tenoners-mortisers

balestrini
pico range



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SCM GROUP SPA
via Casale 450 - 47826 Villa Verucchio, Rimini - Italy
tel. +39 0541 674111 - scm@scmgroup.com
www.scmwood.com

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woodworking technology

FIND THE PERFECT JOINT





balestrini pico md



balestrini pico tn



balestrini pico ff



balestrini pico fj



balestrini pico om

WITH THE RANGE OF SCM TENONING-MORTISING MACHINES

6
THE BALESTRINI PICO RANGE

FLEXIBILITY



Multifunctionality with small footprint: it's one of the technological goals underlying the project of the new balestrini pico range. **The design of two-faced machine and the integrated electrical cabinet** are the main innovative features that strongly reduce machine overall dimensions.

PRODUCTIVITY



Thanks to the ***Infinity* work cycle** that uses the interpolation of the two NC axes, on the new balestrini pico machines it is possible to execute pendulum machining without interruption, depending on the presence of the workpiece on the worktable.

PROMPT DELIVERY



The **reorganization of the supply chain** on a "lean" approach base has made more efficient the supply system allowing to maximize machine reliability and to guarantee fast delivery times.

SAFETY



At SCM, safety always comes first.
The machines are designed respecting the **higher security requirements** for European and non-European markets.

The **CE protection enclosure**, standard on all the machines, protects the operator from accidental ejection of workpieces and contact with mechanical parts in motion.

CLEANLINESS



The **full enclosure of the machine** ensures protection without reducing its ease-of-use, and keeps the outside environment clean.

USER FRIENDLINESS



Machine control is easy and immediate thanks to the new Human-Machine Interface **Maestro active joint**, with an extremely simple and effective design, which allows to select numerous macros for different types of joint.

25
Applications

26
Technical data

THE BALESTRINI PICO RANGE

MODEL		DESCRIPTION	APPLICATION
BALESTRINI PICO TN		High productivity CNC Tenoning machine with double worktable, dedicated to the execution of straight or round end tenons: horizontal, vertical or with an inclination.	Elements of chairs and tables.
BALESTRINI PICO MD		CNC Tenoning-mortising machine with double worktable, dedicated to the execution of “Miter Door” joints.	Frames and cabinet doors in solid wood or melamine-coated MDF.
BALESTRINI PICO FF		CNC Tenoning-mortising two-faced machine, dedicated to the execution of “Miter Door” and “Face Frame” joints.	Frames, cabinet doors and shuttered doors in solid wood or melamine-coated MDF.
BALESTRINI PICO FJ		CNC Tenoning-mortising two-faced machine, dedicated to the execution of “Miter Door”, “Face Frame” and “French Joint” joints.	Frames, cabinet doors and shuttered doors in solid wood or melamine-coated MDF.
BALESTRINI PICO OM		CNC Tenoning-mortising two-faced machine, dedicated to the execution of tenoning, drilling and mortising operations.	Solid wood elements for tables and chairs, such as legs, crossbars and chair backs.

OVERVIEW OF TECHNICAL FEATURES

TECHNOLOGICAL ADVANTAGES

*The **tenoning unit** consists of a 4.5 kW electrospindle with ER40 connection.*

*To protect the operator from contact with mechanical parts in motion and from accidental ejection of workpieces, the machines are equipped as standard with a **CE-compliant protection enclosure.***





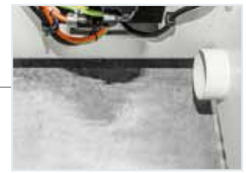
*The **2 cast iron worktables** allow pendulum machining at the workpiece end with no interruption.*



*The **10" touchscreen PC Panel**, integrated in the electrical cabinet, allows programming with macros.*



*The **worktables set-up** is easy, thanks to the presence of adjustable handles. It is possible to adjust manually rotation of the workpiece support guide and tilting of each worktable. The workpiece length is defined by a rear reference stop.*



*The **extraction system for shavings and dust** consists of 3 outlets connected to the main system.*



*The **parking station**, positioned between the two worktables, allows tool change and adjustment of the tenoning height.*

MACHINING FEATURES		
Workpiece cross-section	With straight cut min.	10 x 10 mm
	With straight cut max.	200 x 60 mm
Workpiece length	min.	100 mm
	max.	880 mm
Tenon dimensions	Tenon horizontal length max.	200 mm
	Thickness max.	30 mm
	Height	8 ÷ 50 mm
Tenon inclination		0° ÷ 90°
Productivity max.		720 tenons/hour

