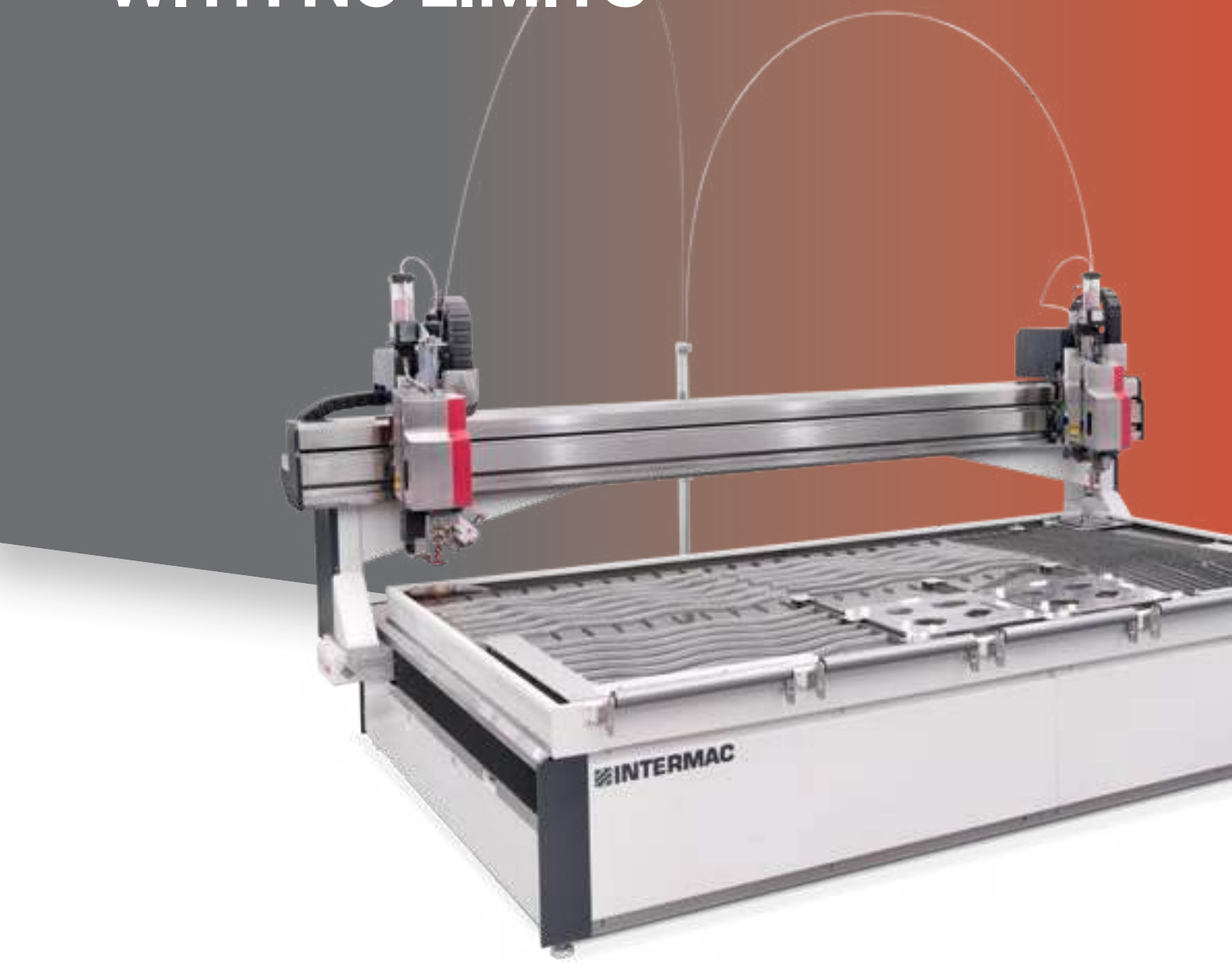
PRIMUS SERIES

WATERJET CUTTING SYSTEMS



INTERMAC

MACHINING OPERATIONS WITH NO LIMITS



THE MARKET EXPECTS

a change in manufacturing processes, enabling companies to accept the largest possible number of orders. This is coupled with the need to maintain high quality standards while offering product customisation with quick and defined delivery times, as well as satisfying the requirements of even the most highly-automated industries.

INTERMAC RESPONDS

with technological solutions which enhance and support technical skills, knowledge of processes and the continuous evolution of materials, and which can adapt to a range of application requirements, ensuring high cutting speeds and control over production costs. The **Primus Series** is the range of waterjet cutting machines designed to meet the needs of companies looking for maximum versatility.



PRIMUS

- IDEAL FOR CUTTING ANY TYPE OF MATERIAL AND FOR PERFORMING ALL COMPLEX SHAPING OPERATIONS
- HIGH QUALITY AND PRECISION AND OPTIMUM CUT FINISH
- EXCELLENT PERFORMANCE AND OPTIMISATION OF CUTTING COSTS
- CUTTING-EDGE TECHNOLOGY THANKS TO THE PATENTED INTERMAC C-AXIS INFINITE ROTATION SYSTEM
- SET-UP TIMES REDUCED TO ZERO THANKS TO THE SIMPLICITY OF THE FIXING AND SETTING SYSTEMS

IDEAL FOR CUTTING ANY TYPE OF MATERIAL







Ease of use and the ability to cut all types of materials combined with high quality and precision and optimal cut finishes make the Primus range suitable for a wide range of users.

