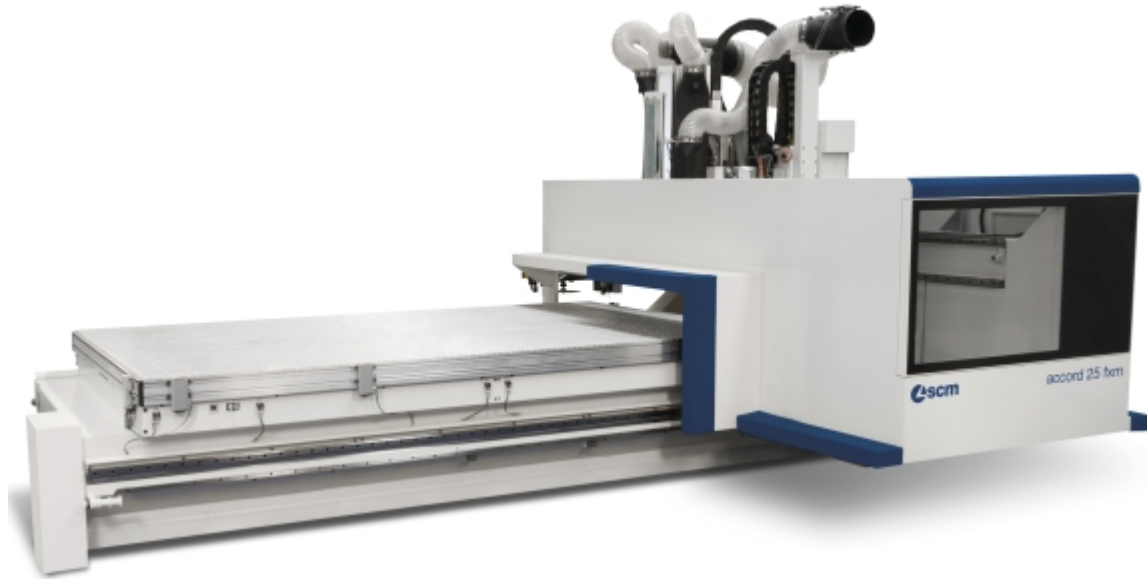


# CNC MACHINING CENTRE SCM accord 25 fxm

First time installed: September 2022 Norway.

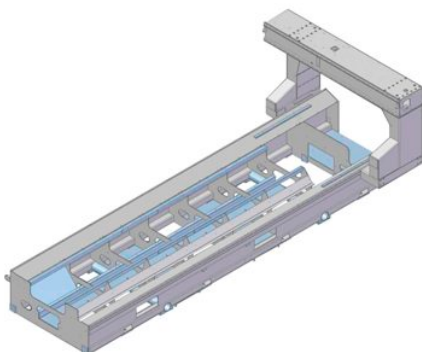


[Illustrations foto](#)

## CONCEPT

Numeric control machining centre, with mobile gantry and fixed worktable for the processing of solid wood and various types of materials: glued laminated timber, plywood, chipboard, MDF, etc.

## STRUCTURE



Designed using the best three-dimensional solid modelling systems, the structure is composed of a machine bed and a mobile gantry made of electro-welded steel. Component's milling of machine bed are performed on high quality CNC machining centres, with one single positioning operation, in order to guarantee the very best planarity, perpendicularity and precise tolerances.

The electrical control box, placed at the right hand of machine bed, ensures a compact overall dimension and an easy access to the machine for maintenance.

## CONTROL UNIT

The control unit is a numeric control interfaced with an industrial PC. The CNC solution with PC combines all of the qualities of numeric controls with the user-friendliness typical of personal computers.

The PC allows to use the operator interface **Maestro cnc**, developed by SCM to make machine programming fast and simple even for the less skilled operator.

