

DONATONI KROSS

CNC MULTIFUNCTION MACHINE



DONATONI
Stone Tech Creators

Describing the potential of a machine often means opening the doors both to new opportunities and to new markets





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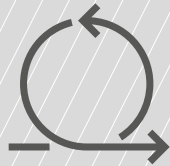
**COMPACT,
FAST,
UNIQUE**



MULTIPLE FUNCTIONS, IN JUST ONE MACHINE

DONATONI KROSS is the machine that has been designed and created to simplify the work of all those companies that want to mass-produce panels and claddings for curtain walls and internal walls. It is fully capable of carrying out all the work processes necessary to prepare the workpieces for the mechanical fastenings, thereby, reducing both the processing times and the costs. The idea that gave rise to the creation of this machine is simple: to avoid manual machining, having to move pieces from one machine to another, or even having to move single pieces on the machine itself. The solution was to incorporate all the machining operations into a single machine. The objective that Donatoni set itself for the design of the DONATONI KROSS machine was, right from the start,

to simplify and speed up the machining process. In order to achieve the final result, not only did Donatoni dedicate itself to the mechanical design, but also to the development of the dedicated, simple and intuitive software. The latter allows the work to be programmed, thanks to a library containing numerous types of machining operations that are useful for carrying out the most common configurations used for mechanically fastening the machined parts to the wall. To meet the most demanding customer's needs, it is also possible to integrate the DONATONI KROSS with robotic loading and unloading systems, or even with production systems combined with other solutions, such as storage systems, cutting machines and/or handling and palletising systems.



**AUTOMATION OF THE
PRODUCTION PROCESS**



**REDUCTION OF THE
PROCESSING COSTS**



**EXTREMELY
FAST**



**HIGH
PRODUCTIVITY**



**IDEAL FOR MASS
PRODUCTION**



**QUICK AND EASY
TO PROGRAM**



**A WIDE RANGE OF WORK
PROCESSES AVAILABLE**



**EASY TO TRANSPORT
AND ASSEMBLE**

MULTIFUNCTIONAL AND AUTOMATIC

Thanks to the standard equipment, **DONATONI KROSS** is able to carry out serial machining processes, thereby, reducing machining times and increasing productivity.

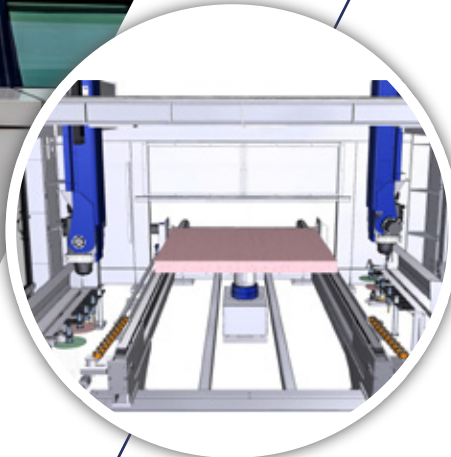
DONATONI KROSS is a multifunctional machine specifically designed to prepare slabs, panels and claddings so that they can be fastened mechanically to the external facades of buildings and to internal walls. But it is also suitable for other applications that require mechanical fastening systems, or even for carrying out simple serial machining or finishing processes.

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MULTIPLE TOOLS FOR MULTIPLE MACHINING OPERATIONS

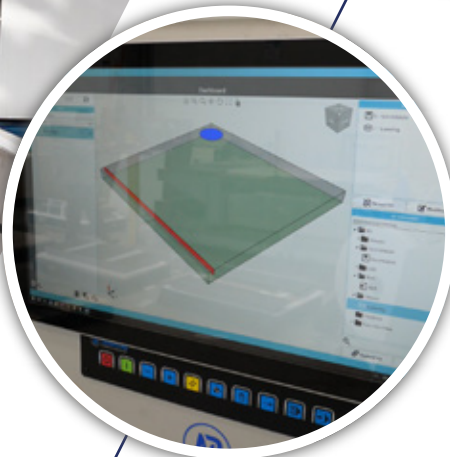


Machining without the intervention of an operator: Each electrospindle is equipped with an automatic tool-change system and with an ISO 40 tool holder, which allows diamond discs and tools to be used.