Primus enables a wide range wide range of materials: glass, natural stone, ceramics and sintered materials.

The Primus 402 can be configured with either a single or double cutting head.



With special applications for variable Z-axis machining operations, this system allows three-dimensional materials to be processed using dedicated software.

The cutting process makes use of Waterjet technology, which machines materials by means of a high-speed jet of water and abrasive (where necessary), with pressures that can reach 400 MPa.



HIGH QUALITY AND PRECISION AND OPTIMUM CUT FINISH









Primus is the technological solution that looks to the future and is always ready to perform any type of complex shaping operation, including boring directly into the material.

PERFECT CUT FINISH WITH NATURAL STONE, CERAMIC AND SINTERED MATERIALS.

CUTTING FINISH ON GLASS DESIGNED FOR PROCEEDING TO THE TEMPERING PROCESS WITH NO NEED FOR SECONDARY MACHINING OPERATIONS.









The Primus 322 can be configured with either a single or double cutting head.

IDEAL FOR CUTTING LAMINATED AND FLOAT GLASS, PLYWOOD, ARMOURED AND FIREPROOF MATERIALS.

PERFORMANCE AND PRODUCTIVITY

Primus can be configured with one or more independent* cutting heads to meet the customer's production needs.





The software automatically adapts the number of cutting heads to suit the panels being created, to guarantee maximum productivity at all times without losing sight of flexibility requirements (one cutting head for pieces that are different from each other, or two for cutting several identical pieces simultaneously).

Work can be done on 3 or 5 axes, which allows for 45 degree cuts or 0 to +/-60° angled cuts to be performed, as well as chamfering or countersinking operations.

Each cutting head is fitted with an independent, automatic abrasive management system to constantly ensure the right amount for the machining operation in hand.

*not available for the Primus 184.

A SOLUTION FOR EVERY NEED

Maximum scope for customisation in order to respond to market demands for a solution that adapts to materials as they evolve, as well as to a host of very varied application requirements.





Table with standard blades.



Option of placing more than one template on the work table, in order to increase productivity.

WIDE RANGE OF WORK TABLE CONFIGURATIONS

Support surfaces are available for special materials and applications, to minimise the reverberation of the jet of water on the material being machined and to facilitate the drainage of water and small machining residues.



PRIMUS 402

The Primus 402 is the ideal solution for machining all materials with a size of 4000x2000 mm.

PRIMUS 402 WITH TILTING ARMS SHEET LOADING

The tilting arms make it easier to load the heaviest sheets on the work table.
You can load sheets weighing up to 500 kg and measuring up to 4000 mm x 2000 mm (minimum width 1100 mm).





THE PRIMUS 184 IS THE IDEAL SOLUTION FOR ALL WORKSHOPS WITH LIMITED SPACE

The Primus 184 is designed as a plug-and-play system that enables production to begin straight away.
It stands out for its compact overall dimensions - the electrical cabinet is integrated into the console cabin, while the optional abrasive removal system is incorporated into the structure of the machine itself.

SPECIAL SOLUTIONS FOR SPECIFIC PRODUCTION NEEDS

PRIMUS 402 WITH DUAL TANK

Primus 402 with dual tank: ideal for pendulum machining for 4000 x 2000 mm size sheets.



PRIMUS 3212 WITH DOUBLE BEAM

Two independent machines (3210 x 6000 mm) with single beam for machining up to 12,000 m.



SETTING AND BLOCKING AS SIMPLE AS POSSIBLE

**Once the piece has been positioned on the table and the machining parameters have been entered, the machine is ready to start cutting.
Very simple blocking of the piece being machined
(sometimes not even necessary), and minimal machine settings required.**





Aluminium set square for positioning the pieces.



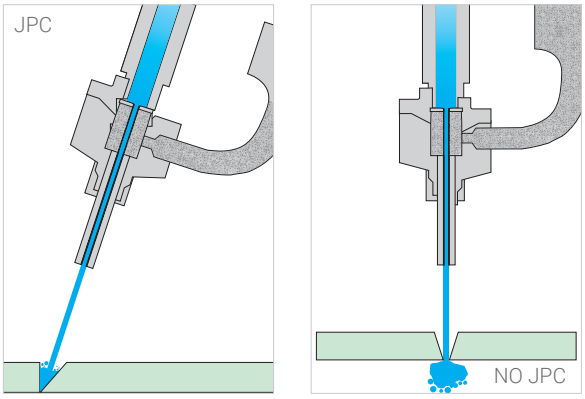
Clamps for locking the panel in place from 4 to 50 mm.



Clamps for locking the panel in place from 1 to 3 mm.

OPTIMISED CUTTING COSTS

Dynamic control over the abrasive flow and the main cutting parameters ensures cost optimisation without any production compromises: the machine maintains maximum productivity by accurately controlling production costs.



Developed by Biesse, JPC (Jet Performance Control) technology maximises machining efficiency in terms of profile quality and cutting speed



The thickness tracer system automatically adjusts the optimum distance between the cutting head and the piece surface, improving the quality of the cut and guaranteeing the utmost safety during machining operations.

