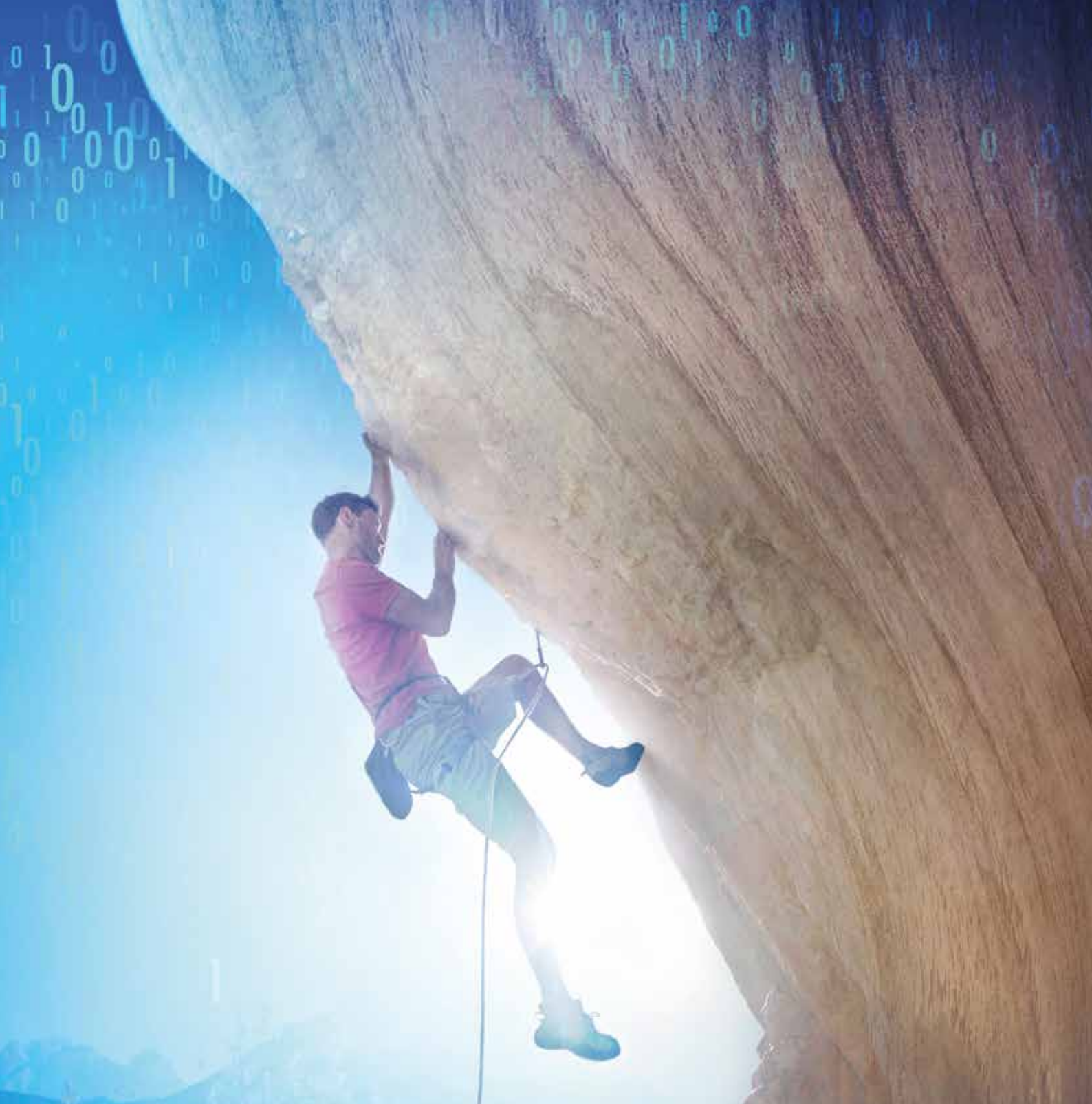


CNC – machining centres for timber construction

# oikos xl

6-axis machining centre for structural beams and columns





For great sustainable  
**CHALLENGES**

# OIKOS XL



THE NEW MACHINING CENTRE  
FOR STRUCTURAL ELEMENTS:  
**SKYSCRAPING TECHNOLOGY**

## TECHNOLOGY



**Any machining operation on all workpiece faces is possible** with no repositioning required, thanks to the innovative 6-axis architecture.

The new generation machining head unit with its interpolations allows to **execute any geometry decreasing downtime and increasing flexibility.**

**Optimization of tool change time**, thanks to the strategic position of the tool stores.

Compatibility with special aggregates, like XL-size mortise chain aggregate that allows to **carry out exceptionally deep slots.**

## PRECISION



Powerful and sturdy structure allowing to **absorb mechanical stresses, in order to execute precise complex operations.**

Laser probe is an **exclusive SCM solution ensuring a high level of accuracy and speed.**

Specific technical solutions to **eliminate the risk of damaging the surface of the processed element.**

## STRENGTH



The electrospindle develops a power of **24 kW at 6000 rpm**, for carrying out **heavy duty material removal operations even on very hard wood.**

Possibility to manage **beams of thickness up to 500 mm and weight up to 4000 kg on the loading buffer.**

Loading/unloading buffers are extensible **up to 19 metres in length.**



## STABILITY



Specific **self-centering clamps lock the element and move it firmly** throughout the whole machining process.

The **pressure rollers on the guide carriages guarantee high-quality finished elements**, thanks to a high degree of stability that eliminates possible vibrations of the workpiece.

## CLEANLINESS



**The work area is always clean**, thanks to the automatic belt system located inside the cabin.

**No more dust outside the cabin**, thanks to the new self-closing casings that separate the work area from the external environment.

Suitable **exhaust outlets** are placed on the perimeter of the cabin, in order to collect the finest dust and keep the **work area always clearly visible**.

## EASE OF USE



**eye-M** console available to the operator to **control the machine in the most rapid and effective way**.

**Maestro beam&wall** is the software designed and developed by SCM that makes **machine programming and management simple and intuitive**.

Possibility of executing complex projects such as **nesting machining, in order to produce modular structures**.

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# OVERVIEW OF TECHNICAL FEATURES

## TECHNOLOGICAL ADVANTAGES



**No vibrations** thanks to the use of pressure rollers that lock the element during machining.



**Firm and precise movement of the element** by means of large self-centering clamps.



**Simple unloading of the finished element** by means of a rear mechanical pusher.



The machine can be configured with **loading/unloading system on the right or left side of the cabin**, depending on the customer's production requirements. The powerful structure allows the handling of **elements weighing up to 4000 kg**.



**Efficient chip evacuation** by means of bi-directional motorized belt, which ensures constant cleaning of the work area.



