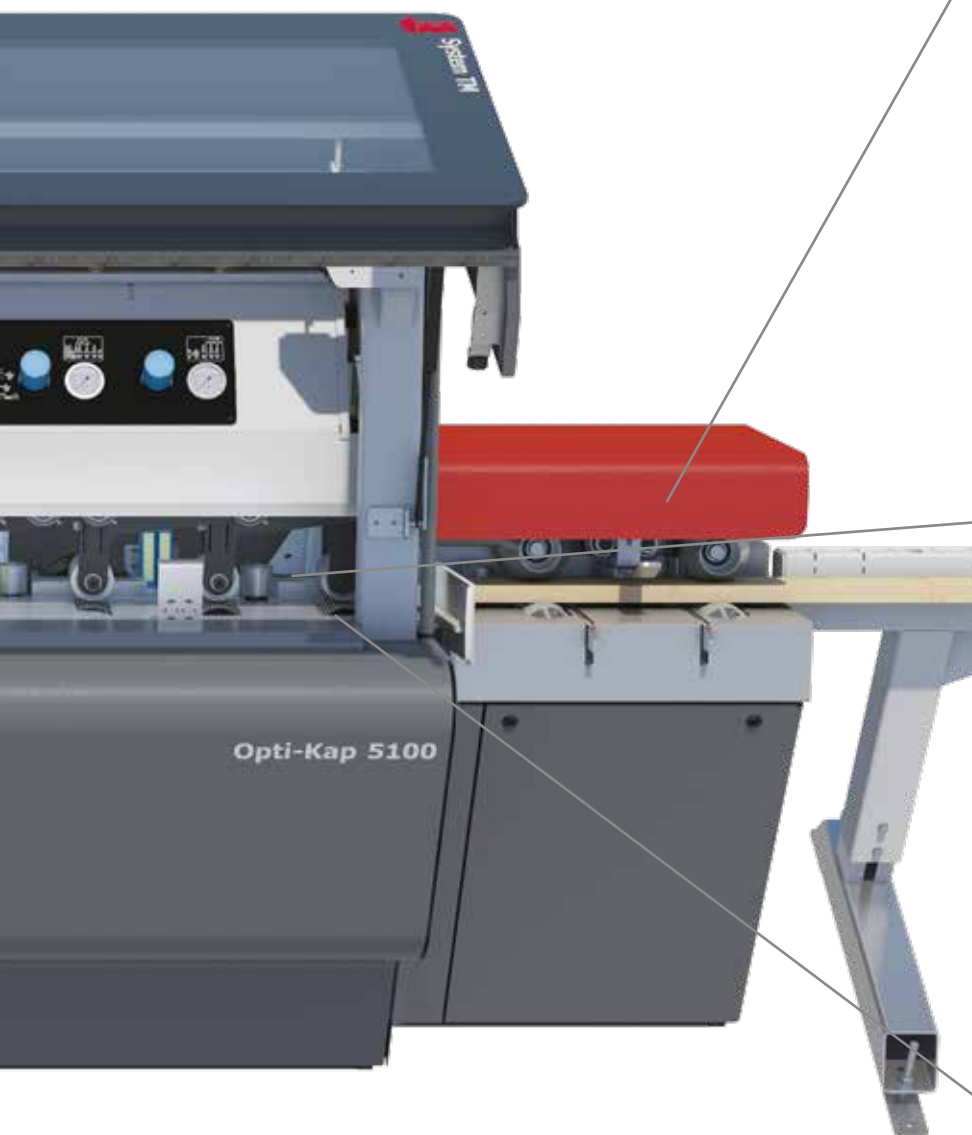
► *Heavy-duty infeed design featuring 9 driven bottom rollers and 9 top rollers. The rollers are supported on both sides to maximize and surface contact to each workpiece to provide excellent cut precision.*



► *The blade stroke moves in circular motion. This ensures a smooth cut with minimum tear-outs at high speed.*



# 100 Details



# Cutting methods

## Sawn timber before cutting



## Cutting to length optimization

Saw model: Opti-Kap 1001, Opti-Kap 3001 & Opti-Kap 5101



## Crayon marking of defects & quality optimization

Saw model: Opti-Kap 1002, Opti-Kap 3002 & Opti-Kap 5102



## Automatic scanning of defects & quality optimization

Saw model: Opti-Kap 1003, Opti-Kap 3003 & Opti-Kap 5103



### Identification description:

- A = A quality
- B = B quality
- C = C quality
- D = Defect
- F = Finger-joint
- R = Re-rip
- T = Trimming
- W = Waste

# Opti-Kap control

## Control & optimization

All System TM's Opti-Kap cross-cut series are controlled by industrial PC's, featuring System TM in-house developed control and optimizing software.

