

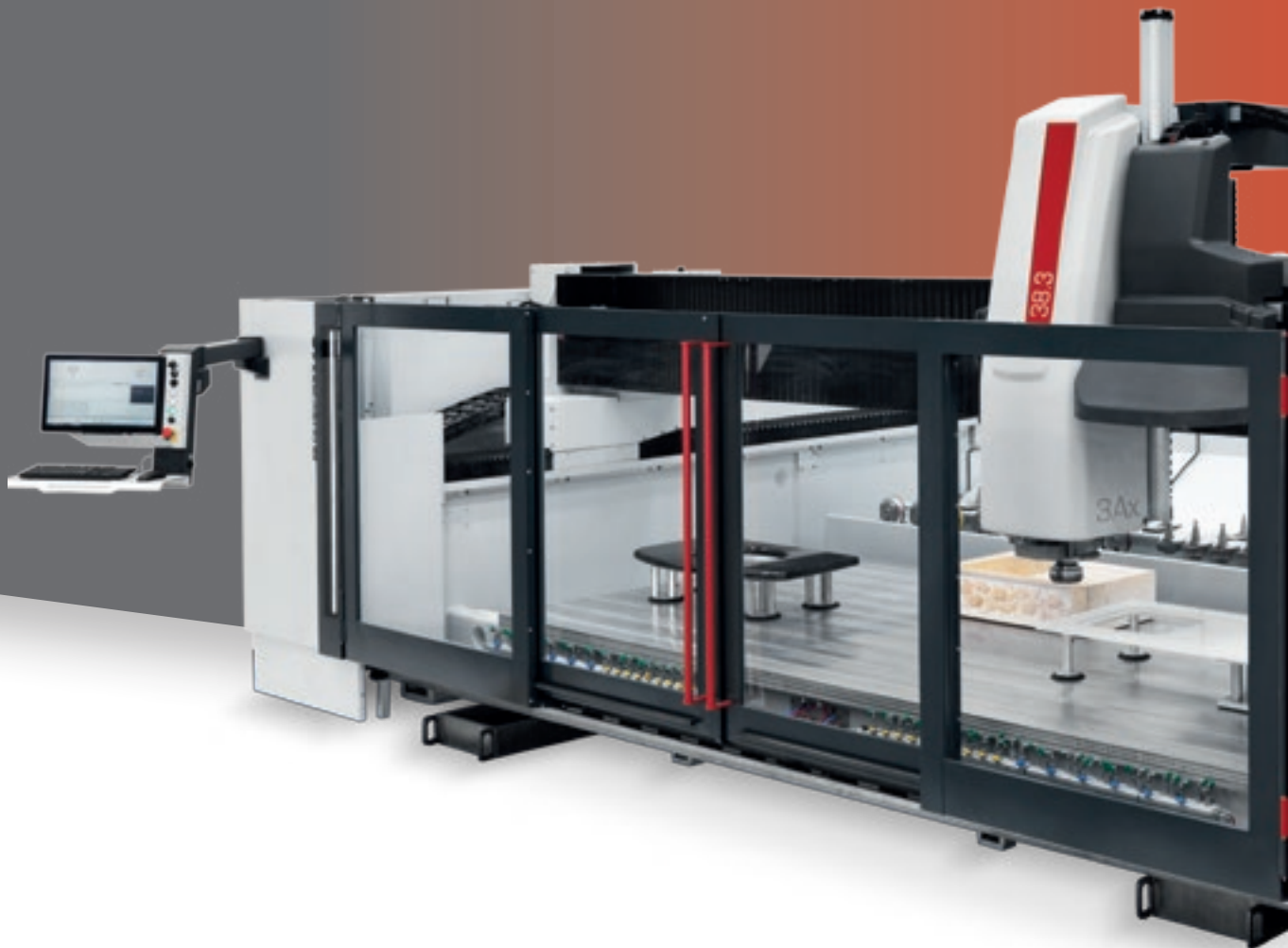
MASTER SERIES

CNC WORKING CENTRE
FOR STONE



 **INTERMAC**

LATEST-GENERATION TECHNOLOGY



THE MARKET CALLS FOR

a change in production processes to meet the ever-growing request for personalised products to satisfy customers' specific needs. This is coupled with the need to maintain high quality standards whilst offering product customisation with quick and clearly-defined delivery times.

INTERMAC RESPONDS

with manufacturing technologies that enhance and support technical abilities and knowledge of processes and materials. The **Master Series** is the range of Intermac machining centres dedicated to stone processing. These technologies can machine sheets of natural materials, ceramics and synthetic materials used for floors, façades and cladding, furnishings, kitchen tops and funerary applications. The all-new and improved Master range maintains the quality and reliability that has always characterised Intermac technology, making it an industry-leading company and an iconic point of reference in its field.

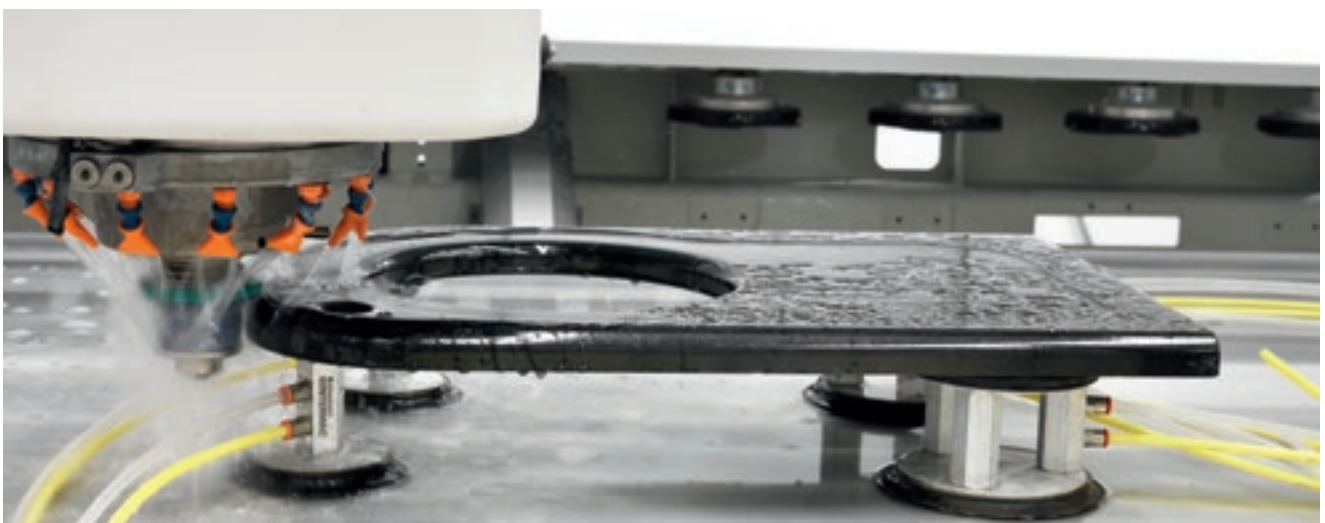
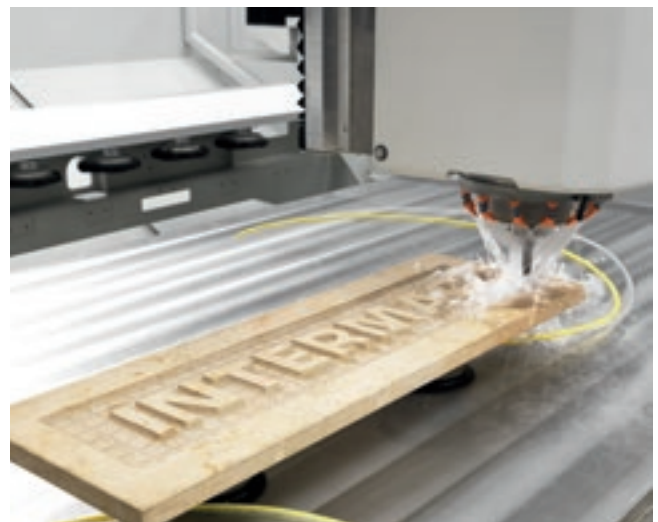


