

**cantarutti**

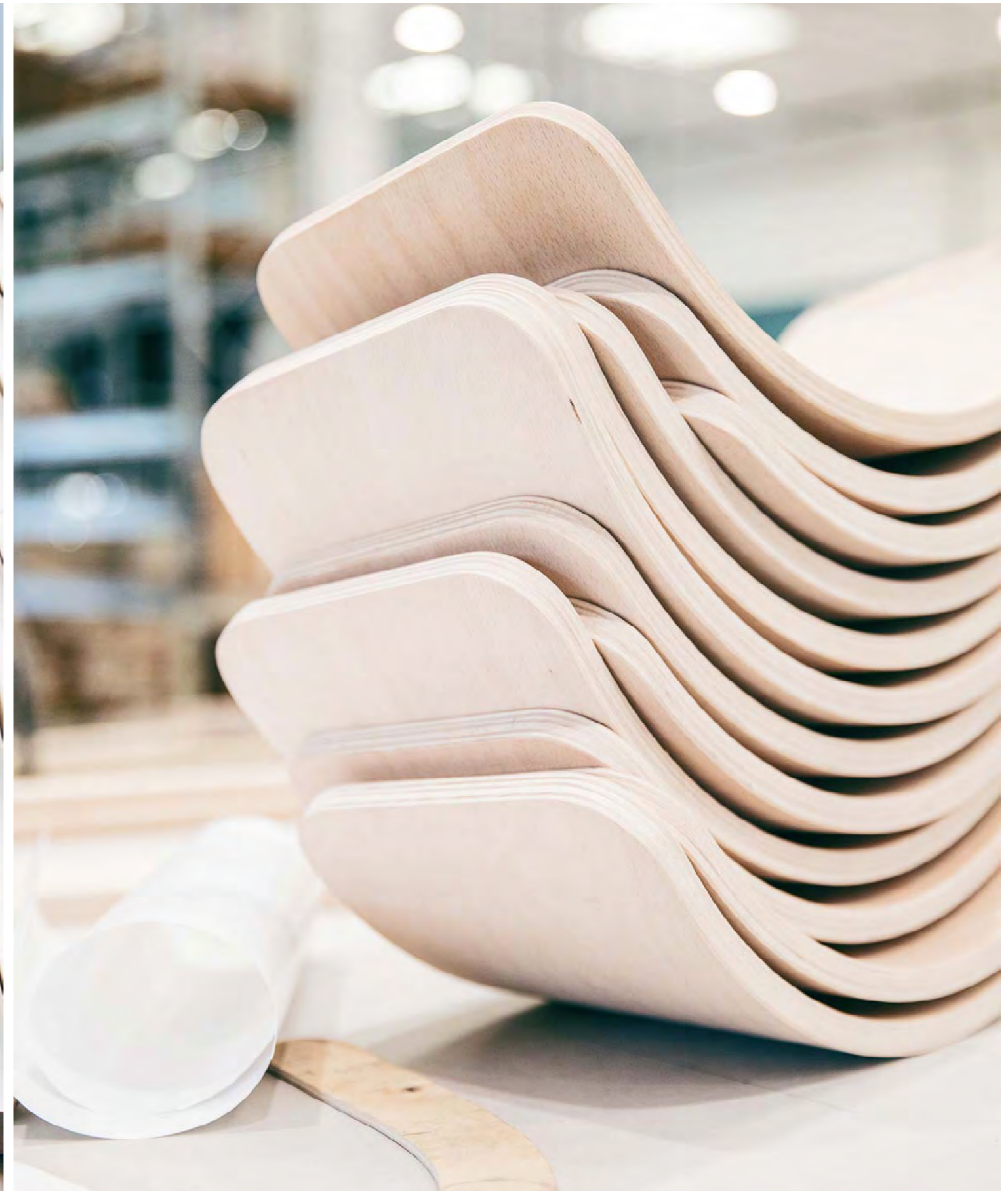
# Technical Profile

## WE MAKE



WE MAKE

We make designer chairs. With care, quality and innovation. Because we like to do things well, always.





