





# MORBIDELLI X200 / X400



## ... BUT WE HAVE ALREADY DESIGNED IT

Class







## FREE



Fully safe machining, both in PRO-SPEED and PRO-SPACE version with the bumpers safety system.

Accessible and ergonomic 360° all around, no floor obstructions: all the components are within the base.

**Optimizing the space** in your factory thanks to the solution without perimetral fences.

## **TOP QUALITY**



Unrivalled finishing with new direct drive JQX (Just Quality eXtreme) 5-axis electrospindle.

Reduced maintenance, thanks to the RO.AX (Rotoaxial spindle technology) drilling bits, recommended only after more than 1,000 hours of machining.

60% of time saved on drilling cycles with the new drill-bits designed to guarantee the best effectiveness on all types of material and any style of construction.

FASTER



Beyond imagination, more than 50 tools always available on board.

Faster machining cycles thanks to the FAST tool changer with up to 18 positions.

Maximum speed, nesting processing at 50 m/min is now a reality.

## **FLEXIBLE**

## **MODULAR**



Total flexibility with an operating group configurability unique to the market.

From wood to plastic, from panel to furniture, from kitchen doors to windows. The right solution configured for all your needs and your investment plan.

Sturdy, practical and resistant "HE" (High Efficiency) or "PHE" (Phenolic High Efficiency) work tables.

**No limit** for the work piece machining with thickness from 150 up to 180 mm.



The perfect solution to simplify work: cell version, available to configure the machine no matter the material flow required.









CAD/CAM programming software to design all the production process. Maestro cnc allows easy, quick and errorless machine management.

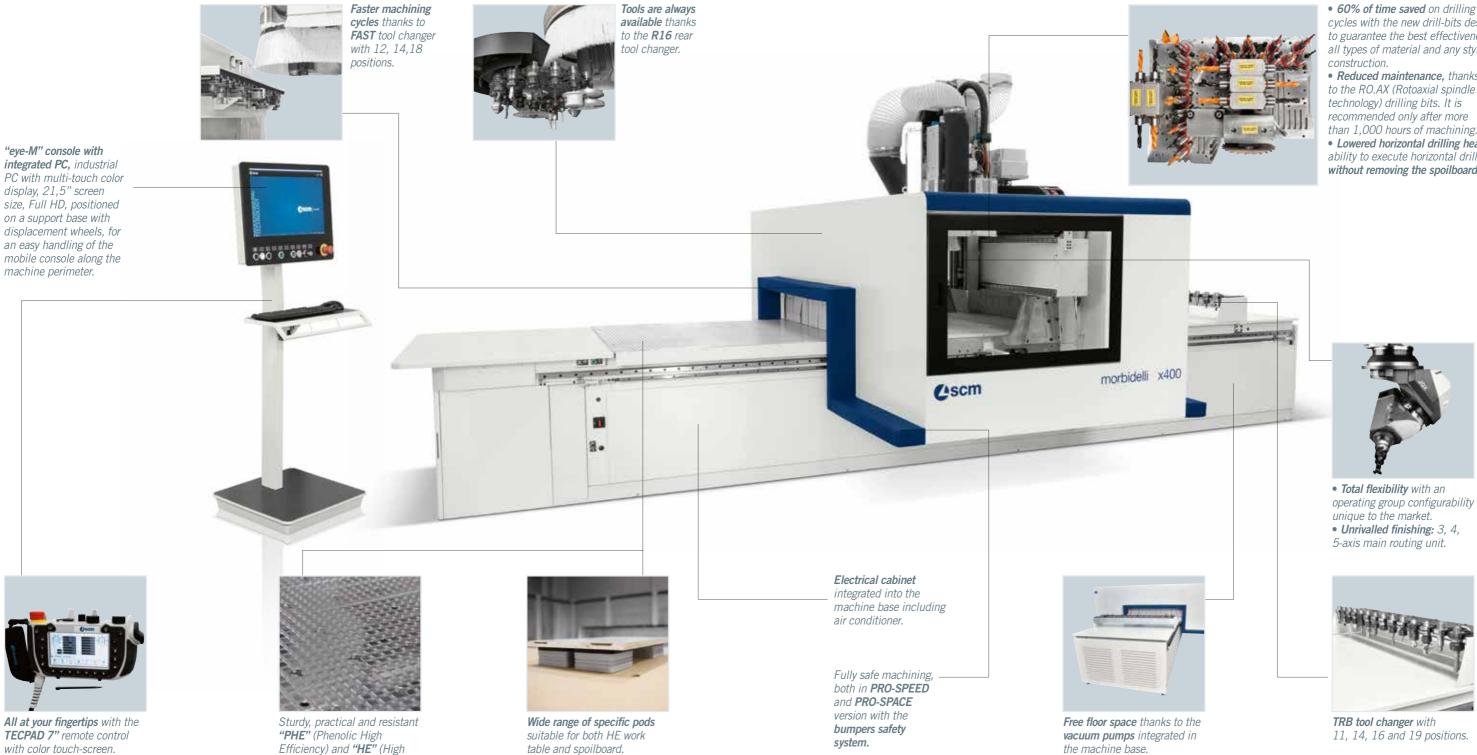


# **TECHNICAL FEATURES OVERVIEW**

Efficiency) work tables.

TECHNOLOGICAL ADVANTEGES

The new generation of 3, 4, 5-axis CNC nesting centres for drilling and routing. Models are also available in cell version with both automatic loading and unloading belt.