MASTER SERIES

- ✓ UNPRECEDENTED QUALITY AND FINISH.
- ✓ FLEXIBILITY AND VERSATILITY IN ALL MACHINING OPERATIONS AND WITH ALL MATERIALS, FOR UNRIVALLED PRODUCTIVITY.
- ✓ SUPERB PERFORMANCE EVEN WHEN CARRYING OUT THE MOST COMPLEX MACHINING OPERATIONS.
- ✓ REDUCED TOOLING TIMES.
- ✓ EXTENSIVE CHOICE OF TOOLS, READY FOR ALL TYPES OF MACHINING OPERATION.
- ✓ FUNCTIONAL DESIGN AND ERGONOMIC PROTECTION FOR OPTIMUM VISIBILITY AND MAXIMUM SAFETY DURING MACHINING.

UNPRECEDENTED QUALITY AND FINISH

The Master series is capable of performing the most complex and varied machining operations, providing users with superb finish quality when working with natural stone, granite, marble and synthetic and ceramic materials for bath tops and kitchen tops.



MASTER PROCESSING CENTRES ARE DESIGNED TO OFFER OPTIMUM FINISH QUALITY ON SHEETS AND BLOCKS OF NATURAL AND SYNTHETIC MATERIALS AND CERAMICS, GUARANTEEING MAXIMUM RELIABILITY AT ALL TIMES.

FLEXIBLE AND VERSATILE IN ALL MACHINING OPERATIONS AND WITH ALL MATERIALS



Ideal for all types of machining operation:

- ▣ Boring
- ▣ Milling
- ▣ Grinding and polishing
- ▣ Recesses
- ▣ Cup grinding
- ▣ Tapering
- ▣ Writing and engraving
- ▣ Ageing
- ▣ Engraving
- ▣ Profiling



QUALITY THAT IS UNEQUALLED ON THE MARKET

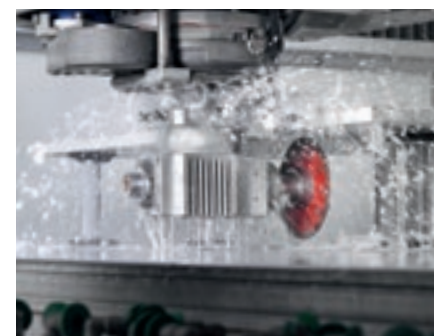
Cup grinding and polishing on the external profile and the internal squared bore, using an aggregate with magnetic tool change.



Drainage channels on a tilted table for kitchen tops.



45° disc cuts for joints.



Aggregate for undercuts on kitchen tops.

ENDLESS POSSIBILITIES

The solid 5-axis hi-tech working head is capable of machining kitchen tops and slabs and blocks with perfect results, demonstrating the renowned quality of Intermac work centres.



Disc cut at any angle.



Polishing of rounded profiles on slabs.



Bevel with variable angle.



Cup grinding of the external edge.

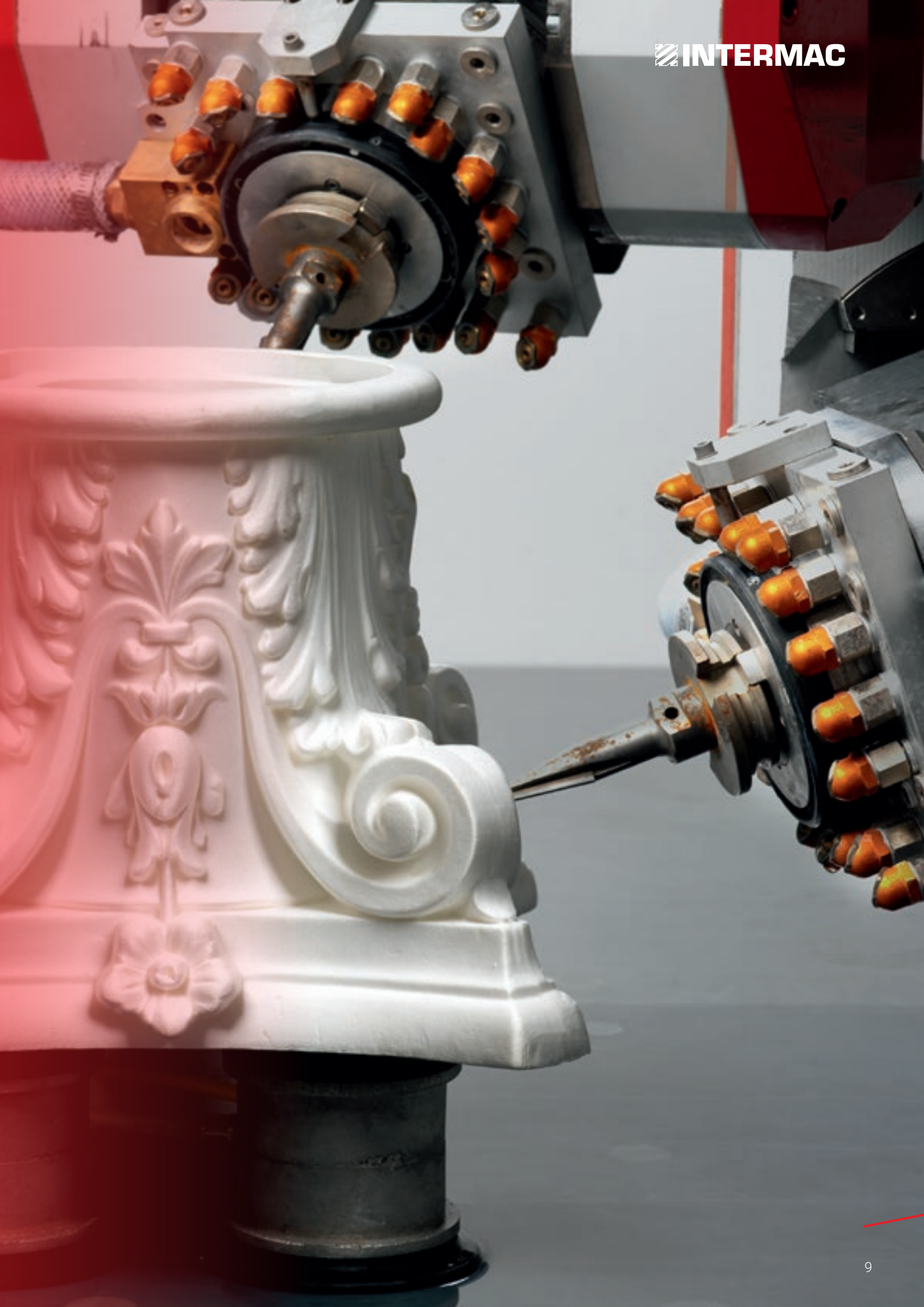
INNOVATION

The background of the entire page is a photograph of a 5-axis CNC machine. The machine is shown from a low angle, looking up at its complex structure. A red semi-transparent overlay covers the entire image, creating a monochromatic red background for the text.