ZERO SET-UP TIMES

Thanks to the automatic centring check on the 5-axis head, there is a reduction of about 90% in the head centring time following the replacement of cutting head components.





Maximum accessibility in total safety.
The main advantage of this new solution with opening casing is that it enables customers to quickly inspect the head unit and perform maintenance operations, with no need to remove the casing.

Laser pointer for defining the positioning of the sheet on the work table.
The laser pointer can be used for manual template learning.



MAXIMUM EFFICIENCY WHEN MANAGING ABRASIVE



The abrasive propulsor allows the operator to load fresh abrasive in the first tank without needing to stop the machine.

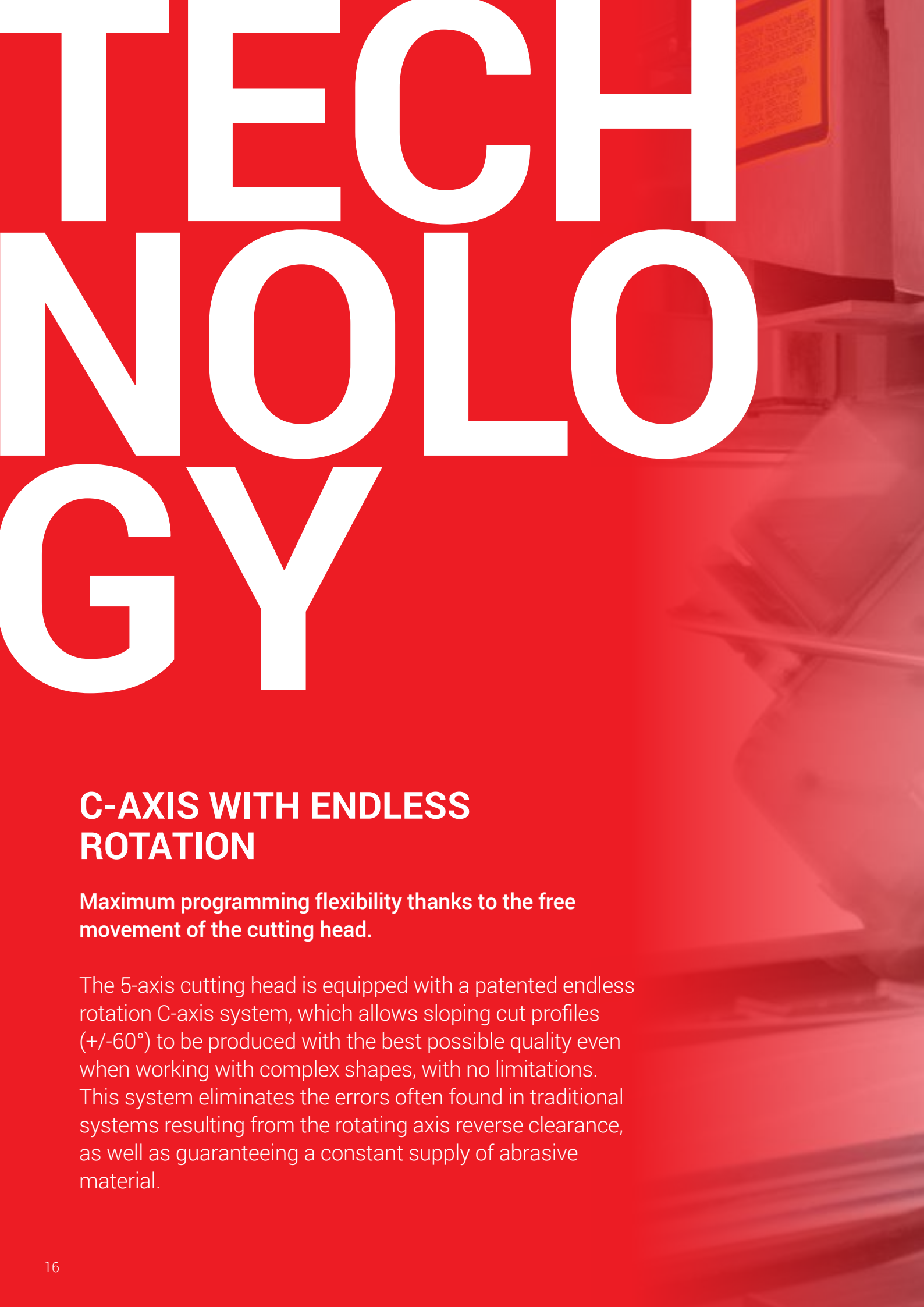
It consists of two parts - one tank with an abrasive load capacity of about 330kg, and another that is pressurised.



Automatic system for removing used abrasive (including a 1m3 big-bag holder with control panel, relative PLC and management software), that can be used separately from the machine.

Thanks to this new solution, the work hours of the abrasive removal system can be programmed in any time band (e.g. during the night, when electricity may cost less). Another advantage concerns the possibility to carry out system maintenance without having to stop the machine.

TECHNOLOGY



C-AXIS WITH ENDLESS ROTATION

Maximum programming flexibility thanks to the free movement of the cutting head.

The 5-axis cutting head is equipped with a patented endless rotation C-axis system, which allows sloping cut profiles (+/-60°) to be produced with the best possible quality even when working with complex shapes, with no limitations. This system eliminates the errors often found in traditional systems resulting from the rotating axis reverse clearance, as well as guaranteeing a constant supply of abrasive material.