### morbidelli x200/x400 CNC nesting machining centres for drilling and routing

• 60% of time saved on drilling cycles with the new drill-bits designed to guarantee the best effectiveness on all types of material and any style of construction.

• Reduced maintenance, thanks to the RO.AX (Rotoaxial spindle technology) drilling bits. It is recommended only after more than 1,000 hours of machining. • Lowered horizontal drilling heads:

ability to execute horizontal drilling without removing the spoilboard.

TRB tool changer with 11, 14, 16 and 19 positions.



## SAFETY SYSTEMS

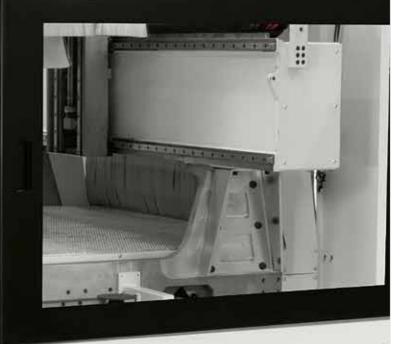
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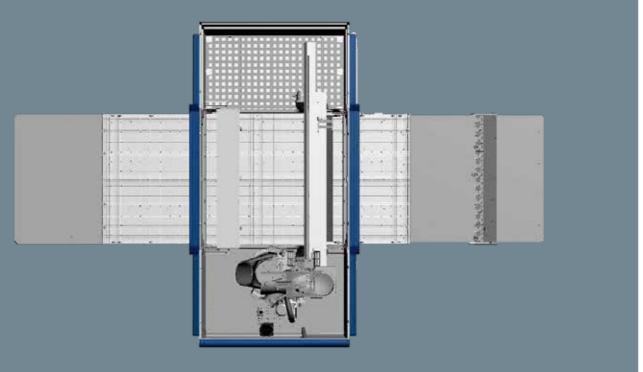
#### **GUARANTEED SAFETY: BUMPERS PROTECTIONS**

Fully safe machining with the bumpers safety system which locks the machine only in case of accidental contact with the operator.



#### MINIMUM OVERALL DIMENSIONS, MAXIMUM SAFETY AND FLEXIBILITY: PRO-SPACE

The absence of perimeter fences facilitates the work table access on all the sides of the machine; panels can be loaded and unloaded from both the rear and front side thanks to the control devices located on both sides. The protections allow the machine to be used with a feed speed up to 25 m/min along the horizontal X-axis.

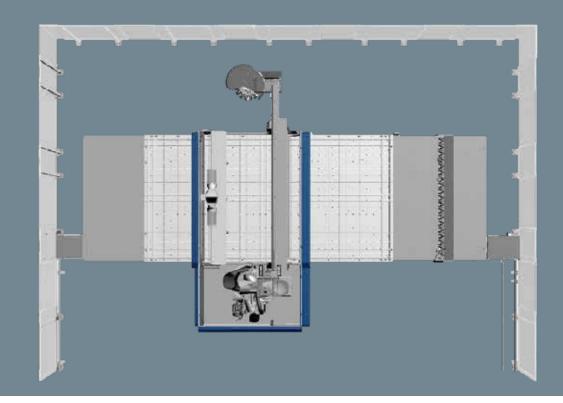


#### TOTAL FREEDOM AND HIGH PRODUCTIVITY: PRO-SPEED

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Protection system for the machine use to the maximum speed. When the operator enters into the loading area, which is delimited by the front photocell barrier, the machine automatically reduces the speed; when the operator leaves the loading area, the system restores the maximum speed.

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# OPERATING UNIT: DRILLING UNIT

Saves 60% of time on drilling cycles thanks to the wide range of drilling heads, also with double saw-blade, designed to meet every

machining need and to increase its effectiveness on every type of furniture component optimizing the implementation of any drilling pattern.

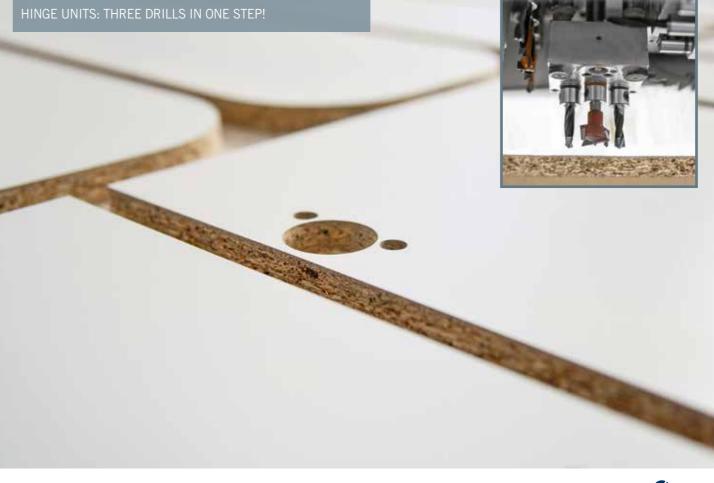
GREASE KLÜBER

GREASE KLÜBER ISOFLEX NBU15

GREASE KLÜBER

Reduced maintenance, thanks to the RO.AX (Rotoaxial spindle technology) drilling bits. It is recommended only after more than 1,000 hours of machining.







GREASE NUÜBER ISOFLEX NBUTS



Lowered horizontal drilling heads: ability to execute horizontal drilling without removing the spoilboard.





## OPERATING UNIT: DRILLING UNIT

Optimal machining precision with the **3 and 4-axis** electrospindles up to **24.000 rpm**.