**Production Code: ACCORD 25 FX-M**

**109920 Basic machine execution in conformity with CE Norms N. 1**

**930731 Volt 400 EU N. 1**

**931201 Frequency 50 Hz N. 1**

**R2.14.76 accord 25 fxm N. 1**

**Multifunction worktable X-Y = 4970x2120 Z =250**

Multi-function worktable designed and engineered by SCM for maximum flexibility and safety in the locking of pieces of any shape. Made entirely of extruded aluminum in order to maintain its stability over time. Directly fixed to the machine base it ensures rigidity and prevents vibrations. The ducts for the vacuum circuit integrated in its interior and the grid holes in step 120x120 allow maximum distribution of the vacuum in each part of the table.

**Technical specifications:**

- drilled and tapped holes spaced 120x120 mm for vacuum connection of jigs and equipment fitting
- groove scheme spaced 40 mm for suction cups or rubber gaskets
- n. 2 working areas
- max. dimension to work in Y direction = 2170 mm



**Working component passage Z = 250 mm**

**N. 1**

## **Pendulum machining**

**N. 1**

## **Automatic axes lubrication**

**N. 1**

## **TELESOLVE teleservice via internet**

**N. 1**

Teleservice system to connect the machine pc with the service centre via Internet.

Software equipment: connecting program which allows:

- operator's interface visualisation
- signals diagnosis
- on-line verification and modification of the status of configurations, parameters and machine programs
- data back-up and files transfer operations
- upgrade operations for machine logics and operator's interface

*N.B.*

*\*\* Internet connection at customer's charge is necessary*

*\*\* Network cable not included*

*\*\* Free for the duration of the warranty*



## **450328 Mobile console with "eye-M PRO" integrated PC**

**N. 1**

Device connected to the CNC machine which allows the usage of the supplied software.

The integrated LED light bar allows the operator to check in real time the state of the machine (emergency, operative, etc.) without the need to be on the console itself.

It is equipped with an industrial PC with "fanless" construction and IP53 grade protection (IP65 on the front side). This robust solution grants the highest durability even in the worst environmental conditions which an industrial site may present. The 21,5" LCD color display through a 16/9 sized touch screen grants an unbeatable easiness and efficiency in controlling the main functions of the machine, also through:

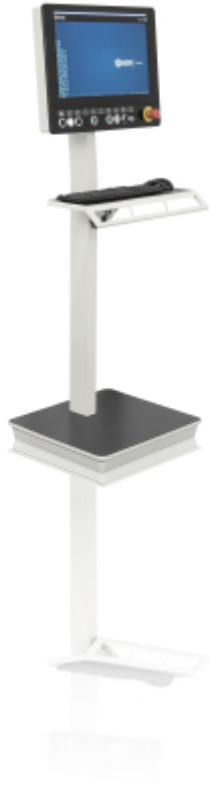
- Full HD display resolution 1920x1080
- LED background lighting
- Capacitive multi-touch screen - 10 points of contact
- Wide visual angle 176° Horizontal / 160° Vertical
- Zero Pixel Defect" quality

The processor in a boosted version and the considerable availability of RAM memory enable also the use of programs requiring a great quantity of calculations, without reducing the machine control performances.

And furthermore:

- Intel i7; 2,80-3,80GHz
- RAM 8GB - DDR4
- Hard disk: SSD 256GB

- O.S. Windows 10 IOT 64bit
- QWERTY keyboard with english layout
- Wired mouse – 3 functions
- Ethernet port RJ45
- USB port 3.0 protocol supported
- Nominal operating temperature: +5°C / +35°C



**870068 TECPAD - Remote machine control**

**N. 1**

Mobile console with 7” touch-screen color monitor that allows the control and management of the machine.

It also allows to:

- control the speed of the axes adjustment
  - control the rotation speed of the electrospindle
  - manage the movement of the axes in manual
  - display the positioning of bars and clamps/suction cups
- Mobile wired control panel able to perform multiple operations on the machine.