**Maximum safety for the operator,** cleanliness of the work area and dust containment thanks to the integral, pressurized protection cabin.



**Handling of large elements** with the possibility of positioning workpieces up to 500 mm thick on the loading chains.



**Precision and safety during loading** thanks to NC-controlled clamps that ensure a perfect grip.



**No creep or damage to the element** thanks to special lifting devices with rollers.

# OVERVIEW OF TECHNICAL FEATURES

TECHNOLOGICAL ADVANTAGES



**Reduced tool change time** thanks to the strategic location of the Rapid 15 tool store, which can accommodate up to 16 tools including aggregates.



6-axis machining head unit for maximum manufacturing flexibility.



Additional aggregates to **carry out all workpiece geometries** used in the timber construction sector.



The machine bed is fixed directly to the workshop floor, without the need of masonry construction, and **guarantees greater stability for high performances.**





Video surveillance system for **real-time monitoring of the entire machining process**. Useful for **troubleshooting via teleservice/hotline with SCM engineers**.




**Maximum ergonomics** thanks to the new **eye-M** console with 21.5" touch screen. The multi-function, multi-touch control panel facilitates daily work.



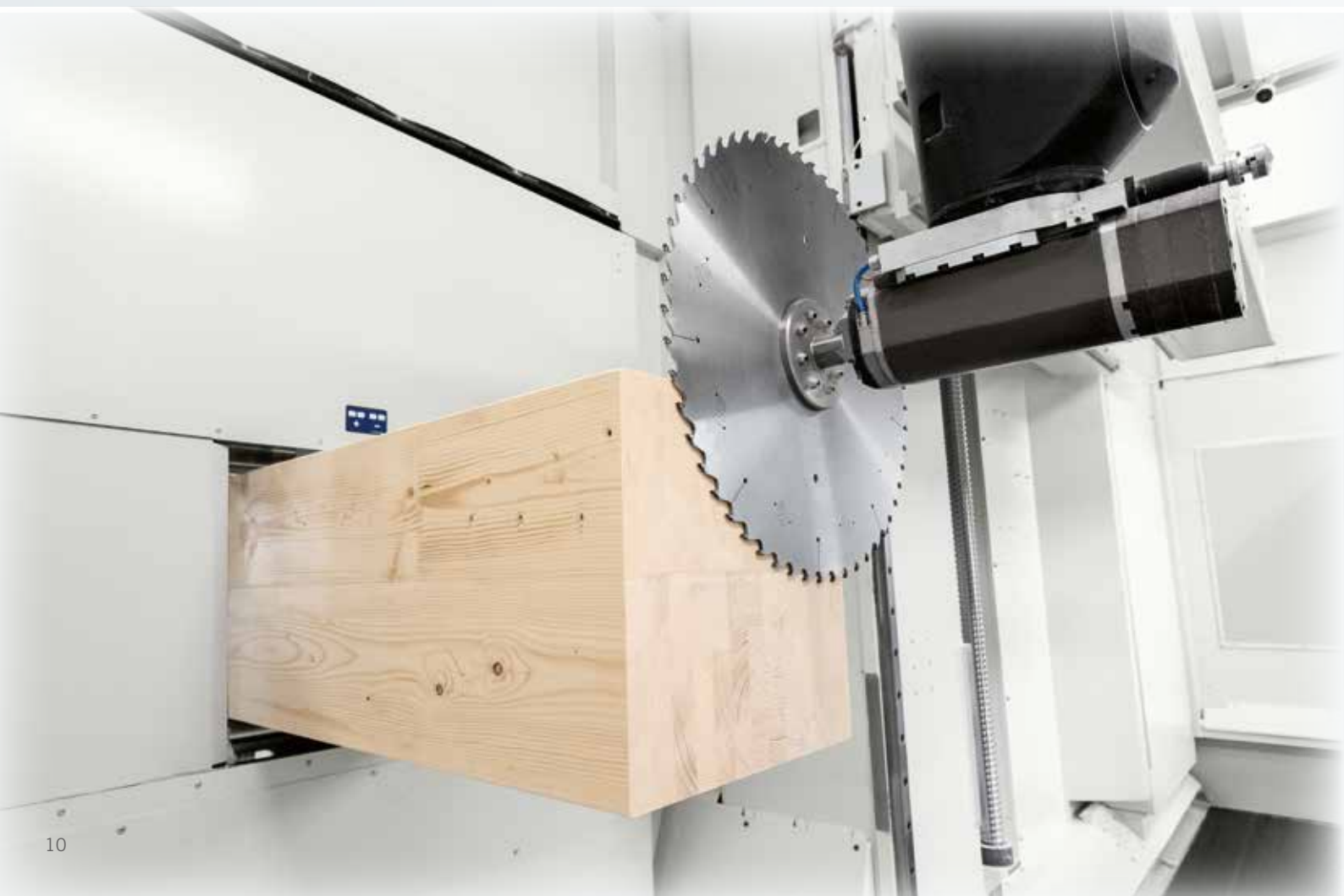
**Easy identification of each finished element** thanks to the "label printing" system.

# MACHINING HEAD UNIT



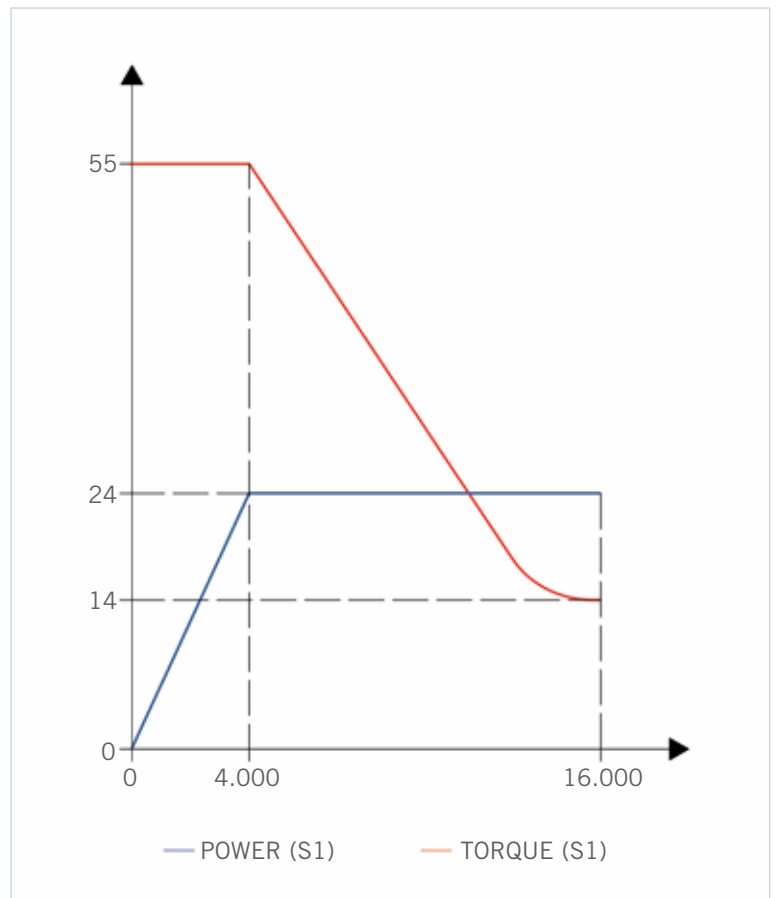
Machining head unit with electrospindle suitably sized to execute **all the machining operations typical of the sector at maximum performance.**