OVERVIEW OF TECHNICAL FEATURES

TECHNOLOGICAL ADVANTAGES

*To protect the operator from contact with mechanical parts in motion and from accidental ejection of workpieces, the machines are equipped as standard with a **CE-compliant protection enclosure.***

*The **4.5 kW tenoning unit and the 2 kW mortising unit** allow to realize tenons and mortises with a reduced number of passes. Tenoning and mortising depth are regulated in the parking station.*





*The 21.5" touchscreen **eye-m console**, positioned on mobile support, allows to use the new HMI **Maestro active joint.***



***Each worktable** is equipped with a workpiece reference guide with two positions 0° and 45°, a vertical pneumatic clamping cylinder with presence sensor and a clamping cylinder for side locking.*

*The **electrical cabinet is integrated** in the machine structure, a solution that allows to obtain an extremely small footprint.*



*The particular **path of the operating units,** which exploits interpolation of the two NC axes, allows to realize frames and cabinet doors in solid wood or melamine coated MDF, avoiding any workpiece chipping.*



*The **extraction system for shavings and dust** consists of 3 outlets connected to the main system.*

MACHINING FEATURES		
Workpiece cross-section max.	With 45° cut	102 x 26 mm
	With 0° cut	150 x 26 mm
Workpiece cross-section min.		38 x 18 mm
Workpiece length	min.	100 mm
	max.	Not applicable
Tenon dimensions	Length max.	150 mm
	Thickness max.	12,7 mm (1/2")
	Height	8 ÷ 26 mm
Hole or mortise dimensions	Hole diameter max.	26 mm
	Mortise length max.	140 mm
	Mortise thickness max.	26 mm
	Hole or mortise depth max.	12,7 mm (1/2")
"Miter Door" work cycle time		18s (50 frames for cabinet doors/hour)

OVERVIEW OF TECHNICAL FEATURES

TECHNOLOGICAL ADVANTAGES



The front worktables *are each equipped with a workpiece reference guide with two positions 0° and 45°, a vertical pneumatic clamping cylinder with presence sensor and a clamping cylinder for side locking.*



The ***extraction system for shavings and dust*** *consists of 6 outlets connected to the main system.*

The ***4.5 kW tenoning unit and the 2 kW double-ended mortising unit*** *allow to realize tenons and mortises with a reduced number of passes. Tenoning and mortising depth are regulated in the parking station.*

The 21.5" touchscreen ***eye-m console*** *allows to use the new HMI* ***Maestro active joint*** *and, thanks to the installation on mobile support, it follows the operator to the two work stations.*



The ***electrical cabinet is integrated*** *in the machine structure, a solution that allows to obtain an extremely small footprint.*



Thanks to its unique design, the machine has ***two worktables always ready to use****, to switch easily from top machining to longitudinal one.*



The ***rear cast iron worktable*** *allows loading of workpieces up to 1250 mm in length and locking by means of 3* ***adjustable clamping cylinders longitudinally.***



The ***reference stops*** *at the end of the worktable (optional) allow loading of workpieces up to 1370 mm in length.*

MACHINING FEATURES FOR FRONT WORKTABLES		
Workpiece cross-section max.	With 45° cut	102 x 26 mm
	With 0° cut	150 x 26 mm
Workpiece cross-section min.		38 x 18 mm
Workpiece length	min.	100 mm
	max.	Not applicable
Tenon dimensions	Length max.	150 mm
	Thickness max.	12,7 mm (1/2")
	Height	8 ÷ 26 mm
Hole or mortise dimensions	Hole diameter max.	26 mm
	Mortise length max.	150 mm
	Mortise thickness max.	26 mm
	Hole or mortise depth max.	12,7 mm (1/2")
"Miter Door" work cycle time		18s (50 frames for cabinet doors/hour)

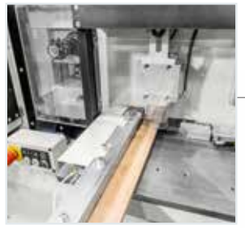
MACHINING FEATURES FOR REAR WORKTABLE		
Worpiece cross-section	min.	38 x 18 mm
	max.	150 X 50 mm
Loadable workpiece length	min. with 2 clamping cylinders	220 mm
	max.	1250 mm (STD) 1370 mm (OPT)
Machinable workpiece length	min. with 2 clamping cylinders	220 mm
	max.	1100 mm
Hole or mortise dimensions	Hole diameter max.	32 mm
	Mortise length max.	960 mm
	Mortise thickness max.	32 mm
	Hole or mortise depth max.	50 mm