2 HEAD GROUPS = DOUBLE PRODUCTIVITY

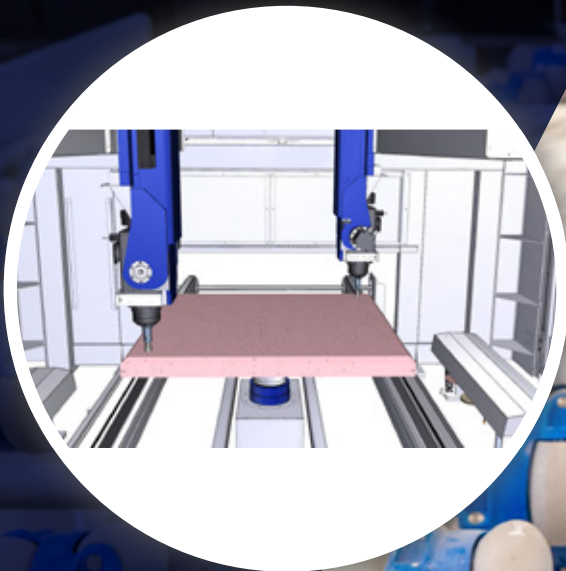
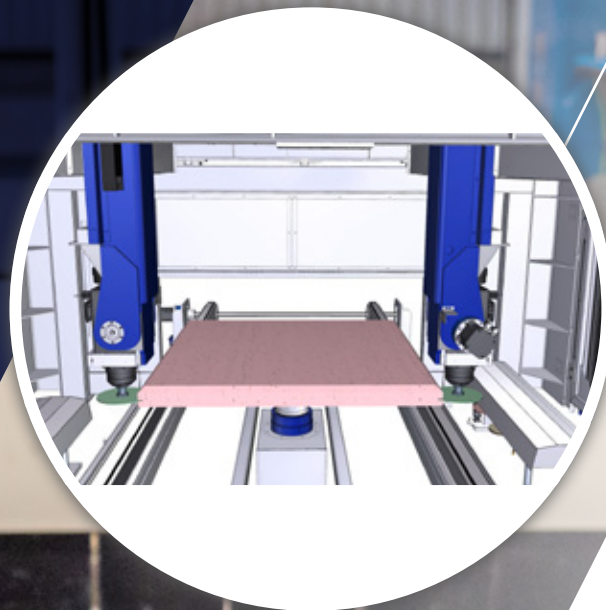
Both head groups have a tool storage unit, each of which is equipped with 2 positions for discs and 6 positions for tools; this allows parallel and sequential machining without requiring the intervention of an operator.



INTEGRATED TECHNOLOGIES AT YOUR SERVICE

The CNC technology and the native software make it possible to program different types of machining processes in sequence, thereby avoiding manual handling and machining or having to move pieces for further machining on other machines.

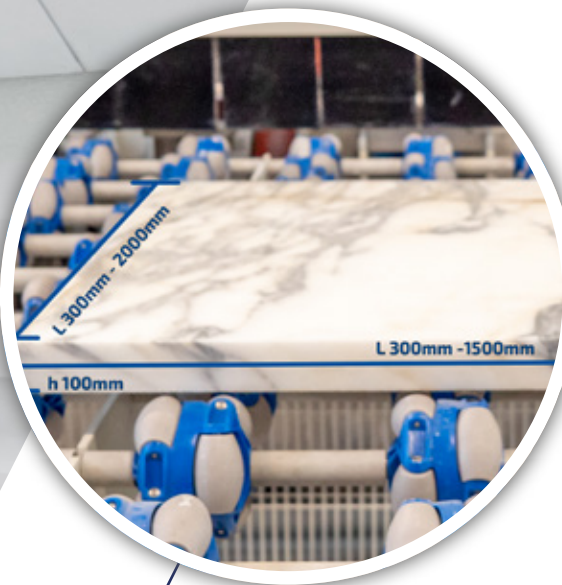
FLEXIBILITY FOR EVERY FORMAT



The slab can be processed in different ways:

- **On the side:** to make holes, recesses and for milling operations;
- **On the upper surface:** to make holes, cuts, recesses and for milling operations.



