



**Morbidelli Author M400 F**  
5' X 12' CNC Nesting Cell

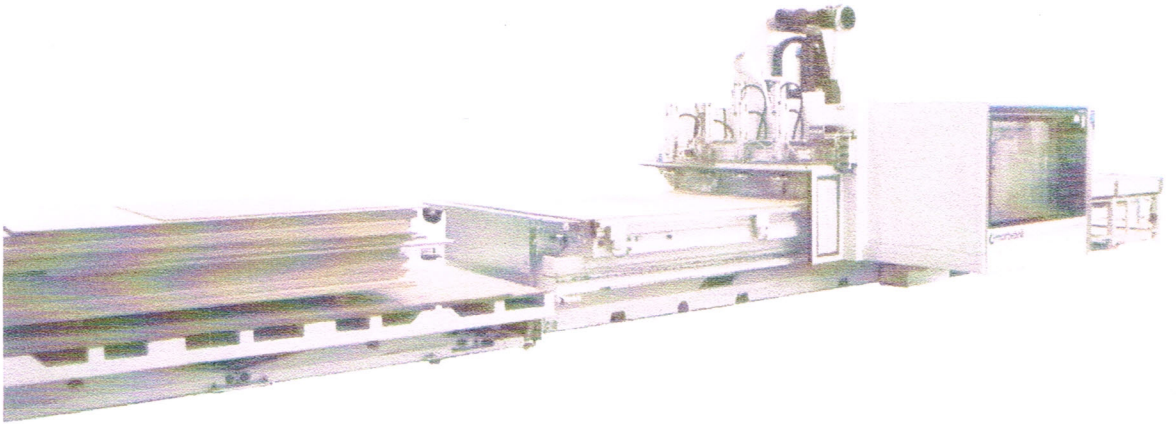


Photo may include optional equipment



## About SCM GROUP

Founded in 1952 in Rimini, Italy, SCM Group S.p.A is the leading designer, manufacturer and distributor of innovative and technologically advanced solutions for woodworking, glass, stone, plastic, metals and composite materials. SCM Group's line of products range from the "Classic" entry-level manual equipment to the turnkey fully-automated "Industrial" solution, and all products use the best Italian components possessing the renowned "Made in Italy" high level of quality and control. With headquarters in Rimini, SCM Group operates through 18 production facilities located throughout Italy and 19 foreign subsidiaries



with a total workforce of 3.100 employees. Using an extensive distribution network, SCM Group exports over 80% of its production, covering 120 countries through subsidiaries, distributors and agents..

## AUTHOR M400 F – CNC Nesting Cell - A Equipment

### CONCEPT

Numeric control machining center, with mobile gantry and fixed worktable for the processing of solid wood and various types of materials: chipboard, MDF, plastics and light alloys.

### (52.35.44) Base Design and Construction

Designed using the best three-dimensional solid modeling systems, the structure is composed of a machine bed and a mobile gantry made of electro-welded steel. All the machining of mechanical components are performed on high quality CNC machining centers utilizing a single positioning operation guaranteeing the highest accuracy and quality.



### High Precision, High Load Prismatic Bearing Guides

SCM uses prismatic guides for support in all axes. Due to their added weight load capability (approximately 4 times that of conventional round guides), prismatic type guides can permit accurate head positioning at high speeds.

### A.C. Servo Motors X,Y & Z Axes

A.C. servomotors, or A.C. brushless motors as they are sometimes called, are the latest in electronic linear motion technology. A.C. servomotors use less power and produce a more even output (drive) throughout the power band. The ability to maintain a constant torque setting when going from an idle setting into a heavy rout produces cleaner cuts and longer tool life. These motors are controlled by digital supply cards that offer the reliability and precision fine tuning associated with solid state electronics.