OVERVIEW OF TECHNICAL FEATURES

TECHNOLOGICAL ADVANTAGES

*The **4.5 kW tenoning unit and the 2 kW double-ended mortising unit** allow to produce tenons and mortises with a reduced number of passes. Tenoning and mortising depth are regulated in the parking station.*

*The 21.5" touchscreen **eye-m console** allows to use the new HMI **Maestro active joint** and, thanks to the installation on mobile support, it follows the operator to the two work stations.*



***The front worktables** are each equipped with a workpiece reference guide with two positions 0° and 45°, a vertical pneumatic clamping cylinder with presence sensor and a clamping cylinder for side locking.*

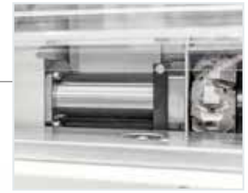
*The **extraction system for shavings and dust** consists of 7 outlets connected to the main system.*



*The **electrical cabinet is integrated** in the machine structure, a solution that allows to obtain an extremely small footprint.*



*Thanks to its unique design, the machine has **two worktables always ready to use**, to switch easily from top machining to longitudinal one.*



*The 3 kW **notching unit** with shaped cutter allows to perform the machining operations at 45° for "French Joint", with material removal from 8-20 mm in a single pass.*



*The **reference stops** placed at the end of the worktable (optional) allow loading of workpieces up to 1370 mm in length.*



*The **rear cast iron worktable** allows loading of workpieces up to 1250 mm in length and locking by means of 3 **adjustable clamping cylinders longitudinally.***

MACHINING FEATURES FOR FRONT WORKTABLES		
Workpiece cross-section max.	With 45° cut	102 x 26 mm
	With 0° cut	150 x 26 mm
Workpiece cross-section min.		38 x 18 mm
Workpiece length	min.	100 mm
	max.	Not applicable
Tenon dimensions	Length max.	150 mm
	Thickness max.	12,7 mm (1/2")
	Height	8 ÷ 26 mm
Hole or mortise dimensions	Hole diameter max.	26 mm
	Mortise length max.	150 mm
	Mortise thickness max.	26 mm
	Hole or mortise depth max.	12,7 mm (1/2")
"Miter Door" work cycle time		18s (50 frames for cabinet doors/hour)

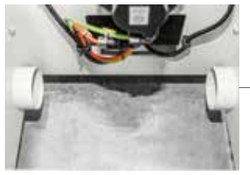
MACHINING FEATURES FOR REAR WORKTABLE		
Worpiece cross-section	min.	38 x 18 mm
	max.	150 x 50 mm
Loadable workpiece length	min. with 2 clamping cylinders	220 mm
	max.	1250 mm (STD) 1370 mm (OPT)
Machinable workpiece length for "Face Frame"	min. with 2 clamping cylinders	220 mm
	max.	1100 mm
Machinable workpiece length for "French Joint"	min. with 2 clamping cylinders	220 mm
	max.	760 mm
Hole or mortise dimensions	Hole diameter max.	32 mm
	Mortise length max.	960 mm
	Mortise thickness max.	32 mm
	Hole or mortise depth max.	50 mm

OVERVIEW OF TECHNICAL FEATURES

TECHNOLOGICAL ADVANTAGES



*The **worktables set-up** is easy, thanks to the presence of adjustable handles. It is possible to adjust manually rotation of the workpiece support guide and tilting of each worktable. The workpiece length is defined by a rear reference stop.*



*The **extraction system for shavings and dust** consists of 6 outlets connected to the main system.*

*The **4.5 kW tenoning unit and the 2 kW double-ended mortising unit** allow to produce tenons and mortises with a reduced number of passes. Tenoning and mortising depth are adjusted in the parking station.*



*The **electrical cabinet is integrated** in the machine structure, a solution that allows to obtain an extremely small footprint.*



***Maestro active joint**, the Human-Machine Interface with an extremely simple and effective design, allows to select numerous macros for tenons, holes and mortises programming.
The **exclusive CAD/CAM system Smart pro lite** makes balestrini pico om a machining centre for all purposes.*