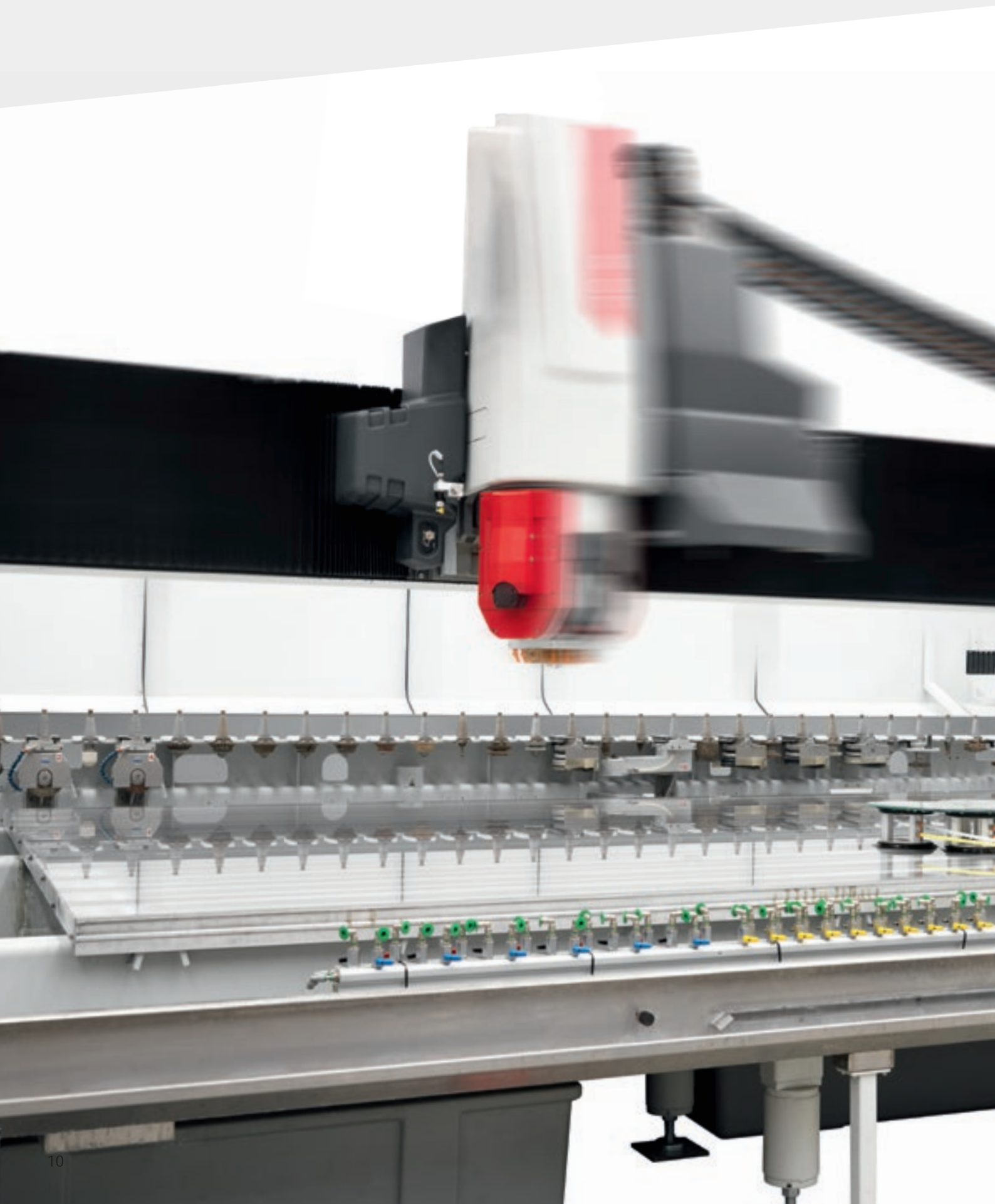
5-AXIS TECHNOLOGY

High level technology for the best results and extremely easy to use.

The 5-axis head with endless rotation C axis and tilting A axis (from -90° to +90°) ensures excellent flexibility and pushes the limit for the execution of complex machining operations.

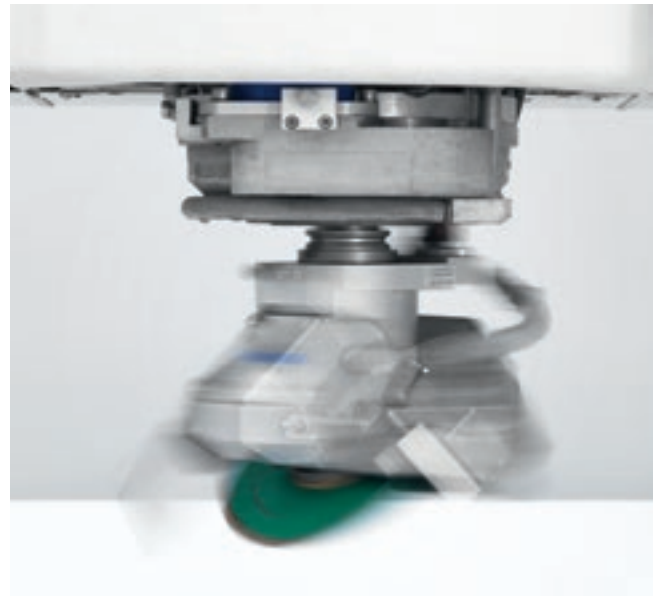


HIGH PERFORMANCE



In line with requirements, the machine can be equipped either with a C Axis or a T Axis.

**Maximum acceleration
and axle speeds,
minimising waiting times
and enabling cycle times
to be reduced.**



C axis with endless rotation, for the perfectly smooth and accurate execution of even the most complex machining operations.