It is equipped with:

- n.2 override potentiometers to manage speed on operative devices (i.e. spindle and drilling bits rotation, main axes feedrate etc.)
- n.19 buttons on keypad: 6 keys are command keys, to be used for a direct machine control while the remaining 13 keys are function keys, to be used for navigating and operating through the panels of the software applications (i.e. managing the positioning of pods and rails during set-up phase).
- n.1 red push-button to activate emergency state
- solid rubber protection case against accidental damages

- a left side ergonomic handle, to give the operator the ability to operate easily on the commands with the right hand free
- a magnet on the back side allows the operator an easy and immediate placement on the metallic parts of the machine, in order to have both hands free

**230509 BASIC PRISMA KT Machining Head**

**N. 1**

The machining head with 5 interpolating axes, fixed directly to the mobile gantry, guarantees maximum strength during routing operations and provides top finishing quality also with high stock removal.

Characterized by a particular configuration with axes rotating at 50°, Prisma machining head offers several advantages, compared to traditional 5-axis machining units such as:

- full use of machining areas both with 5 axes and with vertical spindle
- spindle overall dimensions kept out of the working area
- very streamlined shape of spindles, particularly useful in all cases when horizontal machining is required.

The machining head is equipped with a 12 KW “High Torque” electrospindle and has the centralized dust extraction system with automatic air flow activation/deactivation on working units present. Support the presence of an aggregate unit (option).

**Technical specifications:**

- \* Routing unit with 5 interpolating axes
  - electro-spindle with HSK 63F quick release tool-holder
  - rotation speed 600-20000 rpm
  - right and left rotation
  - max power (S1/S6) 11/12 kW (15/16,5 HP) from 9000 rpm
  - inverter
  - C-axis rotation = 640°
  - B-axis rotation = 270°
  - C-axis equipped with TTS locking system (Total Torque System – SCM Patent)

- “for life” grease lubrication
- liquid cooling with heat exchanger
- automatic dust extraction hood with four positions and ON-OFF by workpiece program.



<b>470013</b>	<b>Air blower for tool</b> A device allowing to have compressed air conveyed to the tool to remove the chip from the routing area.	<b>N. 1</b>
<b>870119</b>	<b>Measuring device for tool length</b> It allows the measurement of the length of the tool fitted on the electrospindle.	<b>N. 1</b>
<b>OPMFPI OPTIONS FOR MULTIFUNCTION TABLE</b>		
<b>480065</b>	<b>Magnetic plug for vacuum closing</b> Magnetic plug for vacuum closing, in order to speed up the machine set-up time.	<b>N. 100</b>
<b>AC16R5 REFERENCE STOPS FOR MULTI-FUNCTION WORKTABLE</b>		
	<b>6 Perimetrical reference stops H50</b> 6 Retractable reference stops that can be positioned along the perimeter of the multi-function worktable and compatible with MPS suction cups or counter-templates of 50 mm max thickness.	<b>N. 1</b>
<b>480156</b>	<b>N°6 Rear stops H50</b>	<b>N. 1</b>
<b>350214</b>	<b>Two 250 (300) m3/h - 50 (60) Hz vacuum pumps</b> N° 1 vacuum pump for each half-table. Independent vacuum circuit for each half-table.	<b>N. 1</b>
<b>190039</b>	<b>PRO-SPACE Safety system</b>	<b>N. 1</b>

Protection system composed of:

full protection of the machining head with anti-ejection strips  
curtains and bumpers with emergency sensors  
-emergency cable in the operator area  
-rear and side protection along the perimeter

**400624 Enclosed cable-holder chain N. 1**

The mobile gantry cables are placed inside a chain enclosed on all sides for preventing eventual damages caused by sharp shavings.

**MAESTRO ACTIVE Human-Machine interface software (HMI) N. 1**



**Maestro active** is the new interface software (HMI) which has been **unified across all SCM technologies.**

**A single operator can easily and confidently run multiple SCM machines, reducing operator training times and facilitating entry into production.**

**Maestro active** has been specifically designed and optimized for immediate use via touch screen. Graphics and icons have been redesigned for simple and comfortable navigation.