The 6 axes of the machining centre allow **machining to be carried out on all faces of the element in a single position.**



The electrospindle develops a power of **24 kW at 6000 rpm**, to use tools of large dimensions and achieve a maximum rotation speed of 16000 rpm.

The specific electrospindle features **allows high stock removal, even on very hard woods.**



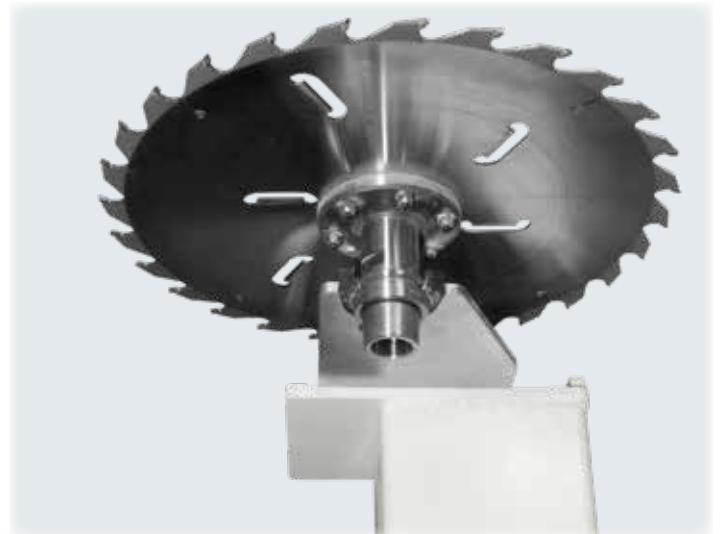
# TOOL STORES

**Up to 18 positions on board:** all the necessary tools for manufacturing the whole range of geometries, used in the sector of timber construction, **are always ready to use.**



The Rapid 15 tool store is positioned at a minimum distance from the work area, allowing to **execute tool change very quickly.**

Upper position dedicated to a **sawblade of 740 mm maximum diameter.**



Lower position dedicated to the **mortise chain aggregate or tools of up to 15 kg weight.**



### MORTISE CHAIN AGGREGATE



Aggregate with centralized lubrication, dedicated to hardware slots, blind or pass through, **of up to 400 mm depth.**

Execution of slots of **as from 10 mm thickness.**



### CHAINSAW AGGREGATE

Aggregate with centralized lubrication, dedicated to **precise, slant and 90° cuts, in particular on wall panels executed with nesting technology.**

# MACHINING OPERATIONS



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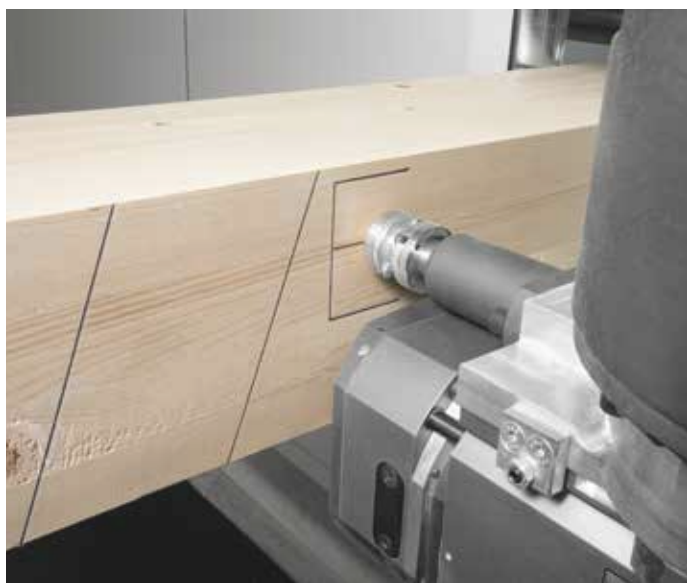


# LASER PROBE AND MARKER



Laser probe detects the exact position on the element side where operation must be performed, to guarantee high accuracy.

Rapid touch probe cycle: **laser reading speed can be executed in 2/3 seconds.**



Extremely fast marking operations **on the 4 side faces of the element, at any angle.**



**No tool change required.** The positioning of the device on board of the machining head unit allows to optimize the marking operation with a simple 90° rotation.





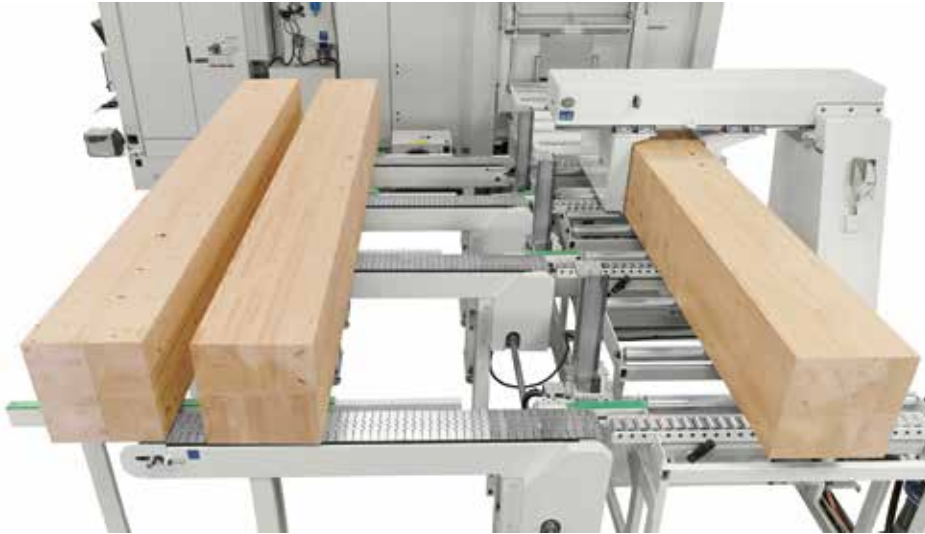
## ZERO VIBRATIONS

Oikos XL is a machining centre with a sturdy structure allowing to absorb mechanical stresses generated during element processing. It is possible thus to perform complex and heavy operations with different tools.