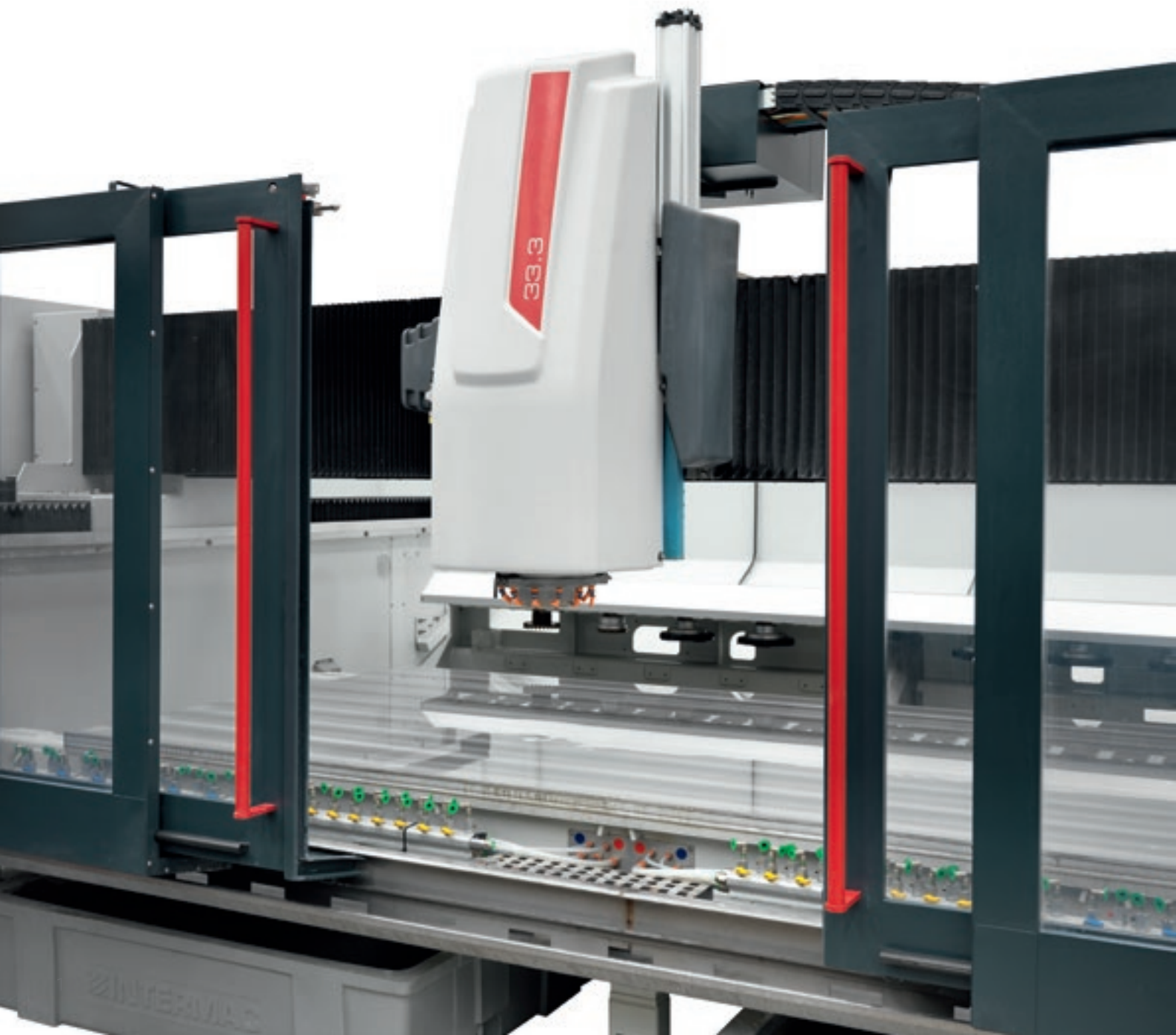
Tilting T axis ($\pm 2.5^\circ$) for making recesses for kitchen tops on the tilted table.



CUSTOMISABLE ACCORDING TO REQUIREMENTS

The machine work table is an extremely rigid structure upon which is placed an aluminium worktable calibrated to grant maximum flatness of the work area, fundamental for first class machining results. The machine is designed to work in twin-station mode too.

The beam is moved by means of twin-motor gantry technology to ensure greater accuracy and a longer lifespan.



The size of the work table is optimised for all production requirements.



The dual height of the work table (525 or 730 mm) simplifies loading and unloading of panels in line with the varying requirements.



Compact width and height for smaller working dimensions.



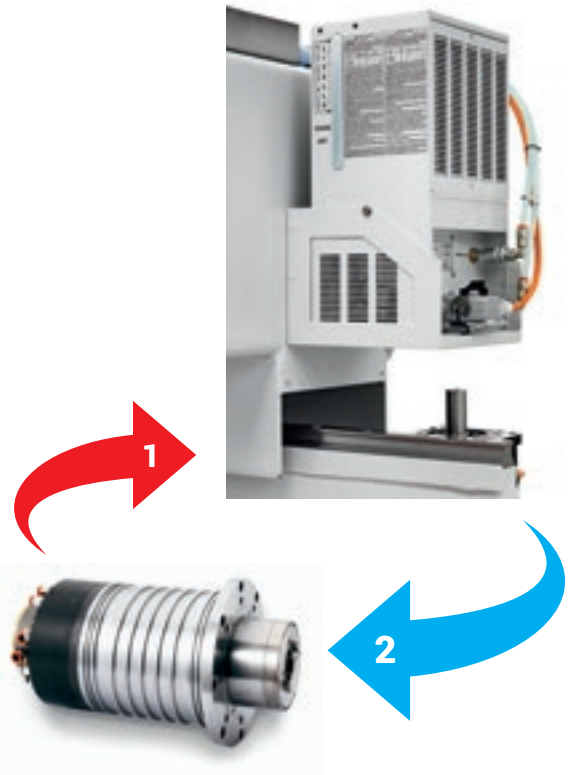
Master processing centres can also be configured in the Plus version for companies that need to machine particularly thick pieces.

MAXIMUM MACHINING RELIABILITY AND PRECISION



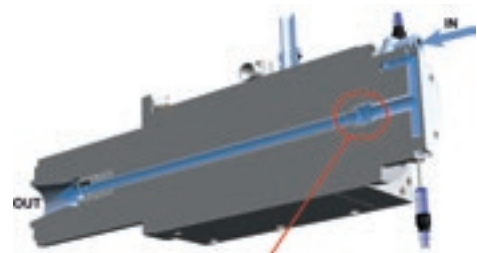
The Master range is fitted with spindles manufactured by HSD - a world leader in its sector. They guarantee optimum power, compact dimensions and extremely high finishing standards.

- ▀ **+60% spindle lifespan and noise reduction**
thanks to 4 ceramic bearings that offer greater resistance to mechanical stress.
- ▀ **Greater reliability**
thanks to the use of stainless steel and the 55mm spindle shaft.



Glycol-based cooling systems with a closed circuit that guarantees constant results over time and resistance to the maximum machining stress levels.

1. **High-temperature fluid**
(cooling system with heat exchanger).
2. **Low-temperature fluid**



DPC (patented) - Controlled loss distributor

A patented system that ensures excellent reliability and a long lifespan, thanks to the innovative seal system with no mechanical contact.



Spindle absorption is constantly measured by the NC, and the pressure exerted by the tool on the piece is then proportionally adjusted to guarantee the best possible finish quality.