Developing our control hardware and software is an ongoing process. Our optimizing control hardware and software is designed by highly educated programmers, and based on reliable, industrial computer technologies. System TM's programmers have broad experience in programming high-speed mechanical movements and optimization for best wood utilization.

The reason why the Opti-Kap series feature the fastest and most reliable, optimizing cross-cut saws worldwide today is, what we have the in-house resources required to design and develop the hardware and software of the Opti-Kap series.

## Opti-Kap computers include:

- ▶ Industrial multi touch screen featuring simple user interface and software
- ▶ Optimization of wood resources and overall line utilization
- ▶ Complete hardware and software integration between all functions of the line
- ▶ Automatic line control from one computer
- ▶ Web-based PC with external log-on option
- ▶ Extensive range of production statistics available
- ▶ Access from local network
- ▶ Simulation production software including the transfer of pre-prepared setup and production data

## Optimizing methods

- ▶ Minimum waste
- ▶ Value optimization
- ▶ Parallel ending of cutting lists
- ▶ Width optimization
- ▶ Length x number





## Opti-Kap cross-cut saws data overview

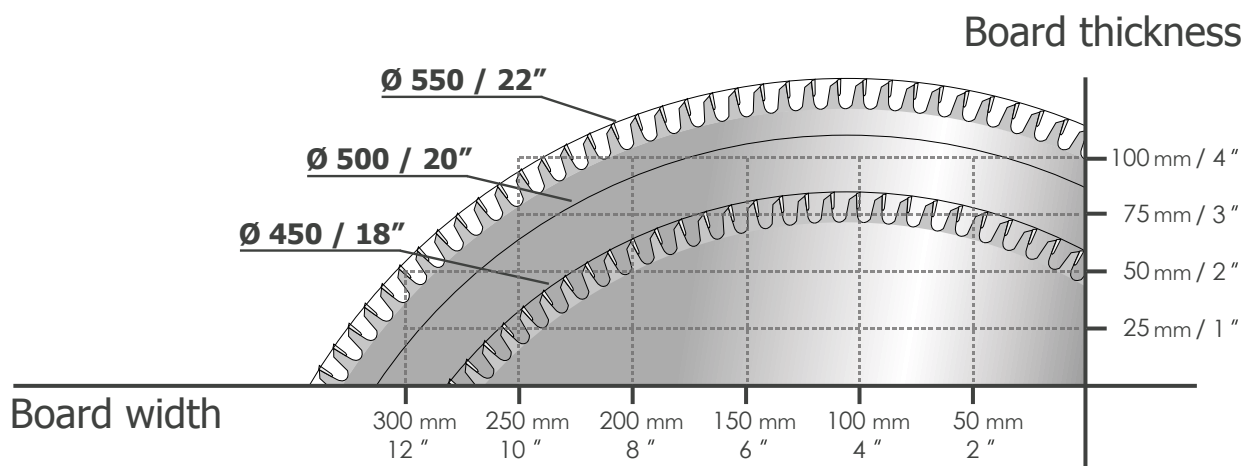
	<b>Opti-Kap 1000</b>	<b>Opti-Kap 3000</b>	<b>Opti-Kap 5100</b>
Board length	300 - 6,300 mm (12"-20' - 8")	500 - 6,300 mm (20"- 20' -8")	500 - 6,300 mm (20"- 20' -8")
Board width	20 - 300 mm (3/4" - 12")	30 - 300 mm (1.2" - 12")	30 - 200 mm (1.2" - 8")
Board thickness	10 - 100 mm (0.4" - 4")	12 - 100 mm (1/2" - 4")	12 - 75 mm (1/2" - 3")
Cross-cut length	25 - 6,300 mm (1" - 20' -8")	115 - 6,300 mm (4 1/2" - 20' -8")	100 - 6,300 mm (4" - 20' -8")
Min. cross-cut length at board end	25 mm (1")	180 mm (7")	115 mm (4 1/2")
Cross-cut tolerance up to 1,000 mm / 39.37"	+/- 0.1 mm (pusher tol.) (0.004")	+/- 1 mm (+/- 0.039")	+/- 0.75 mm (+/- 0.03")
Cross-cut tolerance longer than 1,000 mm / 39.37"	+/- 0.1mm (pusher tol.) (0.004")	(1 ‰ of cutting length)	(0,75 ‰ of cutting length)
Saw blade stroke	Pneumatic driven system	Servo driven crank mechanism	Servo driven exentric system
Feed motion	Servo	Servo	Servo
Air consumption	300 L/min. 6 Bar (79 gal/min. 87 psi.)	500 L/min. 8 Bar (132 gal/min. 116 psi.)	500 L/min. 8 Bar (132 gal/min. 116 psi.)
Waste extraction	1,500 m³/hour (53,000 ft³/hour)	3,000 m³/hour (106,000 ft³/hour)	3,300 m³/hour (116,000 ft³/hour)