## HIGH ACCURACY OVER TIME

Machine bed, drive carriages and carriages with clamps are firmly anchored to the workshop floor to ensure a perfect parallelism between the sliding surface of the element and the floor; the result is top quality end products.

# LOADING SYSTEM



The loading system allows to place a set of beams on the infeed buffer and to **automatically manage the single beam** quickly and accurately.

Composed by a series of supports with variable centre distance, it is possible to load **up to 4000 kg heavy elements**.



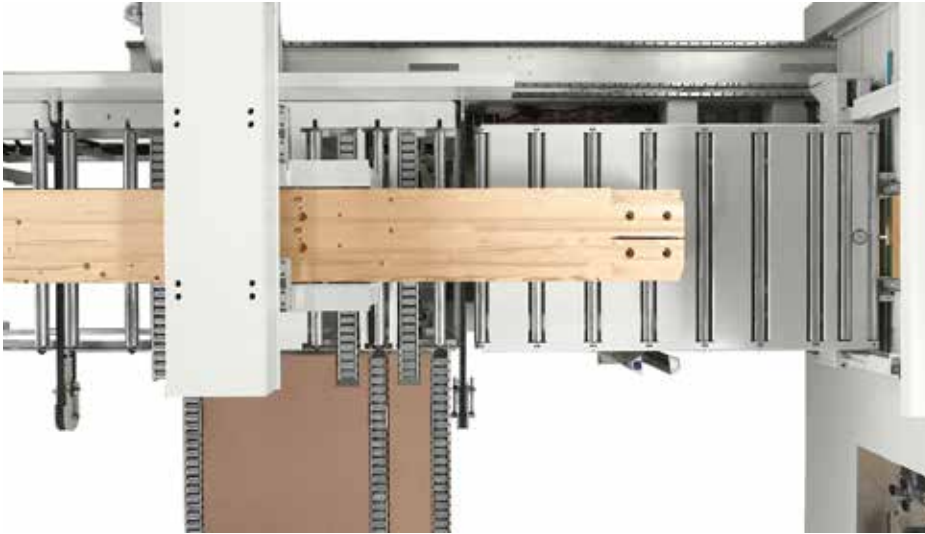
Special clamps, positioned immediately after the loading buffer, lock the first element and transport it to the centre of the loading roller conveyor.

The clamps can manage **up to 500 mm thick elements**.

# UNLOADING SYSTEM

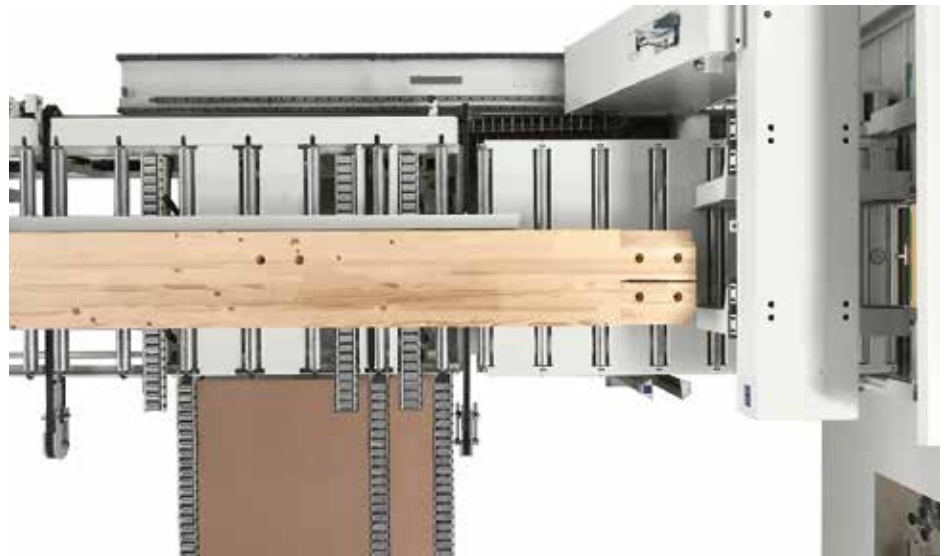
**oikos xl**

6-axis machining centre for structural beams and columns



The unloading system manages the finished elements at outfeed.

A **mechanical pusher** moves the element onto an accumulation buffer. The buffer is made up of a **series of fixed supports with variable centre distance**, enabling the operator to take the work pieces easily and quickly.



The machine, equipped with **special anti-slide devices on the loading and unloading system**, is able to safeguard the surface of the finished elements.


# WORKPIECE HANDLING

The image shows a large industrial machine, likely a wood processing or assembly line. A long, light-colored wooden beam is being moved along a roller conveyor. A white carriage is positioned above the beam, equipped with a clamp mechanism. The machine is white and has various components, including rollers and a control panel. The background is a clean, industrial setting.