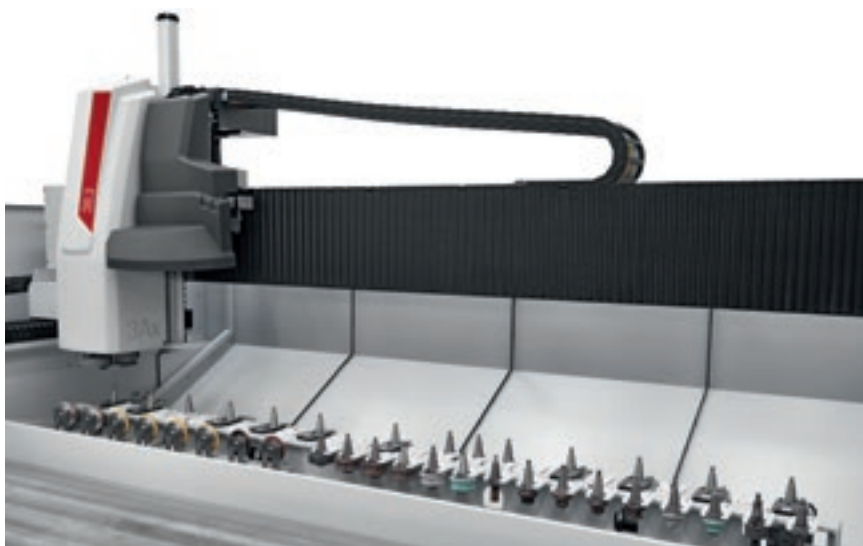
The entire Master range is equipped with an integrated system for the automatic greasing of the movement axes, ensuring constant and precise maintenance every day.

WIDE RANGE OF TOOLS READY TO USE ON THE MACHINE

The Master Series offers the option of equipping the machine with a large number of ready-to-use tools for any type of machining operation, with automatic loading via the working unit.



Rear single row magazine.



Rear dual row magazine.



8-position rotary magazine on the head, reducing the time taken to replace the most frequently used tools.



Magazine dedicated to tool change operations for aggregates, with magnetic change.

Maximum results thanks to the ability to equip the machine with high quality components.



The mechanical pre-setter checks the degree of wear on the diamond tools (with a frequency set by the machine operator) and automatically updates the tool parameters in the machine control, thereby guaranteeing constant machining results over time and preventing potential operator error.

The dressing devices are positioned near the working area for fast, easy tool dressing operations that guarantee constant top quality and speedy execution. The dressers make the Master fully automatic, even for the longest machining operations, which means that manual operations are also simplified.

**Drill dressing**

The dressing device is placed near the working area for the immediate dressing of tools, to guarantee the best quality and quickest execution all the time.

REDUCED TOOLING AND SET-UP TIMES



The laser projector is used to make the preparation of the working area quick and easy, reproducing the position of all the suction cups and pieces to be machined on the table and preventing head movements.

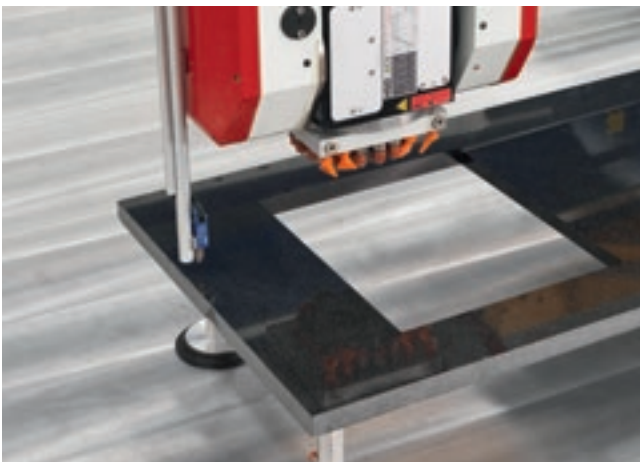
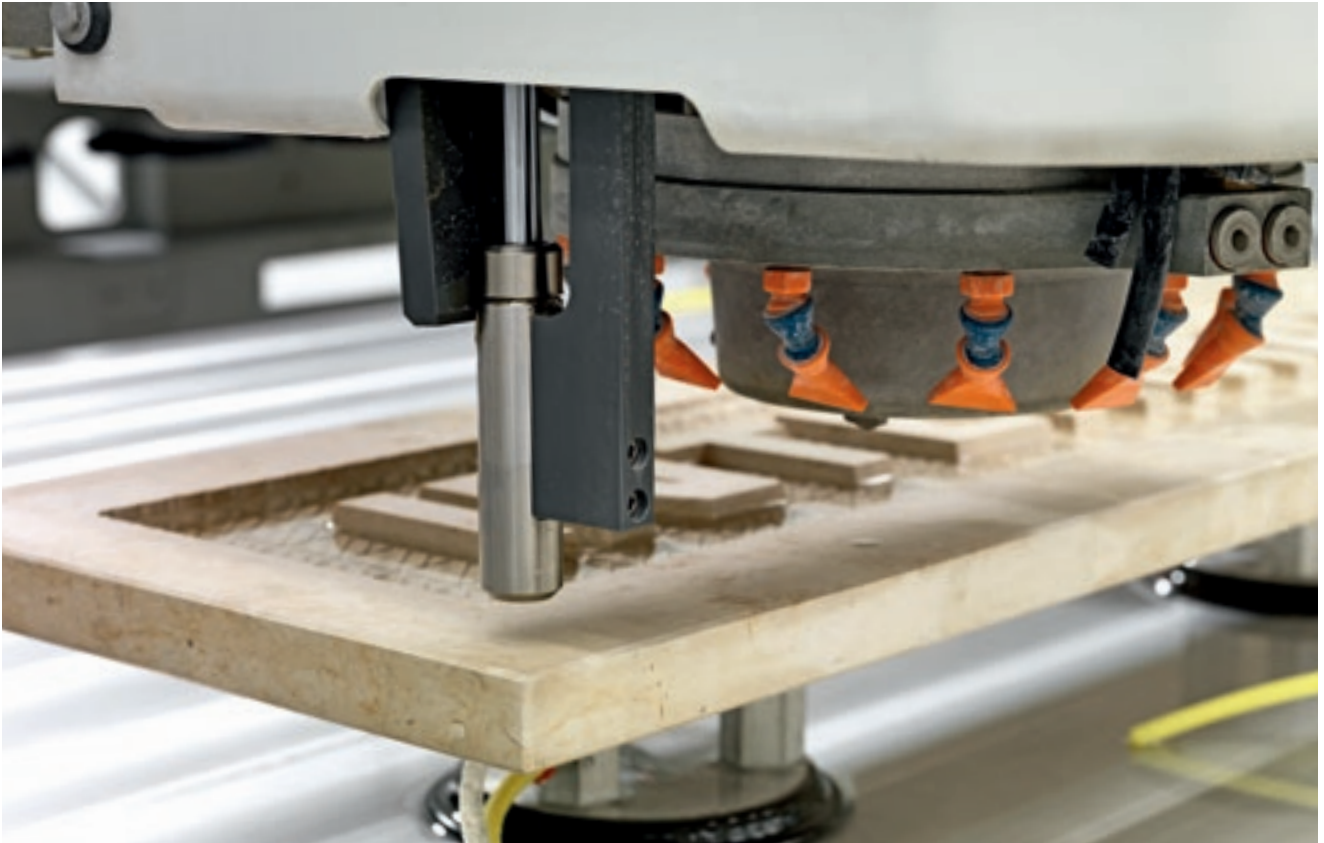


The cross-hairs laser guides the operator through the positioning of suction cups and stops, speeding up the preparation of the work surface.





