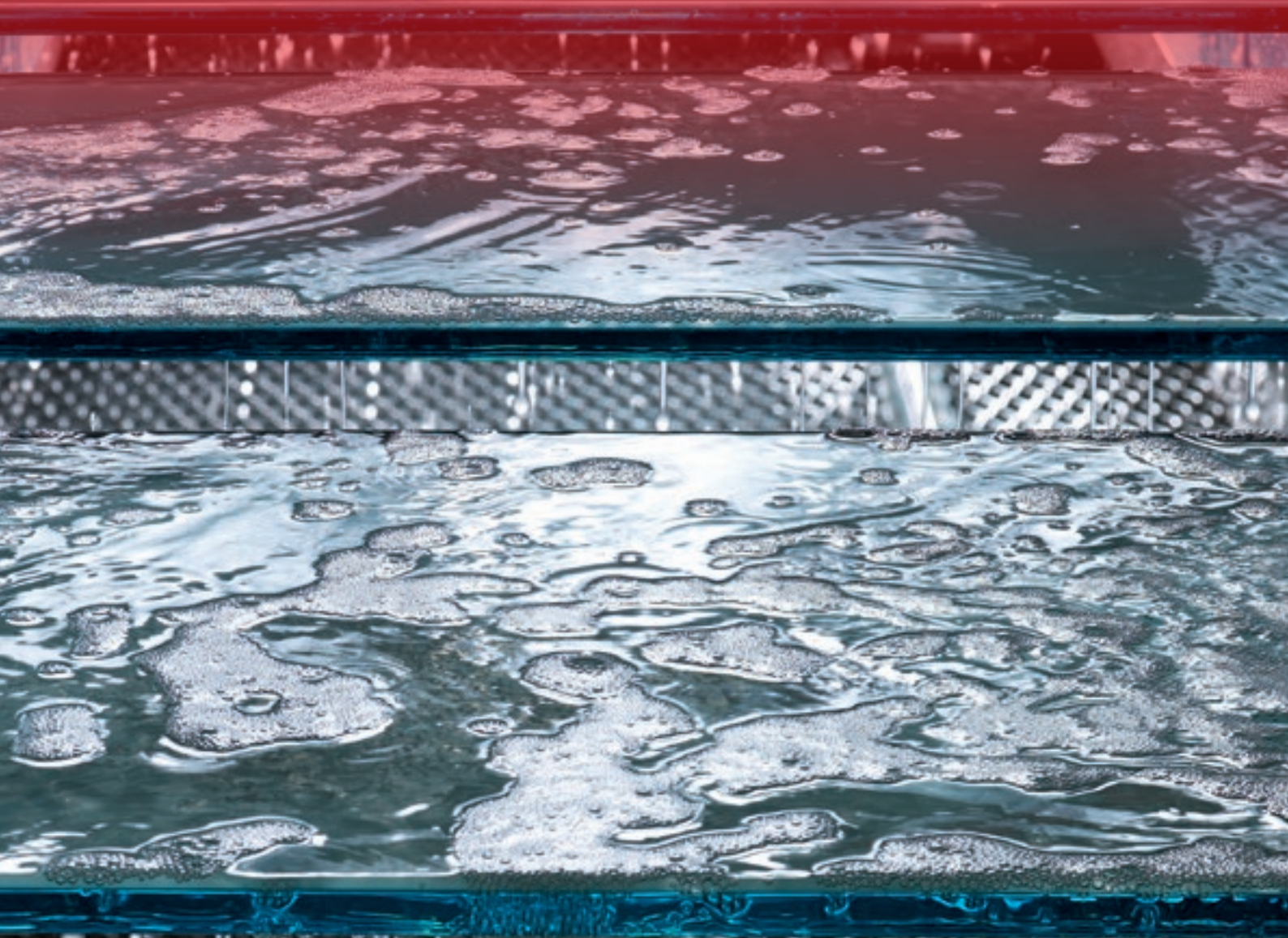


GLASS TOOLING

TOOLS FOR GLASS
PROCESSING



DIAMUT

A SOLUTION FOR ALL PROCESSING OPERATION NEEDS



THE MARKET DEMANDS

innovative solutions for achieving the highest quality standards across all types of glass processing operations.

DIAMUT RESPONDS

with a wide range of tools for processing glass, born of more than 30 years of experience and in-depth knowledge of the sector and of the various different types of materials and machines. Developed and tested according to rigorous quality standards, these tools guarantee excellent results in terms of processing quality and durability.

- ▀ **WIDE RANGE OF TOOLS FOR ALL PROCESSING OPERATIONS**
- ▀ **VERSIONS AVAILABLE FOR THE MOST POPULAR MACHINES ON THE MARKET**
- ▀ **EXTENSIVE SALES AND SERVICE NETWORK**
- ▀ **TESTING CARRIED OUT DURING DEVELOPMENT AND IN ORDER TO ENSURE RELIABILITY OF TOOLS IN COLLABORATION WITH INTERMAC**
- ▀ **DESIGN AND MANUFACTURE OF TOOLS TAILORED TO CUSTOMER NEEDS.**

WHO WE ARE

FOR OVER 30 YEARS, DIAMUT HAS BEEN A LEADING PLAYER IN THE MARKET WITH ITS COMPLETE RANGE OF TOOLS FOR GLASS, STONE AND SYNTHETIC MATERIALS PROCESSING WHICH CAN BE USED ON MOST NC MACHINES, BOTH AUTOMATIC AND SEMI-AUTOMATIC. THANKS TO THE SUPERIOR QUALITY OF OUR TOOLS, WE ARE THE TRUSTED PARTNER OF A RANGE OF SUCCESSFUL COMPANIES OPERATING IN A NUMBER OF INDUSTRIES, FROM AERONAUTICS TO DOMESTIC APPLIANCES, FROM ELECTRONICS TO FURNITURE AND ARCHITECTURE.



DIAMUT

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DIAMUT

GLOBAL PRESENCE



Italy

Lugo
Thiene

U.K.

Daventry

Germany

Elchingen

France

Lyon

North America

Charlotte

Brasil

San Paolo

Asia

Shanghai
Kuala Lumpur
Jakarta

Oceania

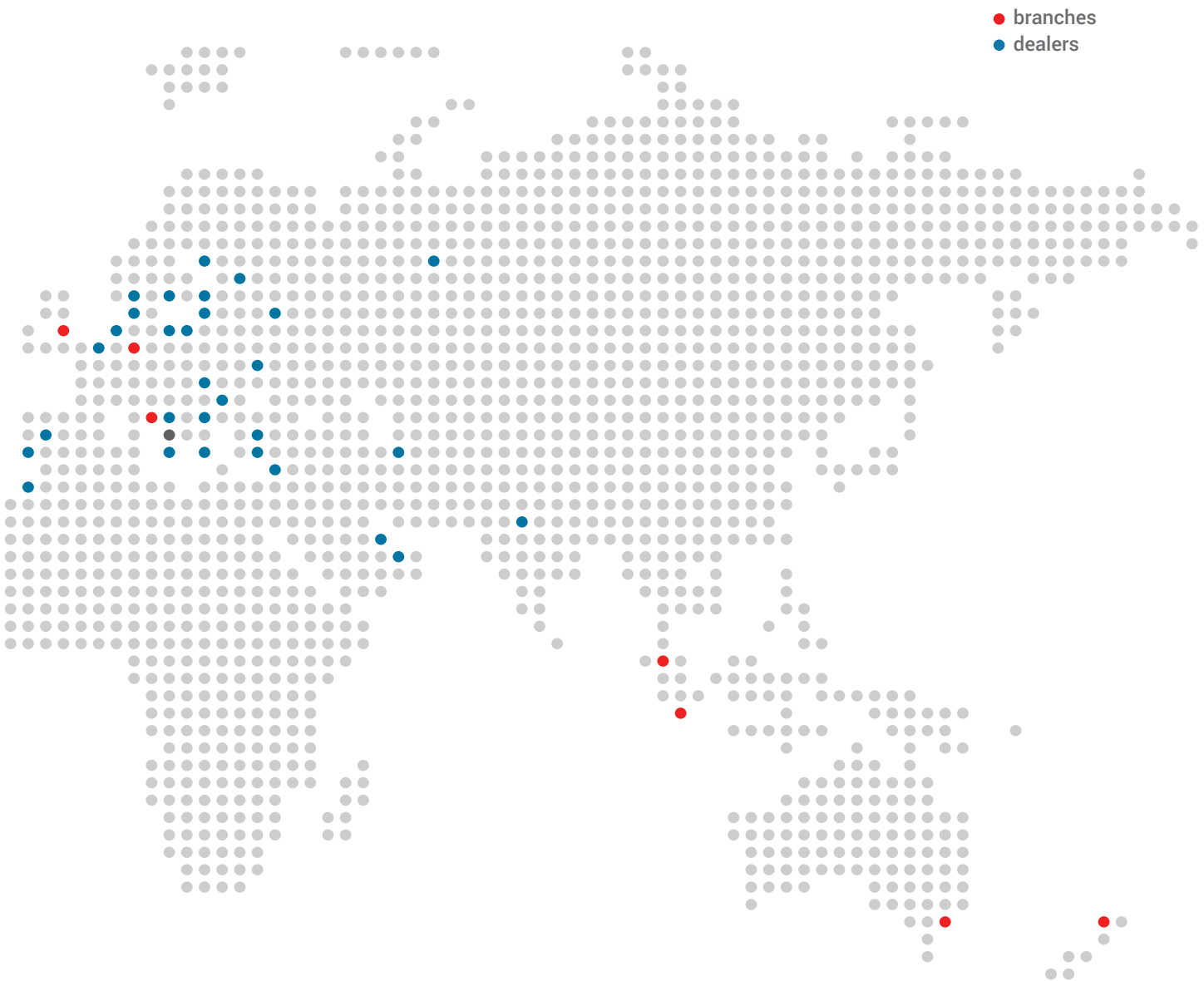
Auckland
Sydney

Dealers

Argentina
Ecuador
Mexico
Bolivia
Colombia
Perù
Venezuela
Panama
Paraguay
Portugal
Spain
Denmark
Finland

Norway
Sweden
Lithuania
Latvia
Estonia
Czech Republic
Ukraine
Hungary
Poland
Holland
Romania
Slovenia
Belgium

Serbia
Malta
Greece
Turkey
Cyprus
Marocco
South Africa
Russia
Belarus
India
United Arab Emirates
Israel
Iran
Qatar



Being part of the Biesse Group means that we can rely on a global distribution network. The 8 branches globally (Asia, Brazil, USA and Canada, France, Germany, UK, Australia and New Zealand), in addition to the 70 dealers and 15 agents across the world, provide strong foundations for a company which can listen to the requirements of each individual customer and design not only tools, but total solutions.