# Technical Profile

# PRODUCTION



## TECHNICAL OFFICE

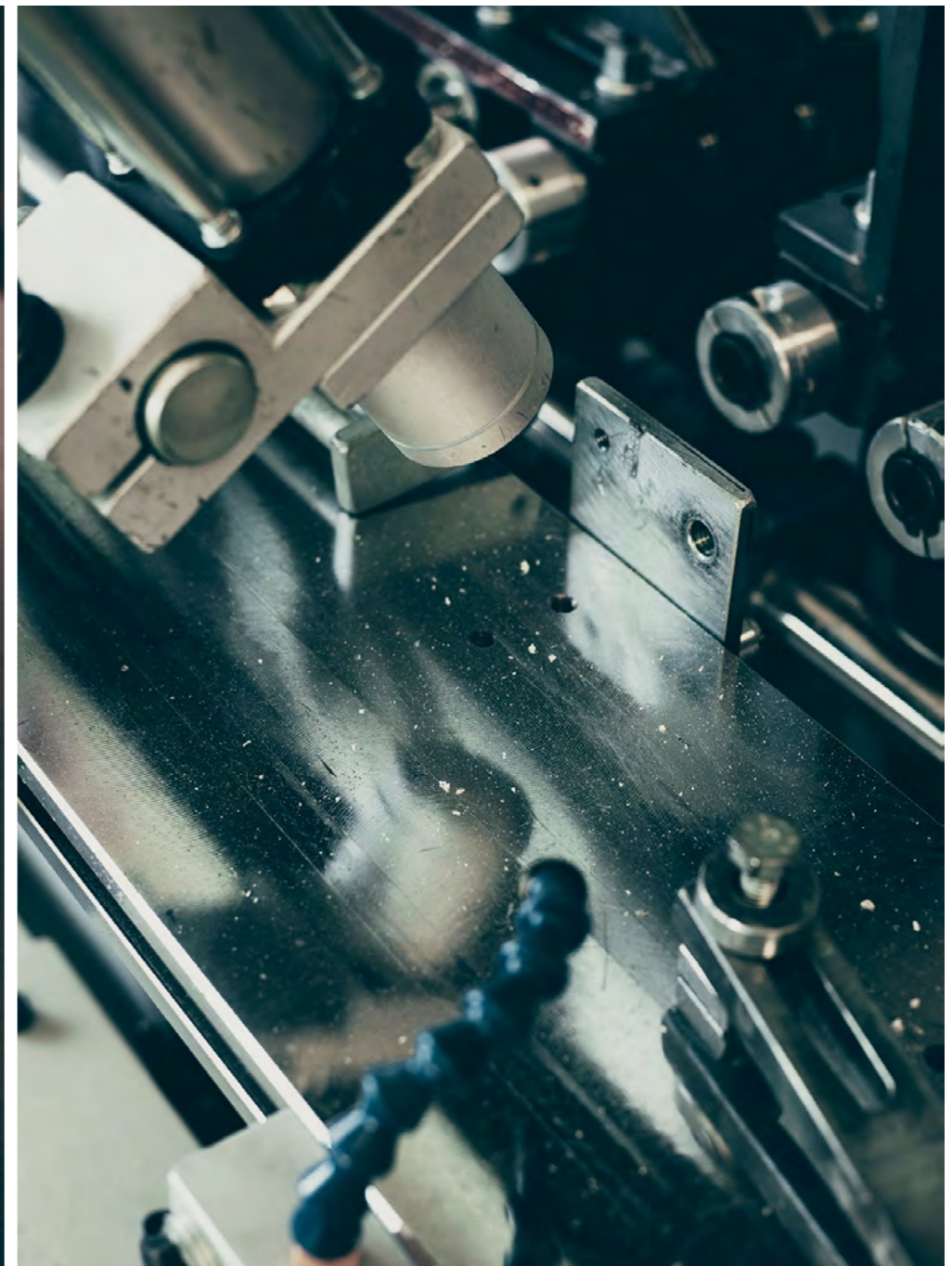
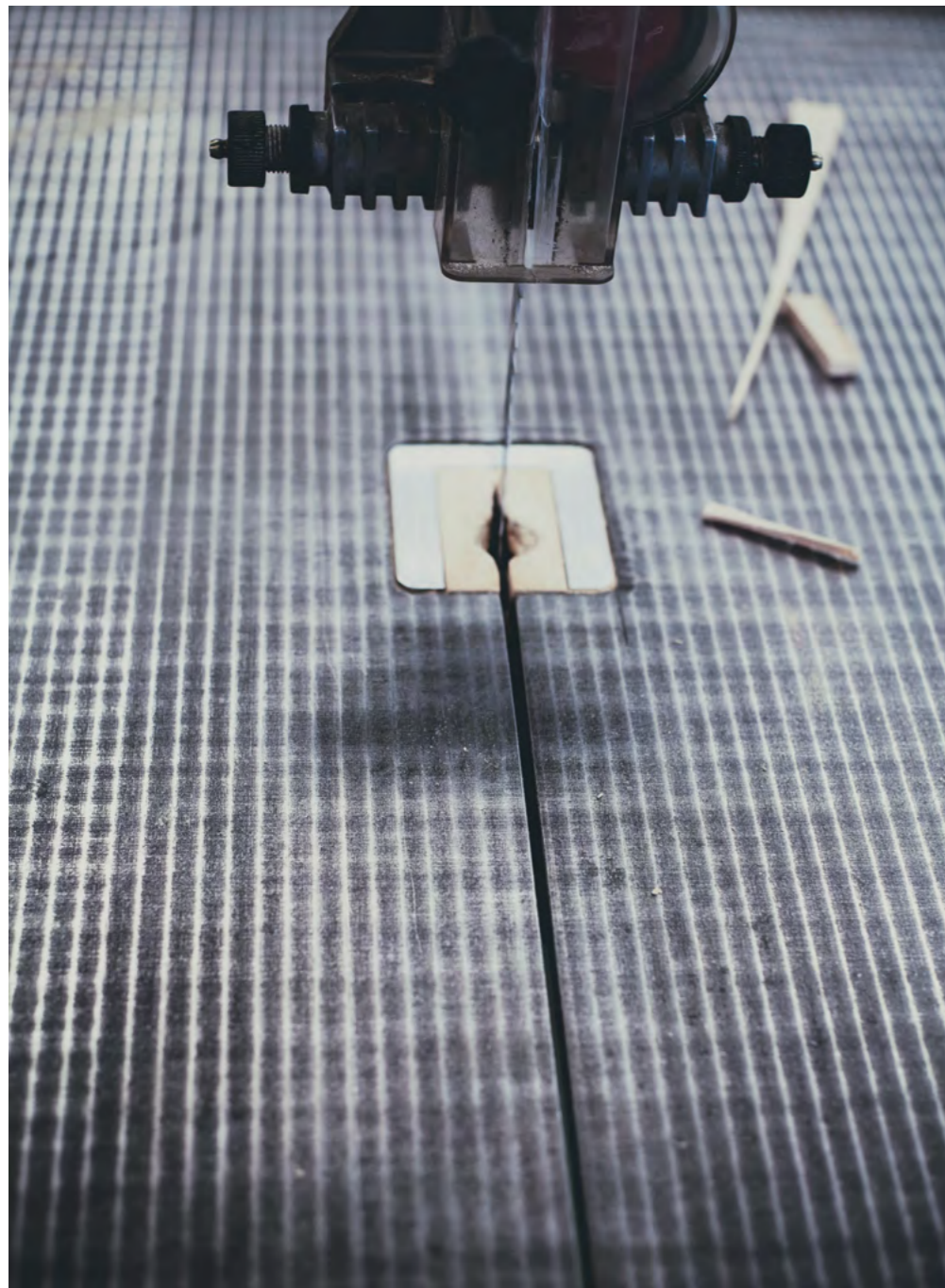
The Technical Office directly manages the entire production schedule, from the launch of an order, to the verification of workings, to the budgeting of new models.