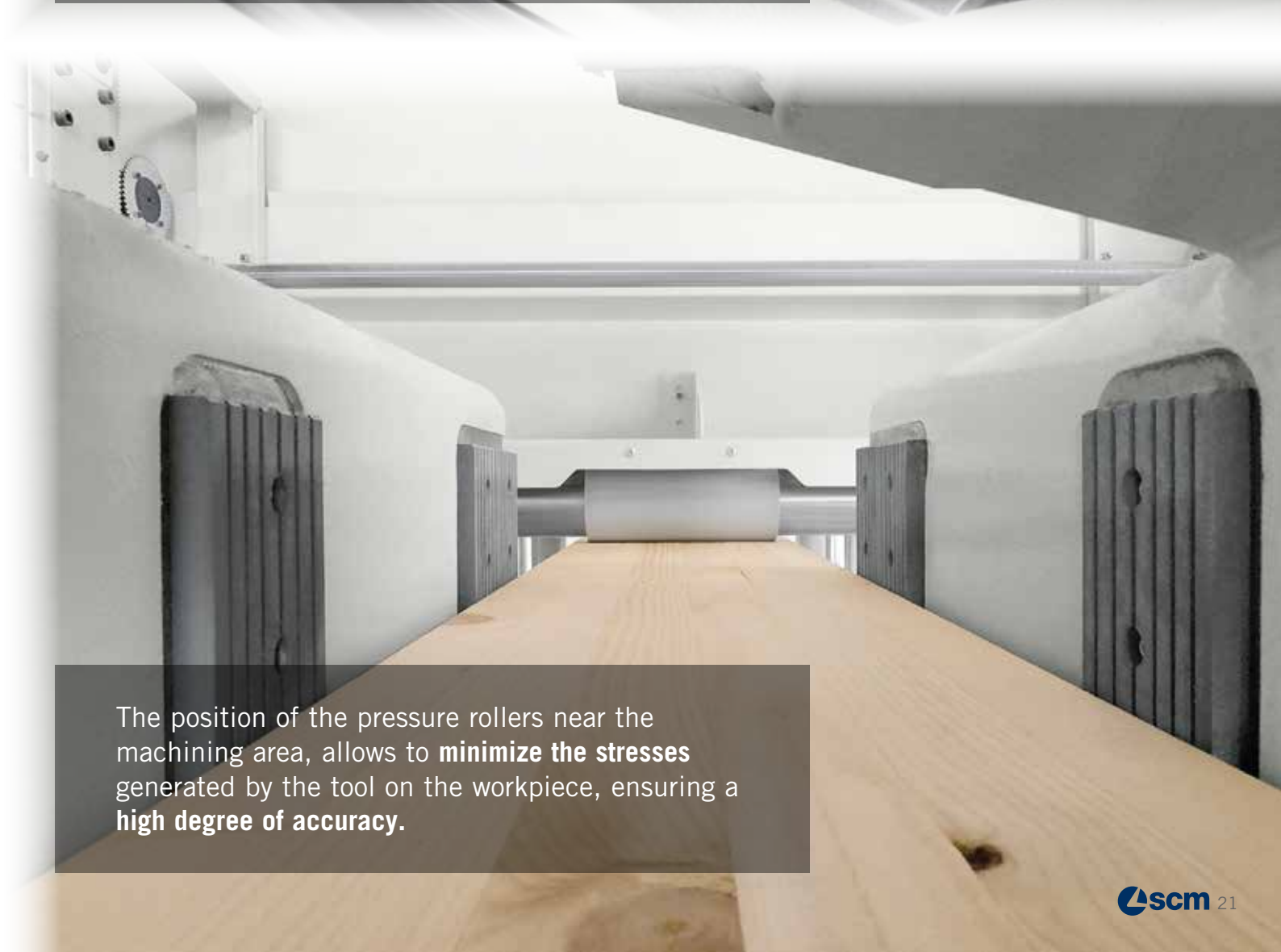
The element is locked and moved along the longitudinal axis by a **carriage equipped with a clamp** that ensures **optimal grip at any time**.

The **jaws of the clamp are self-centering**, hence the beam is always aligned to the centre of the loading roller conveyor.





The horizontal and vertical pressers with a **“self-centering” closing movement** are managed by the numerical control; they adapt to the element section automatically and “guide” it in the work area.



The position of the pressure rollers near the machining area, allows to **minimize the stresses** generated by the tool on the workpiece, ensuring a **high degree of accuracy**.

# CLEANING SYSTEMS



**Always clean work area.** A motorised conveyor belt transports swarf and scraps to the outside of the cabin.

This operation is facilitated by the **function of waste dimensions reduction.**



Thanks to the reversal of the rotary direction of the main conveyor belt, it is possible to **recover “short pieces” that cannot be automatically discharged** into the buffer.

The machine can be equipped with a transversal rear belt dedicated to the **transport of processing waste to a container.**

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6-axis machining centre for structural beams and columns



**Elimination of dust.** Suction outlets are placed on the perimeter of the cabin, in order to collect the finest dust and keep the work area always clearly visible.

Maximum dust containment thanks to **motorised casings** surrounding the workpiece section during machining.





# EYE-M CONSOLE



Oikos XL is equipped with a touch screen control panel, with an **easy, intuitive and powerful operator interface.**

## **You will never work alone!**

The new eye-M console allows connection via internet with the SCM Service. Our engineers can so access remotely at all machine levels to **perform diagnostics, solve problems or update the machine logic in real time.**







The **integrated LED bar** lights up in various colours and allows the machine status to be recognised at a glance, even from a distance.



### Full control over the process.

The **video surveillance system** allows the operator to monitor in real time the machine status through a monitor positioned above the eye-M console. Use of 4 high-resolution cameras.



**Remote control of the machining centre** via the main functions, **always "at hand"**.



Connected to the machine software, the printer produces labels with data related to the processed element, for **an easy identification of the project**.

# YOUR SCM SOFTWARE TO EVERY TECHNOLOGY

## Maestro beam&wall

**Maestro beam&wall** is the software entirely developed by Scm that interprets files in "bti" format exported by the main design CADs of the sector and automatically transforms them into programs to be run on the machine, choosing the best machining strategies and associating the necessary tools to the paths, in order to execute the geometries of the input file.



**OPEN AND INTEGRATED**



**PROGRAMMING FREEDOM**



**FAST WORKFLOW**

**"FROM SCREEN TO MACHINE"** to carry out even complex projects with highest production efficiency.



**Maestro beam&wall** makes programming in the office and operations on the machine easy.

The software also features an integrated function for production with **nesting technology** and a high-performance **3D simulator**.