TECHNOLOGICAL EXCELLENCE

The use of the most advanced technologies available throughout the production process of our tools, along with the superlative expertise of Diamut personnel are the keys to our success in meeting the sector's highest quality standards. Diamut's unwavering commitment to research and development activates ensure that the company remains at the cutting-edge of the industry, constantly evolving towards new technological goals with regard to both process and product.



GOAL = INNOVATION

So many solutions, with one unchanging goal: to innovate. To innovate, in order to be able to ensure that we can provide the best solution for your business, improving the performance of our products and allowing our customers to meet their targets with maximum efficiency. Among the most innovative of Diamut's solutions are: Chevron, the line of tools for CNC machines, specially designed for processing operations on laminated glass Helix System, the revolutionary Diamut tool which, along with a working centre from the Intermac Master range and specialist software, allows users to bore, countersink and grind in a single operation, on sheets of glass of up to 19 mm thick.



CONSISTENT QUALITY

More than 34000 quality controls per year demonstrate our commitment to reliability and precision, providing you with superior tools. We can guarantee the precision and accuracy of an excellent product, in every single aspect.



Diamut
corporate film

IDEAS TRANSFORMED INTO SUCCESS STORIES

Not many manufacturers can rely on a technological partner for the development of cutting-edge tools. Diamut works with Intermac, an industry leader in the design and manufacture of machinery and technological solutions for glass, stone and metal processing, carrying out hundreds of hours of product testing per year to develop new products and provide our end customers with high quality tools.



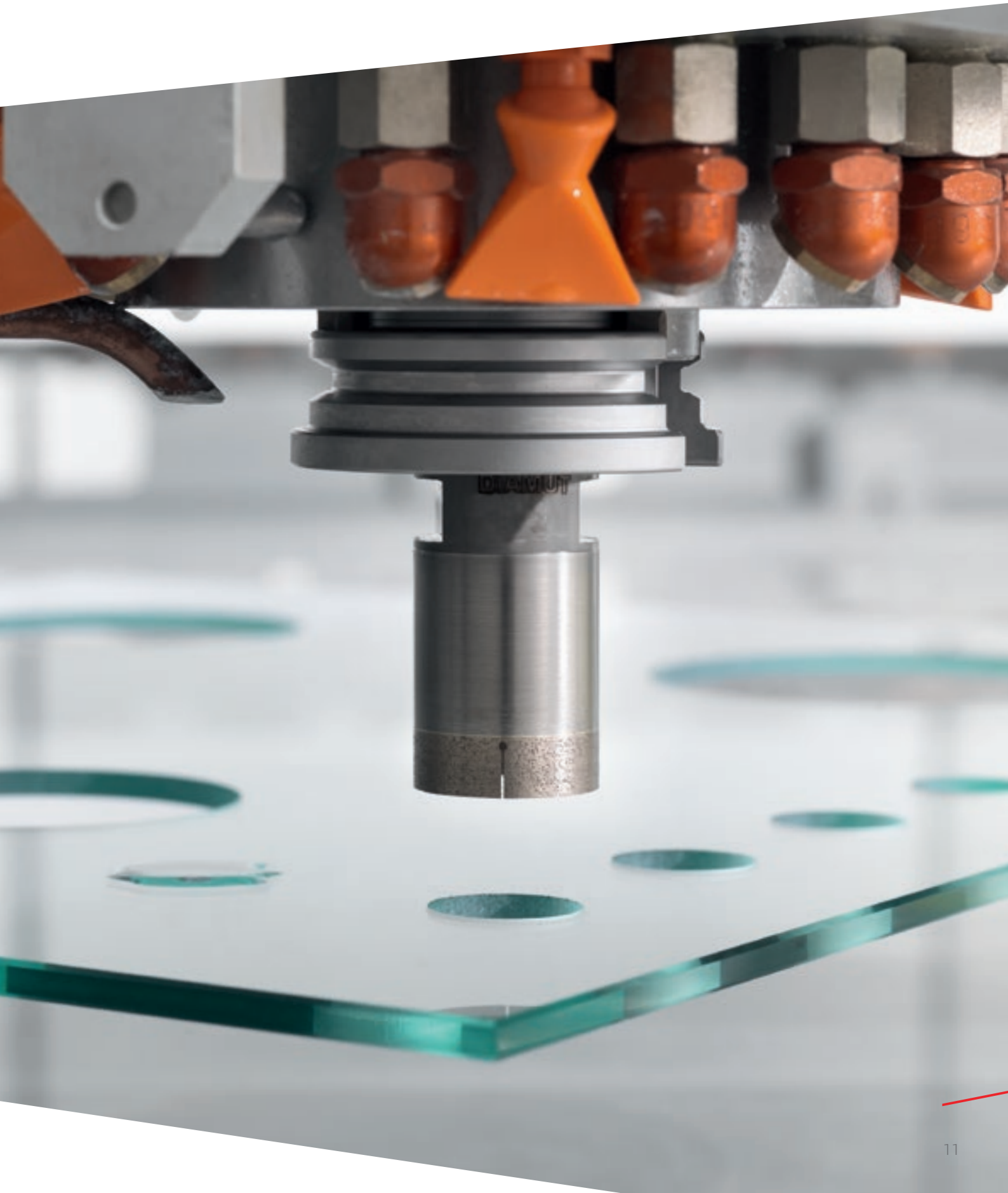
A PARTNER FOR YOUR BUSINESS

We do not only manufacture tools, but are keen to liaise with you to provide the best solution based on your processing requirements and goals you want to achieve. A team of dedicated technicians is at your disposal, working with you to help research and identify the ideal tool for all types of production.

DRILLS

Machines: **CNC, vertical, manual machines.**

Applications: **furniture, domestic appliances, architecture.**



DRILLS

DRB LINE

The DRB (Diamut Regular Bond) drill is characterised by consistent performance and durability. Available for CNC, vertical and manual machines, the DRB drill features a diamond ring measuring 1.2 mm as well as a 3mm channel for removal of water and cutting residues, offering superb drilling quality for all types of machining, for the best balance between quality and accessibility.

Diamut drills can be used on any type of glass, whether monolithic or laminated.



KCX LINE

Dedicated to those looking for higher performance levels, the KCX drill offers the ultimate in cutting capacity, hole quality and tool life. The stainless steel body minimises the risk of rust on the tool, as well as ensuring greater durability and resistance to machining stresses.

Available for CNC and vertical machines, it boasts a dedicated channel design for draining water and glass powder.

Special production technology ensures greater forward speeds and less regular dressing.



HELIX

Machines: **CNC with dedicated software.**

Applications: **furniture, domestic appliances, architecture.**



GLASS TOOLING



The Helix System was born of the desire of both Di-amut and Intermac to develop a revolutionary drilling system unlike anything that has been seen on the market to date, capable of drilling holes with integrated upper and lower countersink on sheets of glass up to 19mm thick, using a single tool on CNC machines.

Today's technology obliges operators to use two tools, and does not integrate the lower countersink, as well as requiring different drill bits for different diameter holes. With Helix, the descent of the tool is not longer vertical but occurs helically; it is the radiused part of the tool which enters the glass sheet, and instead of a drilling motion, the glass is ground to create the bore. Once the drilling operation is complete, lateral grinding takes place, which enlarges the bore to the nominal dimensions. Once this phase is complete, the lower and upper countersinking takes place, eliminating all defects.