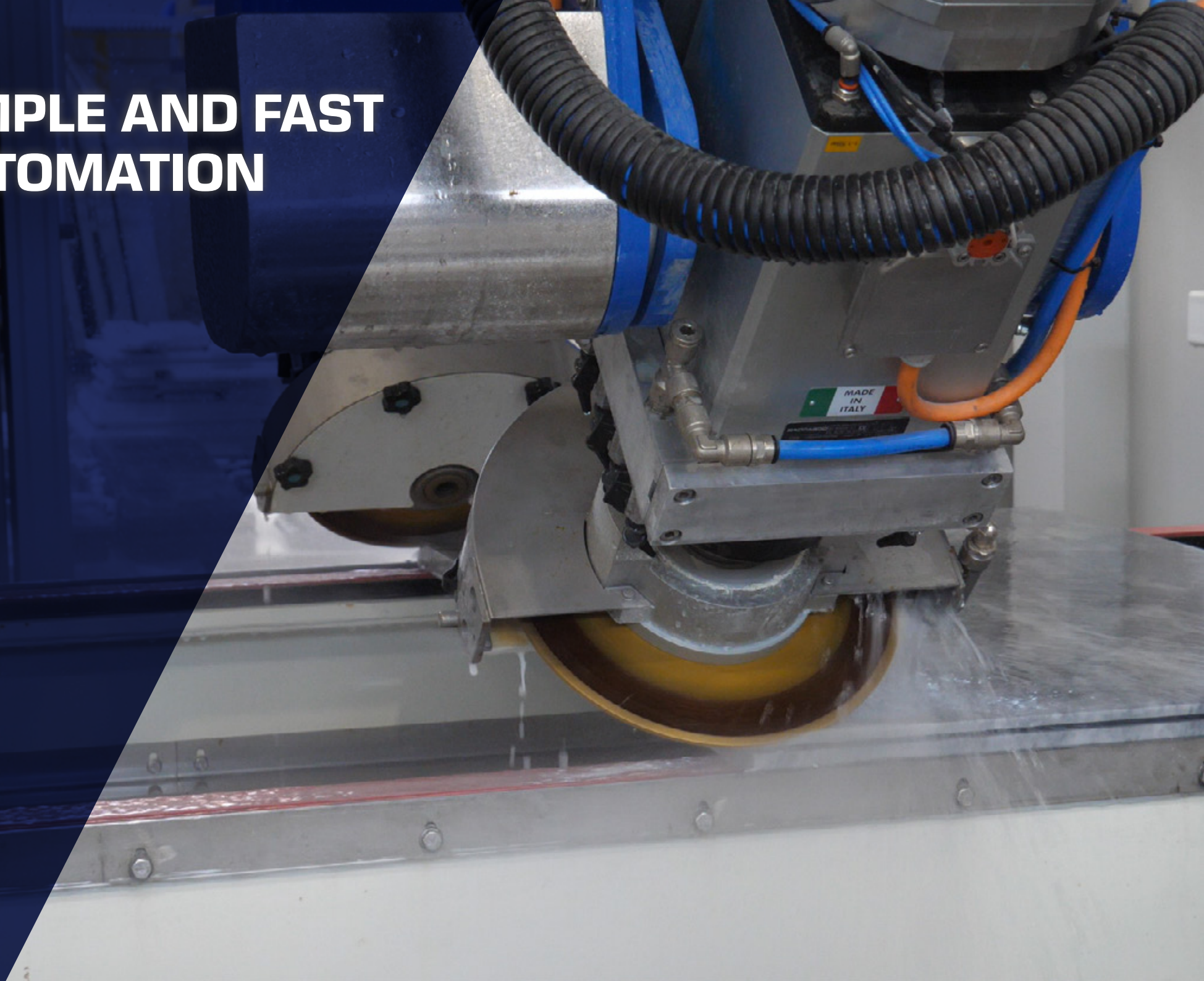


It is possible to process slabs with a thickness of up to 100 mm, with a minimum size of 300 x 300 mm, and with a maximum size of 1500 x 2000 mm.



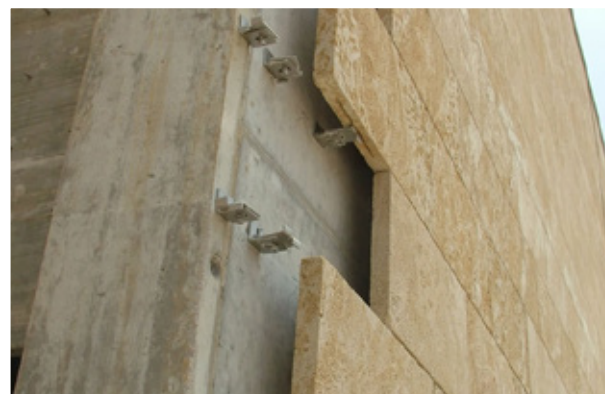
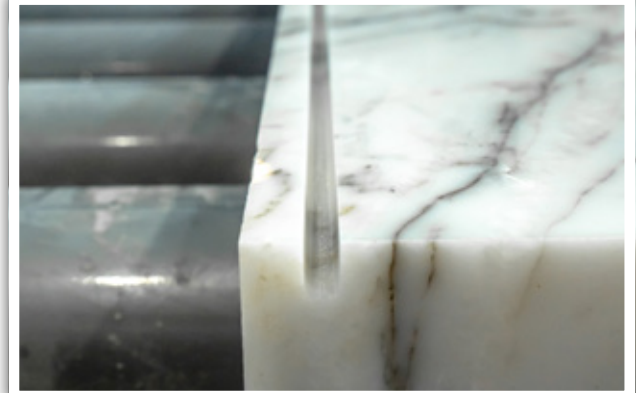
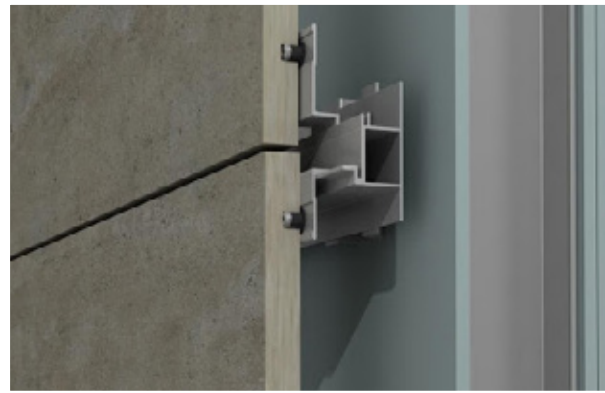
The belt conveyor system that automatically widens or narrows, according to the width of the workpiece, guarantees the extreme flexibility of the work processes.