*Top and longitudinal machining operations are carried out **on different work stations but on the same machine**, thus expanding the applications and reducing overall dimensions.*





***Jig Free Compact** workpiece locking devices allow locking of curved workpieces on a single worktable.
The workpiece reference is defined in a simple way with two stops fixed to the sides of the worktable.*

MACHINING FEATURES FOR FRONT WORKTABLES

Workpiece cross-section max.	With straight cut min.	10 x 10 mm
	With straight cut max.	200 x 60 mm
Workpiece length	min.	100 mm
	max.	880 mm
Tenon dimensions	Tenon horizontal length max.	200 mm
	Thickness max.	30 mm
	Height	8 ÷ 50 mm
Tenon inclination		0° ÷ 90°
Productivity max.		720 tenons/hour
Hole or mortise dimensions	Hole diameter max.	32 mm
	Mortise length max.	140 mm
	Mortise thickness max.	32 mm
	Hole or mortise depth max.	30 mm for pieces to be cut off 50 mm for cut off pieces

MACHINING FEATURES FOR REAR WORKTABLE

Worpiece cross-section	min.	15 x 15 mm
	max.	100 x 60 mm
Loadable workpiece length	min. with 2 Jig Free Compact	180 mm
	max.	1350 mm
Machinable workpiece length	min. with 2 Jig Free Compact	180 mm
	max.	1100 mm
Hole or mortise dimensions	Hole diameter max.	32 mm
	Mortise length max.	1100 mm
	Mortise thickness max.	32 mm
	Hole or mortise depth max.	50 mm

Maestro Digital Systems

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

SCM accompanies woodworking manufacturers throughout their whole process combining machines with matching software solutions and digital services, with a constant commitment 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 active joint

MAESTRO ACTIVE JOINT IS THE HUMAN-MACHINE INTERFACE SOFTWARE FOR TENONING AND MORTISING MACHINES.
THE SOFTWARE PRESIDES OVER THE CREATION OF THE WORK PROGRAMS AND ALLOWS THE MACHINE OPERATIONS TO BE MONITORED IN REAL TIME DURING EXECUTION.

Smart Pro Lite

THE EXCLUSIVE APPLICATION OF THE BALESTRINI PICO OM IS A 2 AXIS CAD/CAM SOFTWARE THAT ALLOWS TO PERFORM DRILLING AND MORTISING OPERATIONS ALONG THE SIDES OF CURVED WORKPIECES WITH EASE-OF-USE AND RELIABILITY.

Maestro active joint

FACTORY

SOFTWARE

Simple, smart and open.
Maestro software are tailored on the machine technology as well as on the entire process. All Maestro software share a common mission:

easy to use, so that any operator can easily and confidently learn and use the software

smart, with algorithms and computing modules aiming at the best possible result

open, in order to integrate existing software, and provide customer the coverage of all his process.

Smart Pro Lite

FUNCTIONS

The human-machine interface guides the operator during machine programming, which consists of the following steps:

- **Programming the shape, size and position of the joints**
- **Tool selection**
- **Work cycle selection**
- **Sending the program to the machine**