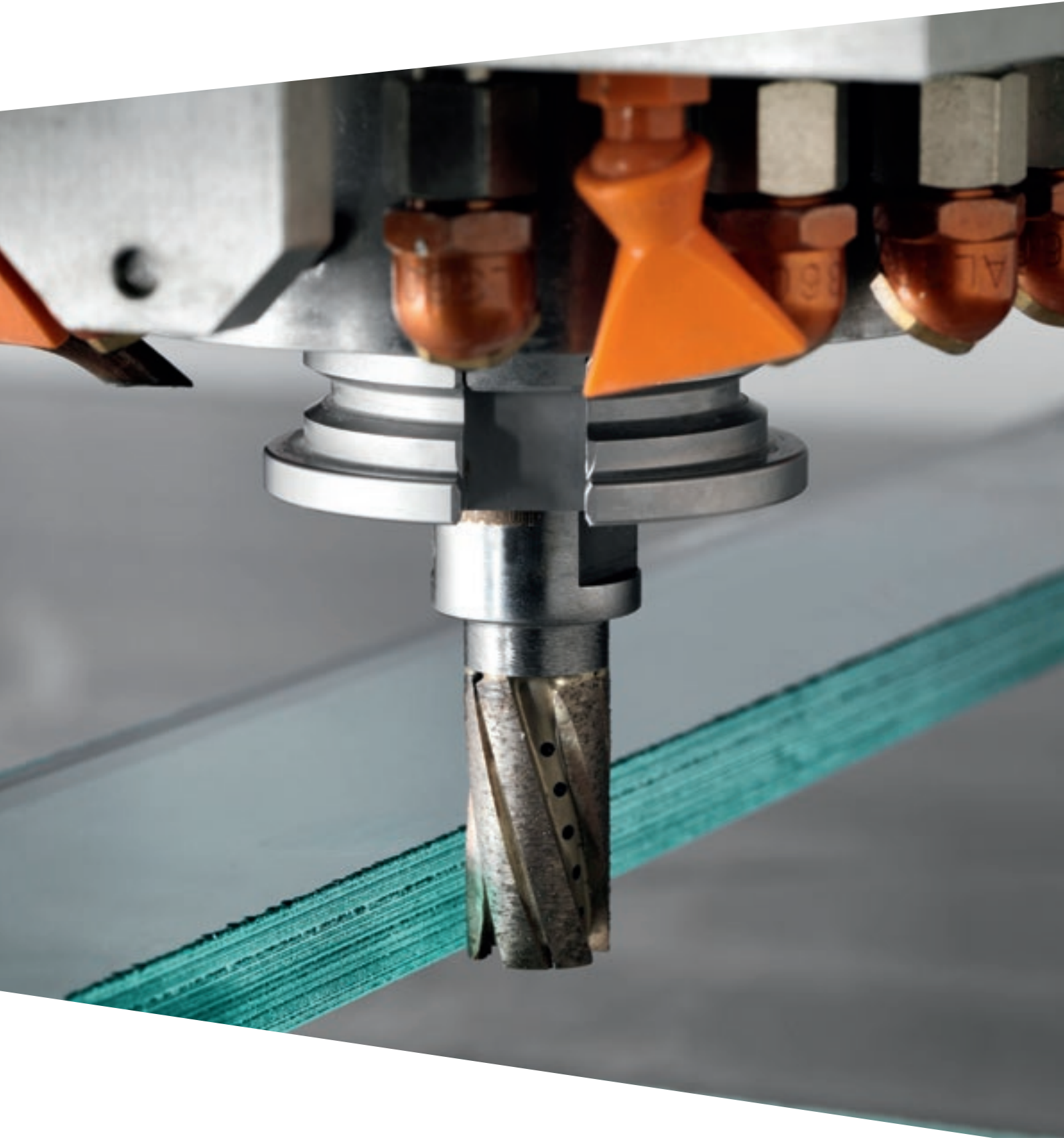
Helix is available on Master CNCs which have been manufactured since 2005. Starting from April 2017, this tool and a dedicated software will be a standard feature on the new Master range.



MILLING CUTTER

Machines: **CNC and vertical.**

Applications: **aeronautics, furniture, domestic appliances, electronics, architecture.**



MILLING CUTTERS

Diamut milling cutters are available in a range of versions, from a minimum diameter of 6 mm to a maximum of 20 mm. The 10 mm version is also available with a reinforced body, in order to resist all types of machining stresses. Each version is available with various binders and grits; This ensures the perfect balance between tool durability and perfect finish quality.

Diamut offers the market both its extensive expertise and highly innovative technology, designing and producing milling cutters which are customised with regard to number of segments, binders and grit, in order to achieve any result desired.



SHAPED MILLING CUTTERS

Diamut shaped milling cutters cover a wide range of diameters, ranging from 10 mm to 20 mm, and are available with both trapezoidal and pencil edge profiles, with an internal water channel for optimal cooling of the tool.

For the trapezoidal version, Diamut also offers two different grits, for optimal performance across a range of uses and processes.

The 14 mm version is also available in a combined version, with trapezoidal profile and segment height of 20 mm or 25 mm. This version allows users to carry out specialised processing operations in just a few seconds, without the need for tool change. Edge finish and cutting speed are always guaranteed.

BREAKER MILLING CUTTERS AND CUP CUTTERS

The extensive range of Diamut milling cutters is completed with breaker milling cutters, available in diameters from 4 mm to 12 mm, and cup cutters from 20 mm to 100 mm.

MILLING CUTTERS AND SHAPED CUTTERS FOR FORVET FRANCESCA

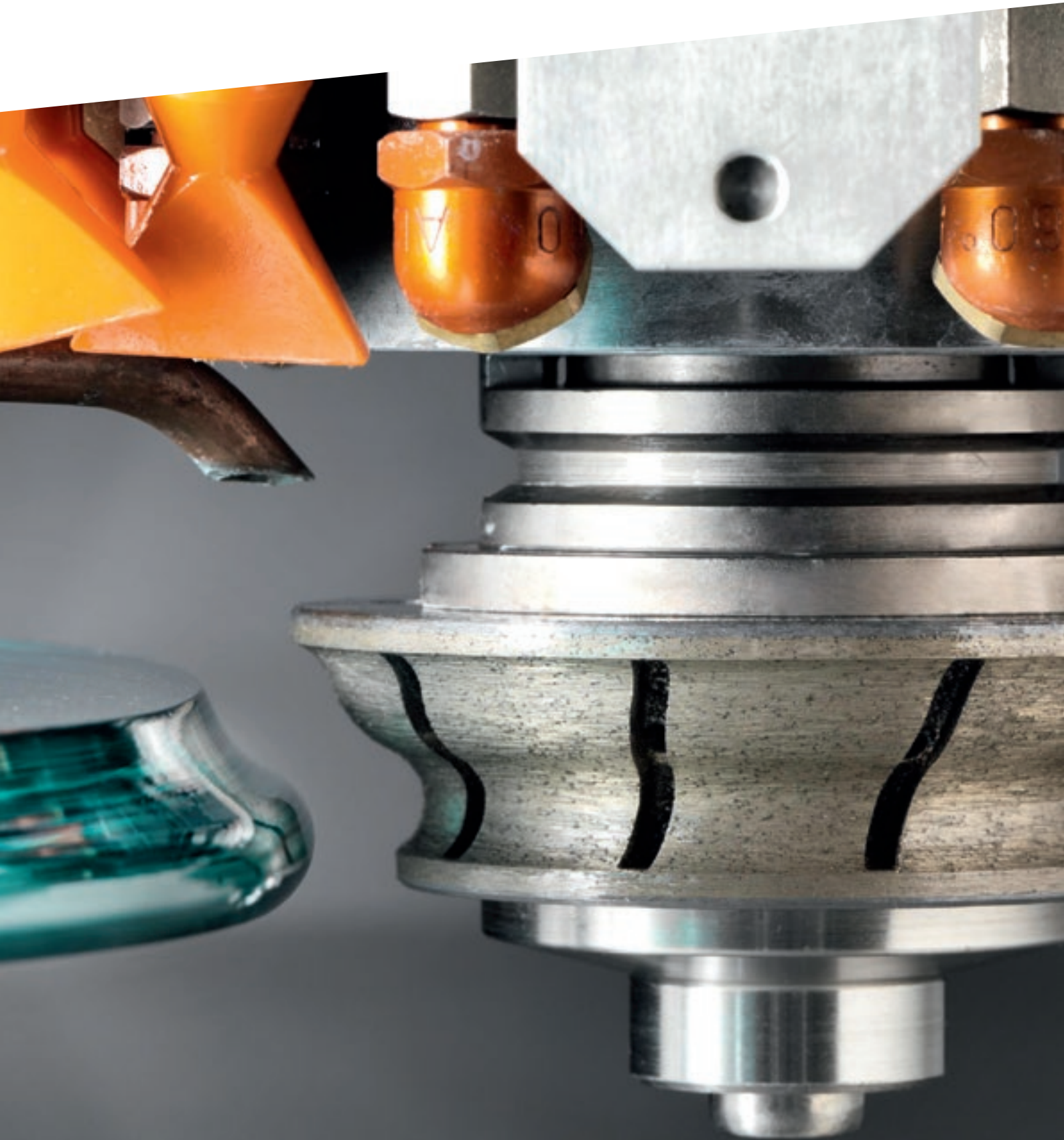
Diamut also manufactures and markets milling cutters and shaped milling cutters for Forvet Francesca machines, in diameters from 12 mm to 25 mm.

PERIPHERAL GRINDING WHEELS

Machines: **CNC, vertical, double edgers pencil edge.**

Applications: **building, domestic appliances, architecture.**





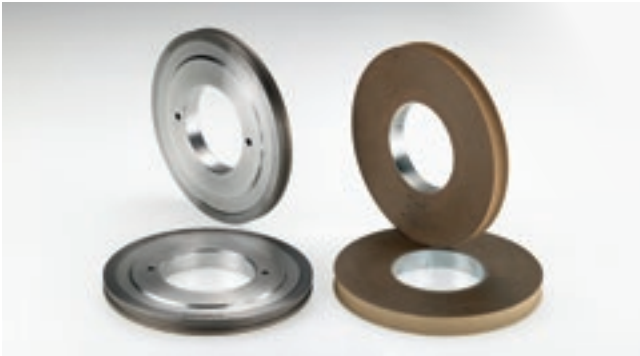
PERIPHERAL GRINDING WHEELS

The Diamut wheel range features a wide variety of versions with 25 to 200 mm diameters which can be used on monolithic, laminated and stratified glass. On request we can also design and manufacture tools to meet customer specifications.