SIMPLE AND FAST AUTOMATION



WORK PROCESSES

Panels for interior and exterior claddings,
sills, and slabs.



A UNIQUE MACHINE THAT SIMPLIFIES YOUR WORK

MAIN FEATURES



- / 4+4 CONTROLLED, INTERPOLATED AXES
- / Z-AXIS VERTICAL STROKE: 700 MM
- / MIN/MAX DISC DIAMETER: 300 MM
- / HEAD INCLINATION: 0° - 90°
- / 2 TOOL STORAGE UNITS
- / AUTOMATIC, CENTRALISED GREASE-LUBRICATION OF SLIDING GUIDES
- / BRUSHLESS MOTORS AND HIGH PRECISION GEARBOXES FOR AXIS MOVEMENTS

TYPES OF WORK PROCESSES



D RIP CUT



DRILLING WITH MILLING CUTTER



KERF



LOWERED KERF



SHAPED KERF



MITER CUT



MILLING



SLOT (KERF NOT PASSING
RIGHT THROUGH)



CIRCULAR RECESS



HOLE



COUNTERSUNK HOLE



HOLE ON THE EDGE



RECESS WITH HOLE

A COMPLETE PACKAGE FOR A UNIQUE MACHINE

MAIN COMPONENTS



MAIN BRIDGES AND HEAD UNITS



2 independent bridges, designed and made of steel, to ensure the best support for the carriage/sleeve/head assemblies and to guarantee maximum precision.

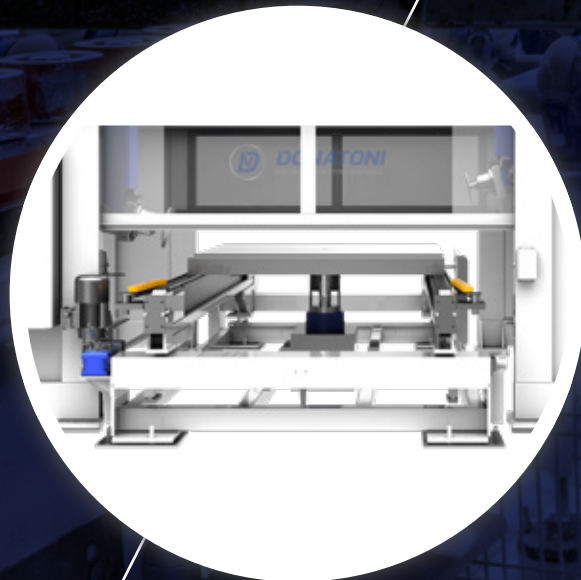


Very high-quality 11 kW/S6 electrospindles, with a liquid cooling system, an inverter that allows the number of revolutions to be adjusted, an ISO 40 tool holder, automatic tool change and a head that can be inclined from 0° to 90°.



Sliding, recirculating ball cross-beams, made of steel, and equipped with linear recirculating ball guides and with hardened and ground racks, all protected by bellows and greased by an automatic system.

MONOBLOC CONVEYOR WITH 2 BELTS



Monobloc self-supporting structure, galvanised and painted, for easy positioning and assembly.

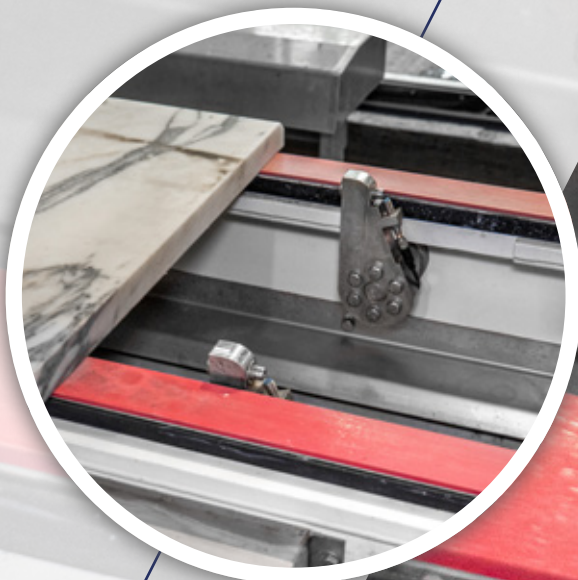


Automatic width adjustment, based on the dimensions of the workpiece. The movement to vary the width is motorised and the workpieces are transported on motor-driven conveyor belts.