EASY TO LOAD AND UNLOAD FOR THE OPERATOR

A compact and ergonomic solution with maximum accessibility on 3 sides, enabling material to be loaded and unloaded with ease.





Option to fit front and rear rollers to facilitate material loading and unloading.



MACHINING CAN ALSO BE PERFORMED IN DOUBLE STATION CONFIGURATION, DIVIDING THE ENTIRE WORKING AREA INTO TWO ZONES.

In one of these two zones, the machine continues to cut, while the operator can safely unload and load pieces in the other area in the meantime.
The barrier that divides the table into two can be easily removed, so that the operator always has the option of using the maximum working area, operating in a single zone when necessary.

MAXIMUM EASE OF USE

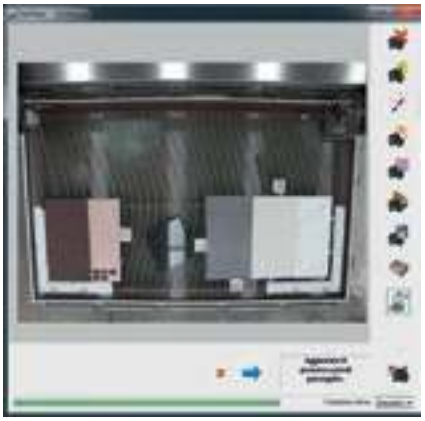


Mobile console with touch screen monitor. Modern and intuitive graphic interface for a simple machine use.

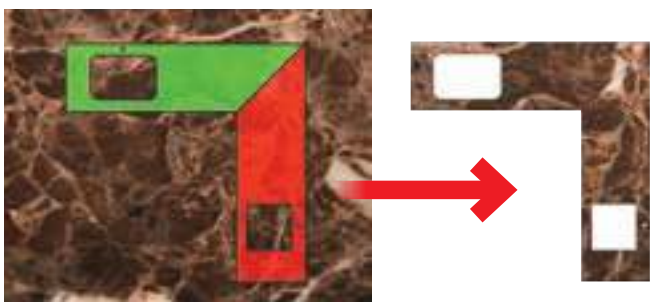
The quality of the cut and the main machining parameters (such as the capacity of the abrasive material) are controlled via the software, and can be altered at any time - even while the piece is already being machined. This means the machine operator has full control over production costs.



The hand-held terminal allows the operator to carry out the main machine operations with great ease and safety, as he can move away from the control panel when necessary.



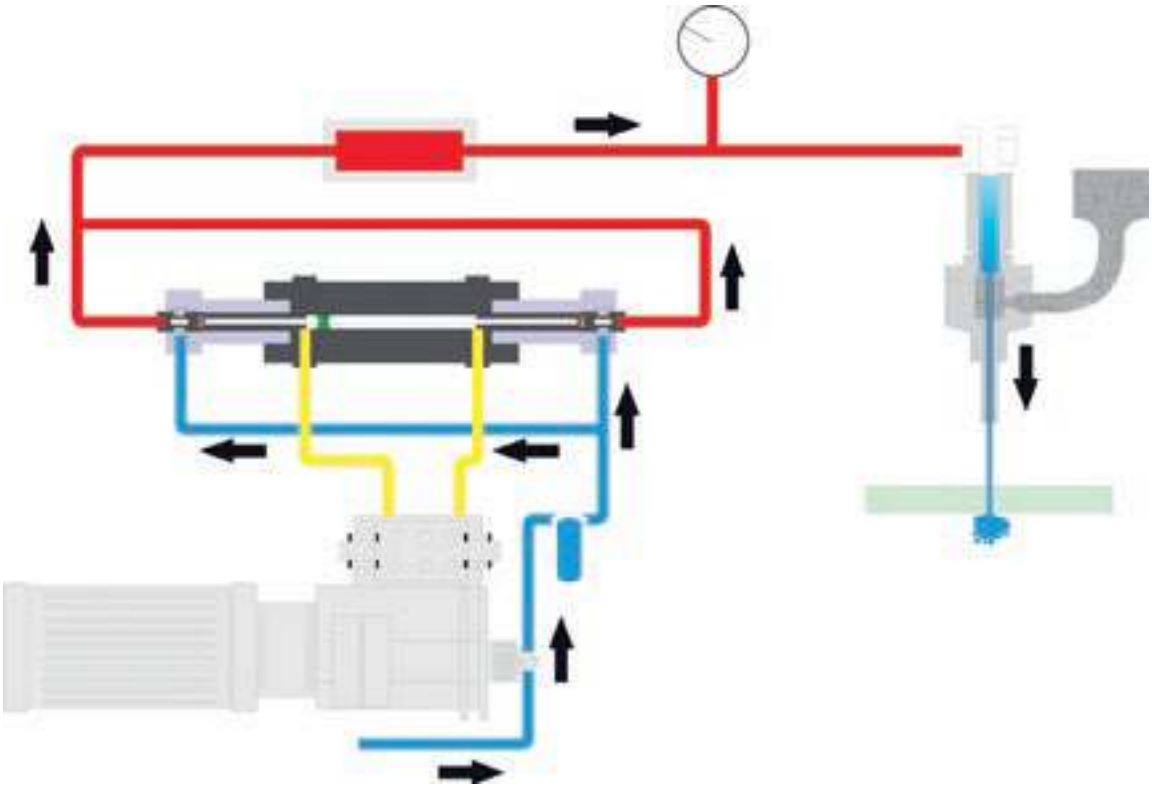
The optional photographic detection system is particularly suitable for open machine operations, where the contours of the natural stone must be followed. Another key advantage lies in the ability to optimise even partially used panels or panels with imperfections, by discarding just the part of the material where the defect is present.