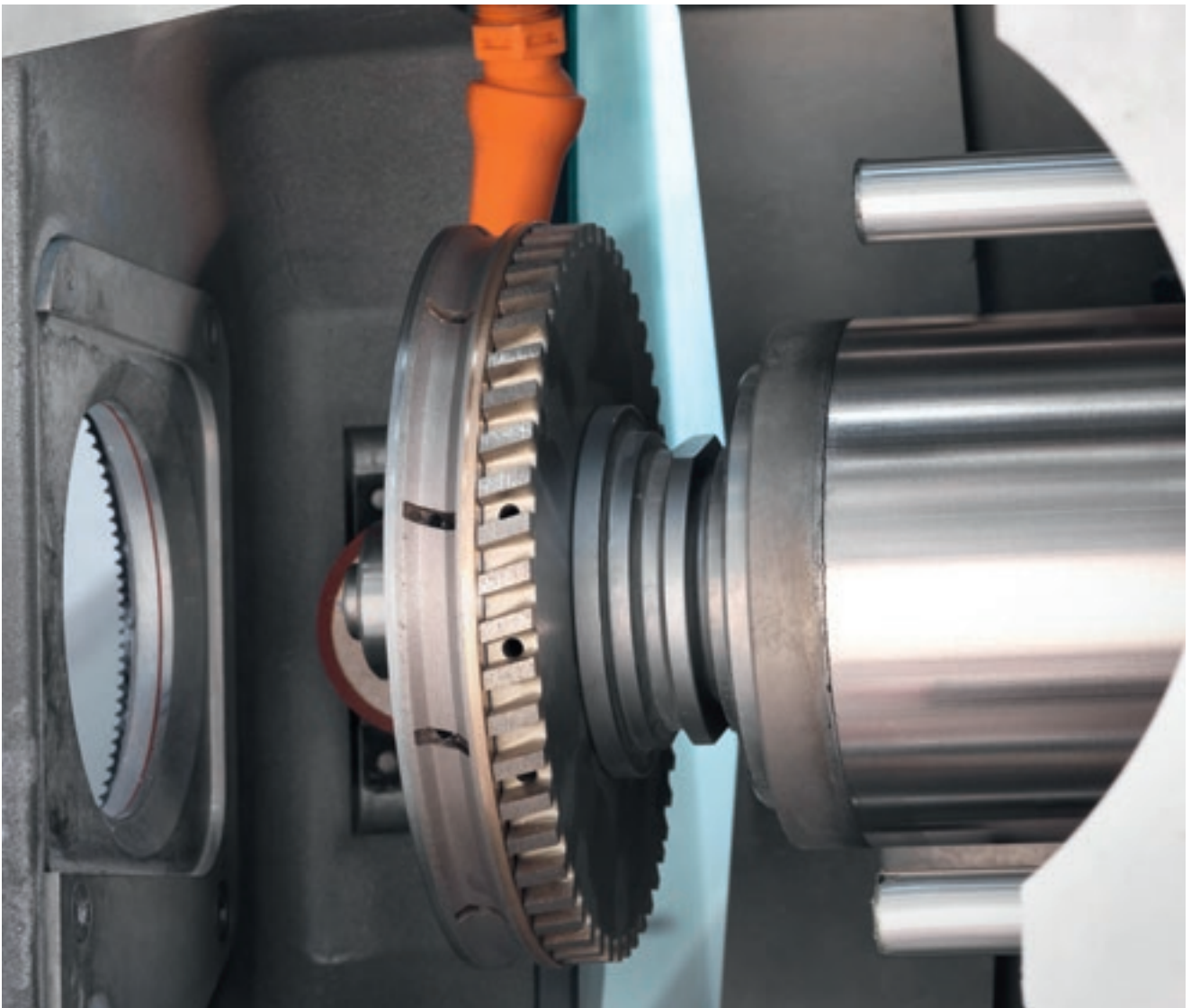
From high productivity grinding wheels to those with increased durability over time, Diamut can offer the ideal product for any type of processing operation and for any application. Constant product research often gives rise to the development of new versions of common tools, with a view to continuing to offer a full range of products to meet every requirement.





Diamut offers all sequences for each available diameter, for every processing and finishing need: polished edge, rough edge, industrial polished edge, cerium oxide finishing. In accordance with the machining operation to be carried out, we can combine all the sequences, with or without polishing wheels.

In order to ensure record-breaking results, we use only the best components. The use of natural diamond in combination with coated diamond allows us to achieve levels of performance and durability which surpass all expectations, whilst maintaining impeccable quality.



PERIPHERAL PROFILE GRINDING WHEELS

Machines: **CNC.**

Applications: **building, domestic appliances, architecture.**



Bull nose, triple pencil, OG, waterfall, waterfall arris and V45 profiles are just some of the dozens of profiles that Di-amut has to offer in its extensive range of profile wheels.

In the event that the customer needs to develop a new profile which is not present in our product catalogue, Di-amut is on hand to offer astounding expertise and technology, to meet any processing requirements. Machines: CNC. Applications: building, domestic appliances, architecture.

MOLE LUCIDANTI

Macchine: **CNC, Verticali, Bilaterali filo tondo.**

Applicazioni: **edilizia, elettrodomestici, arredamento.**



Standard and Blu EFX compose the full range of Diamut polishing tools, designed to guarantee perfect results for every application. Accessible quality with the standard range; superb finishing with Blu EFX, the grinding wheel with additional cerium to give machined glass unique brilliance and shine.



CHEVRON PERIPHERAL GRINDING WHEELS

Machines: **CNC, vertical.**

Applications: **building, domestic appliances, architecture.**



Chevron is the Diamut solution for laminated glass; The new profile is designed especially to optimise removal of plastic film and guarantee removal capabilities that have never been achieved before. In comparison to standard tools, the new V-shaped design also limits and delays the classic cutting at the centre of the groove caused by the plastic film which affects the performance of the tool.

GLASS TOOLING



The Chevron line is available in a wide range of different versions, in accordance with the operation to be carried out and the type of machinery in question. The diameters available are 100, 150 and 200 mm and can be mounted either on CNC or on vertical diamond, for producing both trapezoidal and pencil edge profiles.



CUP GRINDING WHEELS

Machines: **CNC, flat edge straight line machines, straight line bevelling machines and double edgers flat edge machines.**

Application: **furniture, architecture, domestic appliances.**



Diamut's cup wheels are straight line flat edge and bevelling machines from all of the major manufacturers, such as Bottero, Glaston, Lattuada, Neptun and Schiatti. In addition, double edgers flat edge machines can also be equipped with Diamut cup wheels. Finally, bevelling wheels and cup wheels are also available for CNC Intermac machines, developed in collaboration with one of the leading names in numerical control machining centres.



The extensive experience boasted by Diamut is translated into a wide range of solutions for grinding any type of glass. Cup wheels are available for machines from major manufacturers, in an assortment of different types; diamond, resinoid and polishing. Characterised by high speed, durability and excellent edge finishes, these machines represent the ideal solution for all companies with a high production capacity.



SWAVE

Machines: **double edgers and straight line edgers.**
Applications: **furniture, construction, household appliances.**



Diamut has revolutionised the sharpness of the grinding wheels fitted on double edgers and straight line edgers machines with SWave, the grinding wheel that achieves new standards of efficiency in grinding operations.

REVOLUTIONARY GRINDING

SWave is the first generation of cup grinding wheels with continuous sinusoidal cutting that does not pass through the diamond wheel.

This enables superior removal and a drastic reduction in splinters. The resinoid grinding wheel has been modified too, using a twin diamond grain in a single wheel.

The direction of rotation of the grinding wheels follows the direction of rotation of the spindle, for greater machining efficiency. SWave is available with a diameter of 150, 175 or 200 mm for double edgers and straight line edgers machines built by any manufacturer.