#### MAXIMUM EFFICIENCY IN ALL MACHINING SITUATIONS: PRESSURE ROLLERS

Perfect holding down of small components or in conditions of reduced vacuum holding, thanks to the pressure rollers. The rollers are also ideal for the machining of overlapped panels. In case of machining where their use is not foreseen, the rollers are excluded maintaining unchanged the machine performance.









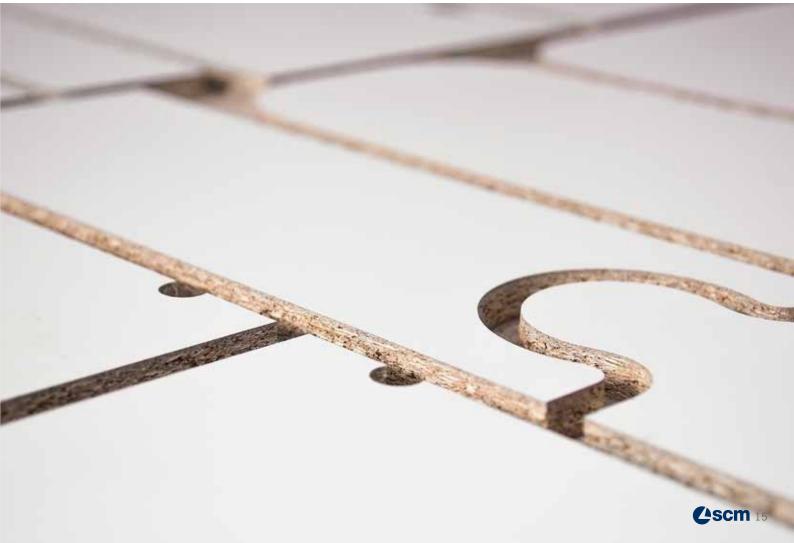
## **OPERATING UNIT: ADDITIONAL UNITS**



Easy cutting and grooving operations along X and Y direction thanks to the 0°-90° blade unit.





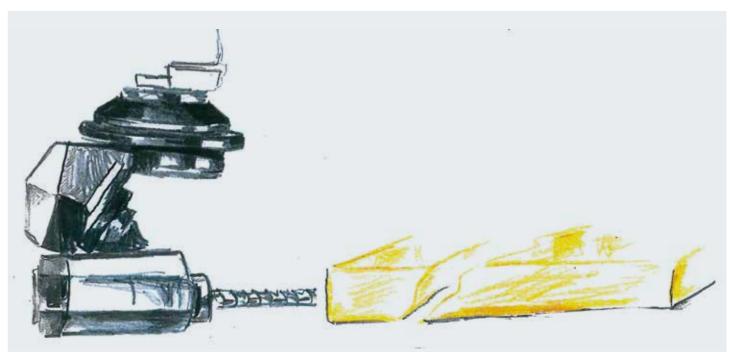




Higher efficiency and machining time reduction with the up to 5,4 kW additional routing unit.

# NOT ONLY NESTING





#### THE BEST SOLUTION FOR THOSE LOOKING FOR A FLEXIBLE AND PRACTICAL PRODUCT BUT WITH HIGH LEVEL PERFORMANCE



#### JQX ELECTROSPINDLE

Very high finishing quality with the JQX (Just Quality eXtreme) 5-axis electrospindle, with direct drive and up to 13,5 kW power, which ensures total absence of vibrations even with large material removals at high speeds.













TRB side tool changer with up to 19 positions.

## THE BEST IN ITS CLASS, UP TO 53 TOOLS AVAILABLE ON BOARD: ALWAYS READY TO MACHINE ANY PIECE

Faster machining cycles with the up to 18 position **FAST** tool changer: less than 15" for the tool change thanks to the linear tool changer directly installed on the mobile unit.





One position **"Pick-up"** tool changer fitted on the mobile cross beam. Ideal set-up for tools and large sized angular heads.





Many tools always available thanks to the **R16** rear tool changer.

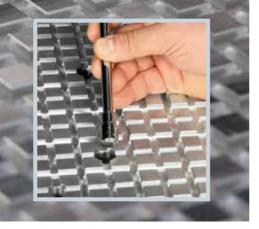


## TOOL LENGTH DETECTION DEVICE

Positioned on the machine base side, it allows to automatically detect the length of the tool.



## WORK TABLES



#### DESIGNED FOR EFFICIENCY AND SAVING: "HE" (High Efficiency) WORK TABLE

Sturdy and practical work table, resistant over time thanks to its laminate aluminum structure. Easy and quick setting with the magnetic locking system of the vacuum: in a few seconds the vacuum is activated only in the positioning area of the piece to be machined.

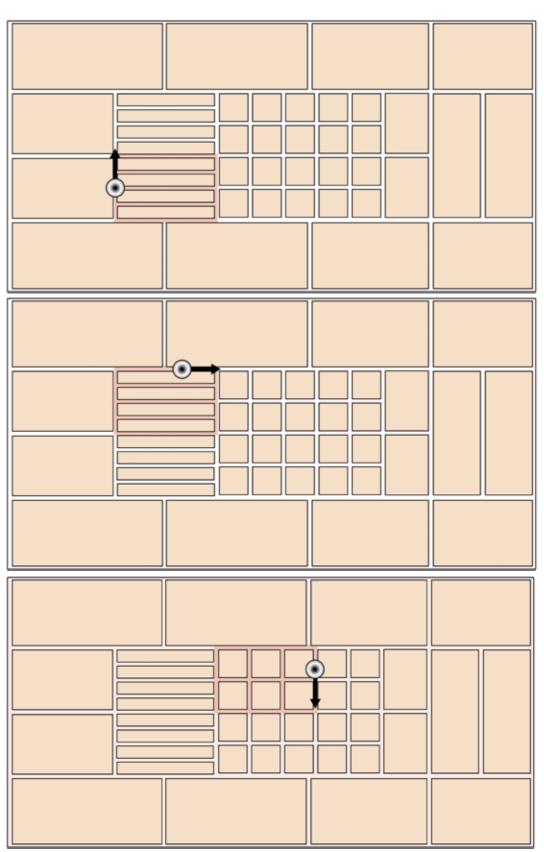


Maximum workpieces locking only where needed:

starting at 2 increasing up to 30 vacuum zones according to the table size.