## PROTOTYPING DEPARTMENT

We study and develop new models, printing directly onto a large scale the project drawings created by architects and designers. The department is equipped with all the conventional machines used in series production, in addition to the spindle moulder, surface / thickness planer, circular and band saw, horizontal and vertical sander, for the realisation of all varieties of prototypes on site.









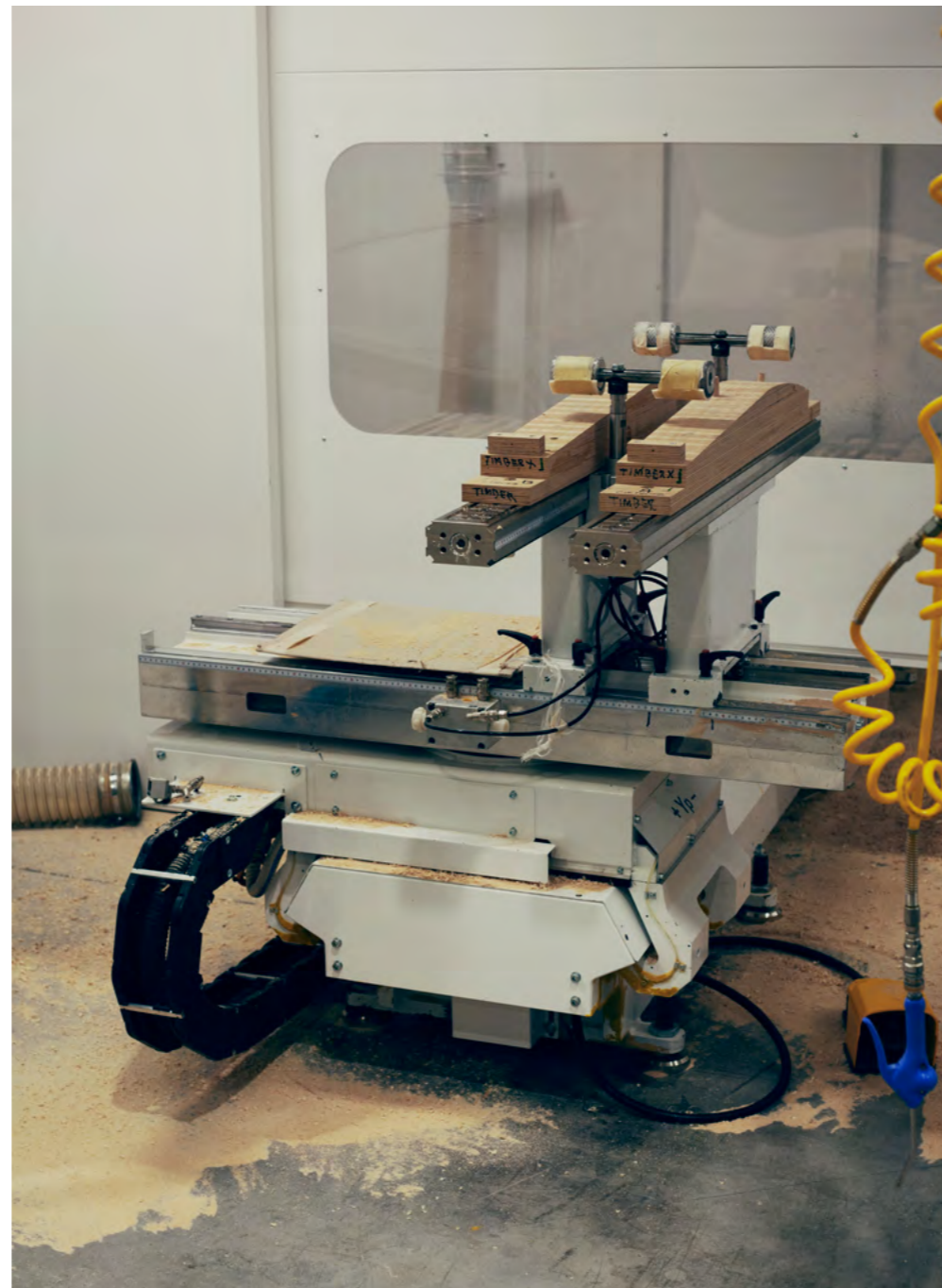
MACHINE DEPARTMENT

Three machining centres with different characteristics by type of product and processing, programmed using the CAD-CAM ALPHACAM software:





- a TURBO TWISTER CMS-BALESTRINI centre, ten axes with high machining speed and two cross operating units with four tools always available and double work table with relative semi-automatic hopper loader, used for butting, tenoning, drilling, mortising and milling on long elements of legs and crossbars;
- a TWIN PAOLINO BACCI centre, six interpolated axes with two independent front tables with variable geometry and a cross operator group with four tools capable of performing butting, drilling, milling, mortising, tenoning and contouring on a single positioning multiple items at once;









- an EVOLUTION AVANT PAOLINO BACCI centre, double work centre with sixteen interpolated axes with two independent operating units and two cross operator groups with four tools, capable of performing butting, drilling, milling, mortising, tenoning and contouring on the same piece with both heads or on different pieces simultaneously.

All the machining centres are networked according to the logic and protocols envisaged by Industry 4.0.





Thousands of unfinished pieces are always available in our warehouse, ready to be processed and customised according to requirements. All our chairs are CATAS certified for safety, strength and durability, while the models are registered with an ornamental patent, which protects the designs against copies and counterfeits.