VEINS MATCHING - DDX
It is possible to program the cutting of the slabs in order to obtain the "continuous grain" result, that is, by coupling different slabs and matching the veins.

HIGH EFFICIENCY AND ENERGY SAVINGS

Maximum levels of professional performance thanks to the advanced pump technology system.





ECOTRON
The excellent quality/price ratio is the main advantage of this pump model.
The pressure is generated by an axial piston pump, which is precisely regulated by a standard proportional valve.

A complete range of extra high pressure intensifiers to meet the needs of even the most demanding customer. All the systems are fitted with a high-volume pressure accumulator (2.49 l) to minimise the typical pressure fluctuations and component wear. The proportional valve allows the pressure intensity to be altered to suit the material being machined and the type of cut to be made.
Maximum access to all parts subject to wear, to facilitate maintenance and repair operations.

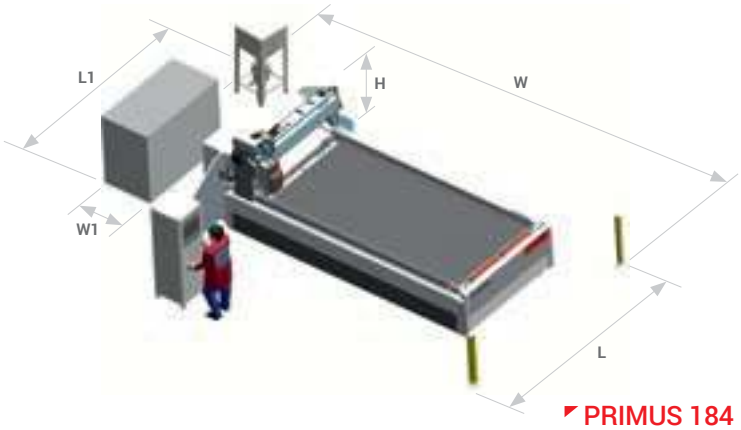


SERVOTRON
The pressure is managed via a frequency-regulated servomotor (BFT patented), which enables energy savings of around 24% more than those offered by conventional pumps. This technology also increases the lifespan of the high pressure components (seals, valves) and helps to reduce wear across the entire high pressure system, from the pump to the cutting head.



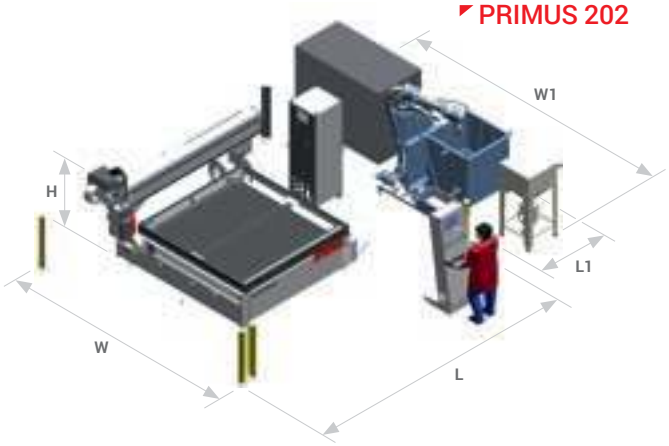
HYTRON 40.75
The pump is equipped with two air multipliers, regulated by two axial piston pumps which use an electronic control system in order to guarantee an optimal pressure flow.
Thanks to the high flow rate it delivers, this type of pump is ideal for customers who work with thicker panels and for those who wish to maintain good working speeds, even when operating with multiple cutting heads.