Incoming rollers which allow the workpiece to be aligned with the belts.



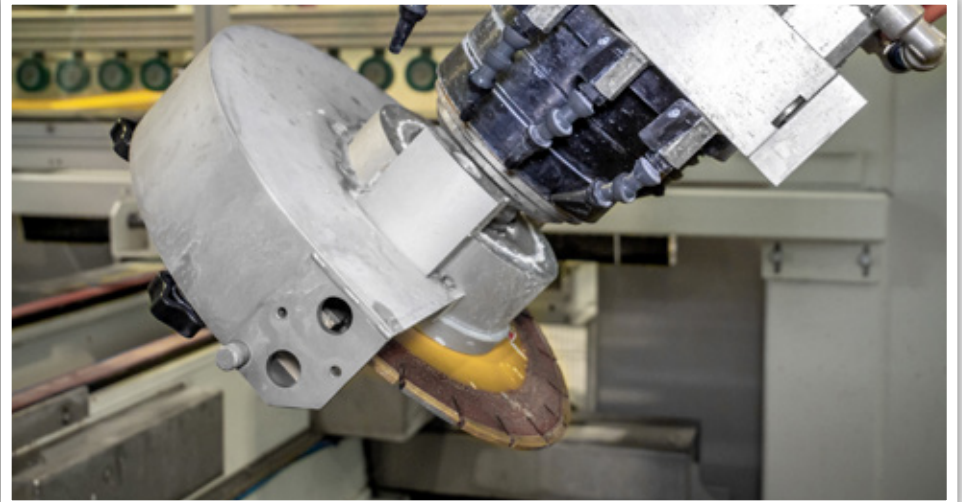
A side mechanical stop on each belt, to allow the workpiece to be held still during the machining operations.



2 Tool storage units positioned opposite each other, along the sides of the access doors. Each tool storage unit has 6 tool positions and 2 positions for 300 mm- diameter discs.



Automatic disc change with ISO 40 cone, suitable for discs with a diameter of 300 mm (2 pcs. per storage unit).



Control console: mounted on a double-articulated arm, with manual controls, a 21" colour touch-screen display, a keyboard and a USB port for importing DXF files.



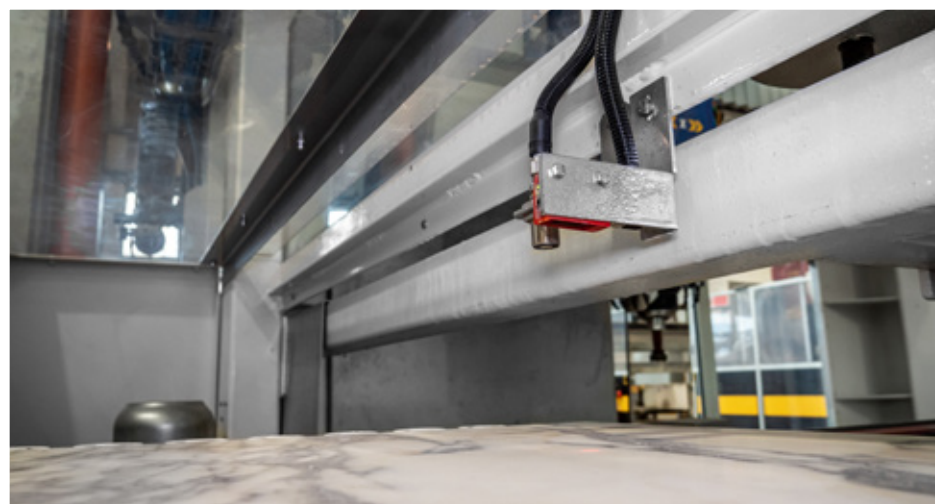
Tool presetting group: a system for measuring the tool thickness and the disc diameter.



Loading roller conveyor equipped with omnidirectional rollers made of plastic material and with a steel structure, used to load pieces with maximum dimensions.



Slab thickness detector: a system for automatically detecting the slab thickness, using a laser.



Unloading roller conveyor equipped with rubber-coated rollers and with a limit switch sensor.



Sliding front safety guards: the front protection barriers, with locking system, guarantee the highest safety standards while allowing maximum visibility of the work area and being extremely compact.