#### X-VACUUM

Maximum vacuum holding capacity for processing small workpieces or highly breathable materials.



The vacuum is condensed into the area of the worktable where the workpiece is being processed.



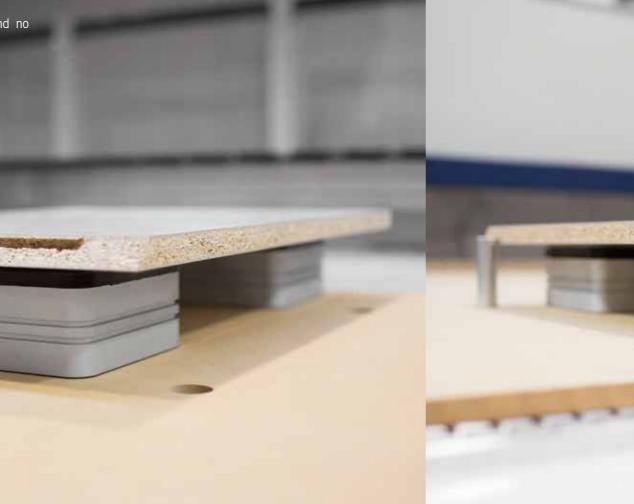


## WORK TABLES: ACCESSORIES

Available also a wide range of specific pods suitable also for HE or PHE work tables, when spoilboard is not used.



Any machining process without removing the spoilboard and no obstacles thanks to the tubeless X-PODs.









## **LOADING/UNLOADING AUTOMATION**

No dust with the aspiration systems to eliminate any machining waste:

- adjustment or vertical NC managed adjustment;

Precise and rapid panels positioning on the work table with a



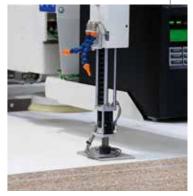


High productivity: the pusher moves the processed work pieces on the unloading belt and simultaneously cleans the work table while the new panel to be machined is loaded.

The guides hold the workpieces of all shapes at the outfeed table to avoid any possibility of them falling off.

Lifting table for the management of panels stacks with height up to 700 mm.

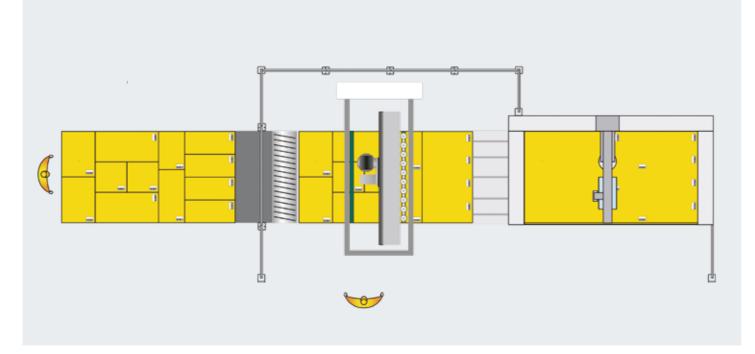
Complete machining cycle with the automatic labeling station that operates in hidden time directly on the stack of panels.

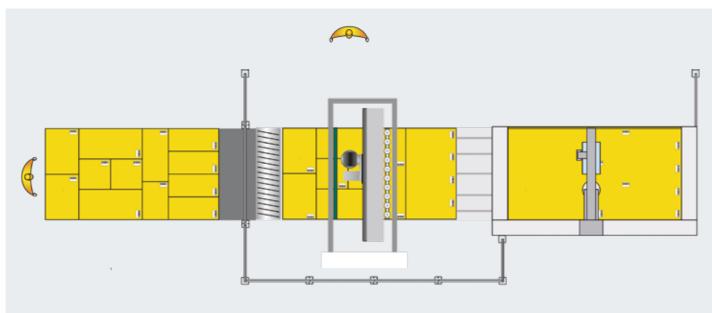




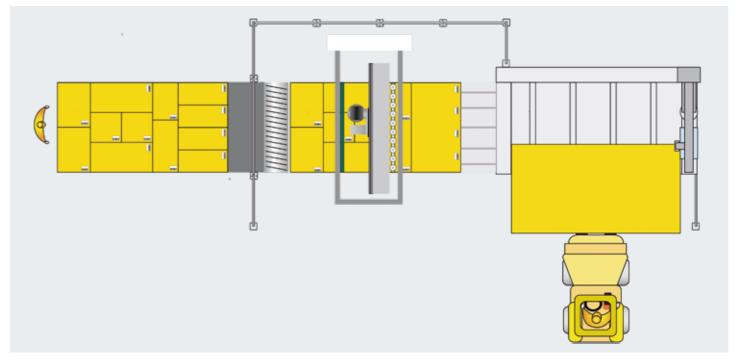
# LOADING/UNLOADING AUTOMATION

No restrictions on material flow, from right to left or from left to right in both PRO-SPEED and PRO-SPACE versions.