In addition to the three centres with latest generation technology, the machinery department has a traditional equipment of:

- CAMAM MO / 4° multiple oscillating mortising machine for the mortising and drilling of left and right chair elements, structured with two work benches and two independently adjustable and tilting oscillating units, for the machining of slots of different length and inclination between them, with four spindles adjustable vertically and horizontally along the slide. Maximum production capacity 600 pcs / h;
- CAMAM MO / A / 30X multiple oscillating mortising machine with two workbenches and three independently adjustable and tilting oscillating units, with five spindles for creating a greater number of mortises and holes. Maximum production capacity 600pcs/h;
- CAMAM MOS / A2 multi-spindle oscillating mortising machine for mortises and holes on curved elements, with five independent spindles adjustable longitudinally and transversely and one retractable for mortising and drilling in even or odd numbers. Maximum production capacity 300 pcs / h;
- PAOLINO BACCI double rounded tenoning machine with numerical control with two opposing heads and loader that simultaneously performs, in all possible inclinations, the tenons at the ends of the pieces. Maximum production capacity 900 pcs / h;
- BALESTRINI PICO single round tenoning machine, small manual tenoning machine with two benches and one axis, for particular elements in shape or size. Maximum production capacity 500 pcs / h;
- Combined end-boring-milling machine BACCI TTF for single and multiple machining, with a maximum of three simultaneously for cutting, drilling and milling. Production capacity from a maximum of 400 pcs / h for a single processing to 200 pcs/h for all three processes simultaneously;
- Multiple tilting boring machine with CAMAM FOT / 2M loader, machine with two spindles adjustable and tilting at 90° for series drilling. Maximum production capacity 1000 pcs / h;
- COMEC FRO500 horizontal axis milling machine for interlocking milling in combination with a machining centre.



## ASSEMBLY DEPARTMENT

The Assembly Department includes numerous clamps and presses, in particular three groups of pairs of CAMAM SI/PM clamps are used for the assembly of chairs without manual pre-assembly of the elements, which are housed and directed by particular guides and support sets, increasing production up to 50% more than traditional systems, with a maximum production capacity of 800 chairs per day for each. The assembled drums, ready for painting or directly for shipment, are delivered to the warehouse department, which has a storage capacity of 35,000 chairs.





## RAW GOODS WAREHOUSE

- 3.250 m<sup>2</sup> surface;
- 1.150 m shelves containing 790 pallets 200 × 120 cm;
- 910 m<sup>2</sup> drive-in shelving for raw parts storage;
- more than 30.000 raw parts.