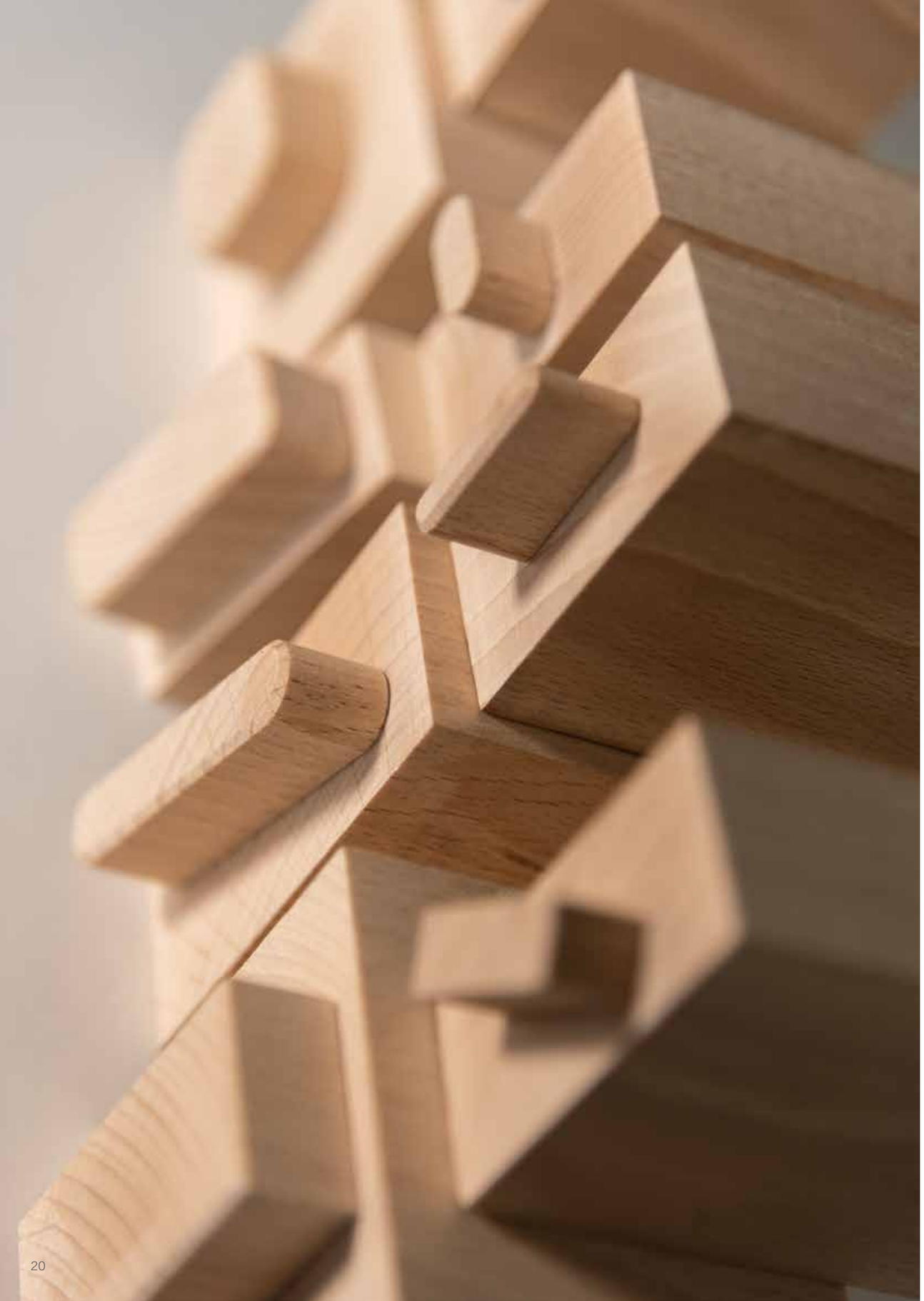


FUNCTIONS

The main functions include:

- **2D DRAWING**
  Parametric CAD/CAM system with macro for simplified programming and free drawing.
- **2D AND 3D FILES IMPORT**
  2D Formats .dxf, .dwg
  3D Formats .step, .iges, .stl
- **MACHINING MACRO**
  Possibility to insert predefined macros for a quick creation of the typical machining operations (single and multiple drilling, mortising).
- **2-AXIS MACHINING**
  Automatic blank and machining definition
  Possibility to modify one or more automatically calculated parameters
  Machining library with tool association and machining path.
- **WORKPIECE POSITIONING IN THE MACHINE**
  Workpiece positioning in the machine on Jig Free Compact workpiece locking devices.
- **SIMULATION AND COLLISION CONTROL**
  Control of generated program
  Control of eventual collisions
  ISO code generation and sending to the machine.
- **“HELP” FUNCTION**
  In case of software malfunction, the user can use the Help function.
  This function provides:
  Sending an e-mail containing the machine configuration to service
  Remote assistance.