**Maestro active cnc** is the innovative software specifically addressed to SCM machining centres and drilling machines. It is characterized by the following **functions:**

- **Reporting system:** active can provide the following reports: production report, alarms, event, and maintenance reports;
- **Maintenance support:** Maestro active indicates the maintenance operations to be carried out on the machine, connecting them to the relative procedure;
- **Diagnosis system:** Maestro active detects and displays alarms and warnings; offering help to eliminate the current error;
- **User management and shifts management;**
- **Machine records;**
- **Loading of lists of programs, single programs, also through barcode;**
- **Execution of manual/semi-automatic commands (MDI);**
- **Axes calibration;**
- **Machine status management;**
- **Paddle** (command virtual keyboard);
- **Axes dimensions, feed and speed override display;**
- **Tooling for:**

- \* work tables
- \* magazines and heads without automatic tool change
- \* drilling heads
- \* edges magazine
- \* rollers magazine

*Maestro active cnc, can be integrated with the Iot Maestro connect platform assuring a remote machine control in real time and a proactive maintenance management.*

## **Windows 10 embedded 64 bit operating system**

**N. 1**

## **Maestro cnc programming software**

**N. 1**

Minimum characteristics required for the software installation in office:

- Operating system: Windows XP Professional (SP2), Windows Vista, Windows 7 or Windows 10
- Processor: Intel compatible, 2GHz minimum; multicore processor is advisable
- Memory ram: 2GB minimum, 8GB are advisable
- Space on hard disc: 5GB
- Graphic card: Open GL compatible

## **MAESTRO CNC SOFTWARE SUITE – USER INTERFACE AND PROGRAMMING**



**Maestro** is the software platform equipping all SCM CNC machines.

Maestro is a 3D graphical **CAD/CAM** suite, developed by SCM GROUP's software department, which grants an easy and quick programming, basing on the following main functionalities:

- Part machining programming
- Tool database management
- Machine configuration management: operating units, working table, tools store management
- Locking devices management (pods, rails, clamps, ...)
- Operative control and machining diagnostic

The user interface shows up with an easy-to-use graphics which utilizes the most actual tools in objects representation and follows this layout:

- Functions menu, divided in groups, top screen positioned
- Geometries drawing, in the middle of the screen
- Geometries and machining operations properties, right side positioned, with drop down menu
- List of operations, left side positioned, tree structured

CAD functions cover a wide range of choices through a sketching environment which includes basic geometries:

- **point**
- **line**
- **arch**
- **circle**
- **ellipse**
- **polyline**
- **polygon**
- **slot**
- **text**

On these basic geometries additional operations can be performed such as chamfers, fillets joints.

Aided drawing functions are also available, same than any CAD software:

- **osnap**
- **cut**
- **copy**
- **move**
- **opposite**
- **mirror**
- **offset**
- **rotate**
- **reversed orientation on geometry**
- **editable starting point on geometry**
- **distance measuring**

Maestro CNC allows the operator create his own macros and sub-programs, to be added to the preconfigured apps (drilling patterns, routing patterns, geometries etc.) which represent the most common construction schemes on furniture.

**Parametric programming is included:** parameters can be assigned on main machining program and/or sub-programs and/or macros.

***Tools management***

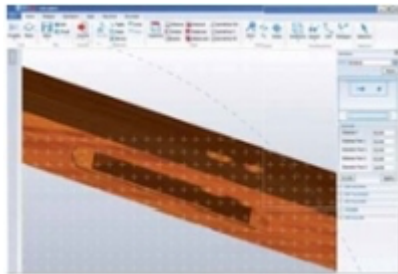
A dedicated application inside Maestro, named “**Tool Manager**”, takes care about it: this environment shows tools grouped in categories and graphically represented to grant an immediate and intuitive access to the operator.

Each tool has an identification tag so to be immediately recovered once the tool selection is required in programming mode.