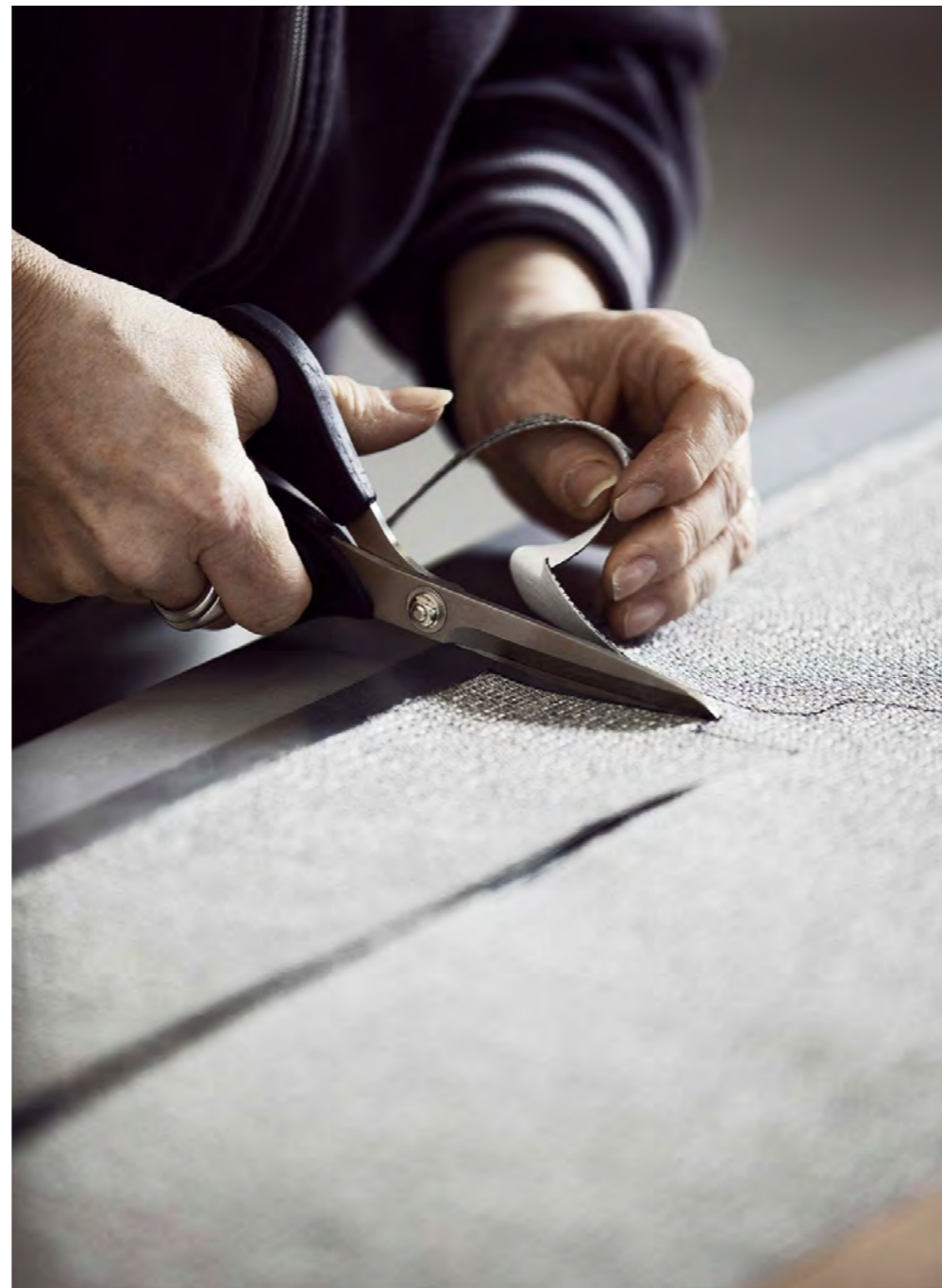
# Technical Profile

# UPHOLSTERY DEPT.



The department receives and administrates client fabrics and hides. Arranging quality checks, and, following preliminary sample tests, production begins structured in four distinct operations:

- fabrics and leathers are tailored with scissors and electric cutters;
- tailored fabrics and leathers are sewn and finished with single or double needle stitching;
- the bonding of the foams to the bodies is completed by means of a pneumatic pump and airbrushes, using solvent or thermal solvent adhesive glue;
- the sewn items are filled into the glued shells and blocked with pneumatic staplers.