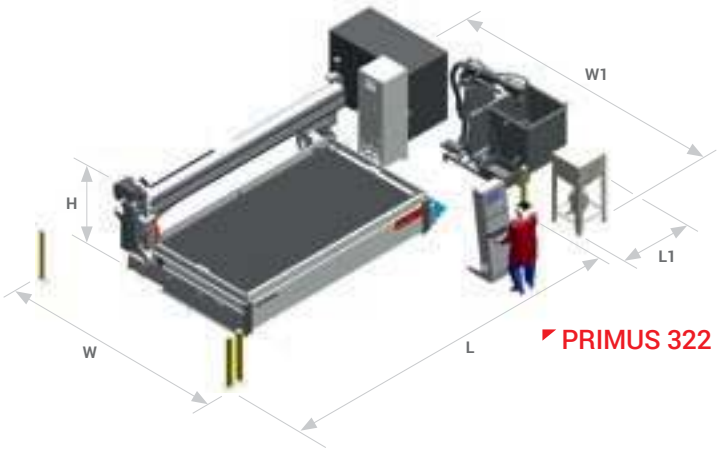
TECHNICAL SPECIFICATIONS



PRIMUS 184

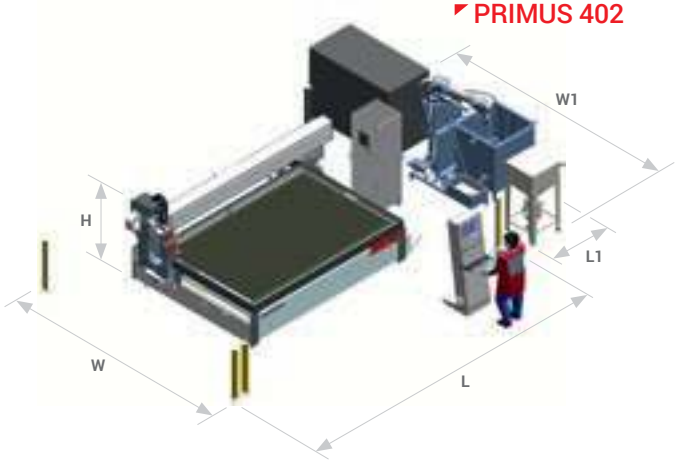
PRIMUS 202

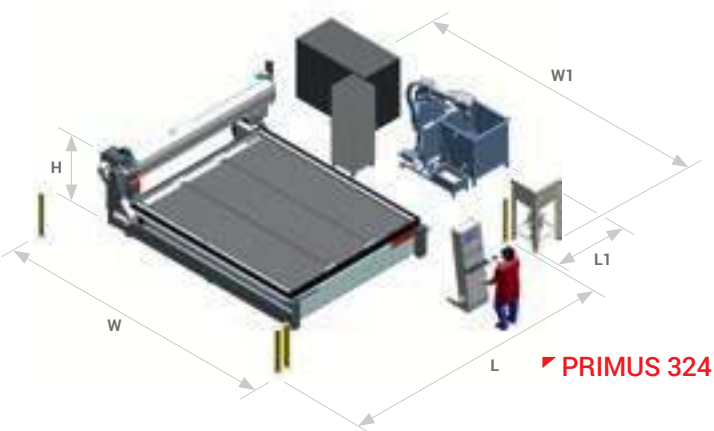




PRIMUS 322

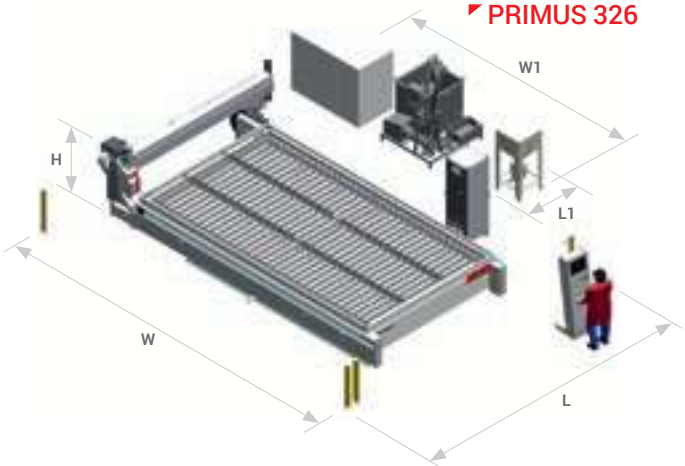
PRIMUS 402





PRIMUS 324

PRIMUS 326



	PRIMUS 184	PRIMUS 202	PRIMUS 322	PRIMUS 402	PRIMUS 324	PRIMUS 326
Working area X-Y (mm)*	1860x4000 1700x3800**	2000x2000	3210x2000	4000x2000	3210x4000	3210x6000
Maximum sheet dimensions for loading X-Y (mm)	2010x4100	2080x2250	3300x2250	4100x2250	3300x4300	3300x6300
Z axis stroke	250 (200 with 5-axis head)					
Maximum speed of X-Y axes	45m/min					
Maximum capacity of the piece support table	1000kg/sq.m					
A-axis	+/-60°					
C-axis (opt.)	Endless					
Minimum centre distance between cutting heads (3 axes)	-	280 mm				
Minimum centre distance between cutting heads (3 + 5 axes)	-	340 mm				
Minimum centre distance between cutting heads (5 axes)	-	500 mm				

* with outward sloping cut, the working area is reduced; the reduction depends on the cutting angle and the thickness of the material.
** with 5-axis cutting head

UHP INTENSIFIER - TECHNICAL DATA

Intensifier power	22 kW	30 kW	37 kW	45 kW	75 kW
Max. pressure	420 Mpa				
Max. water flow rate	2 l / min	3.2 l / min	3.8 l / min	4.1 l / min	7.8 l / min

OVERALL DIMENSIONS		PRIMUS 184	PRIMUS 202	PRIMUS 322	PRIMUS 402	PRIMUS 324	PRIMUS 326
L	mm	3900	5070	6280	7590	6280	6280
L1	mm	3900	1650	1650	1650	1650	1650
W	mm	6490	4940	4940	4940	7130	9210
W1	mm	800	4940	4940	4940	4940	4940
H max (standard)	mm	3000	5000	5000	5000	3000	3000
H max (optional)	mm	-	3000	3000	3000	-	-

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.