3-axis head mechanical thickness tracer.



The variable Z thickness tracer maintains a constant machining quality even on pieces with an irregular thickness.



The on-board laser device allows the panel to be placed on the work table without having to use mechanical stops, ensuring maximum precision with significant time savings. Particularly useful in the presence of large sheets that are heavy and occupy the entire work table.

EASE OF USE

Extremely easy to use, thanks to the ergonomic console and user-friendly operator interface.

The use of a PC with Windows guarantees a particularly easy, user-friendly approach for the operator and allows for CAD-CAM programming directly beside the machine.



Console with mobile arm for improved organisation and management of work.

The operator interface in Windows enables operators to:

- easily set the work list to optimise production
- rapidly handle the work origins and tool parameters
- see the execution time for each piece.





Optimum convenience in the operations thanks to a hand-held terminal with:

- ▀ Quick, simple positioning of the stops and suction cups thanks to the option of tooling the work table with doors open.
- ▀ Simplified tool preparation, thanks to the optimum control of the working head directly on the piece to be machined.
- ▀ No limits between operator and Master
- ▀ Machining speed control
- ▀ Emergency button always near the operator's hand
- ▀ Start buttons for the two machining stations
- ▀ Machining pause and restart button.

THE SIMPLEST RESPONSE

WITH OVER 6,500 PACKAGES INSTALLED AND USED BY SATISFIED CUSTOMERS IN 180 COUNTRIES THROUGHOUT THE WORLD, ICAM IS A HIGHLY RELIABLE AND ROBUST SOFTWARE THAT COMBINES TOP PERFORMANCE WITH EXTREMELY EASY USE.

▸ **User-friendly**

A simple, powerful interface for working quickly and easily.

▸ **Time saving**

Positioning of stops and suction cups within the CAD/CAM environment, minimising tooling times even with project modifications.

▸ **Innovative**

A unified interface for the CAD and CAM environments.

▸ **Automated**

The parametric library and Indoor module allow machining operations to be generated quickly and automatically on the basis of the item being created.

▸ **Service quality**

Worldwide Service with a high level of expertise.

DESIGNED TO MEET THE REAL PROGRAMMING NEEDS OF MASTER WORKING CENTRES, WITH THE AIM OF MAKING THE JOB QUICKER AND EASIER. SOLUTIONS BASED ON THE STANDARDS BUT FOCUSED ON THE FUTURE.

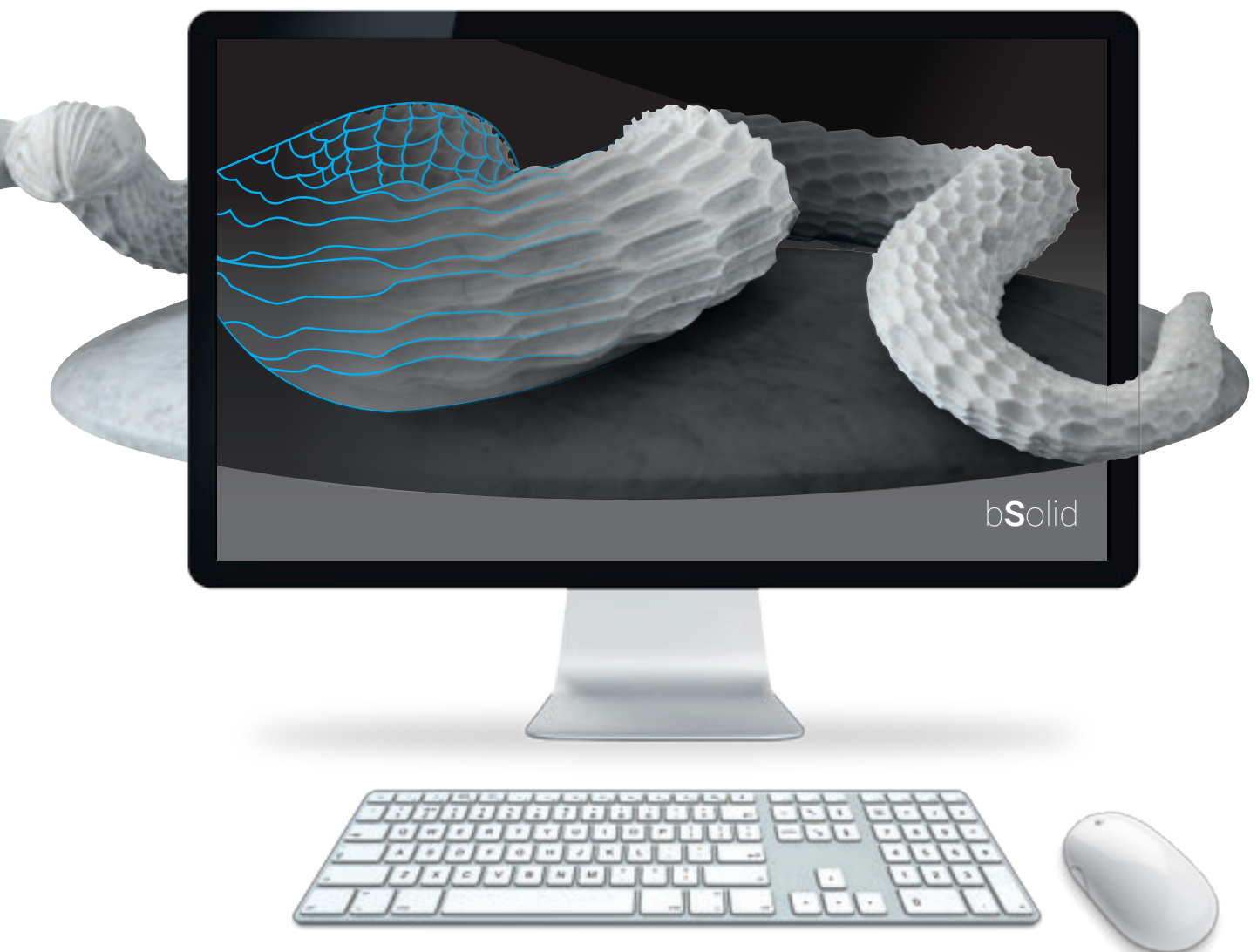


HIGH TECH BECOMES ACCESSIBLE AND INTUITIVE

BSOLID IS FULLY PARAMETRIC 2D/3D CAD CAM SOFTWARE THAT PROVIDES A SINGLE PLATFORM CAPABLE OF CARRYING OUT EVERY TYPE OF MACHINING OPERATION, THANKS TO A WIDE RANGE OF FUNCTIONS DEDICATED TO THE SECTOR.



- **Parametric design**
in just a few clicks, with endless possibilities.
- **Configuration and management of tools**
with complex shapes.
- **Machining operation simulation**
and piece preview.