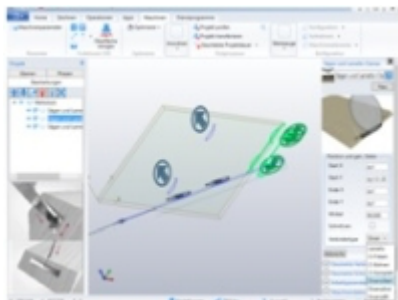
### ***Maestro APPS***

A library of programming functions fully available and easy to use, developed by SCM GROUP and specific to machine furniture elements, doors, stairs, windows etc.

A simple “click” allows the operator get full access to SCM GROUP's technological know-how.



Through Maestro APPS you have the ability to choose the type of machining required and drag it on the geometries you wish it to be applied on.



### ***Working table management***

Working table set-up definition is a totally graphic operation.

#### **The operator has the ability to:**

- visualize the 3D model of the working table on his machine
- through a “drag and drop” operation equip the working table with the necessary locking devices
- drag rails/pods/clamps to the required position under the part to be machined
- use parameters to define position on locking devices, a real effective

- function for those who produce in “batch 1” regime
- insert a repositioning operation on rails/pods/clamps inside the same program
- check eventual collisions between machining devices and locking ones
- check aspect on finished parts
- ask the software to define automatically the best positioning on locking devices

### **Cycle time evaluation**

Maestro is equipped with a preconfigured module which - according to the programmed operations, tool changes involved, tool paths defined etc. - is able to provide a numerical value of the timing required to execute a single program.

This function is strongly effective in:

- evaluating the productivity of your CNC machine before starting the production of a batch of parts
- comparing different versions of the same program so to optimize and reduce at the best the cycle time
- estimating the cost of a supply in terms of machining hours

*NOTE: This software function provides only a simulation, the data obtained from a real processing cycle may vary in a value range by +/- 10%*

### **Data import**

Maestro CNC allows external files to be imported:

- DXF files import  
a DXF file is imported, the operator may edit geometries through the drawing tools on Maestro and/or directly apply the required machining operations, exactly as they were being created through Maestro CNC
- PGM files import  
PGM programs - created through previous programming suite (Xilog Plus) or external software sources - can be imported; Maestro reads and converts them into PGMX format (standard Maestro CNC format) so to be then completed with working table set-up module, cycle time evaluation module etc.

### **MSL Connector**

MSL Connector (**Maestro Scripting Language**) is the software module developed by SCM GROUP so to **connect directly** its own CNC machines **with the main softwares on the market**.

The data coming from external sources softwares are imported into the machine which - basing on the parts dimensions and the machining operations to be executed - manages the process strategies optimizing the position of the locking devices and the tool paths.

### **Software protection**

Maestro CNC is protected against unauthorized copy through hardware USB key.

The additional hardware key is not associated to a single user or PC so the customer can install Maestro Suite on different PC consoles and use the one more suitable in any moment simply carrying the hardware key.

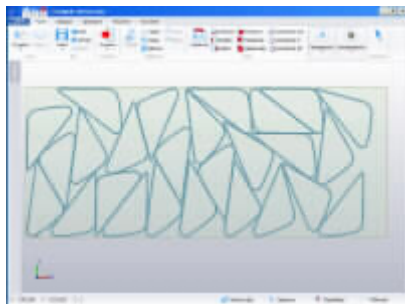
**Hardware key for Maestro cnc**

**N. 1**

**523962 Advanced nesting free-form + Label module for Maestro cnc**

**N. 1**

The Maestro Label module allows to manage the manual or automatic labeling included on the price list. The module includes: data management for label printer; label templates management; Label Manager viewer for the manual labels printing.