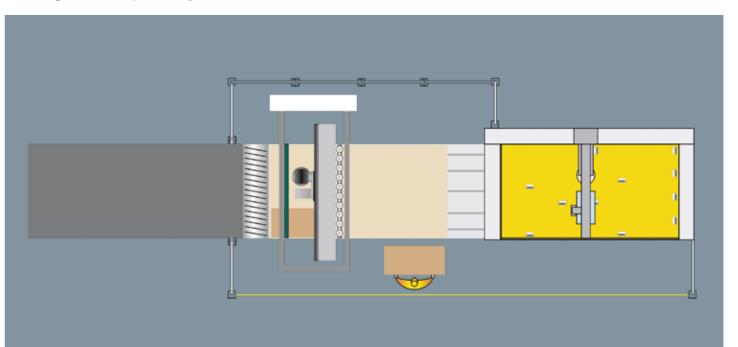


#### Non-stop machining cycles, thanks to the ability to load a new stack in hidden time.



#### MANUAL LOADING AND UNLOADING

Total flexibility: the cell can also be used as a stand-alone machining centre without removing the spoilboard with the ability of pendulum machining to maximize productivity.





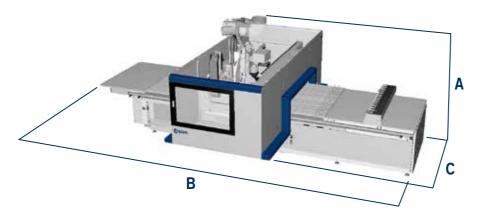


## **OVERALL DIMENSIONS PRO-SPACE**

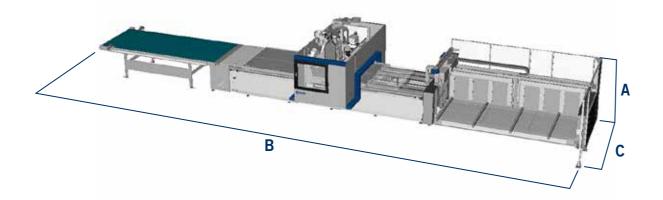
\* It includes the operating area

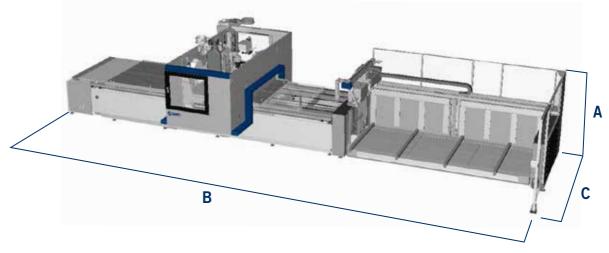
STAND-ALONE		Α	В	С
morbidelli x200/x400 1224	mm	2610/2790	6110/6350	3965/4465
morbidelli x200/x400 1531	mm	2610/2790	6710/6950	4265/4765
morbidelli x200/x400 1536	mm	2610/2790	7310/7550	4265/4765
morbidelli x200/x400 1836	mm	2610/2790	7310/7550	4565/5065
morbidelli x200/x400 2231	mm	2610/2790	6710/6950	4885/5385
morbidelli x200/x400 2243	mm	2610/2790	7910/8150	4885/5385

LOADING AUTOMATION	
morbidelli x200/x400 1224	mm
morbidelli x200/x400 1531	mm
morbidelli x200/x400 1536	mm
morbidelli x200/x400 1836	mm
morbidelli x200/x400 2231	mm
morbidelli x200/x400 2243	mm

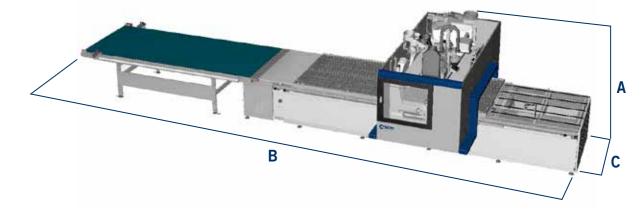


LOADING/UNLOADING AUTOMATION		Α	В	C
morbidelli x200/x400 1224	mm	2610/2790	10870	3890/4790
morbidelli x200/x400 1531	mm	2610/2790	12670	4190/5090
morbidelli x200/x400 1536	mm	2610/2790	14470	4190/5090
morbidelli x200/x400 1836	mm	2610/2790	14470	4490/5390
morbidelli x200/x400 2231	mm	2610/2790	12670	4810/5710
morbidelli x200/x400 2243	mm	2610/2790	16270	4810/5710





UNLOADING AUTOMATION	
morbidelli x200/x400 1224	mm
	111111
morbidelli x200/x400 1531	mm
morbidelli x200/x400 1536	mm
morbidelli x200/x400 1836	mm
morbidelli x200/x400 2231	mm
morbidelli x200/x400 2243	mm



В	С
9000/9050	3890/4790
10200/10250	4190/5090
11400/11450	4190/5090
11400/11450	4490/5390
10200/10250	4810/5710
12600/12650	4810/5710
	9000/9050 10200/10250 11400/11450 11400/11450 10200/10250

Α	В	С
2615/2790	8300/8490	3890/4790
2615/2790	9500/9690	4190/5090
2615/2790	10700/10890	4190/5090
2615/2790	10700/10890	4490/5390
2615/2790	9500/9690	4810/5710
2615/2790	11900/12090	4810/5710