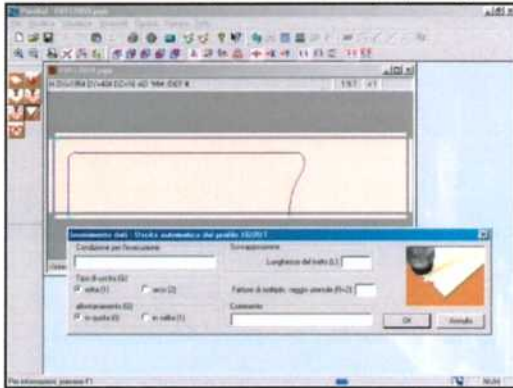
### Solid State Inverter Controls Router RPM

Solid State frequency inverters support the programmable router spindle speeds (S functions). By utilizing digital inverter technology, the programmer can select the correct cutter RPM and match it to the correct linear/rotational feed speed for the specific application and/or material being cut. This will give optimum quality of cut while greatly extending tool life. The inverter also acts as an electronic brake, stopping the router spindle motor in microseconds if an emergency signal is given.

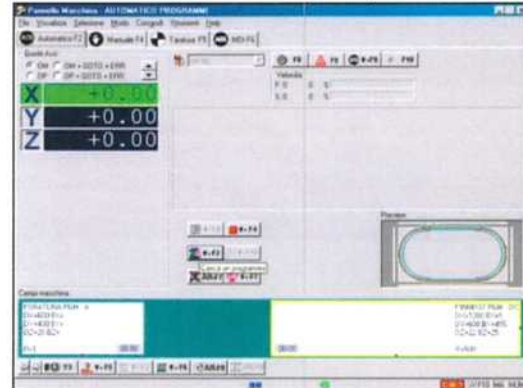
## Xilog MAESTRO Operator Interface

XILOG PLUS is the SCMI workstation management software developed as a highly flexible, powerful and user-friendly programming system.

- The beginner will immediately find himself at ease in front of the intuitive XILOG PLUS interface. There are many graphic aids that eliminate the need to learn particular instructions or programming language.
- The more experienced computer user will also find himself at ease in a Windows® based operating environment, including all the features that this implies (i.e., cut and paste, multiple opening of files, etc.).
- Those already familiar with previous SCMI programs will be able to choose whether to manage the machine in the new graphic environment or to continue with the traditional input of programming instructions with the alphanumeric keyboard. Moving quickly from one environment to the other is very simple.



Graphic programming interface



Machine operation interface

XILOG PLUS has two applications – to aid in programming and to allow operation of the machine.

### Graphic programming interface

This application is a powerful graphic/text editor that aids in programming. It manages program file as well as tooling information. Especially helpful are the built-in macros, shortcuts that are used in performing repetitive tasks (routing arcs, drilling shelf holes, etc.). Users can also customize macros for their own particular needs.

### Machine Operation Interface

This application allows the operator to recall programs and run them on the machine. It tells the operator basic information about the program such as the working field, part size, etc. It also has a very powerful machine diagnostic section with photos and troubleshooting aids.

### Additional XILOG PLUS features:

- Controlled acceleration and deceleration
- Linear and circular interpolation
- Self diagnostics through error messages
- Dynamic tool correction via PLC due to active wear concerning space and time.
- Subroutine programming (canned cycle) with library
- Specular programming: Allows writing of programs two different multiple reference points. For example the Left or Right corner of a panel.
- Parametric scaling of programs through use of template type programs that the operator creates and stores in memory. Part programs can then be proportionally scaled up or down in size without the need to re-write the entire program.
- Programs can be viewed from all 5 faces
- Built in macros for simple, widely used programs
- On board cycle optimization

### Office PC Based Controller

The Morbidelli Author M400 uses an office PC for the operator interface. This Windows 7 based platform utilizes a CN unit to communicate with the machine



### (63.01.27) Electric cabinet with Air Conditioning Device

It maintains temperature of approx. 65°F inside the electric cabinet.



### (63.03.73) Remote Control Pendant

This remote control pendant allows the operator to freely move around the machine and control the machines functions without being restricted to the computer console.