APPLICATIONS













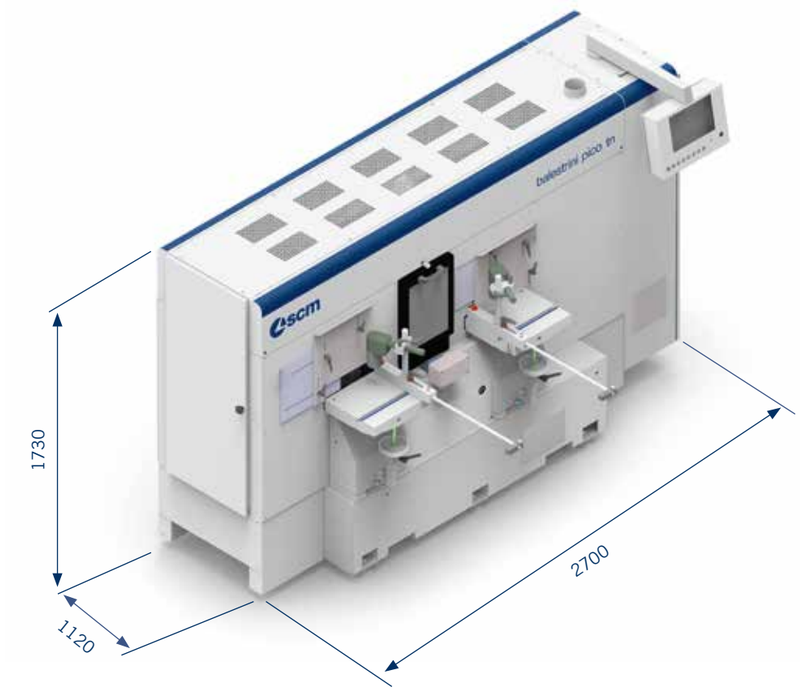


TECHNICAL DATA

balestrini pico
tenoners-mortisers

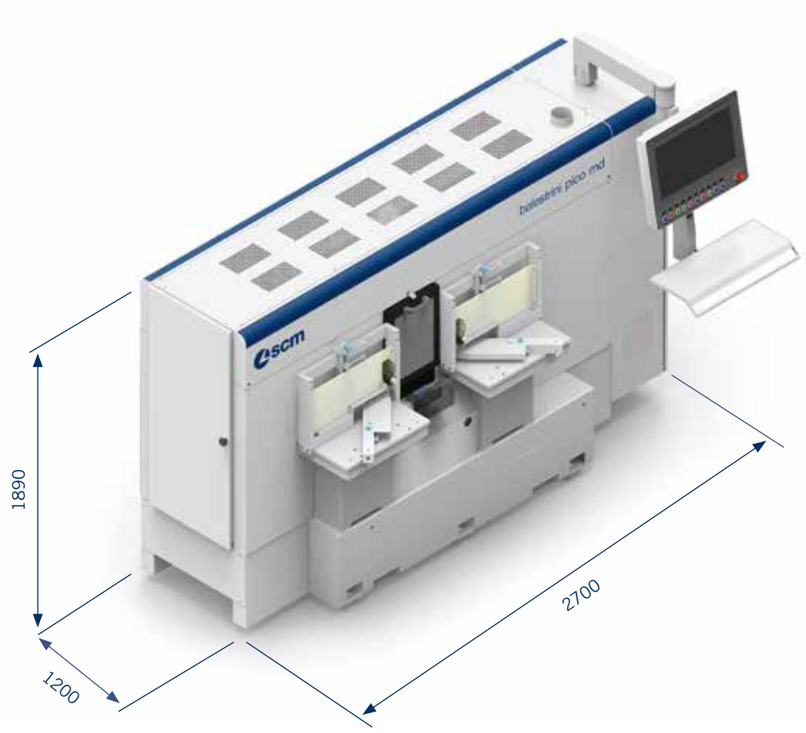
BALESTRINI PICO TN

Installed power	Total	10 kVA
	Standard supply	400 V - 50/60 Hz
Compressed air pressure		6 BAR (min. 4 BAR)
Compressed air consumption	Per work cycle (N° 2 tenons)	1 Nl/cycle
Suction	N° outlets	3
	Outlet diameter	100 mm
	Air volume suctioned at 25 m/s	4200 m^3/h



BALESTRINI PICO MD

Installed power	Total	14 kVA
	Standard supply	400 V - 50/60 Hz
Compressed air pressure		6 BAR (min. 4 BAR)
Compressed air consumption	Per work cycle (tenon+mortise)	55,4 Nl/cycle
Suction	N° outlets	3
	Outlet diameter	100 mm
	Air volume suctioned at 25 m/s	4200 m^3/h approx.