AN INTELLIGENT SYSTEM TO MAKE YOUR WORK EASIER

LET US GUIDE YOU TOWARDS
THE FUTURE OF INTELLIGENT
MACHINES



D-INSIDE:

EQUIP YOURSELVES WITH
A SUPERIOR FORM OF INTELLIGENCE



Perfect machining can only be achieved through multiple movements that need to be perfect coordinated. Just as all the movements in the human body are managed through brain impulses, similarly, the movements of our machines are managed by **integrating the machine with the programming software.**

Every Donatoni machine is born with an intelligent work management system, integrated with all the parts that manage its movements; we call this system **D-Inside**, the real brain of the machine. It is an advanced interface that is simple to use, even for inexperienced operators, which allows the machine-software system to be coordinated.

The D-Inside system offers many programming options and can be interfaced with the different types of Donatoni software, such as Parametrix and all the additional modules, or with CAD-CAM DDX EasySTONE, so as to customise the machine to meet the customer's requirements.



OPERATOR
INTERFACE WITH
PC AND 21" TOUCH
SCREEN MONITOR

HIGH PERFORMANCE
THANKS TO THE
NEW POWERFUL PC

USB
PORTS FOR
TRANSFERRING
FILES

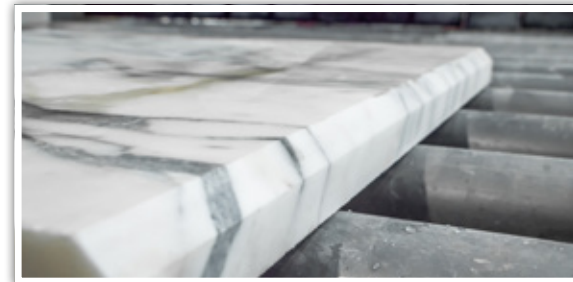
CONTROLS FOR
THE MANUAL
MOVEMENTS
OF EACH AXIS

MOBILE, STIFF ARM
THAT ALLOWS
THE OPERATOR TO
PROGRAM WITH 1
HAND

KROSSFIX

SUPPLIED WITH THE MACHINE

KROSSFIX is the simple and intuitive software developed by Donatoni Macchine specifically for the DONATONI KROSS machine. It has been designed to optimise the management of the machining operations carried out on all four sides and on the upper surface of a single workpiece. It is a program that allows you to manage various machining operations: cutting operations with a disc (for obtaining kerfs, slots, drip cuts and miter cuts); drilling different types of holes, even on the edges; milling operations as well as cutting operations to obtain recesses, using different types of cutters. By using the preset machining operations, it is possible to program your work quickly and in a simple and intuitive way. The software automatically adjusts the width of the 2 conveyor belts and organizes the machining setup, according to the dimensions of the workpiece that have been set in the system. Parametrix it's combined with the workpiece-thickness detector and with the system for measuring the tool and disc thickness.



CAD-CAM

OPTIONAL

The software allows to design, import and execute 2D and 3D files in DXF, IGES, STL, PNT, STEP and RHINO formats and to define surfaces and shapes through laser scanning.

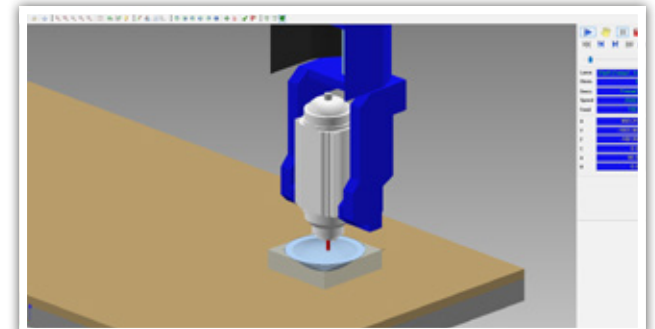
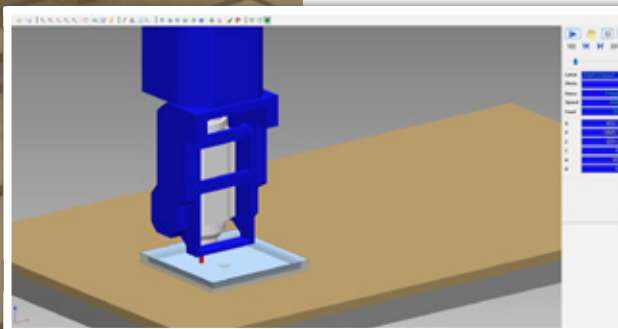
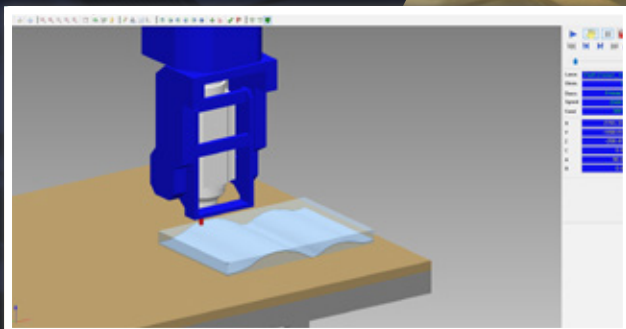
Multiple processes can be set: roughing, drilling, profiling, emptying and polishing, which can be carried out by optimizing the execution process.