**All of the above data can be customized upon request.**

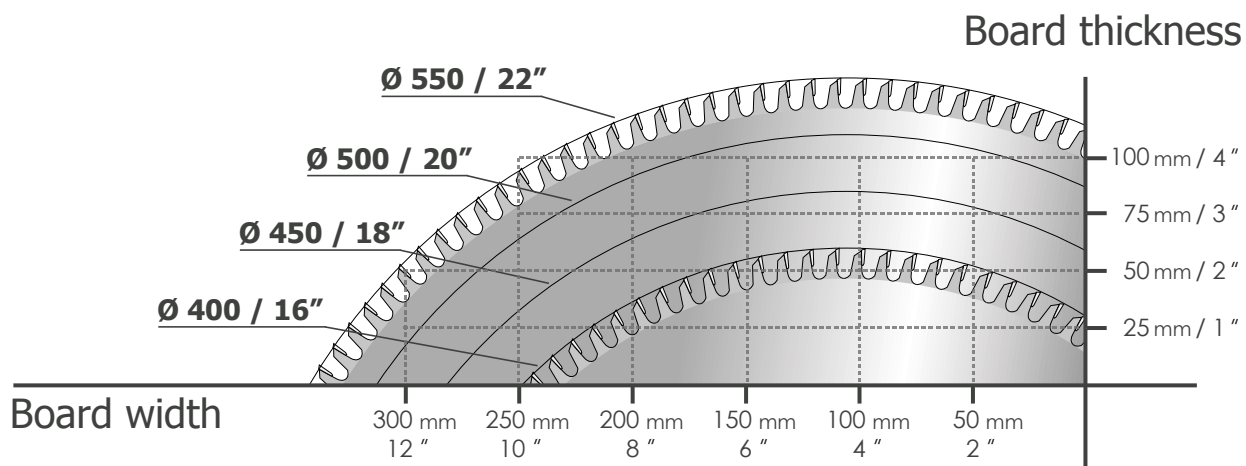
**All equipment is built to metric standards. Dimensions shown in imperial units are approximate and for comparison purposes only.**



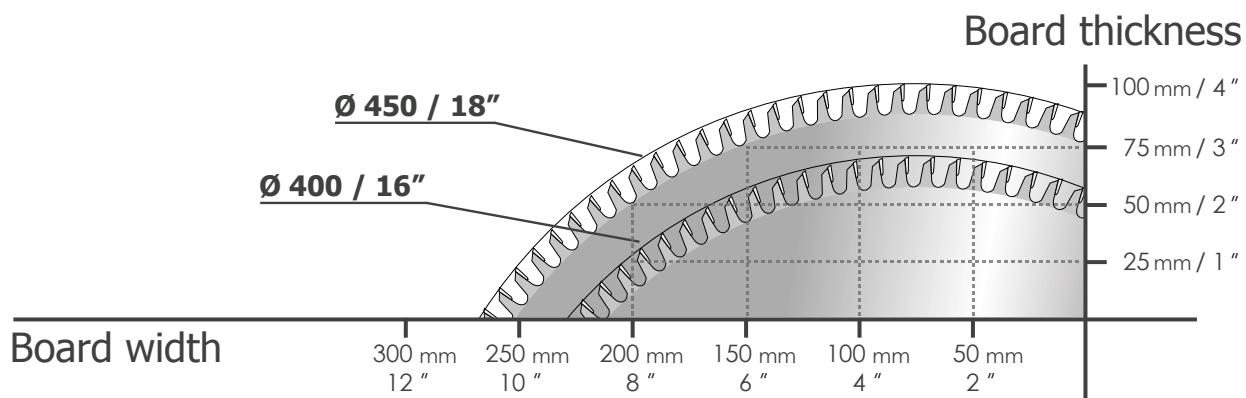
## Opti-Kap 1000



## Opti-Kap 3000



## Opti-Kap 5100



## System TM A/S

System TM products and system solutions can be equipped with automatic handling or scanning systems for best lumber utilization and capacity with minimum use of labor power.

In order to meet all customer demands, our selection of material handling systems consists of both standard and fully customized solutions.