## SOFTWARE

### SOFTWARE FOR TIMBER CONSTRUCTION

Maestro beam&wall

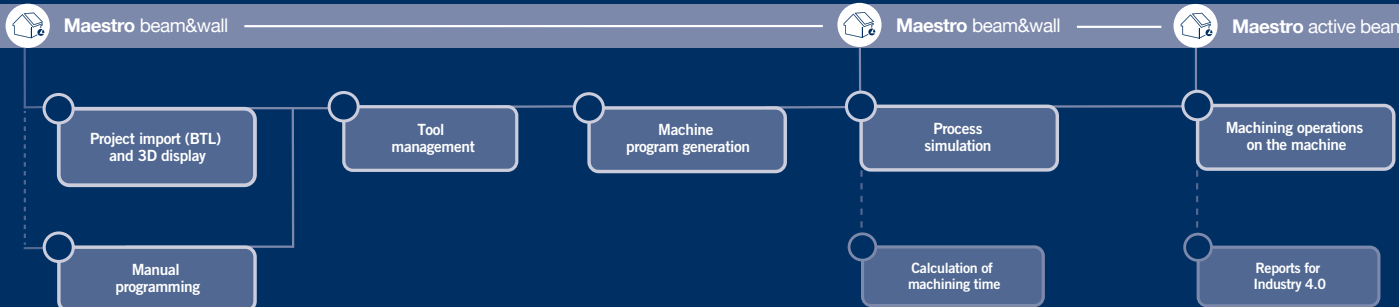
Maestro active beam&wall

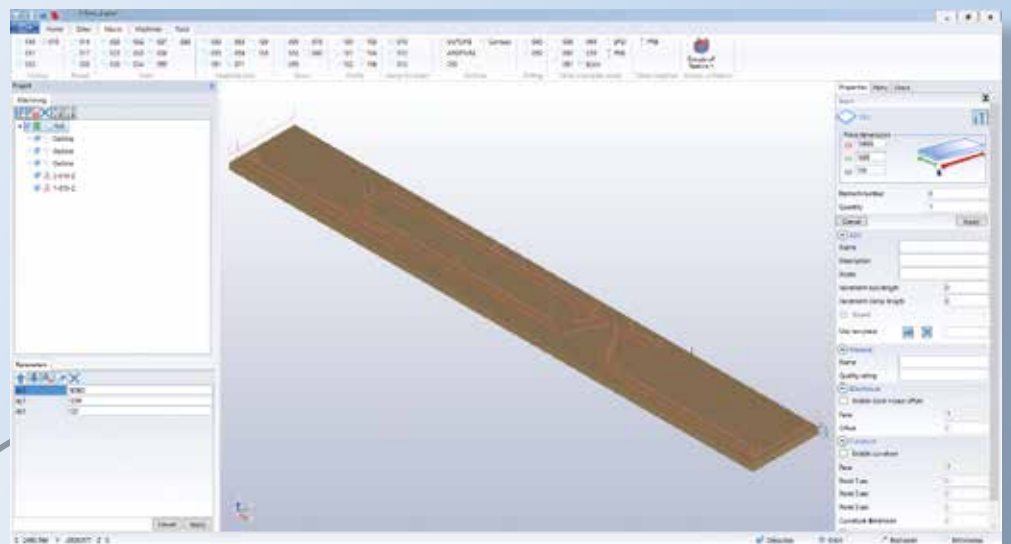
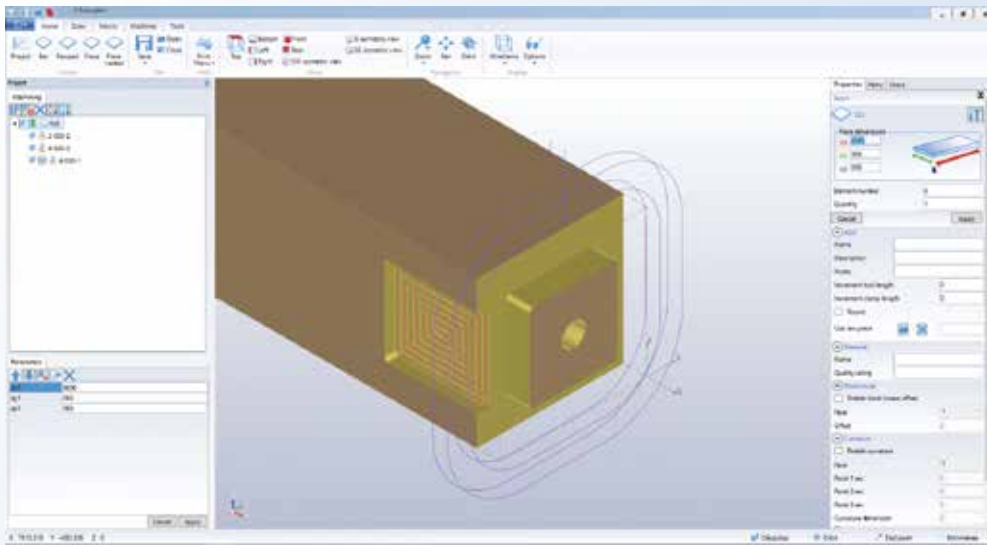
Maestro beam&wall

