

The new SCM automated and connected solutions at Ligna 2023

In an exhibition area covering 3,000 m² between Hall 13 and Hall 16, SCM is presenting its vast range of new entries for highly customised, interconnected and sustainable production.

SCM returns to Ligna with an extensive range of new products for every production requirement for machining panels, solid wood, timber construction and joinery. The innovations on display in an area covering **3000 m²** between **Hall 13** and **Hall 16** (the latter being Superfici technologies for finishing), have a common objective of making the processes more efficient, simplifying control and keeping down costs, consumption and waste.

One example is the **Smart&Human Factory** integrated, interconnected and intelligent factory solution which will be presented in Hanover in **two separate versions for industry and joineries**.

The numerous innovations being presented by SCM at Ligna are part of a **strong continuous growth path**. In 2022, Scm Group recorded a turnover of **850 million Euro** (+14% on 2021) and **orders totalled around 900 million**. The SCM Wood Division surpassed **600 million**, again recording double-figure growth on the previous year and continues to gain global market shares in the woodworking industry: +1.5% from 2018 to 2021 with further advancement expected for 2022 while waiting for the final balance figures for the sector. A positive financial statement despite uncertainties and complexities linked to the supply chain, the rising cost of energy and raw materials and the conflict between Russia and Ukraine. All thanks to the Italian Group's continuous investment into R&D (7% of the annual turnover), the upgrading of production sites in Italy and the development of markets and customer care that SCM continues to push ahead with in 2023.

NEW AUTOMATED AND CONNECTED SOLUTIONS: THE MODERNISED SMART&HUMAN FACTORY FOR THE FURNITURE INDUSTRY

The system of automated, modular and flexible cells on display in Hanover can produce around **400 furnishing components per shift**. It has mainly been designed for **kit furniture manufacturers** and is one of the many configurations that the Smart&Human Factory can assume based on customer demands.

It is an **integrated system of machines, software and services**, for customised, versatile, interconnected and sustainable production, and an **intelligent solution** with data flow which starts with the order entry right up to the production report. The advantage is monitoring both the advancement status of the orders given and the status of the machines in real time to understand how they are used and be able to predict any kind of maintenance required.

The process starts in the office where the clients' orders are imported from management software (ERP) or order-entry systems and other SCM office software is used at the design, optimisation and simulation stages, before production. The orders to be produced are then planned using MES software that allows the work to be distributed across the machines, optimising overall productivity.

The process continues, therefore, in the Smart&Human Factory made up of the new cells - **gabbiani gt2** for the beam saw, **stefani cell E** for edgebanding, **morbidelli cx220** for drilling and a new **cut c 200** right-size-box-making machine for cardboard packaging. The cells are automated using **articulated robots** to ensure quality, repeatability and guaranteed process times. They are also connected by unmanned **AMR shuttles**, an evolution of the traditional AGVs because they can move safely in the areas and around people thanks to 3D cameras and laser systems capable of scanning the surrounding area at 360 degrees. These AMR shuttles simplify traditional logistics control and spaces, usually consisting of roller conveyors and vast intermediate storage. SCM is offering a new model of logistics which can easily adapt just in time and just in sequence.

It is a **versatile** production system because the machines and systems can manage the variants of the same product with fast set-up changes and because, thanks to the intrinsic modularity of the cell system and the flexible logistics which subtend the process, it can easily be **reconfigured** and **scaled** when required. This is

how a single production system to create different furnishing environments is achieved and resources are shared with a single central storage.

Lastly, the more efficient use of resources coming into the system and the reduction of waste, make this production model more **sustainable**.

In the **beam saw** area, SCM is presenting a **gabbiani gt2** single-blade panel saw **with articulated robot** for automatic loading and unloading: a flexible cell that optimises shifts and assists with the needs of both "batch 1" and large-volume machining. The cell is used with or without the articulated robot, with automatic switch from one program to another. All this enhanced by the new **Maestro optiwise** optimiser.

Stefani cell E is used to control the **edgebanding** process: the flexible cell that combines the advantages of an exceptionally high production level with those of complete automation at 25 metres per minute. The panels are loaded autonomously by an articulated robot. At the exit, the **pickback** gantry panel return system guarantees a timely return of the machined panels. All this with simple and intuitive control thanks to HMI **Maestro active edge** software.

In the **drilling** area, we find the **morbidelli cx220**, a flexible drilling and dowelling cell with robot to more efficiently create all the parts of the piece of furniture, even with pieces that differ considerably from one another. The cell produces **one panel per minute** and over **400 panels per shift** with a single operator in just 50 m². It can be used in robot-only mode for a continuous cycle production, or partially supervised by the operator.

The process is completed in the **packaging** area with the **cut c200**: a new solution for "batch 1" cardboard box packaging to produce **up to 4** different-shaped and sized **boxes per minute**. The ideal solution for optimising the use of cardboard based on the actual sizes of the box produced.

SMART&HUMAN FACTORY FOR JOINERIES

Also taking centre stage at Ligna is an **integrated cell** for flexible and customised production from the raw material to the finished piece of furniture, enhanced by the integration with MES software.

SCM is presenting **class px 350i** for the **beam saw**, a circular saw with mobile unit and blade tilting of up to 46° to machine the panel in complete safety and with a perfect hold. Advanced technology with **Thundercut**, SCM's optimiser-cutting sequencer and the only one to guide the operator one step at a time when inserting the panel into the machine and when cutting.