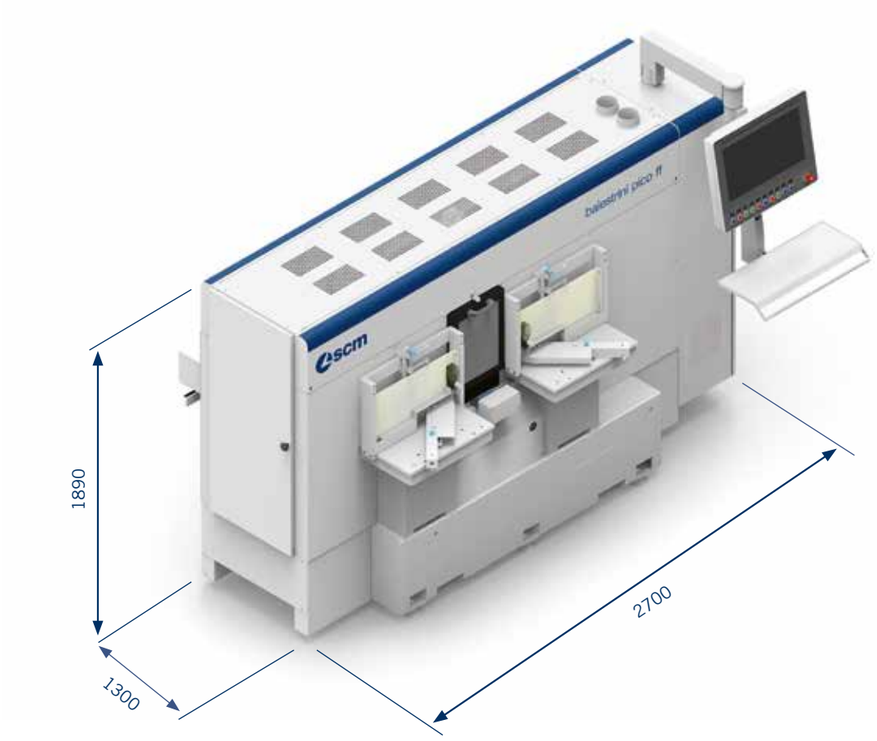


TECHNICAL DATA

balestrini pico
tenoners-mortisers

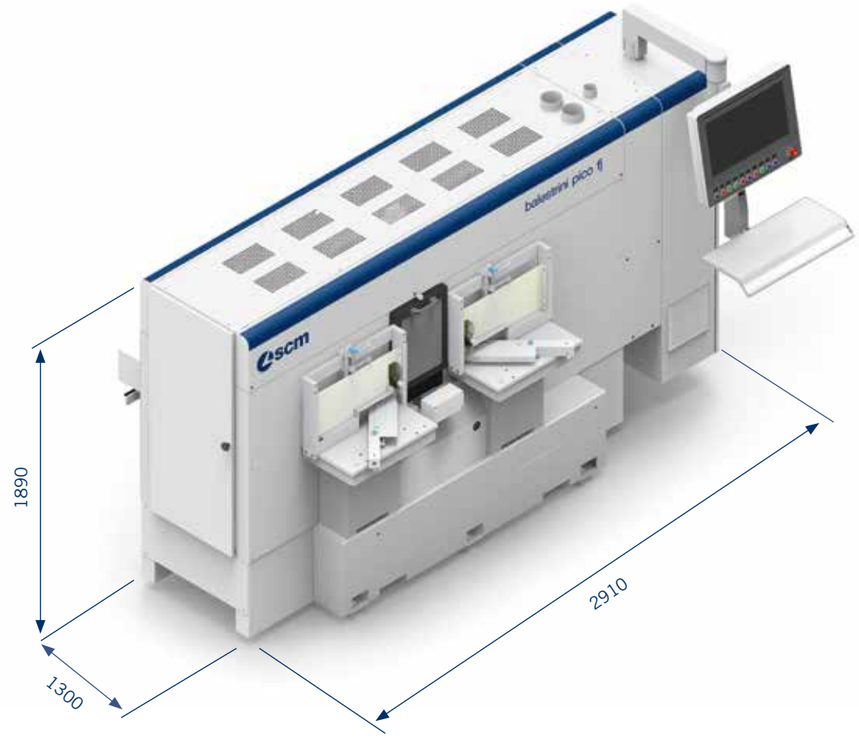
BALESTRINI PICO FF

Installed power	Total	14 kVA
	Standard supply	400 V - 50/60 Hz
Compressed air pressure		6 BAR (min. 4 BAR)
Compressed air consumption on front worktables	Per work cycle (tenon+mortise)	55,4 Nl/cycle
Compressed air consumption on rear worktable	Per work cycle (N° 3 mortises)	11,8 Nl/cycle
Suction	N° outlets	6
	Outlet diameter	100 mm
	Air volume suctioned at 25 m/s	8400 m^3/h