PRIMUS 184 Weighted sound pressure level A L pA 80 dB.
PRIMUS 202/322/324/326/402 Weighted sound pressure level A LpfA 81 dB(A).
Superficial weighted noise level A LwA 102 dB (A).
Uncertainty of measurement K = 4dB (A).

The measurement was taken in compliance with: UNI EN ISO 3746, UNI EN ISO 11202 and subsequent modifications.

The noise levels shown are emission levels and do not necessarily correspond to safe operation levels. Even though there is a relation between emission levels and exposure levels, this cannot be used reliably to establish whether or not further precautions are necessary. The factors determining the actual noise levels to which the operating personnel are exposed include the length of exposure, the characteristics of the work environment, other emission sources (e.g. the number of machines and machining operations nearby). At any rate, the above information allows the operator to better evaluate dangers and risks.

IC: THE TOTAL GLASS EXPERIENCE IN A SINGLE SOFTWARE PACKAGE

IC

IC WAS CREATED FROM THE EXPERIENCE AND RELIABILITY OF ICAM WHICH, WITH OVER 7500 PACKAGES INSTALLED IN 180 COUNTRIES, IS THE MOST WIDELY USED CAD/CAM SOFTWARE IN THE WORLD WHEN IT COMES TO GLASS APPLICATIONS.

- **RENEWED GRAPHIC INTERFACE THAT'S USER-FRIENDLY AND EASY TO PICK UP THANKS TO SELF-LEARNING CONCEPTS, BUT WITHOUT COMPROMISES IN TERMS OF FUNCTIONS AND PROGRAMMING FLEXIBILITY**
- **ROBUST, RELIABLE PLATFORM**
- **ENHANCED CALCULATION POWER THANKS TO THE USE OF THE LATEST DEVELOPMENT TECHNOLOGIES**

- **MODERN INTERFACE:** similar to the most modern apps, it can be used with a touch screen.
- **EXTREMELY USER-FRIENDLY:** assisted design in 5 steps.
  From the drawing to the machine in just a few seconds.
- **TOTAL CONTROL OF THE DESIGN PROCESS, FROM THE DRAWING TO THE FINISHED PIECE.**
- **SOLUTIONS FOR LARGE-SCALE OR ONE-BATCH PRODUCTION:**
  the possibility to manage libraries of models (even parametric).
- **SUPPORT SERVICE ALONGSIDE THE CUSTOMER:**
  IC is equipped with "AIC Log" technology: in the event of problems and/or a need for support, Intermac Service can see the operations that have been carried out, and can quickly intervene.



EASYSTONE: ALL FUNCTIONS JUST A CLICK AWAY



Easy**STONE**

Simple and intuitive
It can even be used by individuals who don't have specialised computer skills: all functions are "just a click away".

Complete
It manages every aspect of machining and the CNC at 360 °, guiding the operator from the design to the arrangement of the pieces in the workbench, to the optimization of tool processing paths up to the generation of machine programs.

Automated
The pieces to be created can be designed rapidly thanks to a library of parametric components. The automatic CAM module can pair the machining operations with the pieces automatically.

Ideal for every type of machining operation
Allows for the programming of all the typical machining operations used on stone: shaping and polishing edges, kitchen tops, bathroom unit tops, engraving, bas relief, shower trays, shaping and finishing solid pieces, polishing surfaces for 5-axis machining operations, using all types of tools.

ICAM: THE SIMPLEST RESPONSE



ICAM

- **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.

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.