CUP WHEELS FOR INTERMAC CNC MACHINES



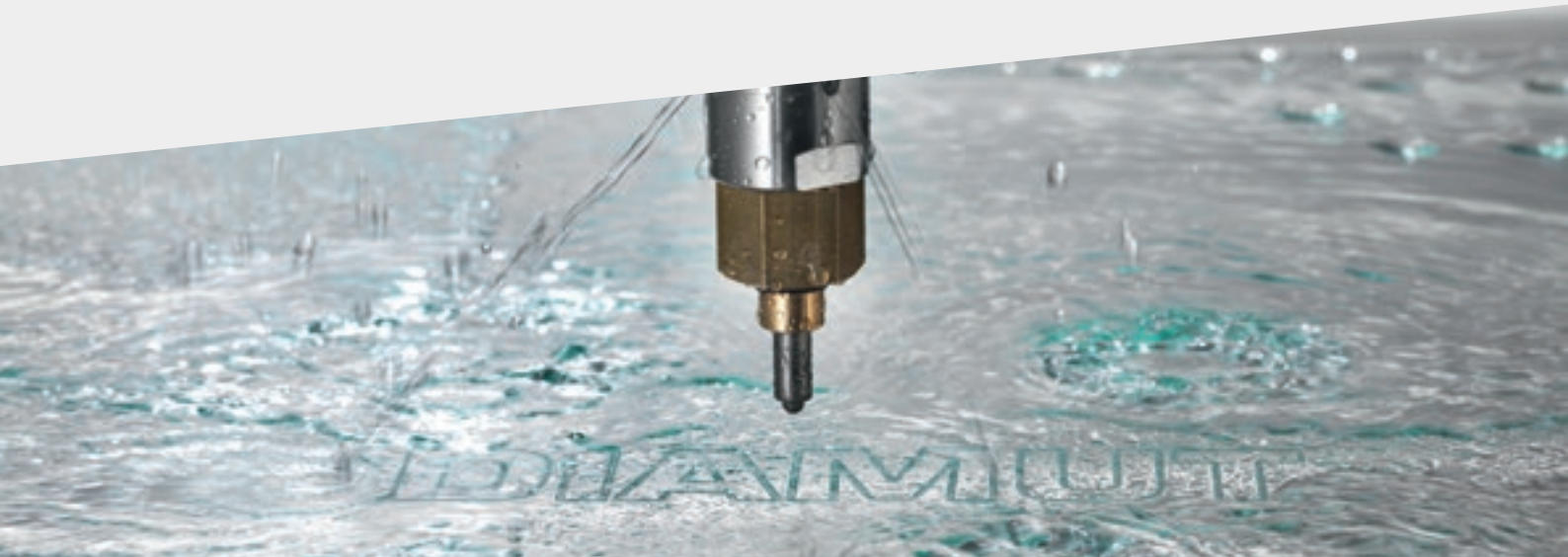
In addition to double edgers and straight line machines, Diamut cup wheels are also available for Intermac machining centres with 3 and 5 axes, guaranteeing superb finish quality.



WRITING BITS

Machines: **CNC.**

Applications: **furniture.**



The extensive Diamut range also includes writing bits with a 2 mm to 10 mm diameter with 1/2" GAS support.

GRINDING WHEELS FOR BEVELLED EDGES

Diamut's considerable expertise in bevel machining operations has led to company to work on the development and continuous improvement of a full range of diamond, resinoid, polishing and cerium grinding wheels for bevel machining, available in diameters of 100 mm and 150 mm.



To ensure that the highest quality standards are achieved in bevel machining operations, Diamut has implemented numerous tests on products involved in this process, to ensure that the company continues to offer the best sequence of grinding wheels available.

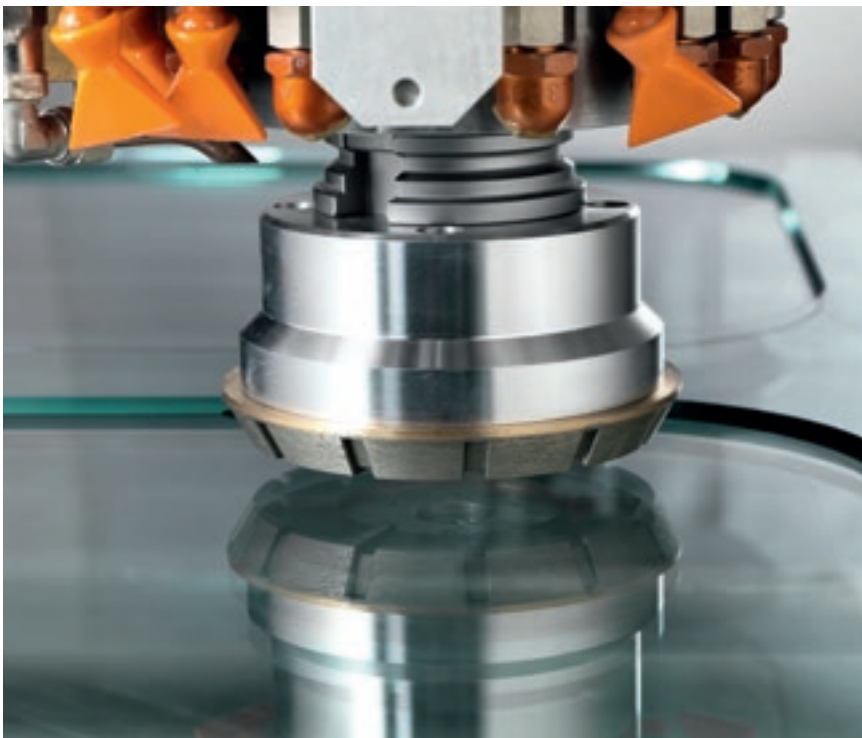
Over time, Diamut has developed wide range of gouge angles available on their grinding wheels, so that both internal and shaped bevels can be carried out on monolithic, layered and laminated glass.



For cerium polishing, Diamut provides customers with a choice between cerium or Velcro wheels, for machines that are designed for use with liquid cerium.

RECESS GRINDING WHEELS

Machines: **CNC Intermac and dedicated software.**
Applications: **furniture.**



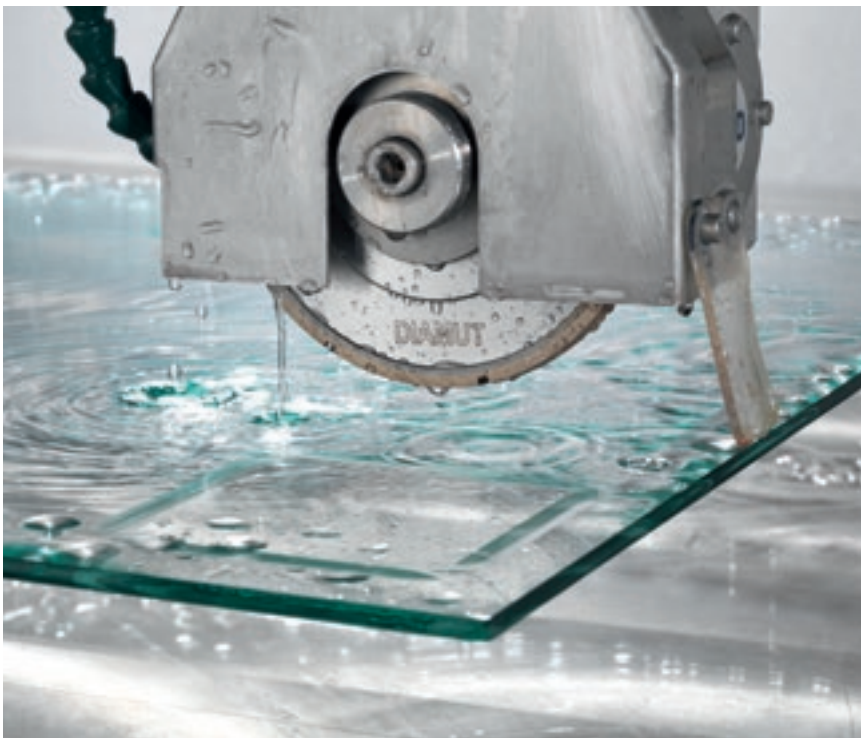
Diamut is the only manufacturer of tools on the world to offer a glass recessing kit. Coupled with Intermac Master machining centres with liquid cerium systems and innovative iCam 3D software, this type of operation can be carried out with the utmost precision and finish quality. Another perfect example of synergy between tools, machinery and artificial intelligence.



