SCM Morbidelli M100 CNC Machining Centre Full Technical Specification

Machine purchased in 2019 | Approximately 2,000 operating hours

1. Machine Identification and Sale Summary

Field	Details
Machine / model	SCM Morbidelli M100
Type	CNC machining centre for furniture and panel processing
Manufacturer	SCM Group SpA, Italy
Purchase year	2019
Operating hours	Approximately 2,000 hours
Control	Computer numerical control (CNC)
Axes / machining capability	Machining in 3, 4 and 5 axes; drilling, routing / milling, grooving and panel processing
Version / package identified in documentation	Morbidelli M100 3110 x 1620 2180 - CNC machining centre
Main software	Maestro CNC integrated CAD-CAM software

2. General Description and Intended Use

- CNC machining centre designed for processing furniture panels, including drilling, routing / milling, trimming and machining on panel edges.
- Configurable FLEX work table with mobile bars and vacuum cups for quick set-up and support of panels.
- Designed for high productivity with rapid machine movements, electronic management of positioning and integrated CAD-CAM software.
- Equipped for vertical drilling, horizontal drilling on all four sides of the panel, and 5-axis routing with an HSK electrospindle.
- PRO-SPACE safety system allows practical access around the machine without requiring front photocells or lateral safety fences, according to the supplied offer text.

3. Working Area and Panel Capacity

Field	Details
Useful working field - X axis	3110 mm
Useful working field - Y axis	1620 mm
Panel passage on Y	1900 mm
Panel passage on Z	180 mm
Length of piece in pendular / pendulum working mode	1400 mm
Working table version	TV FLEX 1600 / FLEXMATIC work table
Number of work tables / supports	6 TV FLEX working planes / aluminium supports
Useful mobile bar length	1600 mm
Number of crossbars / traverses	6
Standard bar positions	From 6 up to 12 positions
Machine internal X distance / reference dimension	3500 mm shown in technical table

4. Machine Structure, Work Table and Movement System

- Steel base / welded steel structure designed for rigidity and low vibration.
- Mobile bars and panel supports are mounted on internal guides, with protective bumpers.
- Movement on the X, Y and Z axes is via prismatic linear guides with recirculating ball bearings.

- X-axis movement is performed by the mobile bars / workpiece support system.
- Y-axis movement is performed by the mobile gantry / bridge; transmission is by toothed rack and pinion on both sides.
- Z-axis movement is performed by the vertical support, with ball-screw style transmission according to the Romanian description.
- NC management controls positioning and movement of the operator groups and machine axes.
- Control of work table and suction-cup positioning is supported by graphic software and electronic management.

5. Axis Speeds and Drive Data

Field	Details
Maximum vector speed on X-Y, PRO-SPACE version	56 m/min
Maximum vector speed on X-Y, PRO-SPEED version	78 m/min
Vertical drilling spindle speed	Up to 8000 rpm
Horizontal drilling spindle speed	Up to 8000 rpm
Electrospindle maximum speed	24000 rpm
Integrated saw blade speed	Speed controlled by inverter; range shown as approximately 2500-8000 rpm / 10000 rpm depending on table section

6. CNC Control, Operator Interface and Software

Field	Details
Operating system	Windows 7
Main display	21.5 inch LCD, 16:9, Full HD
Operator interface	Keyboard, mouse and machine control panel
Software	Maestro CNC integrated software
Programming capabilities	Parametric programming, graphic programming, ISO graphics and import of DXF / SASCAM-type formats as shown in documentation
Machining functions	Interpolated routing / milling, drilling management, configuration of stations, parameters and machining programs
Diagnostics / simulation	Graphic editor with authoring and simulation for drilling and routing / milling operations
TECPAD upgrade	7-inch touch-screen mobile control panel for machine functions, program use and error signalling
Remote control	Mobile control panel transfers machine commands and can be used along the machine work area