### (52.36.19) 16.5 HP (S6) Electrospindle Routing Unit

The routing unit is equipped with a power electro spindle and automatic tool changer. The unit is mounted directly to the machine mobile upright.

It includes:

- HSK F 63 quick release tool-holder
- 1500-24000 rpm spindle speed
- (S1/S6) 8,5 /12 kW (11,5/16.5hp) constant motor power from 12000 to 18.000 rpm
- Right and left rotation
- Static inverter for continuous speed and rapid shutdown of rotation
- Cooling by coaxial air flow
- Exhaust hood around whole perimeter (200 mm diameter)



### (63.03.03) Air tool blower

- Keep the tool cooler, thus increasing the life of the cutter.
- Helps to remove the sawdust from the cutting grooves in the nest.

**(52.22.86) Measuring device for tool length**

It allows to measure directly on the machine the length of the tool.

**(52.22.87) Panel Thickness Measurement Device**

- Measure and detect top of the material

**Presetting for Aggregates with preloading device - 3 Axes**

It allows the angular drive heads fitting on electrospindle and eliminates any mechanical coupling plays.

**(52.34.91) Rear Rapid 16**

Tool room with circular shape anchored to the mobile support.

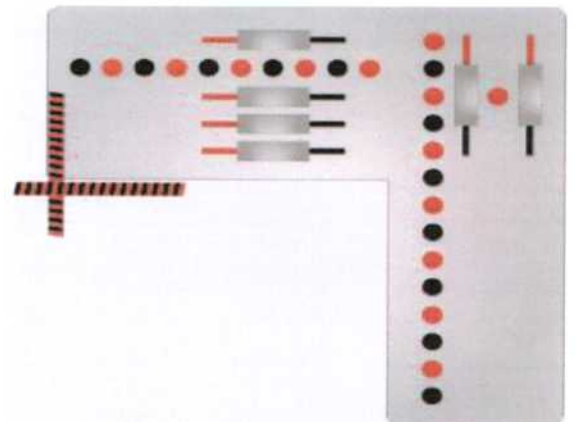
Features:

Number of tools on board	16 (max)
Max diameter tools on board	300 mm (3 axis)
Center to center distance between the positions	80 mm
Single tool weight on board	8 kg (max)
Total weight tools installed	48 kg (max)

**(52.34.79) F37L2 boring head (25+8+4+blade in X-Y)**

This drill unit features:

- No. 25 independent vertical spindles (12 right and 13 left)
- No. 6 horizontal double drilling heads (1+1), 4 along X direction and 2 along Y direction
- Attachment for bits: 10 mm diameter
- Rapid bits locking with 1 screw
- 32 mm center-to-center distance between axes
- Rotation speed: 4.500 rpm, with inverter 8000 rpm maximum
- No. 1 integrated blade with 0-90° automatic rotation (125 mm max.diameter)
- Rotation speed: 5.500 rpm, with inverter 10.000 rpm maximum
- 2,2 kW motor power
- Vertical pneumatic ON/OFF stroke of each vertical spindle: 60 mm
- Vertical pneumatic ON/OFF stroke of each horizontal head: 75 mm