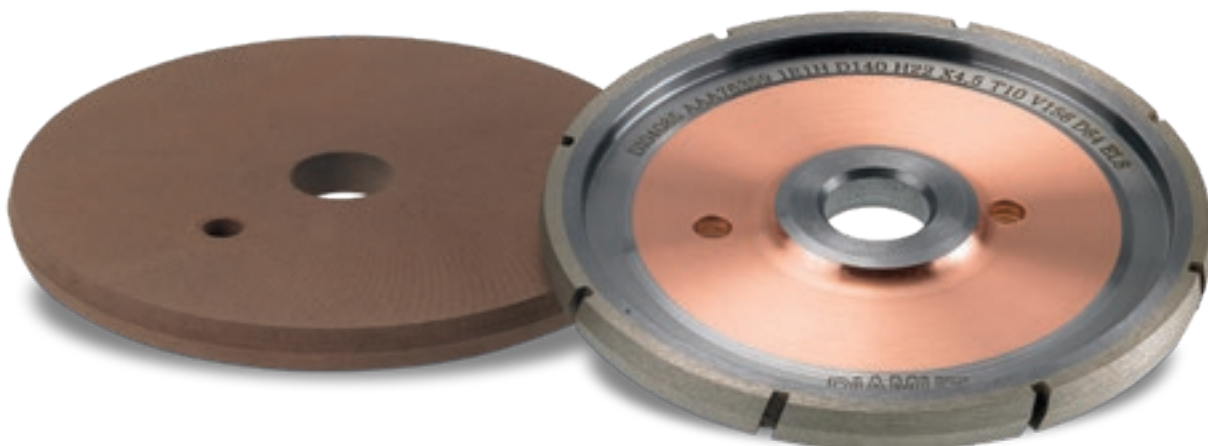
ENGRAVING WHEELS

Machines: **CNC.**

Applications: **furniture.**



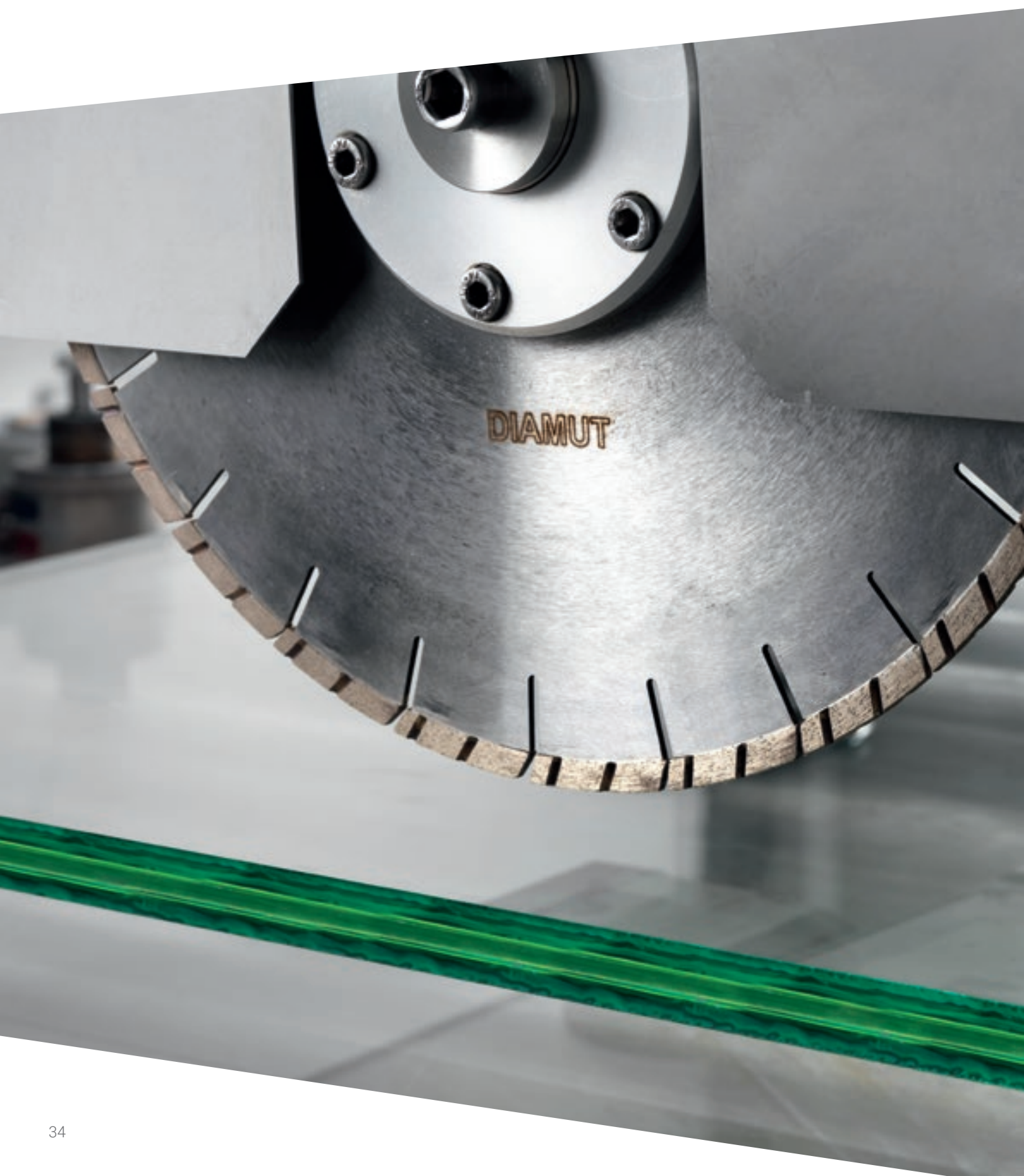
Available with a width of 3 mm to 50 mm, Diamut engraving wheels are available in V and C profiles, as well for other versions according to customer specifications. In addition to the standard diameters, 140- 150-160, customers can also request additional sizes to suit their needs.



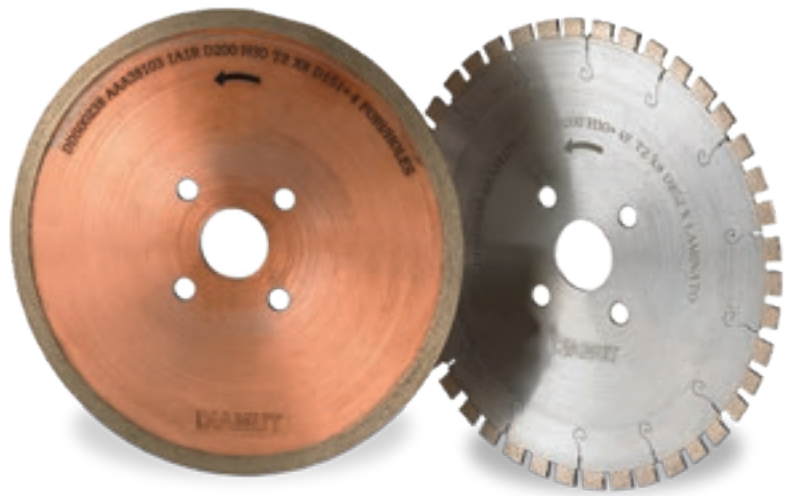
CUTTING DISCS

Machines: **CNC**.

Applications: **aeronautics, furniture, domestic appliances, electronics, architecture.**



GLASS TOOLING



Diamut's range of wet-cutting discs is available for Intermac 3 and 5 axis CNCs and on request for CNCs produced by other manufacturers. These can be used on both monolithic and laminated glass. Diamut wet-cutting discs are available in straight and rounded versions; the latter guarantee a processing finish which is ideal for shaped cutting. Diamut provides both the continuous band and segmented version.



SPHERICAL TOOLS

Machines: **CNC.**

Applications: **furniture, household appliances.**

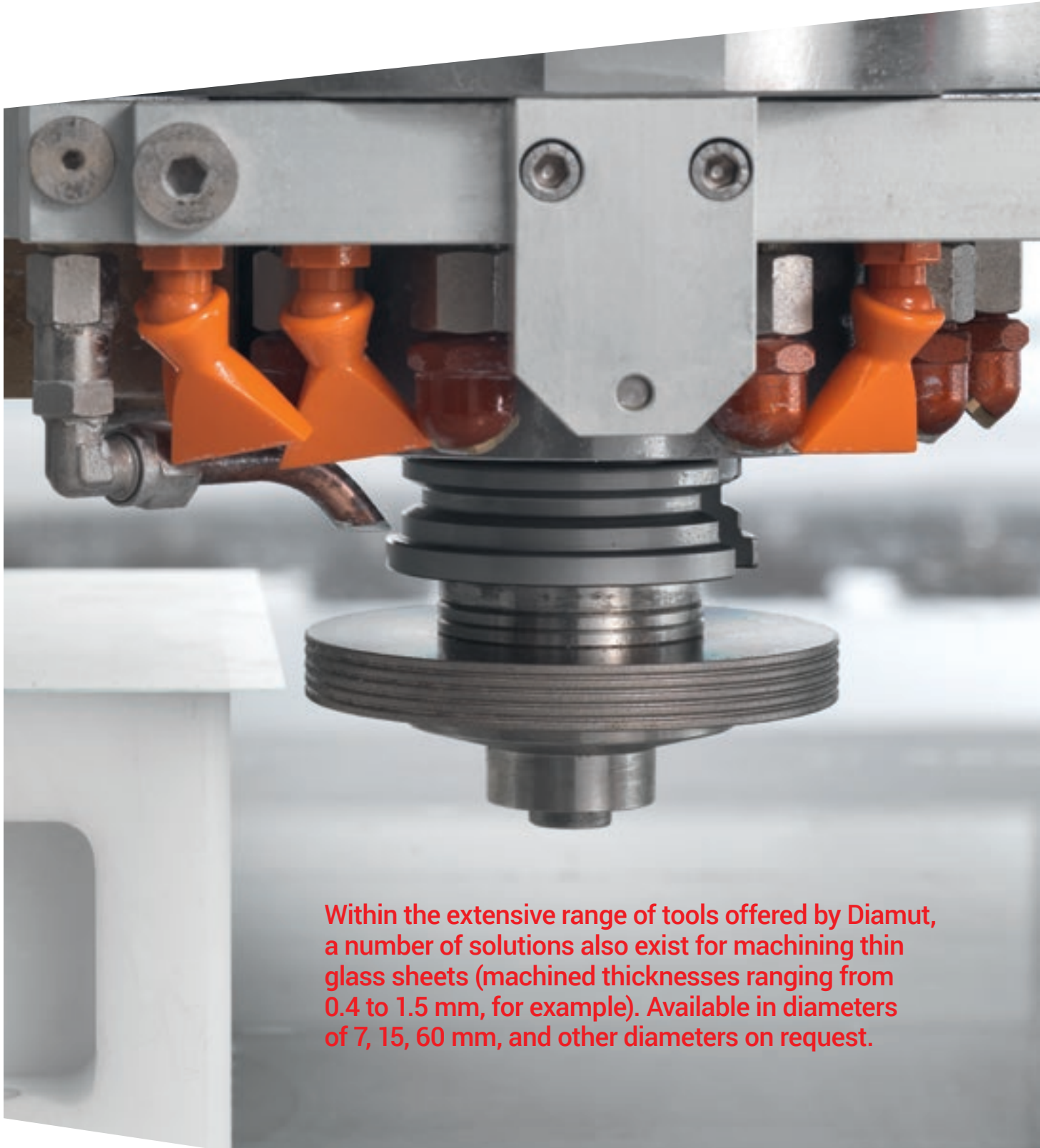


**Spherical tools enable semi-spherical engrave to be scored onto the glass plate.
Available in different diameters on request.**

TOOLS FOR THIN GLASS

Machines: **CNC.**

Applications: **household appliances, aerospace.**



Within the extensive range of tools offered by Diamut, a number of solutions also exist for machining thin glass sheets (machined thicknesses ranging from 0.4 to 1.5 mm, for example). Available in diameters of 7, 15, 60 mm, and other diameters on request.