After the import, the software optimizes processing paths, performs roughing / finishing taking into account the raw material resulting after processing.

With CAD-CAM it is possible to display the processing 3D image with virtual milling and to modify it if required. The 3D simulation of the processing, including free displacements, is realistic as it is based on the Customer's machine model and shows the three-dimensional model of the working center, of the bench, of the motors, the tools, the sub-pieces and the pieces.

Once the design phase is completed, CAD-CAM generates the piece-programs and sends it directly to the Customer's working center.

Finally, it calculates times, lengths and processing costs, allowing accurate reporting of the work performed.



WITH DONATONI YOU ARE NEVER ALONE

AFTERSALES
SERVICE AND ASSISTANCE

The relationship with the customer does not end with the supply of the product but continues and is strengthened through a reciprocal collaboration which creates value for both customer and supplier.



DIRECT CONNECTION WITH OUR TECHNICIANS

Donatoni Service is the company department that is totally devoted to our customers and their needs; it provides a wide range of **services aimed at meeting our customers' all-round requirements**, before, during and after the delivery and installation of the machine and throughout its useful life.

Our highly-qualified personnel have sound experience and are capable of responding to any question or request. We use an open approach that is attentive to specific individual needs since our objective is

to cooperate with and support the customer in its production activities, not only through assistance but also with **technical services and advice** which allow operators to improve their know-how and enhance their production. Speed, reliability and professionalism are the strengths that allow us to ensure an efficient response to your requests; our Service uses the latest generation communication tools and **a global network of partners** so as to provide prompt answers and solutions.

WORLDWIDE ASSISTANCE STRUCTURE

Donatoni is present in many countries worldwide thanks to a structure of reliable and competent partners and agents, among which the Biesse group Intermac branches.

MACHINE INSTALLATION

Our machine are installed by highly specialized technicians granting extraordinary levels of professional work. Installation includes a careful installation service, commissioning of the machine and training of operators according to the model of machine installed.

ON SITE ASSISTANCE

We provide on site assistance at the clients premises if not possible to use the Tele Assistance by modem.

DIRECT CONNECTION - ON-LINE ASSISTANCE

Each machine is supplied with a system that enables it to be connected by Tele-Assistance to our After-sale service (we require connection to the network via a cable). This service enables our technical staff to virtually access the customer machine and to carry out checks, updates and to provide technical assistance as if they were there at the machine location in person.

PARTS AND REPLACEMENTS SERVICE

We handle requests for parts and replacements in any part of the world, in short time frames in order to minimise machine down-time.