# F37L2

**AUTHOR M400 F, Aluminum Table 3650 x 1600 (143" x 62.9")**

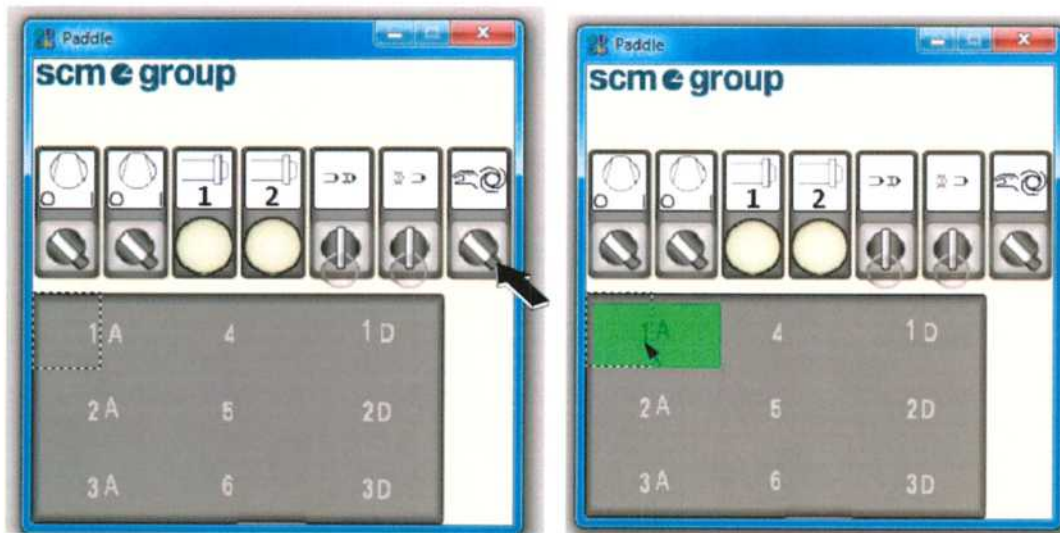
Multi-functional worktable designed and engineered by SCM for maximum flexibility and holding power. It is made entirely of extruded aluminum and it is fixed directly to the machine base to ensure rigidity and prevent any vibrations. The special grooves pattern and the grid of threaded holes, spaced every 120mm (4.72"), allow maximum distribution of the vacuum in every part of the table.

Technical specifications:

- Drilled and tapped holes spaced 120x120 mm (4.72"x4.72") for vacuum connection and equipment fastening.
- Groove pattern spaced 40 mm (1.57") for suction cups or rubber seals
- Max. dimension to work in Y direction = 1665mm (65.5")
- Front and Rear Split Rails



(52.36.33) 9 Vacuum Zones



(52.36.29) Qty 2 – 300 M3/HR Vacuum pumps (Total 600 M3/HR)  
High Capacity Vacuum



## MATERIAL HANDLING SYSTEM FOR NESTING CELL (LEFT TO RIGHT)

### (11.05.07) Automatic labeling system

Automatic labeling system, CN managed in X, Y direction.  
Located on the automatic loading station, it allows applying labels on the single shapes that will be cut from the panel before entering the working station.

#### SPECIFICATIONS

- Average labeling cycle time: 6 secs
- Maximum labeling cycle time: 12 secs
- Minimum positioning accuracy: +/- 5 mm
- Minimum positioning repeatability: +/- 5 mm
- Maximum speed, X direction: 60 m/min
- Maximum speed, Y direction: 120 m/min
- Brushless drive motors
- Aluminum framework
- Rack-pinion driving system
- Pick-and-place pneumatic labeler
- Full integrated electrical cabinet



#### SOFTWARE

- Machine managing and driving software
- Label managing software
- Customer database import and integration

#### LABEL PRINTER

- Industrial printer connected to the general supervisor
- Steel welded framework
- Sense of direction: left side or right side
- Printing drivers for Microsoft® Windows XP / Vista
- Maximum printing area: 100 x 100
- Resolution: 8 dot/mm (203 dpi)
- Maximum printing speed: 203 mm/sec

**SUPPORTS**

- Label and support width: 16 mm up to 114 mm
- Tape width: 25.4 mm up to 108 mm

**LABELS**

- Support thickness (label and support): 0,148 mm up to 0,254 mm
- Types of support: Continuous / Pre-cut

**TAPES**

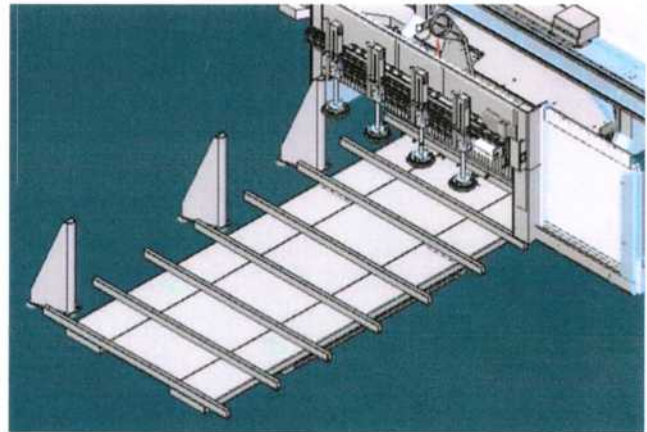
- Roll maximum dimensions: 101.6 mm external diameter
- Standard length: up to 900 m
- Tape type: ink on external side