PROTECTION AND SAFETY FOR ALL MACHINING OPERATIONS

Intermac has always paid the utmost attention to the health and safety of its customers. The protection of every operator during the use of the machine is of vital importance, preventing any possible distraction or error that could lead to inconvenience or even accidents.



One indispensable condition for obtaining any sort of financing is the respect of the machinery directives and workplace health and safety regulations.

With Master working centres, the operator is protected by:

- Active safety features in the front protection devices and rotation magazine.
- Ergonomic front guards of a suitable height that are also explosion-proof (certified by external bodies with "detonation" tests).
- Side and rear guards made of a metallic material subjected to special anti-corrosion painting cycles.
- Electric and pneumatic systems fully integrated in the machine and protected by closed doors.
- Inaccessibility of moving machine parts.
- A clean working environment (water and machining residues are not dispersed).
- Reduced noise levels, fully complying with the machinery directive.



The Master series is equipped with ergonomic protection devices that enable better visibility of the machining operation during the process.



SERV ICE & PARTS

Direct, immediate coordination of service requests between Service and Parts. Support for key customers from specific Intermac personnel, in-house and/or at the customer's site.

INTERMAC SERVICE

- ▣ Machine and line installation and start-up.
- ▣ Training centre for Intermac field technicians and subsidiary/dealer personnel; customer training directly at the customer's site.
- ▣ Overhaul, upgrade, repairs and maintenance.
- ▣ Remote diagnostics and troubleshooting.
- ▣ Software upgrade.

85

Intermac field technicians in Italy and worldwide.

20

Intermac technicians working in Teleservice Centre.

35

certified dealer technicians.

50

training courses in a variety of languages every year.



SERVICE TEAM

The Biesse Group promotes, cares and develops direct and constructive relationships with the customers to meet their needs, improve after-sales products and services through two dedicated areas: Intermac Service and Intermac Parts. With its global network and highly specialised team, the company offers on-site and on-line assistance and spare parts for machines and components anywhere in the world, 24/7.

INTERMAC PARTS

- ▀ Original Intermac spare parts and spare parts kits customised to suit the machine model.
- ▀ Spare part identification support.
- ▀ Offices of DHL, UPS and GLS couriers located within the Intermac spare parts warehouse, with multiple daily pick-ups.
- ▀ Optimised order dispatch time, thanks to a global distribution network with de-localised, automated warehouses.

95%
of machine downtime orders dispatched within 24 hours.

95%
of orders dispatched on time.

30
spare parts staff in Italy and worldwide.

150
orders processed every day.

INDUSTRY 4.0 READY

Industry 4.0 is the latest industry frontier, based on digital technologies and machines that speak to the companies. The products can be interconnected with the production processes via smart networks.



Intermac's commitment is to transform our customers' factories with real-time technology, ready to guarantee digital manufacturing opportunities, with smart machines and software packages becoming vital tools that facilitate the daily tasks of people all over the world who machine glass, stone, metal and more. Our philosophy is a practical one: to supply entrepreneurs with solid data that can help them to lower their costs, optimise their processes and improve their results.

And that means being 4.0 ready.

RANGE OF INTERMAC WORKING CENTRES FOR MACHINING STONE

MACHINING CENTRES



Master 23



Master 30

MACHINING CENTRES



Master 33.3-38.3-45.3



Master 33.3 Plus-38.3 Plus-45.3 Plus



Master 33.5 Plus-38.5 Plus-45.5 Plus

UNIVERSAL MACHINING CENTRES



Master 850-1200

UNIVERSAL AUTOMATIC MACHINING CENTRES



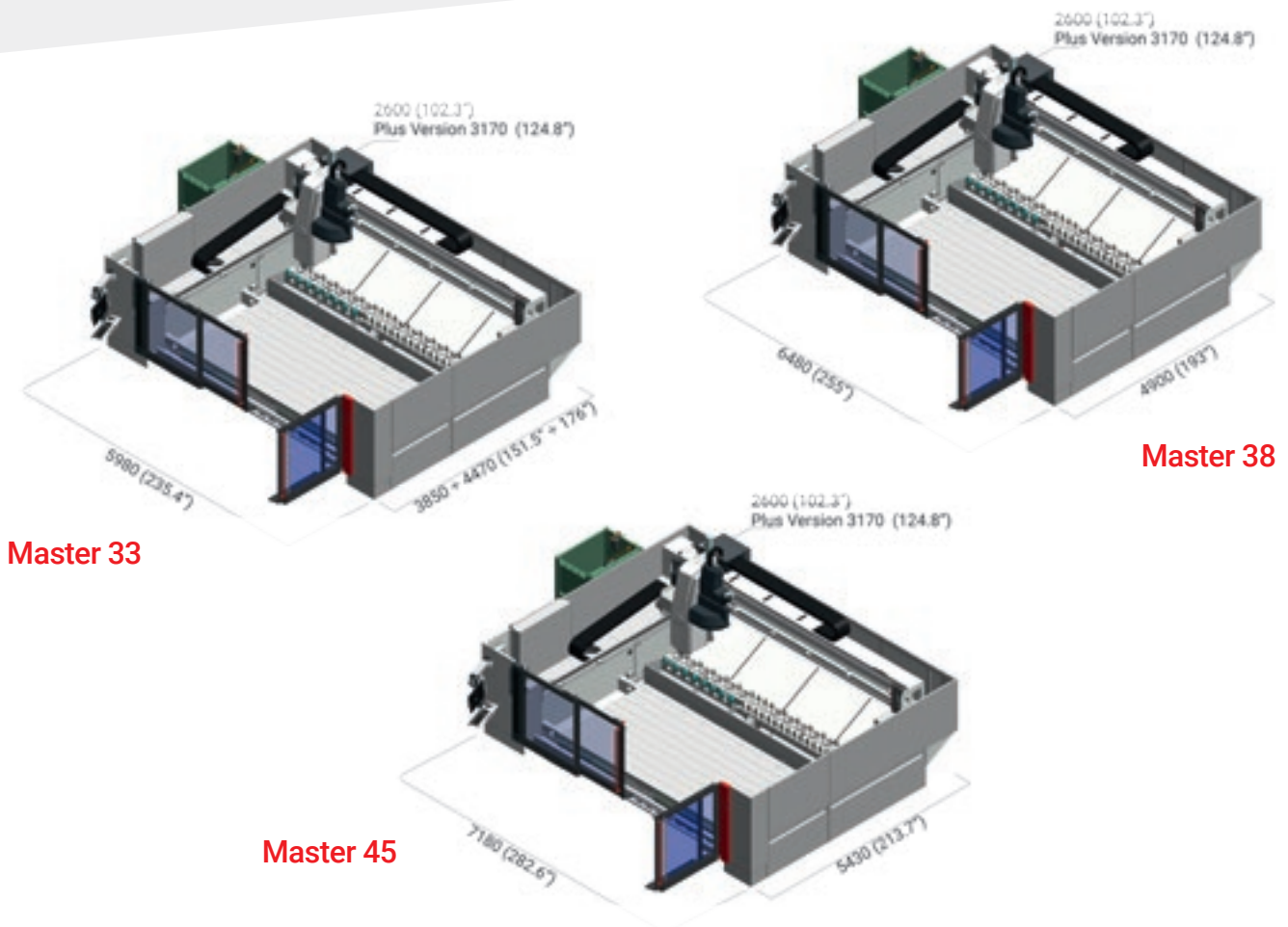
Mastersaw 625 Double Table

The technical specifications and drawings are non-binding. Some photos may show machines equipped with optional features. Biesse Spa reserves the right to carry out modifications without prior notice.