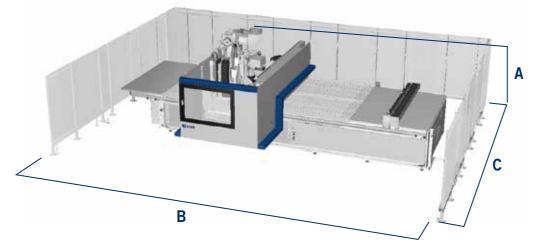


## **OVERALL DIMENSIONS PRO-SPEED**

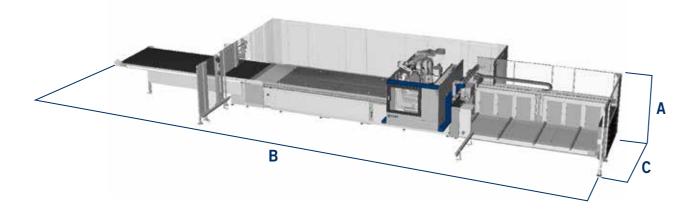
\* It includes the operating area

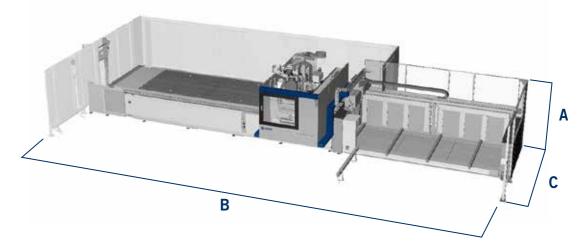
STAND-ALONE		Α	В	С
morbidelli x200/x400 1224	mm	2610/2790	6570	4190/5060
morbidelli x200/x400 1531	mm	2610/2790	7170	4490/5360
morbidelli x200/x400 1536	mm	2610/2790	7770	4490/5360
morbidelli x200/x400 1836	mm	2610/2790	7770	4790/5660
morbidelli x200/x400 2231	mm	2610/2790	7170	5110/5980
morbidelli x200/x400 2243	mm	2610/2790	8370	5110/5980

LOADING AUTOMATION	
morbidelli x200/x400 1224	mm
morbidelli x200/x400 1531	mm
morbidelli x200/x400 1536	mm
morbidelli x200/x400 1836	mm
morbidelli x200/x400 2231	mm
morbidelli x200/x400 2243	mm

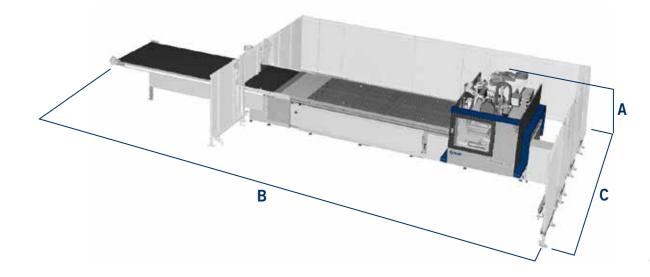


LOADING/UNLOADING AUTOMATION		Α	В	С
morbidelli x200/x400 1224	mm	2610/2790	10870	4500/4920
morbidelli x200/x400 1531	mm	2610/2790	12670	4800/5220
morbidelli x200/x400 1536	mm	2610/2790	14470	4800/5220
morbidelli x200/x400 1836	mm	2610/2790	14470	5100/5520
morbidelli x200/x400 2231	mm	2610/2790	12670	5420/5840
morbidelli x200/x400 2243	mm	2610/2790	16270	5420/5840





UNLOADING AUTOMATION		Α	В	С
morbidelli x200/x400 1224	mm	2610/2790	8480/8670	4500/4920
morbidelli x200/x400 1531	mm	2610/2790	9680/9870	4800/5220
morbidelli x200/x400 1536	mm	2610/2790	10880/11070	4800/5220
morbidelli x200/x400 1836	mm	2610/2790	10880/11070	5100/5520
morbidelli x200/x400 2231	mm	2610/2790	9680/9870	5420/5840
morbidelli x200/x400 2243	mm	2610/2790	12080/12270	5420/5840



Α	В	С
2610/2790	9000/9000	4500/4920
2610/2790	10200/10240	4800/5220
2610/2790	11400/11450	4800/5220
2610/2790	11400/11450	5100/5520
2610/2790	10200/10240	5420/5840
2610/2790	12600/12640	5420/5840



# Maestro Digital Systems

SMART SOFTWARE AND DIGITAL SERVICES TO ENHANCE PRODUCTIVITY OF WOODWORKING AND FURNITURE INDUSTRIES.

SCM accompanies woodworking companies throughout their whole process combining machines with matching software solutions and digital services, with a constant strive to enhance company productivity.

The software solutions powered by SCM are developed to optimize machine usage as well as the entire process, providing integration with the different software existing in the company.



## Maestro cnc

In the office, before the production, the design and programming system Maestro cnc ensures that routing, drilling or sawing can guickly and easily be programmed thanks to 3D graphics of work pieces and machining and clamping aids as well as a smart App and macros library to program any machine operation with a mouse click. Another click away and CNC programs are automatically generated.

## SOFTWARE

## Maestro cnc

## THE SOFTWARE THAT SIMPLIFIES THE WORK

CAD/CAM programming software to design all the production processes. Developed in Windows® environment it ensures easy programming with an advanced, simple and intuitive sketching environment that features all the tools necessary to design the parts, their layout on the work table, tools management and the relative machining operations. All the procedures are contained in a perfectly integrated and high performance software.