**(52.29.77) Platform for Automatic panel loading**

It is capable to lift the panel stack up to the machine worktable height, allowing the suction cups to grip the upper panel. This function also foresses the peripheral safety enclosures length, including the lifting stack positioning on the relevant stops grants the correct position in X & Y.

Panel stack specifications: Max – 700 mm

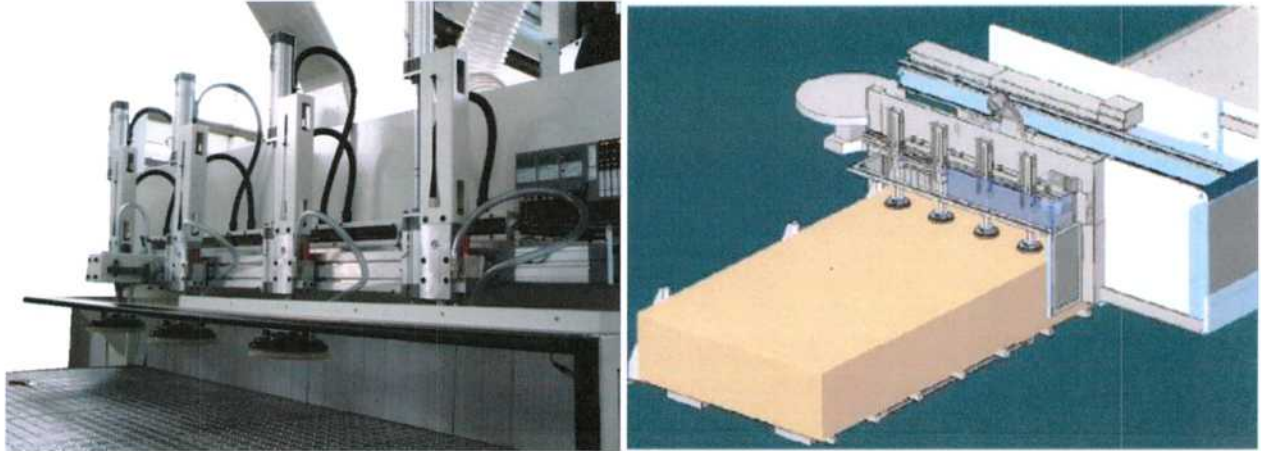




**(52.29.80) Loading Pieces Unit with Vacuum Cup**

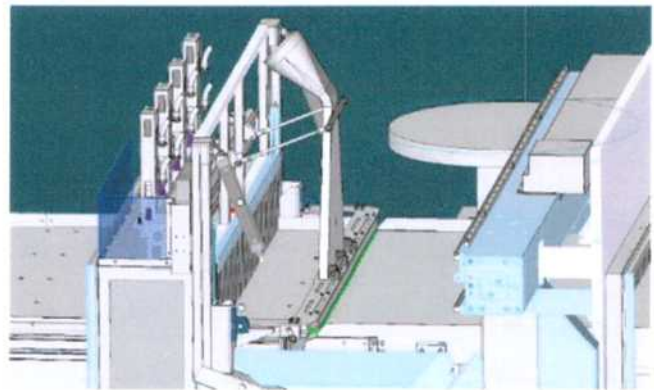
Device mounted on the machine upright with suction cups able to grip the upper panel of the stack on the machine right side and move it up to the machine table support stops. This device includes a detecting system positioned on the machine table left end for a correct panel positioning during loading operation.