The cell has an **me 40** automatic edgebander fitted with the new **eye-S compact control** with **Maestro active edge** interface for excellent machine management. The control manages the new insertion and disconnection of the operator units and graphically represents all the machine's functions.

The work is completed with a **startech cn plus**, a CNC drilling centre designed to easily and flexibly produce furniture parts without repositioning the tools and without a need for operator intervention.

DIGITAL INTEGRATED WOODWORKING PROCESS

In the "**Digital Integrated Woodworking Process**" area, SCM is presenting a new integrated offer of software and services that support the customer at each stage of the process: preparation, planning, production, as well as monitoring, maintenance and servicing.

Preparation. SCM's software from the office include the CAD-CAM **Maestro cnc** for machining centres (nesting and rails work table) and the 3D **Maestro pro view** simulation software that avoid collisions and calculates production times as accurately as possible. Some of the new entries presented at Ligna include the new functions of the **Maestro cnc nest** cutting optimiser and the new **Maestro optiwise** optimiser, for single-blade and angular panel saws, designed to achieve maximum cutting with minimum waste from both small and large production batches.

Also on show is the **Maestro power TMS** software that simplifies and optimises the control of tools inside the CNC machining centres' storages, **Maestro powerset** combined with the new morbidelli pwx500 drilling machines and, previewing exclusively at Ligna, the new **Maestro 3drill** software for drilling, that directly imports three-dimensional solids with automatic recognition of the machining to be performed, in order to speed up and simplify the user's programming experience. Also of importance to the timber construction industry is the **Maestro beam&wall**.

Planning. To program and plan production, SCM is presenting an **MES**-type software that allows to monitor the factory and the orders progress in real time and have reports on the production history.

Production. On board all machines equipped with PC panels, SCM offers the HMI software **Maestro active**, the advanced human-machine interface software that simplifies operator interaction and guidance of SCM machines, with common look&feel on all the Group's technologies.

This year, **Maestro active square** for profiling machines and double-end tenoners and **Maestro active beam&wall** for CNC machining centres for timber construction are being presented for the first time at Ligna. New entries that make it even simpler and more intuitive to control and optimise the production flow directly on the machine.

Services. The **Maestro connect Digital Service platform** ensures machine status monitoring, maintenance optimization, rapid support for issue management, suggestions on spare parts to be ordered and a further augmented reality support with the Smartech program. The aim is to guarantee maximum return from the machines and plants in conjunction with constant support from SCM technicians.

Today, Maestro connect is also a part of the "**Woodworking made lzy**" project conducted by the most important machinery manufacturers who, together, have defined a standard interface and a common language for connecting the machines and MES to one another, which allows the production process to be fully controlled.

Customer care. In a station dedicated to **SCM Service**, the **Service Bundles** are being presented for the first time, i.e. SCM service packages created to offer an integrated solution that assists the customers through the whole production process. It is a customized, customer-centred solution based on four principles: maintenance that optimises machining times and the machine's life cycle; support; prediction of downtimes and any faults; advisory with customized training programs.

THE LATEST FOR ALL WOODWORKING APPLICATION FIELDS

As well as Smart&Human solutions for industry and artisan workers, SCM is presenting an extensive offer of new products both at the fair and digitally, dedicated to each field of application.

Timber construction and prefabricated houses: new **oikos xs** cnc machining centre for the production of prefabricated walls, trusses, roofs and blockhaus; **dmc system xl** to sand and calibrate X-lam/CLT panels; other new entries on show at the **Randek** stand (Hall 13), specialising in advanced systems to machine prefabricated houses and an SCM partner.

SCM Surface Technologies for integrated surface treatment: new **dmc system tc with laser unit** sanding-calibrating machine and, among the latest from **Superfici** for finishing (Hall 16), the new **compact xl** sprayer, a **uv led** polymerisation system and the **excimatt** excimer technology for extra-matte finishes.

CNC machining centres for panels and solid wood: **morbidelli m100** with new FlexDrive work table; **morbidelli x200** with new in-cab labelling for nesting machining; **accord 500** to manufacture doors, windows, stairs and solid wood elements; **hypsos** for 3d machining of elements into complex shapes and large sizes.

Edgebanding: new **olimpic 500** for artisan businesses looking for all the advantages of an edge bander in a reduced floor space, and **stefani sbx** for high-precision squaring-edge banding and quality machining.

And more still: **windorflex**, a new automatic machining cell for producing complete windows, and regarding squaring-profiling, **celaschi cpm** dedicated to machining cabinet door parts.

The extensive offer for artisan joinery where the new "**Blade Off**" safety system and the new **starteck cn k** 3-axis compact are highlighted.

Further details in the editorials included in the SCM Ligna 2023 press kit

Scm Group is a global leader in technologies for machining a wide range of materials and industrial components. Across the globe, the group's companies act as highly reliable partners to leading industries in a wide range of product sectors, from furniture to construction, automotive to aerospace, and yachting to plastic machining.

Scm Group coordinates, supports and develops a system of industrial excellence in 3 large highly specialised production centres in Italy, with a turnover of 850 million Euro, with 4,000 employees and a direct presence on all 5 continents.

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