GRINDER

Using in-depth knowledge of the world of tools for stone and synthetic materials processing, Diamut has designed, produced and offered the new Grinder to all companies that want to grind their tools internally.

Completely redesigned, the Diamut Grinder can also be easily used on tools made by other manufacturers; the tool is restored to good working order in just a few minutes without the need for in-depth technical expertise.

The Grinder can be equipped with the new viewing system for real-time checks on the tool profile.



PRESETTER



The new Presetter Diamut is an instrument that reads the profile of the tool through a fully realized software from Diamut and it transfers with extreme simplicity to all external hardware the parametric information necessary to use the tool in the machine and make it ready to shape the various materials.

The Diamut Presetter simplifies all of the setting procedures that are generally carried out manually by an operator, keeping errors to a minimum.

TOOL HOLDER

Diamut's product offering also includes a wide choice of cones available for all of the most popular machines on the market.

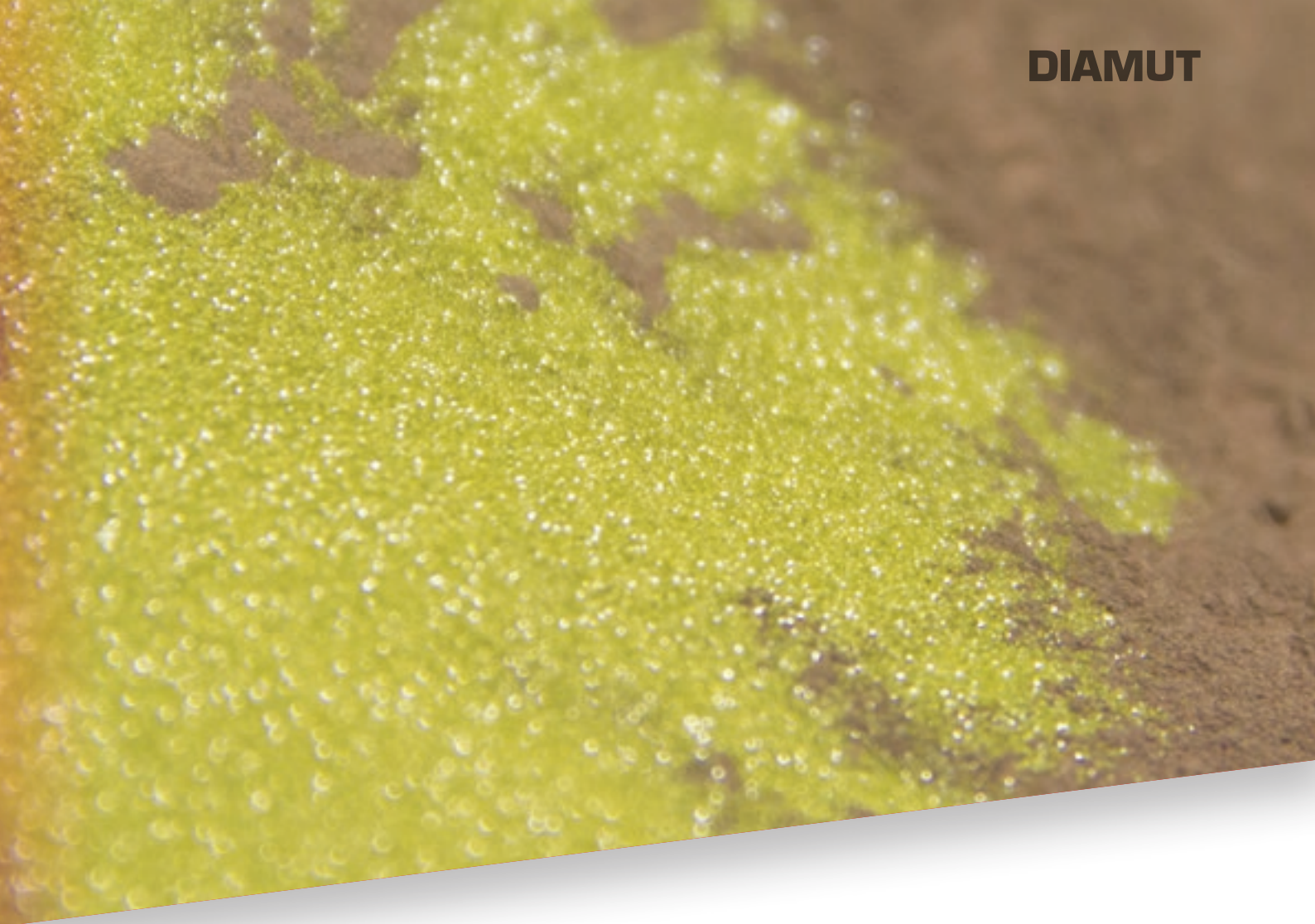
In addition to versions for wheels with 22, 35, 45 and 50 bore, cones can be requested for other tools and machines for milling cutters and drills.



QUALITY EXCELLENCE

THE RANGE OF DIFFERENT TECHNOLOGIES USED THROUGHOUT THE ENTIRE PRODUCTION PROCESS ENSURE THAT OUR TOOLS MEET AND EXCEED THE HIGHEST QUALIFY STANDARDS. EVERY SINGLE STEP OF THE PRODUCTION PROCESS, FROM INCOMING QUALITY CONTROL TO OUTBOUND LOGISTICS, IS CLOSELY FOLLOWED AND MONITORED BY INDIVIDUAL OPERATORS THROUGH A SPECIFIC SOFTWARE CREATED ACCORDING TO OUR BUSINESS SPECIFICATIONS AND A STRICT CHECKLIST OF CHECKS ON EACH OF THE PHASES

- ▣ Incoming quality control
- ▣ Preparation of mixtures
- ▣ Sintering and brazing
- ▣ Turning
- ▣ Grinding
- ▣ Balancing
- ▣ Output checks on finished pieces.



The widespread implementation of the Kaizen method across all Biesse Group companies has resulted in the application of quality controls to individual products and production phases, with a view fostering a philosophy of continuous improvement.

Fault analysis allows us to anticipate potential defects on catalogue tools and those that are custom-made on request for customers. Extensive prior analysis is also complemented by quality controls which are carried out on the tools, and include grinding wheel closure, diamond distribution, hardness and size.

Where defects are noted, the tool identification plate can be used to trace it back through each individual stage of the manufacturing process, accounting for about 70% of total information regarding the tool. In parallel, an internal non-compliance report is created, in order to allow us to undertake all necessary corrective actions immediately.

In 2016 Diamut revealed internal and external non-compliance levels of 0.07%.