Maestro CNC programming software complete with advanced “rectangular” and “free-form” nesting module:

- management of material stock
- nesting import from CSV external file
- DXF / advanced DXF files import also from CSV external file
- automatic “onion skin”
- automatic offcuts management with labelling
- dust grind
- report of 5 different printings
- CU automatic optimisation and paths
- manual nesting
- rectangular nesting
- free-form nesting
- tubular nesting
- approach/removal strategies
- endless panels management
- grains management
- 0-90 automatic panels rotation
- free automatic rotation of panels
- management of integrated support panel thickness
- automatic work pieces contouring
- automatic internal contouring
- cutting depth adjusting
- internals parts nesting of other geometries
- diversified management of the sheets margins
- use statistics
- extra quantity management
- automatic loading/unloading management

870236

**RTCP Setting - Self-calibration system for Prisma machining head**

Equipment to reset the correct parameters of the Prisma machining head.

After placing the equipment on the worktable, it is launched a probe cycle (software provided by SCM) that detects the actual position of the machining head with a sample tool.

Based on the collected data, the software automatically corrects the B and C axis parameters, resetting them to their original condition.

Positioning errors that may be created over time as a result of intensive use of the Prima machining head are eliminated.

The presence of an SCM technician is not necessary, the operation can be performed by the operator that manages the machine.



400003

**Supplementary protections for abrasive materials**

The guides of X-Y-Z axes are equipped with supplementary protections against abrasive dusts.

**Composed of:**

- guide X-axis : steel band onto the guide and device with cleaning air blower on the slides
- guide Y-axis : device with cleaning air blower on the slides
- guide Z-axis : double scrapers on the slides

300481

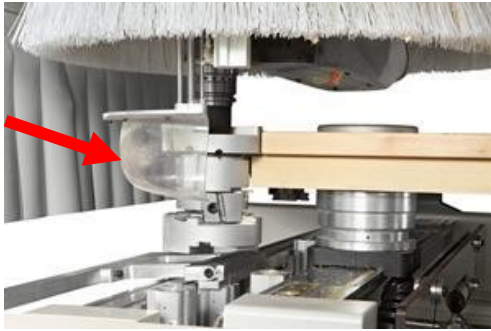
**Tool Lubrificating-refrigerating system**

Complete with 1 nozzle near to the tool which can emit air or air with oil. The oil tank is anchored to the mobile gantry. The oil quantity produced is very small and does not require to be collected.

**56.01.65 Chip conveying device revolving on the electrospindle**

**N. 1**

It ensures optimum cleaning of the work area by conveying towards the exhaust outlet shaving generated by the tool during routing. It is managed automatically by the CNC and can also be used with double profile tools.



**210056 Rapid 24 - Rear Tool store**

Circular tool store anchored to the mobile gantry.

Technical specifications:

- 24 positions (tool-holders not included)
- centre distance between positions 104 mm
- max. tool diameter 300 mm for 3-axis unit
- **max. tool diameter 350 mm for 5-axis unit**
- max. weight per position 8 Kg
- max. total tool weight on the store 96 Kg



## LIFTER SUCTION CUP LIFTER

### LIFTER TECHNICAL FEATURES:

S-structure

Column jib crane, 250 kg lifting capacity (for chipboards and MDF panels, lifting capacity changes depending on material thickness and type) .

- Arm length: 6 metres
- Total height of column: 4 metres
- Under beam height: 2,83 metres
- Base plate for anchoring on to industrial flooring
- Positioning brake
- Enclosed electric line
- Pneumatic air kit for suction power
- Chemical tubes kit complete with bolts Packing

-Hoist

- FEM class 2 metres
- Single Electric chain hoist, VHT brand, K2CN1S model
- Version with eyebolt suspension, FEM 2 metres class
- single lifting speed: 4 m/min. Clutch overload device

∇vacuum lifting device for chipboard panels/mdf panels/laminated materials/covered panels

**REKMAN MASKIN & SERVICE** since 1986

Company number: 879 756 782

Stokkanhaugen 116

N-7048 Trondheim – Norway

e-mail: [olafrekman@gmail.com](mailto:olafrekman@gmail.com)

Phone +47 909 63 306