- Max weight of single workpiece to be loaded: 200kg
- Max panel thickness: 30 mm (1.18")
- Min panel thickness: 10 mm (.39")

**(52.29.82) Automatic Unloading**

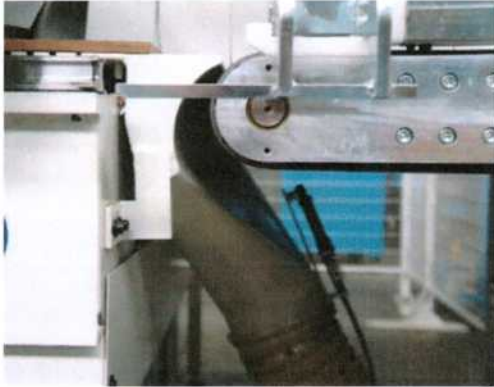
Device mounted on the machine upright that moves the workpieces towards the unloading area on the machine right side. This device cleans the spoil board while it unloads the components. The off loading system is equipped with automatic valves which are opened during the cleaning operation.

- Exhaust outlet diameter: 200 mm (7.87")



**(52.29.84) Outfeed Belt**

Powered belt capable of moving components from the machine table to the unloading position. This position is equipped with photocell automatic detecting system for the belt start/stop and pushbutton for the belt manual speed. (1)-200mm Opening from the bottom. (2) -200mm Openings from the Top

**(52.36.28) Exhaust outlet positioned upper the unloading belt**

Exhaust outlet positioned between the work table and the unloading belt

Exhaust outlet positioned at the end of the unloading belt

**Safety Regulations**

All versions are delivered with the "pro-speed" version with bumpers and photocells.

The customer can also select the installation of the machine with the "pro-space" version without front photocells - in this case the speed of the X axis is limited to 25 m/min due to the reduced crosswise overall dimension.

**Central Optimized Dust Collection System**

It provides a single dust collection point for the electrospindle and Drilling unit allowing in this way to use the Dust Collection system more efficiently. Inside the main dust collector there are pneumatic cylinders that control automatically the opening/closing of each exhaust outlet when the operating unit is switched on/off. 250mm (9.84").

**Automatic Central Lube System**

The correct amount of grease is applied to lubricate moving parts on the machine. This is applied automatically with minimal maintenance for the operator.

**(90.00.64) Electronic Hardware Equipment**

For an integrated management of the working center. Wireless bar code reader included.

**(63.03.43) Multi-voltage autotransformer**

- Available Voltage connections: 208/230/460

**Technical Specifications**

Worktable dimensions: Length Width	3650 mm (143.7") 1600 mm (62.9")
Electrospindle	12 HP S1 Duty / 16.5HP S6 Duty Air Cooled
Tool Changer Positions Attachment	16 position – Rear Ride Along HSK 63
Drilling Unit 37 Spindles No. of vertical spindles No. of horizontal spindles Grooving Saw	10 in X-axis , 14 in Y-axis (1 Additional) 4+4 in X & 2+2 in Y 0-90 (X or Y)
Maximum linear vectorial positioning speeds: X & Y axis Z axis	85 meters/minute (279 feet/minute) 30 meters/minute (98 feet/minute)
Panel passage	170 mm (6.69")
Dust extraction required Working Units Rake System Upper Belt Lower Between Table and Belt Lower End of Belt	250 mm (9.8") 2455 CFM 200mm (7.9") 1570 CFM 200mm X (2) (7.9" each) 1570 CFM each 200 mm (7.9") 1570 CFM 200 mm (7.9") 1570 CFM
Electrics:	208/230/460 volts, 3-phase balanced, 60 cycles
Tooling included (4) 1036237408A HSK63F Toolholder (1) 0000410126D ER32 Collets 1/2" (1) 0000410123G ER32 Collets 3/8" (1) 0000410133H ER32 Collets 3/4" (1) 0000410120A ER32 Collets 1/4"	
PC Specifications: Operating system Monitor	Windows XP Professional 17" Display