## ADDITIONAL FUNCTIONS

#### Maestro pro view - Unique 3D display $\langle ( \mathbf{O} \rangle \rangle$

3D Simulator that allows users access to a three dimensional model of their machine in their office and view the operations that will be carried out during the production in advance on their PC.

#### **Maestro** 3d - Unique in the creation of 3D objects

The module integrated in the Maestro suite is designed to program three dimensional objects on 5-axis machining centres.

#### Maestro apps - Unique know-how

Maestro apps is a library of programming functions that are always available and easy to use, developed by SCM for the production of parts for doors, windows, stairs, furniture and furnishings,

## Maestro msl connector - Total integration

Connector for third-parties with design software.

### SPECIALISED MACHINING

#### Maestro cabinet - Unique in the creation of furniture

This application is designed for the home and office furniture sector to design furniture and program cabinet production step by step.

#### **Maestro** nest - Unique nesting process

The module integrated in the Maestro suite provides all the functions necessary to manage the "nesting" process: from a simple "rectangular" piece to the most varied and complex "free form" geometrical shapes.

#### Maestro label - Unique labeling process

Integrated module to manage label's models, which develops labels by inserting texts, images, parameters and the main barcode formats.

# Maestro active cnc

Maestro active is the new operator interface software which has been unified across all SCM technologies. A single operator can easily and confidently run multiple machines due to controller and interface consistency: regardless the machine, Maestro active maintains the same look&feel, with many identical icons and navigation buttons, thus ensuring the same approach to interaction.

#### EASE OF USE

The new interface has been specifically designed and optimized for immediate use via touch screen. Graphics have been redesigned for simple and comfortable navigation, with tablet-like icons on touch screen controller.

#### "ZERO" ERRORS

Improved productivity thanks to integrated help and recovery procedures that reduce the possibility of error from the operator's side.

## SOFTWARE

## Maestro active cnc

## A REVOLUTIONARY **APPROACH TO INTERACT WITH YOUR SCM MACHINE**

events or notifications

occurred in each shift.

to be executed.





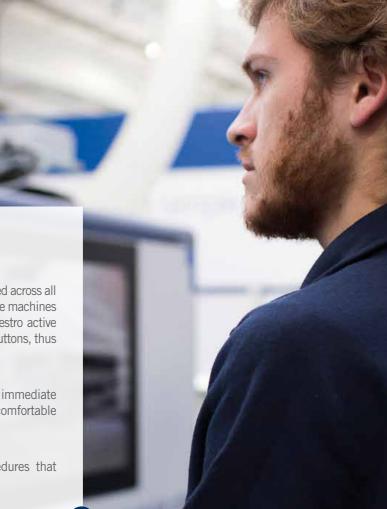


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#### FULL CONTROL OF PRODUCTION PERFORMANCES

The creation of customizable reports by operator, shift, program, forecast period (and much more) allows to monitor, optimize and improve the production performance.

#### FULL MACHINE AWARENESS AND KNOWLEDGE MANAGEMENT SYSTEM

Maestro active allows to record the times related to setup, maintenance, training and other events, tracing all the activities in a database. The operator's know-how is also stored and made available to other people inside the organization thanks to the possibility to comment and document all production

#### **ORGANIZE YOUR PRODUCTION**

Maestro active allows to create different users with different roles and authorizations (e.g.: operator, maintainer, administrator, ...). Any user can only execute the functions whose permissions have been assigned to him. It is also possible to define the work shifts on the machine and then detect activities, productivity and events that

### TOTAL QUALITY OF THE FINISHED PRODUCT

With Maestro active the quality of the finished piece is no longer put at risk by worn tools. The new Maestro Active Tool Life Determination system sends notification messages as the tool reaches its end of life and recommends its replacement at the most appropriate time.

#### **TOOLS? NO PROBLEM!**

Maestro active guides the operator during the magazine tooling phase, taking into account the programs



## A WORLD OF SERVICES FOR GREATER

# **TECHNICAL DATA**

## Maestro connect

#### CONNECT YOUR MACHINE AND GAIN ACCESS TO A WORLD OF SERVICES

Connecting your machine through Maestro connect will let you subscribe a program of fastevolving services. You will access a wide range of benefits that even go beyond the machine experience and will support and assist you through the whole life-cycle of your machine.

#### FASTER SERVICE INTERVENTION AND PROBLEM RESOLUTION

Maestro connect provides real time data and Health Records of the Machine also to SCM Service drastically reducing its troubleshooting time.

#### WORKING ALWAYS IN PERFECT CONDITIONS

Maestro Connect can provide a full kit of sophisticated sensor devices to detect and warn the operator in case of alarming conditions of the machine.

## **DIGITAL SERVICES**

#### **SMART MAINTENANCE:** DOWN TIME REDUCTION

Maestro connect reduces maintenance downtime thanks to:

- automatic maintenance notifications and scheduling, to prevent failures and work in the best conditions of use
- direct connection to SCM Service thanks to an automatic ticket opening function

#### **SMART MACHINE:** ANYTIME, ANYWHERE AWARENESS

Connecting your SCM machine also means having your machine always at hand. Immediate instant notifications in case of alarms or downtimes allow customers to immediately take an action thus optimizing his productivity.

#### **SMART MANAGEMENT:** PRODUCTION PERFORMANCE OPTIMIZATION

Reports and KPIs allow further analysis thus increasing Customer Knowledge about his performance and results.

#### **SMART PARTS:** FAST PARTS REPLENISHMENT

Repairs are scheduled proactively since the system provides Spare Parts suggestions and a direct Integration with Smart Parts e-shop

#### SMART LEARNING: EXECUTE WORK AND RECEIVE PROBLEM SOLVING SUPPORT

Maestro connect provides an intuitive Problem Solving Management System to help the operator to self solve any issue.