Maestro beam&wall

Maestro active beam&wall

### WORKFLOW SOFTWARE FOR TIMBER CONSTRUCTION

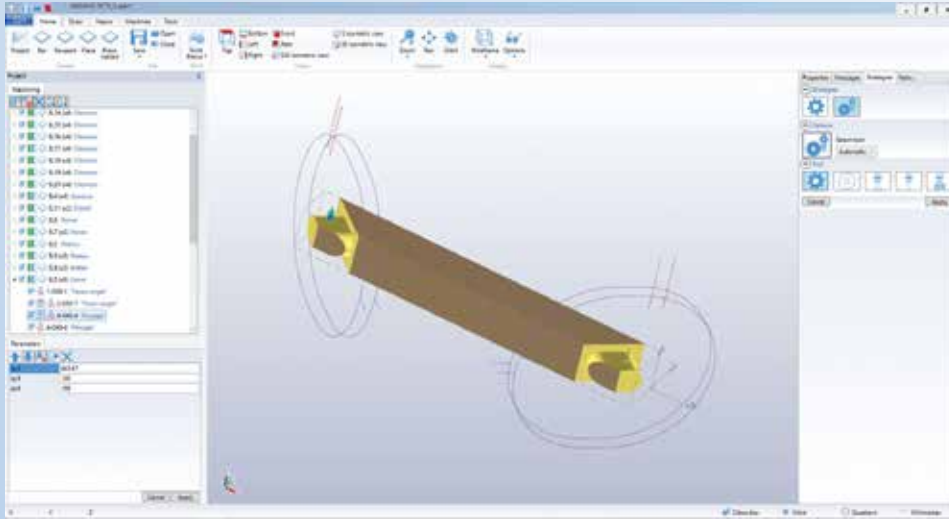






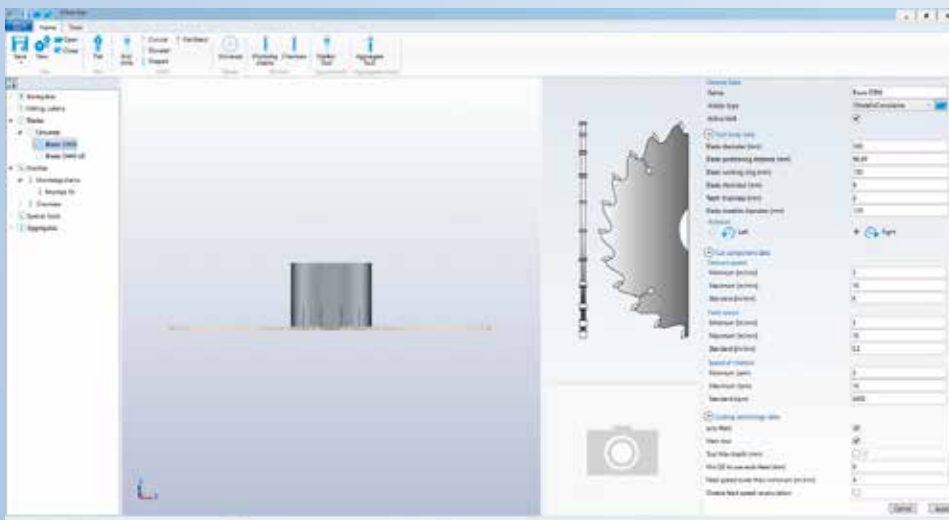
# SOFTWARE

## Maestro beam&wall



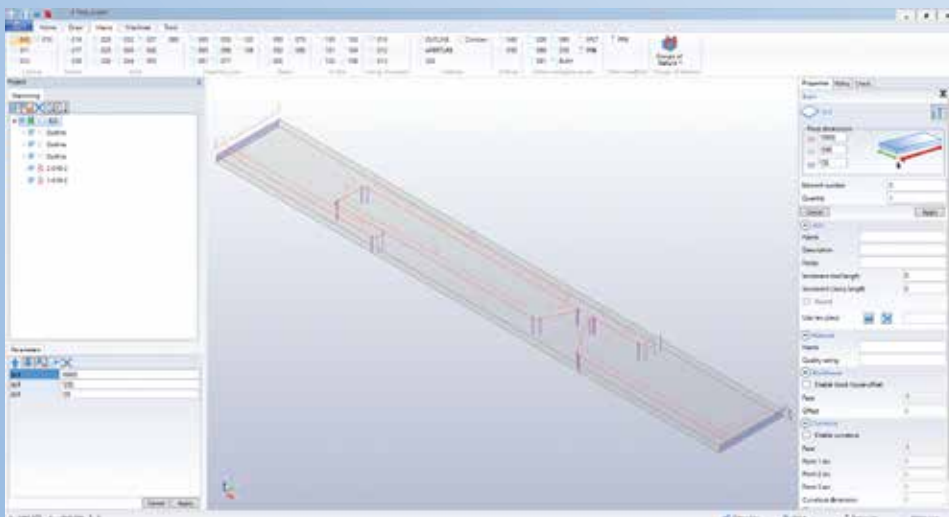
### PROGRAMMING ENVIRONMENT

Dedicated to the development, analysis and check of projects and single operations applied. It is possible to manually create also new elements by adding operations from the library of available macros.



### TOOL MANAGEMENT ENVIRONMENT

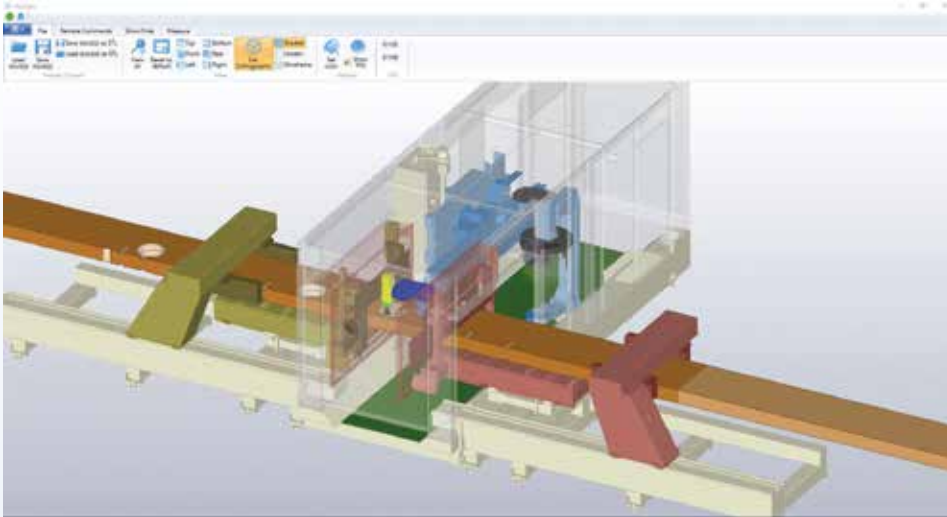
Dedicated to the graphic display and management of different tool sets. It is possible to create new tools and aggregates by choosing from a wide range of pre-configured models and simply modifying the relative geometric and technological parameters.



### NESTING TECHNOLOGY

The software includes the function for production with nesting technology; it allows importing and processing of projects composed of modular elements obtained from rough panels of up to 1,250 mm width.





## 3D SIMULATOR

High-performance simulation environment that allows programs to be tested in advance, i.e. before the actual machining operation. The 3D simulator is available both on the PC in the office and on the machine.

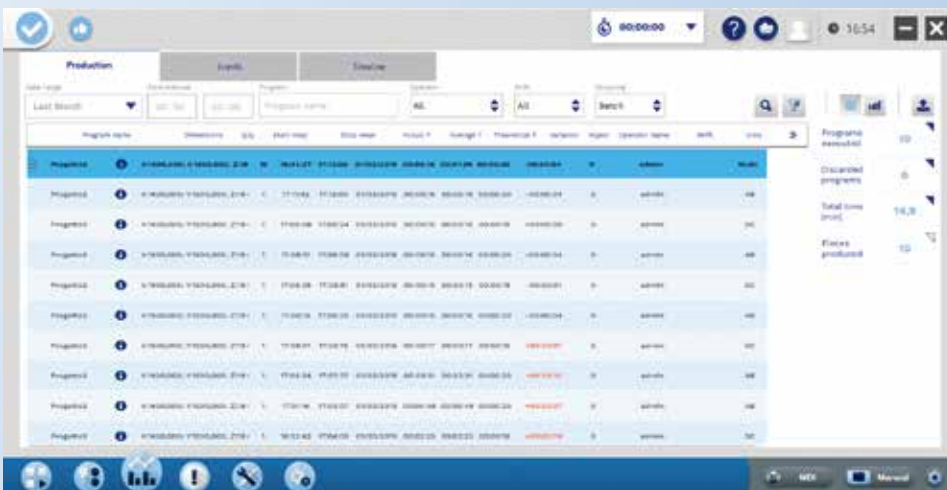
This results in numerous advantages for the customer:

- Elimination of collision risks
- Elimination of programming errors
- Elimination of downtime
- Calculation of production time and costs.



## EXECUTION ENVIRONMENT

On the operator console, it allows the automatic optimisation of the elements inside the raw bars and the subsequent launch of the program on the machine.



## INDUSTRY 4.0

Possibility of generating Industry 4.0 reports.