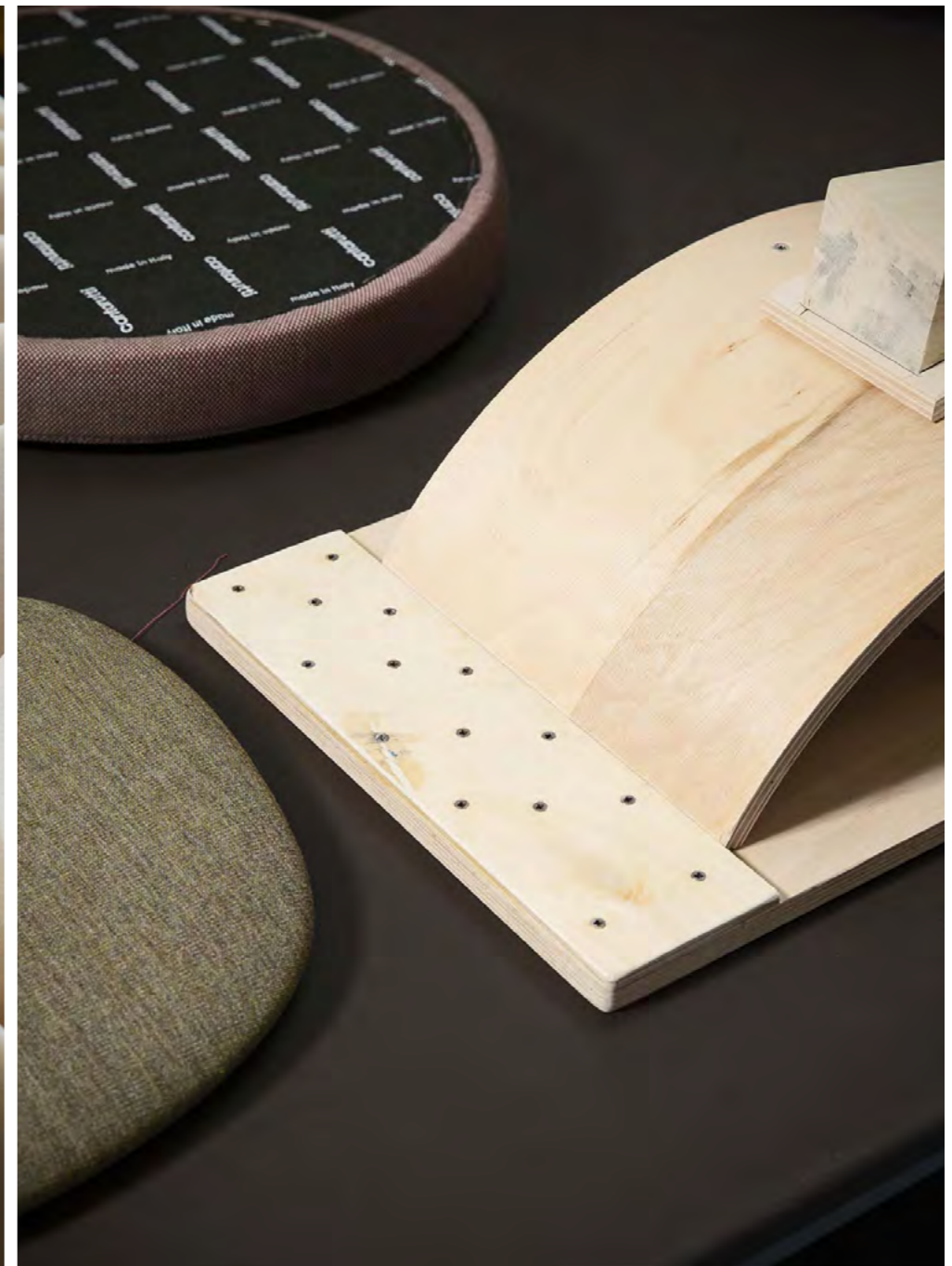
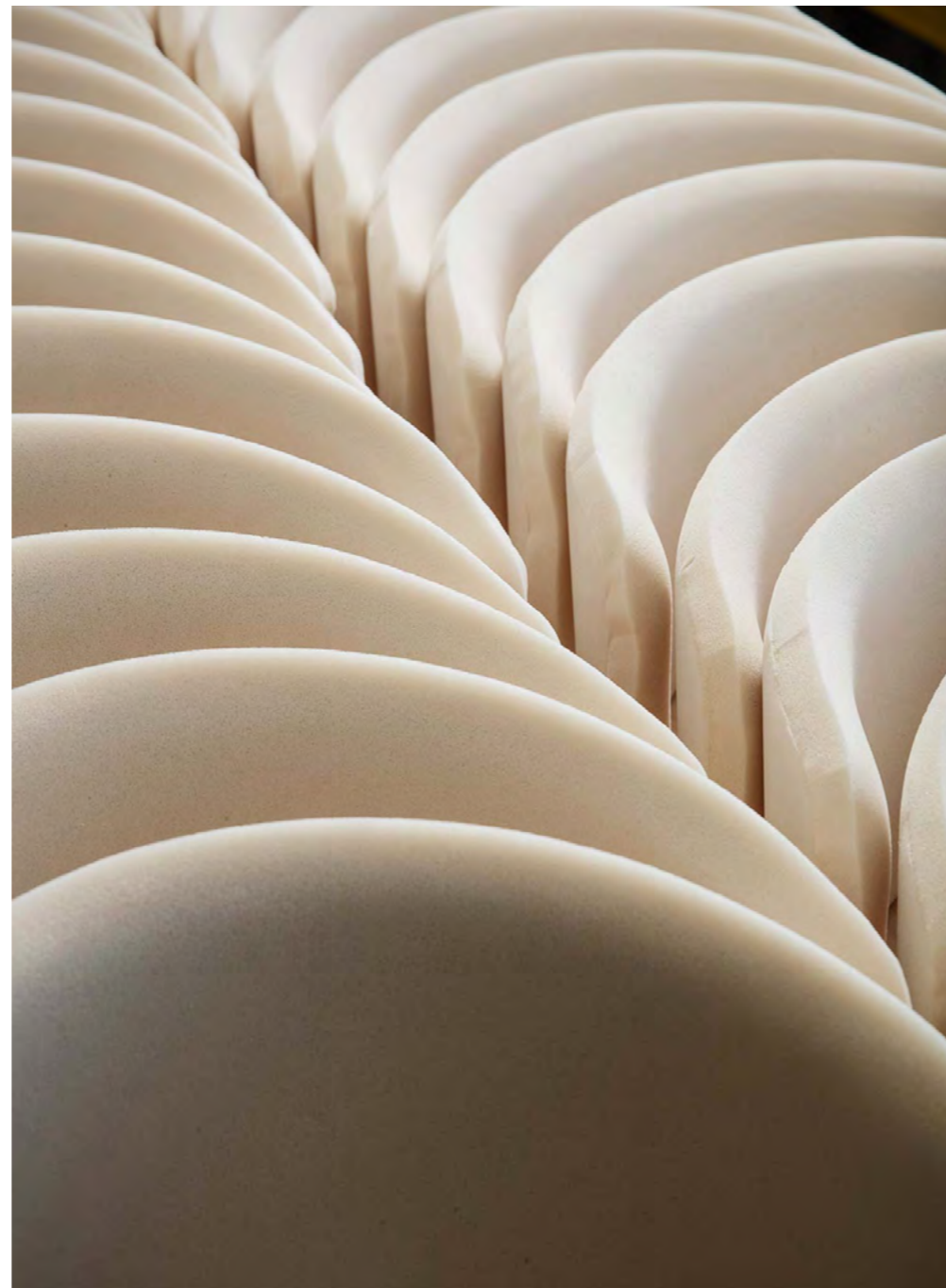