#### **SMARTECH:** FASTER AUGMENTED SUPPORT

Maestro connect allows augmented reality support by means of Smartech: the head-wearable computers with wireless connectivity that will bring the interaction between customer and SCM service to a higher level.

#### **SMART WARRANTY:** YOUR MACHINE ALWAYS IN PERFECT CONDITIONS

Together with scheduled maintenance contracts, you can take care of your asset by doubling the warranty from 1 year to 2 years\* for complete peace of mind! \* please read the complete contract to understand terms and conditions.



## THE USE OF POWER ONLY WHEN IT IS REQUIRED

Sav€nergy allows making things operate only when they are really necessary. It means the machine automatically enters "stand-by" mode when there are no panels to be machined.

#### COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV GL = 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 noise levels measured according to the operating conditions established by EN 848-3:2012 Acoustic pressure in process (routing) 81 dbA (measured according to EN ISO 11202:2010, uncertainty K = 4 dB) Acoustic power in process (routing) 98 dbA measured according to EN ISO 3746:2010, uncertainty K = 4 dB) Even if there is a correlation between above mentioned "conventional" noise emission values and average levels of personal exposure over eight hours of operators, these last also depend on the real operating conditions, duration of exposure, acoustic conditions of the working environment and presence of further noise sources, this means the number of machines and other adjacent processes

morbidelli
AXES
Vectorial speed X-Y axes "PRO-SPACE" version
Vectorial speed X-Y axes "PRO-SPEED" version
Z-axis panel passage
ROUTING UNIT
Motor power (up to) 3-4 axis 5 axis
Rotation speed (max.)
Available tools on tool changer (up to)
DRILLING UNIT
Vertical spindles (max.)
Horizontal spindles (max.)
Rotation speed (max.)
Integrated blade in X, diameter
INSTALLATION
Exhaust air consumption
Exhaust air speed
Exhaust outlet diameter

	x200		x400
m/min		84	
m/min		113	
mm	150		180
(W (hp)	-	15 kW (20,	5) 13,5 (18,4)
rpm		24000	
ositions	38		53
no.		21	
no.		12	
rpm		8000	
mm		125	
m³/h		4430	
m/sec		25	
mm		250	





## **PROMPT AND EXPERT TECHNICAL SUPPORT** THROUGH A NETWORK OF 1000 **TECHNICIANS AND AN INVENTORY** OF 36,000 SPARE PARTS.

HIGHLY SPECIALISED TECHNICIANS, EFFICIENT MANAGEMENT AND 6 SPARE PARTS BRANCHES AROUND THE WORLD GUARANTEE A CLOSE, SAFE AND EFFECTIVE TECHNICAL SUPPORT.

#### **SERVICE**

SCM provides a service that goes beyond the purchase, to guarantee the long term performance of your technological production system and peace of mind for your business.

#### A COMPLETE RANGE OF AFTER-SALES SERVICES

- installation and start-up of machines, cells, lines and systems
- tailored training programs
- telephone support to reduce times and costs when machines are not working
- preventive maintenance programs to guarantee long term performance
- complete renovation of machines and plants to renew the added value of the investments
- custom upgrading to update machines and plants and meet new production requirements

**SPARE PARTS** 

SCM Group can count on 140 spare parts professionals worldwide to meet any request with real time shipments.



Our spare parts inventory, with a value of 12 million euros, covers every single machine SPARE PARTS GUARANTEED



We guarantee also hard to find parts, with 3,5 ion euros invested in "critical" spare parts

he day thanks to the huge inventory available.

#### IMMEDIATE AVAILABILITY Over 90% of orders received are carried out the



**6 BRANCHES AROUND THE WORLD** The spare parts service can count on worldwide support (Rimini, Singapore, Shenzhen, Moscow, Atlanta, São Bento do Sul

**500 SHIPMENTS A DAY** 



# THE STRONGEST **WOOD TECHNOLOGIES ARE IN OUR DNA**

#### SCM. A HERITAGE OF SKILLS IN A UNIQUE BRAND

Over 65 years of success gives SCM the centre stage in woodworking technology. This heritage results from bringing together the best know-how in machining and systems for wood-based manufacturing. SCM is present all over the world, brought to you by the widest distribution network in the industry.

65 years history 3 main production sites in Italy **300.000** square metres of production space **20.000** machines manufactured per year 90% export **20** foreign branches 400 agents and dealers 500 support technicians

**500** registered patents

In SCM's DNA also strength and solidity of a great Group. The SCM Group is a world leader, manufacturing industrial equipment and components for machining the widest range of materials.

## SCM GROUP, A HIGHLY SKILLED TEAM EXPERT IN INDUSTRIAL MACHINES AND COMPONENTS

#### INDUSTRIAL MACHINERY

Stand-alone machines, integrated systems and services dedicated to processing a wide range of materials.

WOODWORKING TECHNOLOGIES

(Ascm

TECHNOLOGIES FOR PROCESSING COMPOSITE MATERIALS, ALUMINIU PLASTIC, GLASS, STONE, METAL

Cms

#### INDUSTRIAL COMPONENTS

Technological components for the Group's machines and systems, for those of third-parties and the machinery industry.

**HITECO** 

SPINDLES AND

ECHNOLOGICA COMPONENTS

#### (Les

FLECTRIC PANELS

**U**steelmec

MFTAI WORK

**(**scmfonderie CAST IRON







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