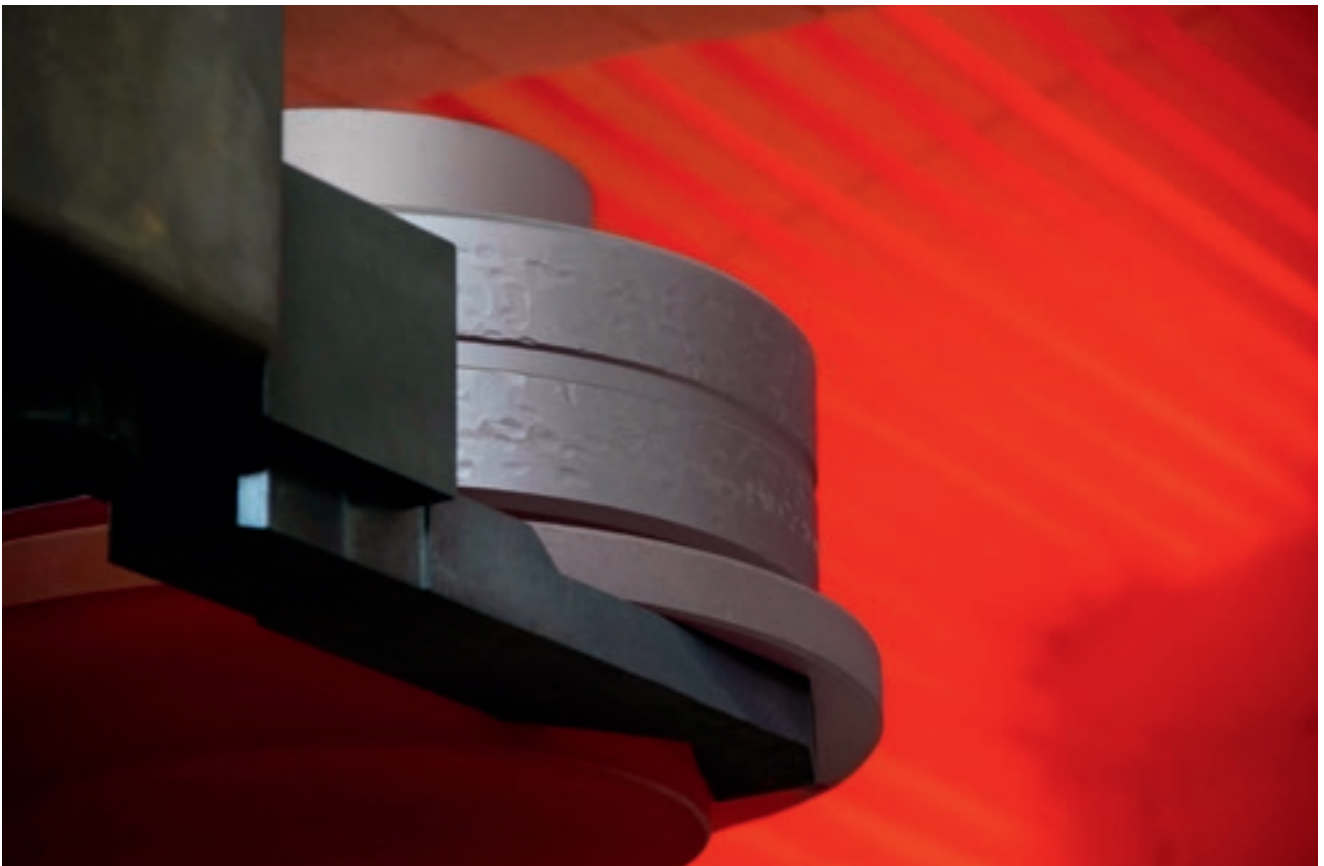
SUPPLIERS OF DIAMOND AND CERTIFIED RAW MATERIALS

Diamut selects only the best suppliers of diamond particles and metal powder. Through rigorous certification and careful quality control, the best raw materials are then used to manufacture tools. Result: Superior quality throughout the entire production process.

QUALITY EXCELLENCE

SINTERING AND BRAZING

The temperature and pressure in the sintering process are closely controlled to guarantee constant repeatability of the product.



ELECTRO-EROSION

The electroerosion process used on each tool drastically improves profile precision compared with traditional manual grinding. Result: Absolute profile precision for all tools.

DIAMOND DRESSING

Each tool is subjected to a diamond dressing process which, using special technology, makes the tool immediately effective from the very first metres of processing. Result: The tool guarantees excellent standards in processing operations from the very first use.



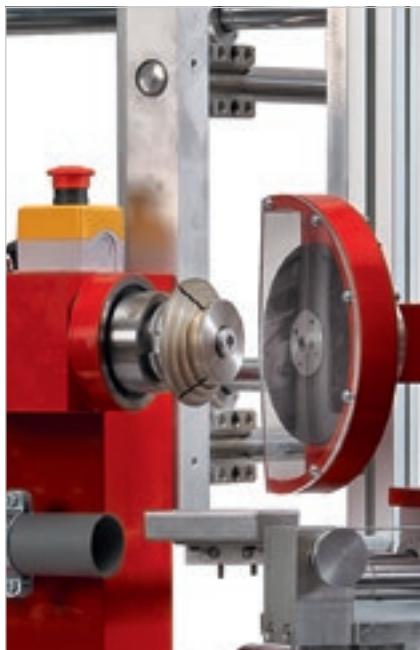
GRINDING WHEEL BALANCING

Before they are delivered every grinding wheel undergoes balance checks. The balance quality grade required is G=6, which is usually used for high rotation parts and is much higher than the rotation speed required of grinding wheels in the various processing operations. Result: any potential imbalance of tools is eliminated, regardless of the programme in use.

MARKING INDIVIDUAL TOOLS

Each tool produced by Diamut is marked with a serial number so that each product can be traced even years later, allowing customers to establish the exact order date and obtain information on each stage of processing. Result: total traceability of each individual tool and rapid response times when assistance services are required.

SERVICES



CUSTOMISED TOOL DESIGN

To meet a varied market demand that is increasingly geared towards customised design and materials, Diamut responds with a team of experts who can interpret and anticipate the needs of every customer, designing and manufacturing tailored tools with customised profiles and blends of diamond and alloy which can be used with any machinery on the market.

The customised same tool can be re-ordered at any time because: once delivered, the profile originally requested by the customer remains in the internal database for the following years, even if the machine for which it was designed goes out of production.

RETTIFICA DEGLI UTENSILI

Diamut offers support to its customers by providing them with a grinding service for purchased tools in its main branches. With its innovative Grinder, our specialists can quickly restore the original efficiency of your tools.

PROJECT ADVICE AND CONSULTATION SERVICES

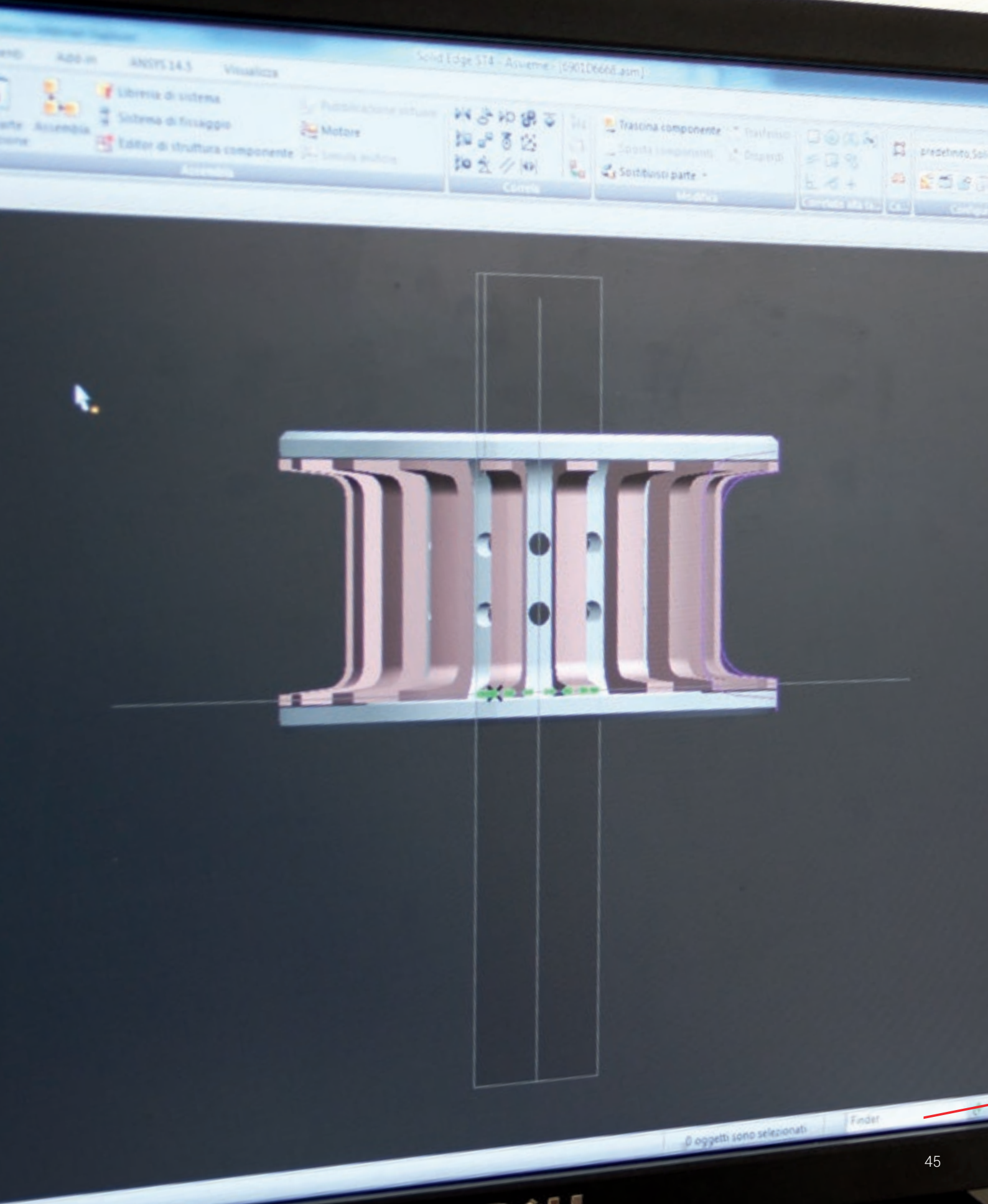
Con il costante obiettivo di mantenere alti gli standard di qualità e la completa personalizzazione dei prodotti finiti, i tecnici Diamut forniscono una consulenza completa e soluzioni tecnologiche che valorizzano e supportano l'abilità tecnica e la conoscenza dei processi e dei materiali.



TECHNOLOGY IN ACTION

For those who wish to experience Biesse Group technologies first hand, the refurbished Intermac showroom in Pesaro offers visitors the possibility to watch live demos dedicated to the main processes, technologies and tools.

GLASS TOOLING



MADE WITH DIAMUT

DEKTON®

**THE TECHNICAL COLLABORATION WITH
DIAMUT HAS LED TO THE DEVELOPMENT
OF A RANGE OF TOOLS FOR USE WITH
DEKTON MIXES, WHICH GUARANTEE THE
BEST POSSIBLE RESULTS EVERY TIME.**



Cosentino Group

Dekton® is a sophisticated mix of raw materials used in construction, glass, latest-generation vitreous materials and quartz surfaces. It is a material with extraordinary properties. The intelligent combination of raw materials and the latest-generation technological processes used in the production of Dekton® make it a very special product.



COSENTINO.COM

LIVE THE EXPERIENCE



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**