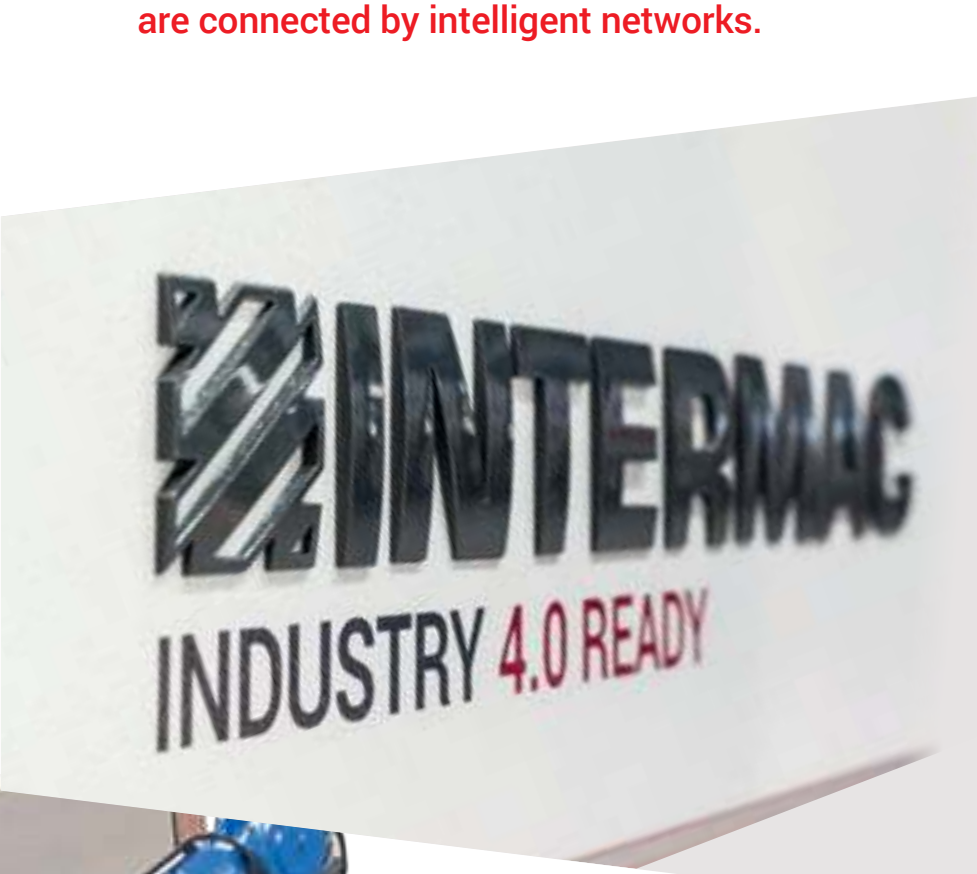


Photocells
at the sides of the machine.

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

INDUSTRY 4.0 READY

Industry 4.0 is the latest industry frontier, based on digital technologies and machines that speak to the companies. These products can communicate and interact with each other independently, during production processes that are connected by intelligent networks.



Intermac is dedicated to transforming the factories which belong to our customers, using real-time technologies which enable them to take full advantage of the opportunities offered by digital manufacturing.
Intelligent machines and software become indispensable tools that facilitate the daily tasks of the professionals all over the world who work with a range of materials, including the most technical. 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.



The machine can be configured either in line or as a work cell.

CUSTOMER CARE IS WHO WE ARE

SERVICES is a new experience for our customers, to offer not just excellent technology but the added value of an increasingly direct connection with the company, the professionals who work there and the experience they embody.



ADVANCED DIAGNOSTICS

Digital channels for remote interaction online 24/7. Always ready to intervene on-site seven days a week.



A WORLDWIDE NETWORK

39 branch offices, over 300 certified agents, retailers in 120 countries, and spare parts warehouses in America, Europe and the Far East.



SPARE PARTS AVAILABLE IMMEDIATELY

Identification, shipping and delivery of spare parts for every need.



EVOLVED TRAINING OPPORTUNITIES

Lots of on-site, online and classroom training modules for personalised growth.



VALUABLE SERVICES

A wide range of services and software packages to help our customers achieve continuous improvements in performance.

AN EXCELLENT LEVEL OF SERVICE

+550 HIGHLY SPECIALISED TECHNICIANS AROUND THE WORLD, READY TO HELP CUSTOMERS WITH EVERY NEED

+100 EXPERTS IN DIRECT CONTACT THROUGH REMOTE CONNECTIONS AND TELESERVICE

+50.000 ITEMS IN STOCK IN THE SPARE PARTS WAREHOUSES

80% OF SUPPORT REQUESTS SOLVED ONLINE

88% OF CASES SOLVED WITH THE FIRST ON-SITE VISIT

90% OF MACHINE DOWN CASES WITH RESPONSE TIME UNDER 1 HOUR

92% OF SPARE PARTS ORDERS FOR MACHINE DOWNTIME PROCESSED WITHIN 24 HOURS

+5.000 PREVENTIVE MAINTENANCE VISITS

96% OF SPARE PARTS ORDERS DELIVERED IN FULL ON TIME

MADE WITH INTERMAC

DIGITAL CHISELS: CHALLENGES IN THE INTERACTION BETWEEN STONE AND 4.0 TECHNOLOGY

At the “Italian Stone Theatre” event that took place during the 2017 edition of Marmomac, Intermac technologies demonstrated their potential in stone machining operations, highlighting the productive and technical ability of the furnishing and design companies involved: Seguso Gianni and Vicentina Marmi. As the designer Raffaello Galiotto explained, "The "Rezzonico" lamp is produced using a natural veined marble - a choice that highlights the value of the raw material, lending this serial format a unique quality that it wouldn't otherwise have. Each single lamp can be considered a unique item because its natural pattern is unrepeatable. From a technical perspective, the 5-axis waterjet machining of the Primus was brought to new levels, considerably limiting waste." The work was produced in collaboration with Generelli Marmi. «The use of the waterjet technology of Intermac's Primus range emphasised the amazing possibilities to transform stone materials into artefacts that are rather complex in both the technical and formal sense. The latest systems used on these machines guarantee accuracy, working speed and reduced waste; these factors are crucial for the large-scale production of practical objects with complex shapes, and for reaching performance levels similar to those seem with other, lighter materials."
This was the opinion of Matteo Generelli, company owner, after the prototype had been created.

Italian Stone Theatre, Italy



Spotlight on Intermac technology at the **ITALIAN STONE THEATRE**.

SOPHIA

GREATER VALUE FROM MACHINES



The Intermac IoT platform which enables customers to access an extensive range of services to streamline and rationalise their work management processes.

- SERVICES
- PROACTIVITY
- ANALYSIS

INTERMAC

in collaboration with accenture

LIVE THE EXPERIENC







BIESSEGROUP.COM



Interconnected technologies and advanced services that maximise efficiency and productivity, generating new skills to serve better our customer.

LIVE THE BIESSE GROUP EXPERIENCE AT OUR CAMPUSES ACROSS THE WORLD

BIESSEGROUP

LYQK500026 december 2021

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