CAD-CAM TECHNICAL ADVICE

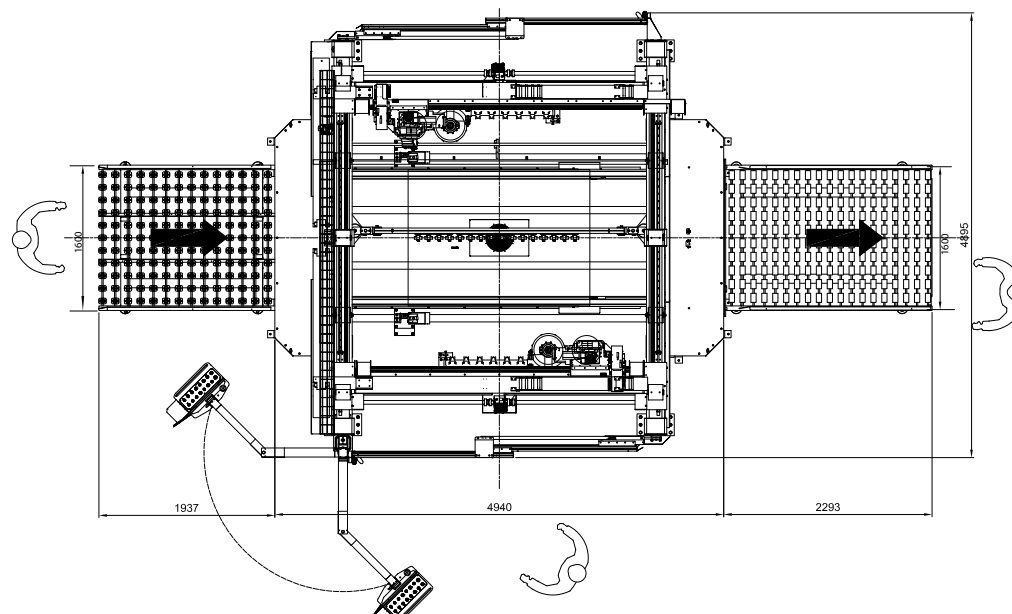
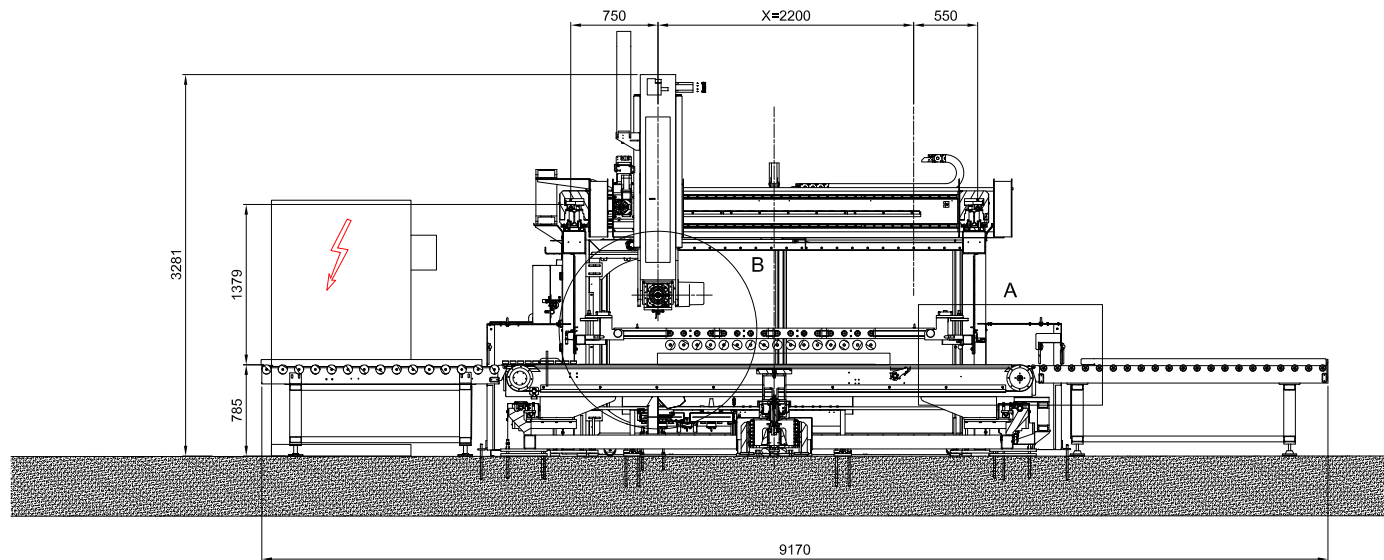
we help our customers in creating and designing projects and objects.

THEORETICAL/PRACTICAL TRAINING

Training courses and update courses regarding new applications and software at our offices or at customer premises. Our offices are equipped to host courses for technicians and operators. The rooms are next to the machines on display in our show room and therefore this allows tests and checks to be carried out directly on the console of the machine and the level of learning can be evaluated.



TECHNICAL DATA



DONATONI KROSS

Number of interpolated axes	N°	4+4
Carriage stroke (X-axis)	mm	2200
Bridge stroke (Y-axis)	mm	2600
Vertical stroke of the head (Z-axis)	mm	700
Disc holder head rotation (C-axis)	degrees	0-90°
Belt conveyor dimensions	mm	MAX 1520 – MIN. 300
Disc diameter	mm	300
Max cutting depth	mm	120
Electrospindle motor power	kW	11/56

Diameter of the disc motor shaft	mm	50
Maximum carriage speed (X-axis)	m / min	0-40
Maximum bridge speed (Y-axis)	m / min	0-30
Maximum head speed (Z-axis)	m / min	0-5
Water consumption - cutting disc (3 bar)	l/min	100
Water consumption - internal (3 bar)	l/min	50
Air consumption	l/min	20
Standard electrical voltage	V/Hz	400 (± 10%) /50
Overall weight of the machine	kg	6000

The technical data and the images in this catalogue are indicative and are not legally binding. The manufacturer reserves the right to make changes to the product, technical data and images without prior notice.

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Donatoni Macchine, founded by Vittorio Donatoni in 1959 in Domegliara, one of the main marble and granite processing districts, is recognised, thanks to their years of experience gained in the natural stone industry during this time, as one of the world leaders in manufacturing **cutting-edge machines of very high quality for working stone.**

Constant research, technological innovation and customer service are key concepts for the company and in order to pursue them the company employs highly qualified technical and commercial personnel, in order to guarantee the end customer a **product that reflects their expectations in terms of quality and performance.**