Weighted sound pressure level A (LpA) during machining at the operator's workstation on the vane-pump machine LpA=79dB(A) LwA=96dB(A) Weighted sound-pressure level A (LpA) at the operator's workstation and sound power level (LwA) during machining on the cam-pump machine LwA=83dB(A) LwA=100dB(A) Measurement uncertainty K dB(A) 4.

The measurement was carried out in compliance with UNI EN 848-3:2007, UNI EN ISO 3746: 2009 (sound power) and UNI EN ISO 11202: 2009 (sound pressure levels at workstation) during panel machining. The noise levels shown are emission levels and do not necessarily correspond to safe operation levels. Despite the fact that there is a relationship between emission and exposure levels, this may not be used in a reliable manner to establish whether further measures need to be taken. The factors determining the exposure level for the workforce include length of exposure, work environment characteristics, other sources of dust and noise, etc. i.e. the number of other adjoining machines and processes. At any rate, the above information will enable the operator to better evaluate dangers and risks.

TECHNICAL SPECIFICATIONS



MASTER - 3 AXIS

		Master 33.3	Master 38.3	Master 45.3
Maximum machinable piece size (3-axis grinding with tool of diameter 100mm)	mm	3,300 x 1,600 *	3,800 x 2,000	4,500 x 2,500
Z axis stroke	mm	465	465	465
C axis stroke (optional)		∞	∞	∞
T axis stroke (optional)		+/-2.5°	+/-2.5°	+/-2.5°
Max axis speed (X, Y, Z)	m/min	60, 70, 18	60, 70, 18	60, 70, 18
Work table height ("high table" version)	mm	535 (740)	535 (740)	535 (740)
Electrospindle power In S1 (S6)	kW	15 (18)	15 (18)	15 (18)
Max electrospindle rotation	rpm	12000	12000	12000
Tool coupling		ISO 40	ISO 40	ISO 40
Tool magazine for	up to	53	61	69
Power required	kW / HP	22,5 / 30	22,5 / 30	22,5 / 30

* Depending on the configuration of the tool magazine.

MASTER (3 AXIS) PLUS

Master 33.3 Plus Master 38.3 Plus Master 45.3 Plus

Maximum machinable piece size (3-axis grinding with tool of diameter 100mm)	mm	3,300 x 1,600 *	3,800 x 2,000	4,500 x 2,500
Z axis stroke	mm	650	650	650
C axis stroke (optional)		∞	∞	∞
T axis stroke (optional)		+/-2.5°	+/-2.5°	+/-2.5°
Max axis speed (X, Y, Z)	m/min	60, 70, 18	60, 70, 18	60, 70, 18
Work table height ("high table" version)	mm	535 (740)	535 (740)	535 (740)
Electrospindle power In S1 (S6)	kW	15 (18)	15 (18)	15 (18)
Max electrospindle rotation	rpm	12000	12000	12000
Tool coupling		ISO 40	ISO 40	ISO 40
Tool magazine for	up to	53	61	69
Power required	kW / HP	22,5 / 30	22,5 / 30	22,5 / 30

* Depending on the configuration of the tool magazine.

MASTER (5 AXES) PLUS

Master 33.5 Plus Master 38.5 Plus Master 45.5 Plus

Maximum machinable piece size (3-axis grinding with tool of diameter 100mm)	mm	3,300 x 1,600 *	3,800 x 2,000	4,500 x 2,500
Z axis stroke	mm	650	650	650
C axis stroke (optional)		∞	∞	∞
T axis stroke (optional)		+/-90°	+/-90°	+/-90°
Max axis speed (X, Y, Z)	m/min	60, 70, 18	60, 70, 18	60, 70, 18
Work table height ("high table" version)	mm	535 (740)	535 (740)	535 (740)
Electrospindle power In S1 (S6)	kW	15 (18)	15 (18)	15 (18)
Max electrospindle rotation	rpm	12000	12000	12000
Tool coupling		ISO 40	ISO 40	ISO 40
Tool magazine for	up to	53	61	69
Power required	kW / HP	22,5 / 30	22,5 / 30	22,5 / 30

* Depending on the configuration of the tool magazine.

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MADE WITH INTERMAC

NATURE CALLS, INTERMAC ANSWERS

Generelli SA, a company from Ticino with headquarters in Rivera, Switzerland, has been converting natural stone into superb manufactured products for over forty years. At Generelli the most advanced stone processing techniques are constantly paired with the skilful artisan craftsmanship fostered in Ticino. With this mission the Swiss company, which was founded in **1974** and directed by founder **Generelli Guido** before his son **Moreno** took the helm, has now reached the third generation with **Matteo**. Natural stone, quartz compounds, plastic materials and ceramic are the daily bread of creativity and are converted into art, "from a simple granite windowsill to more complex 3D machining," says Moreno as he explains how slabs of stone become "everyday" objects: not just surfaces for kitchens and bathrooms, but also stairs, floors,

fireplaces and swimming pools, destined to enrich and highlight living spaces all over the world.

"Thanks to Intermac technology we can achieve complex shapes, and increase productivity and autonomous work." Nothing is outsourced: Generelli carries out every single step internally, to guarantee the highest quality. "Today technology is an integral and irreplaceable part of our company: we wouldn't be where we are today without it" Matteo confirmed. If that technology comes from Italy, which is where Moreno believes the best companies are still to be found, all the better. For production, in fact, the crown goes to the **Master 33** and the **Primus** 5-axis waterjet by Intermac, a company whose history of collaboration with Generelli dates all the way back to 1996. And it's the Primus, one of the newest additions in

production, that has helped the company surpass previous limits, as Matteo explains: "With it we are capable of producing shapes of various sizes, with very precise cuts, and can create double-curved 3D inlays, increasing productivity and autonomous work". Equipped with the latest generation of tools, "with technical features that are more evolved compared to the past", these mechanical powerhouses were designed for power and precision and anticipate a time in the future when, as envisioned by Matteo, "technology will increasingly be present throughout production and will play a greater role in designing and programming thanks to increasing levels of intelligence and autonomy. But all this can only be achieved if the companies that use these machines are able to evolve with the machines".



THE GRO UP

IN

1 industrial group,
4 business sectors
and 9 manufacturing sites

HOW

14 mln €/year in R&D
and 200 patents filed

WHERE

37 branch offices
and 300 agents
and select partners

WITH

customers in 120 countries:
manufacturers of furniture, design
items and door/window frames,
producers of elements for the
building, nautical and aerospace
industries

WE

3800 employees worldwide



 **BIESSE**GROUP

 **BIESSE**

 **INTERMAC**

 **DIAMUT**

MECHATRONICS