# APPLICATIONS



Photos by Alex Schreyer / UMass

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6-axis machining centre for structural beams and columns





# TECHNICAL DATA

WORKPIECE DIMENSIONS AT INFEEED		
Max. Cross-section	mm	1250x500
Min. Cross-section	mm	50x20
Max. Length	mm	9000-13500-19000
Max. Weight	kg	4000
ELECTROSPINDLE		
Max. Power at 6000 rpm (S1)	kW	24
Max. Speed rotation	rpm	16000
Max. Torque	Nm	55
AXES		
X-axis speed	m/min	107
Y-axis speed	m/min	75
Z-axis speed	m/min	28
TOOL STORES		
Rapid 15	n° positions	15
Chainsaw aggregate	n° positions	1
Sawblade aggregate	n° positions	1
Mortise chain aggregate	n° positions	1
INSTALLATION		
Nominal compressed air pressure	bar	6,5
Compressed air consumption	l/min	1300
Suction air consumption	m3/h	8000
Suction outlet D250	n°	2
Suction outlet D120	n°	1
Machine weight	kg	from 19000 to 24000

**COMPANY WITH  
QUALITY SYSTEM  
CERTIFIED BY DNV  
ISO 9001**

*The technical data can vary according to the requested machine composition. In this catalogue, machines are shown with options. The company reserves the right to modify technical specifications without prior notice; the modifications do not influence the safety foreseen by the CE Norms.*

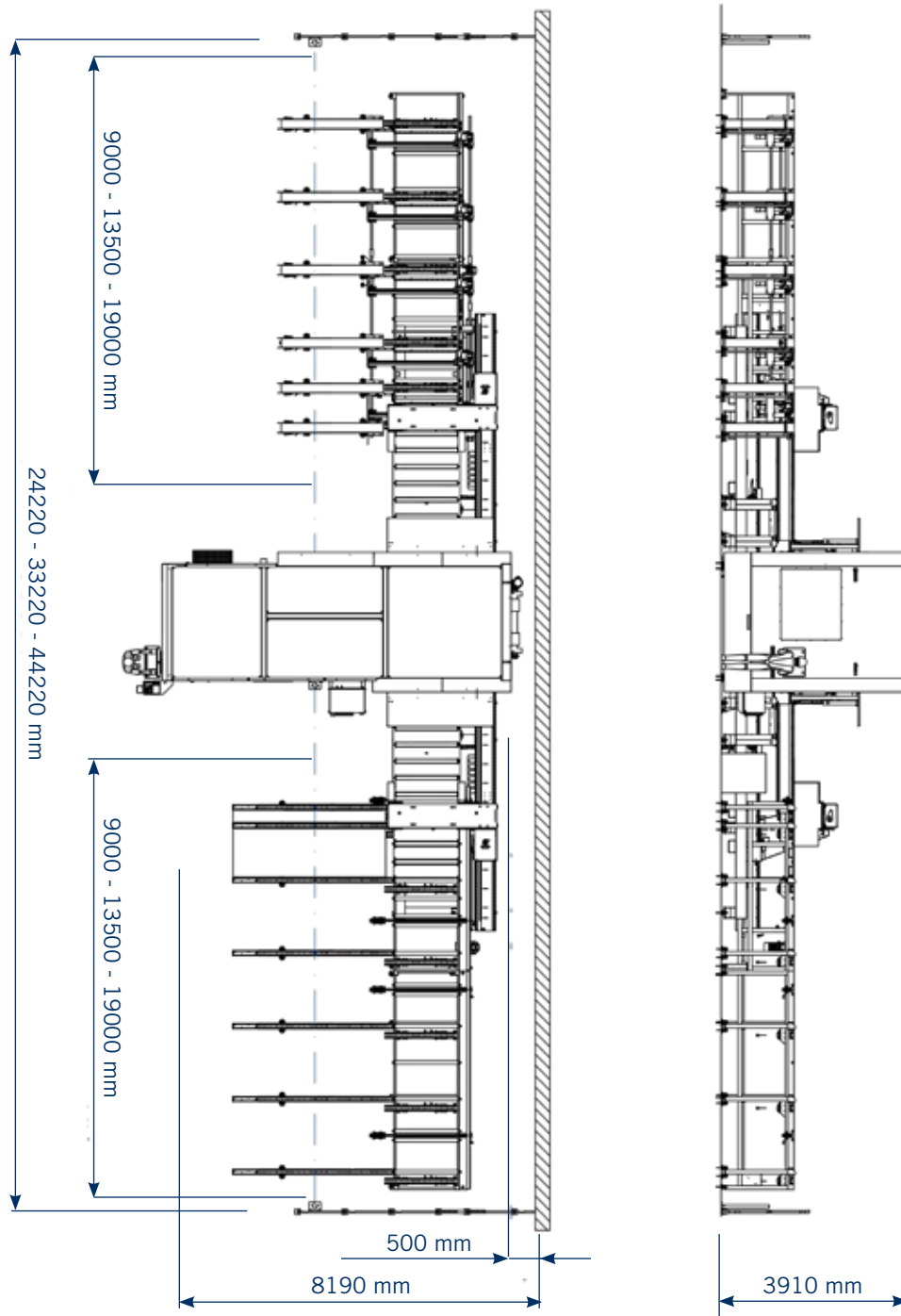
*Maximum recorded noise levels based on functioning parameters established by EN 848-3:2012.*

*Acoustic pressure while working 78,4 dB(A) (measured according to EN ISO 11202:2010, K variance = 4dB).*

*Acoustic power while working 100,6 dB(A) (measured according to EN ISO 3746:2010, K variance = 4dB).*

*Despite the existence of a correlation between "conventional" noise emission values mentioned above and average personal exposure of the operators during the 8 hours, these also depend on the specific functioning conditions, length of exposure, acoustics characteristics of the working environment and by the presence of additional sources of noise, that is the number of machines and adjacent processes.*





WATCH THE VIDEO OF **OIKOS XL**





**SERVICE AND MAINTENANCE**



**TRAINING SERVICE**



**SPARE PARTS**



**DIGITAL SERVICES**

SCM OFFERS A FULL RANGE OF **HIGHLY SPECIALISED SERVICES** WITH A QUALITY AND RELIABILITY THAT STEM FROM 70 YEARS OF EXPERIENCE IN THE INDUSTRY.

From installation and production start-up to services and maintenance. From training to the supply of specific original spare parts: **we provide solutions designed around you!**

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My Scm

# WE'LL GO THE EXTRA MILE FOR YOU



## SERVICE AND MAINTENANCE

- Remote support
- Scheduled maintenance contracts
- Warranty extension



## TRAINING SERVICE

- Courses for machine operators
- Software and programming courses
- Training in production start-up



## SPARE PARTS

- Recommended spare parts list
- E-shop
- Interactive spare-parts catalogues
- Repairs on electronic parts, glue tanks and electro-spindles



## DIGITAL SERVICES

- Maestro Connect - IoT platform to be constantly connected with your machines
- Smartech - assistance with augmented reality
- My Scm portal - opening of service ticket and single point of access to the apps and Services tools



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