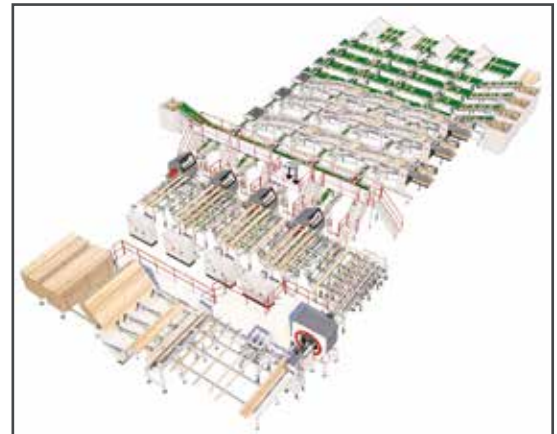
**Opti-Feed**  
Automated feeding systems



**Opti-Stack**  
Automated stacking systems



**Opti-Joint**  
Automated finger-jointing systems



**Opti-Solution**  
Customized system solutions

# products

## MiCROTEC

To achieve best lumber utilization and production optimization, System TM's products and solutions can be combined with automatic scanning.

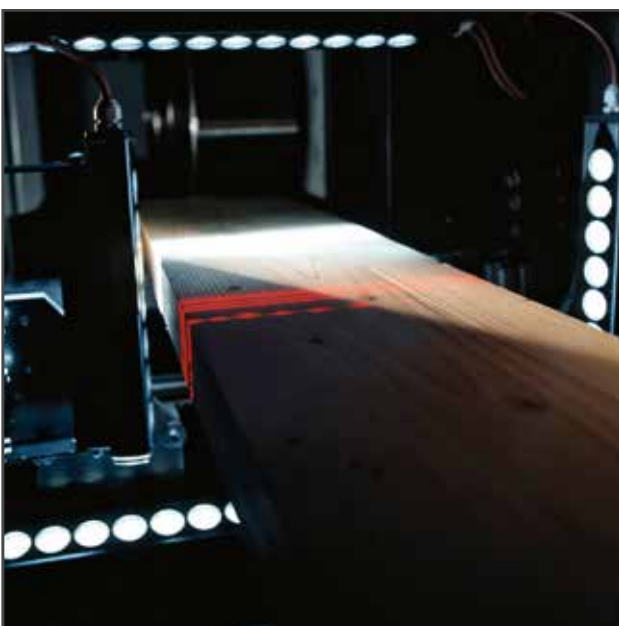
Microtec is System TM's scanner partner and a technology leader within the scanning industry. Microtec scanners are highly reliable and accurate in wood defect detection, and ensure automated, streamlined and optimized production.

To identify the characteristics of lumber, a Multi-Sensor scanning technology recognizes knots, cracks, pitch pockets, holes, stains, waness and other board defects, as well as their location. With exceptional precision and high speed, the sensors scan the boards for best lumber utilization.

Combined with today's scanning technology and optimizing software, a System TM product or system solution ensures best production optimization at high capacity.



► *The Microtec Multi-Sensor Scanner Goldeneye*



► *The Multi-Sensor scanning technology scans workpieces for best wood utilization.*



## Optimal performance thanks to a strong service and support team

System TM's service is a key strategic business unit. Our service department constantly develops its service to meet customer wishes and to provide exceptional service and support.

System TM's service and support team ensures high uptime, productivity, and utilization. Systematic maintenance minimizes production downtime, and ensures smooth operation with minimum risk of unexpected machine breakdowns.

System TM's service and support team consists of highly educated, trained, and experienced service engineers and technicians. With more than 40 years of experience in designing, building, integrating and maintaining automated wood material handling systems, System TM is a highly qualified provider of service and support.



## This includes:

- ▶ Service and maintenance contracts
- ▶ A customized spare part kit for each customer to ensure a succesful start
- ▶ Modification, upgrading and extension of existing machines, controls and software
- ▶ Relocation, renovation, installation and start-up of machine installations
- ▶ Production and system analysis and optimization
- ▶ Staff/operator education on how to handle and maintain machines
- ▶ Advisory and consultancy services
- ▶ Spare parts and enhancements
- ▶ Warranty
- ▶ Helpdesk and online telephone support - 24 hours worldwide







System TM A/S  
Skovdalsvej 35, P.O. Box 249  
DK-8300 Odder, Denmark

---

Phone: + (45) 86 54 33 55  
Fax: + (45) 86 54 32 19  
E-mail: [tm@systemtm.com](mailto:tm@systemtm.com)  
[www.systemtm.com](http://www.systemtm.com)



**Optimization of staff and wood resources**