BALESTRINI PICO FJ

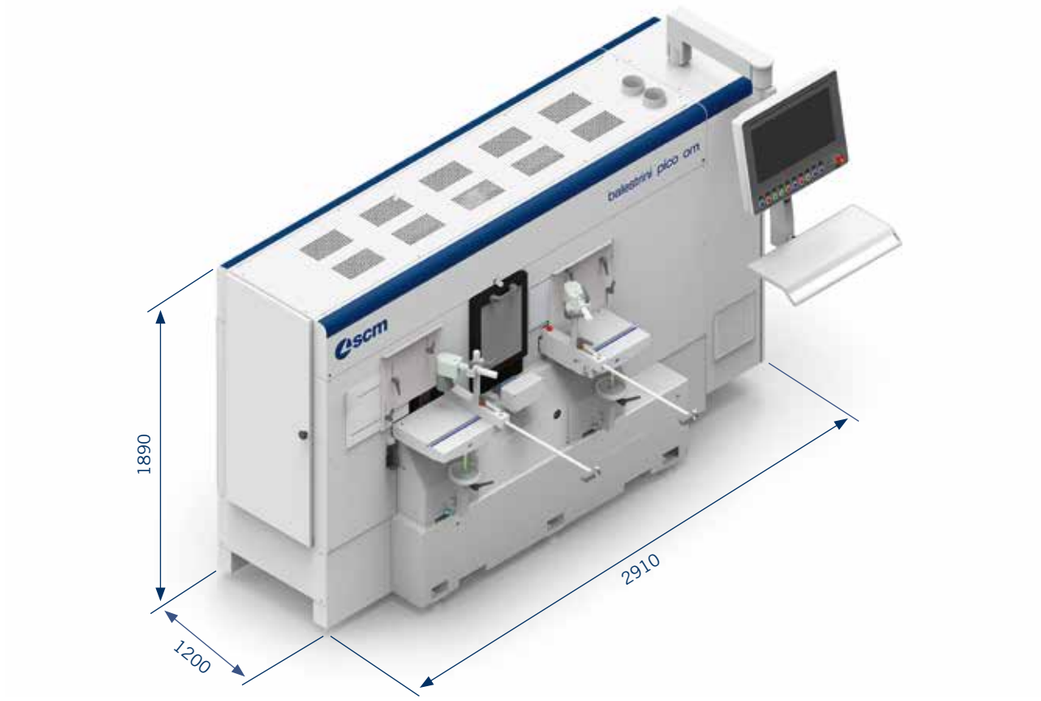
Installed power	Total	17 kVA
	Standard supply	400 V - 50/60 Hz
Compressed air pressure		6 BAR (min. 4 BAR)
Compressed air consumption on front worktables	Per work cycle (N° 1 tenoning + 4 notching operations)	1,3 Nl/cycle
Compressed air consumption on rear worktable	Per work cycle (N° 3 notching + 3 mortising operations)	112 Nl/cycle
Suction	N° outlets	6
	Outlet diameter	100 mm
	Outlet dimeter for “French Joint” operating unit	1 x 60 mm
	Air volume suctioned at 25 m/s	9200 m3/h approx.



TECHNICAL DATA

BALESTRINI PICO OM

Installed power	Total	14 kVA
	Standard supply	400 V - 50/60 Hz
Compressed air pressure		6 BAR (min. 4 BAR)
Compressed air consumption on front worktables	max (N° 10 tenons/min)	5 Nl/min
Compressed air consumption on rear worktable	max (N° 3 work cycles/min)	230 Nl/min
Suction	N° outlets	6
	Outlet diameter	100 mm
	Air volume suctioned at 25 m/s	8400 m^3/h



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 prescribed by CE Norms.

Maximum recorded noise levels based on functioning parameters established by ISO 3746/1995. Acoustic pressure while working 83 dbA (measured according to EN ISO 11202:1997, K variance = 4 dB). 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.

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.

70 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.

- scm — WOODWORKING TECHNOLOGIES
- Cms — TECHNOLOGIES FOR PROCESSING COMPOSITE MATERIALS, ALUMINIUM, PLASTIC, GLASS, STONE, METAL

INDUSTRIAL COMPONENTS

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

- HITECO — SPINDLES AND TECHNOLOGICAL COMPONENTS
- es — ELECTRIC PANELS
- steelmec — METALWORK
- scmfonderie — CAST IRON

scm woodworking technology | is more