7. Drilling and Grooving Group - F23L

Field	Details
Unit	F23L drilling group
Vertical independent spindles	13 total: 7 right-hand + 6 left-hand
Horizontal independent spindles	10 total
Horizontal spindle distribution	4 in X direction on one side, 3 in X direction on the other side, and 2 in Y direction
Integrated saw blade	Saw blade in X direction
Saw blade diameter	125 mm
Saw blade motor power	2.2 kW / approximately 3 HP
Vertical on/off stroke	75 mm pneumatic stroke shown in documentation
Horizontal on/off stroke	75 mm pneumatic stroke shown in documentation
Inverter for drilling group	Allows programming of drilling-group rotation speed, up to 8000 rpm

8. 5-Axis Routing / Milling Electrospindle and Tool Changers

Field	Details
Main routing / milling group	JQX 5-axis electrospindle group
Electrospindle type	Hiteco HSK F63

Electrospindle power	10 kW class; technical table also indicates S6 power range approx. 9.5 kW / 13 HP to 15 kW / 20.5 HP
Maximum electrospindle speed	24000 rpm
Bearings	Ceramic bearings
Cooling	Liquid cooling group for the electrospindle, including protection against overheating / lack of liquid
Lubrication	Centralised automatic lubrication
Tool changer - rear lateral	TRB 14 tool magazine, 14 positions
TRB 14 positioning / travel	Linear stroke 350 mm; 115 mm pitch between positions
TRB 14 capacity	Maximum tool diameter shown as 240 mm / 70 kg total tool weight in the supplied page
Tool changer - front lateral	FAST 14 tool magazine, 14 positions
FAST 14 capacity	Maximum tool diameter 130 mm for selected positions; maximum single tool weight 8 kg; total tool weight 24 kg
Additional hardware key	1 additional hardware key for Xilog Maestro USB

9. Vacuum, Panel Holding and Auxiliary Positioning

Field	Details
Vacuum cups	12 fixed vacuum cups, 145 x 145 mm, H = 75 mm
Vacuum pump	Machine described as standard with one vacuum pump
Additional vacuum pump	One additional 90 m3/h vacuum pump is listed in the offer
Panel support aids	4 pneumatic panel loading / support devices, H = 75 mm
Rear limiters	8 aluminium rear limiters, H = 75 mm
Intermediate limiters	8 aluminium intermediate limiters, H = 75 mm
Left lateral reference	Laser and left lateral reference limiter for arc / shaped workpieces, H = 75 mm
Prepared clamps	Preparation for 6 pneumatic clamps on bars
Reference / positioning	System supports quick positioning of suction cups and machine work supports

10. Dust Extraction, Air and Installation Requirements

Field	Details
Installed power	23 + 28.5 kVA shown in installation table
Compressed air consumption	450 NL/min
Required extraction air flow	4500 m3/h
Extraction air speed	25 m/sec
Extraction outlet diameter	250 mm
Centralised extraction	Centralised and optimised extraction, with adjustable conveyor and grouped suction outlets to reduce consumption

11. Safety Systems and Standards

- PRO-SPACE safety system included in the offer, described as allowing installation without front photocells and side fences while maintaining operator access.
- CE safety protection mentioned in the documentation.
- Magnetic / protected safety devices and guarded areas are referenced in the documentation.
- Emergency stop and machine control safety functions are integrated in the operator interface.
- Electrical installation described as compliant with European norms.

12. Included Standard and Optional Equipment Identified in the Offer Pages

- Morbidelli M100 3110 x 1620 2180 CNC machining centre.
- PRO-SPACE safety system.
- TV FLEX 1600 work planes / 6 working supports.
- TECPAD 7-inch touch-screen mobile control panel.
- F23L drilling group with vertical and horizontal spindles and integrated X-direction saw blade.

- Inverter for drilling group.
- JQX / Hiteco HSK F63 electrospindle group, 10 kW class.
- Liquid cooling group for electrospindle.
- TRB 14 rear lateral tool magazine.
- FAST 14 front lateral tool magazine.
- Centralised automatic lubrication.
- 12 fixed vacuum cups 145 x 145 x 75 mm.
- Panel loading aids, rear / intermediate limiters, left and lateral reference laser / limiter.
- Preparation for pneumatic clamps on bars.
- Additional hardware key for Xilog Maestro USB.
- One additional 90 m3/h vacuum pump.