The upholstery department is equipped with:

- cutting table with electric cutters;
- flat sewing machines;
- single needle column sewing machine;
- two needle column sewing machines;
- leather Skiving machine;
- gluing system with pneumatic pump with airbrushes and suction system;
- oven for heating leathers and fabrics for thermal tempering;
- height-adjustable pneumatic upholstery benches;
- pneumatic seat press;
- pneumatic tackers.





## UPHOLSTERY WAREHOUSE

Equipped with large storage quantities for fast and efficient fulfillment of orders, you will find the range of catalogue fabrics and pre-shaped foams.

- 70 m pallet racking for raw padding panels;
- 15 m pallet racking for storing padded panels awaiting assembly.





# Technical Profile

# SPRAY & FINISHING

# DEPT.



## Phase ① TINT

First phase of the spray and finishing process, which is performed using the “flow coating” system with a jet of water-based dye, which applies the desired colour to the drums. The drums are loaded on the chain by air transport in step adjustable, 220 m long, with a load capacity of 220 drums of whole chairs assembled (or much higher in cases of smaller sized elements). The material hangs on the chain until the dye is dry, to the point of being handled. It is then unloaded and placed on three conveyor belts, 3 m wide and 27 m long, with the capacity of 200 chairs each.





## Phase ② FUND

The second stage of processing consists of an intermediate spray and finishing step, which can be applied manually or with a disc painting system. In the case of small quantities, one cabin per floor is used with manual painting and an electrostatic gun. The cabin is connected to a chain with scales, which develops on three levels, with a capacity of 600 seats. Usually, for large quantities, the disc painting system is used, which can be used for both solvent-based and water-based paint, and is connected to a conveyor chain 900 m long aircraft with adjustable pitch, with capacity up to 900 chair drums. When the bottom is dry, the drums are loaded on trolleys and transported to the correspondence department.





### Phase ③ SANDING

Before the final spray and finishing, an accurate sanding is performed, operators manually carry out this process with the aid of orbital sanders, to make the product perfectly smooth before final painting. The Department has eleven sanding stations with direct suction of sanding dust. During this operation the control of any product defects is also carried out.





#### Phase ④ FINISHING

Finishing is the final stage of the spray and finishing process. For small quantity productions it takes place in a booth for manual finishing, with an electrostatic gun for solvent-based or water-based paints. For larger quantity productions, the robotic cabin is used with two anthropomorphic arms synchronised, working on opposite sides of each frame, following the stems of the chairs that cross the painting booth resting on sliding pedestals, on one 30-place rack. Once finished, the chairs are placed on three wide conveyor belts 4 m and 27 m long, with a capacity of 300 pieces each. Once the final painting is completed, the conveyor belts carry the chairs to the packaging department, where they remain for 24 hours to dry perfectly.





## Phase ⑤ PACKAGING

The approved product is completed with the assembly of the upholstery and, finally, packaged in the appropriate packaging.

- 48 m pallet racking with 10.000 packaging boxes of different formats readily available.





# Technical Profile

# SHIPPING DEPT.



## SHIPPING WAREHOUSE

- 80 m<sup>2</sup> drive-in shelving with 120 linear m of support for 90 pallets
- 160 × 120 cm of finished products packed ready for shipment;
- the entire warehouse is managed with the use of bar code labels and related readers with Industry 4.0 protocols.

