

Intermac Multi Up S H3S

Multi-machining | Shaping





**Biesse
Machinery**

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Intermac

Machines

Forvet

Extended Machines

Identify in a few words
the most suitable machine
for your needs from
our product portfolio.

Machining type

Cut

Cutting

Edge

Edging

Drill

Drilling

Multi

Multi-machining

Segment

Pro

Distinctiveness
and performance

Up

Agility
and expertise

Go

Simplicity
and compactness

Find your perfect fit



Full versatility for every use
We drove the trend
We drive the processes

Leading the way, setting the standard – the benchmark of excellence in our industry. Horizontal NC centre to process the edge as well as the surface of any glass shape. Perfectly designed for medium-sized businesses, empowering growth and efficiency.



Intermac

Multi Up S H3S



Smooth and stable

The rock-solid mechanical transmission, featuring linear guides, ball screws and rack/pinion design, ensures smooth, vibration-free axis movements. These advanced technologies are designed to deliver exceptional precision, speed, reliability, and robustness.

All the tools you need

You can select from various tool magazine configurations, offering up to 39 tool positions. Such versatility optimizes your workflow by having all the necessary tools readily available, or you can save space by opting for the side tool rack, tailored to meet your specific production needs.

All you need is here

Depending on the glass size, you can place more pieces on the work table so to work in double station, optimizing each step of the working cycle and, as a result, increasing production speed. This flexibility allows you to efficiently process both a single glass door or a set of refrigerator brackets with ease.

Multiprocessing needs 4

The built-in head support with the 4th axis unlocks versatile V-grooving capability. This makes the Multi Up a multipurpose solution. Perfect for customers seeking to meet different production needs with precision and efficiency.

Effortless Tooling

We have designed our machine with precision and efficiency not only in machining operations but also in tooling setup and maintenance.

With advanced automated systems designed to streamline tooling setup and redressing processes, this machine ensures that tools remain sharp and ready for optimal performance without manual intervention.

High water pressure, here it comes

The water pressure booster raises processing speed by up to 60%. It features a circular crown with 2mm inclined holes, delivering a powerful, directional water jet precisely at the grinding wheel, enabling high-speed operations.

Discover
more



biesse.com



Create your work logic No matter which program Computerize your axes

Our axis control module (CNC) offers exceptional interpolation capabilities, allowing for highly precise movements tailored to specific requirements.

This ensures smooth processing of parts.

The reliable hardware is seamlessly integrated into the machine's PC, providing a perfect foundation for the custom-built machine interface, optimizing performance and delivering consistent results.

From idea to production in just 5 steps

A comprehensive software package designed to simplify the programming phase, streamlining the process into just five intuitive steps. User-friendly features enable powerful programming without the need for extensive training, helping operators avoid costly mistakes.

Materials

- Mg** Monolithic glass
- Lg** Laminated glass
- Leg** Low-e glass

Glass

We design and manufacture machines for glass processing in the furniture, construction, and automotive industries, with a comprehensive portfolio enhanced by the integration of Forvet, Bavelloni, and Intermac technologies.

The expertise of these historic brands continues to evolve within the two new macro-categories, Intermac and Forvet, created to provide a clearer and more accessible offering.





Doors



Interior
furniture



Cooktops



Beveled
mirrors



The perfect machine for most businesses

This CNC machine for flat glass processing is designed for medium-sized companies, offering versatility and precision.

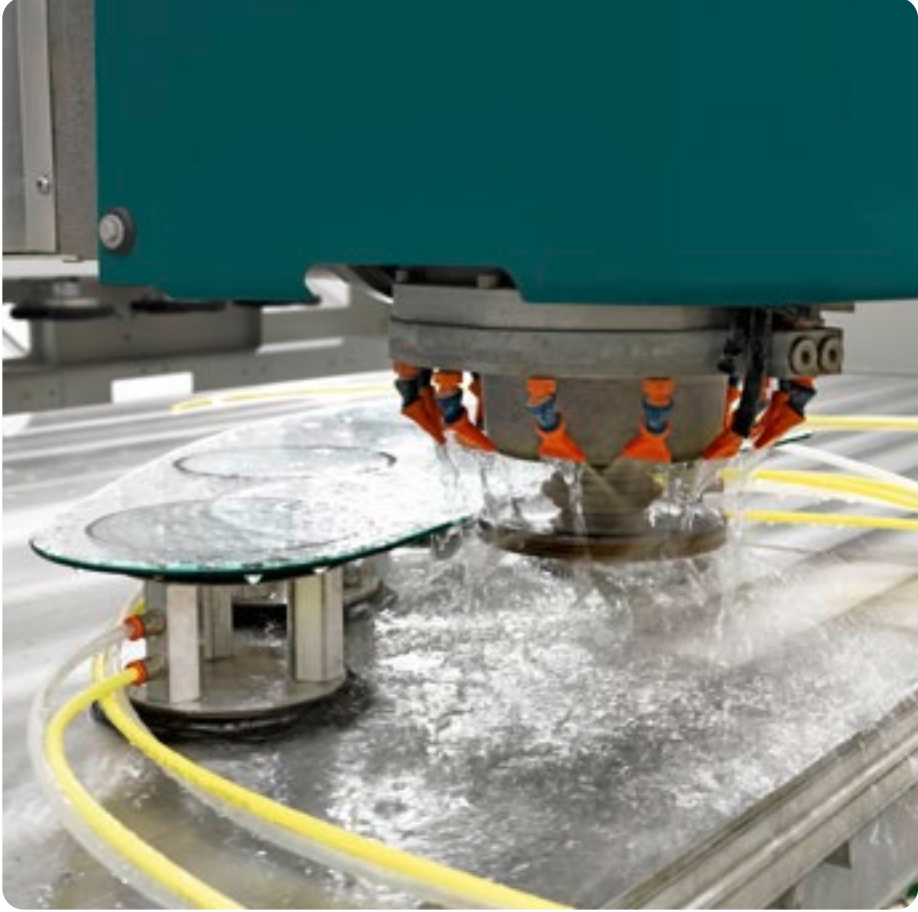
It can perform contouring, beveling, engraving, and milling, making it ideal for creating doors, tables, sinks, furniture, and automotive glass. With advanced technology, it delivers high-quality finishes and precise cuts for various glass types.

The machine can be integrated with other equipment and automation systems, optimizing production efficiency. Its adaptability and reliability make it a perfect solution for diverse glass processing needs.



Peripheral Edging

Our machines excel in edge processing, delivering unmatched precision for any material or thickness. Fast, efficient, and without compromising quality, we set the standard for excellence.



Grinding & Polishing

Grinding fast, the minimum glass removal for each side is 0.7 mm, and if the glass comes directly from the cutting table, the diagonal difference must be 0.15 mm/m or less.

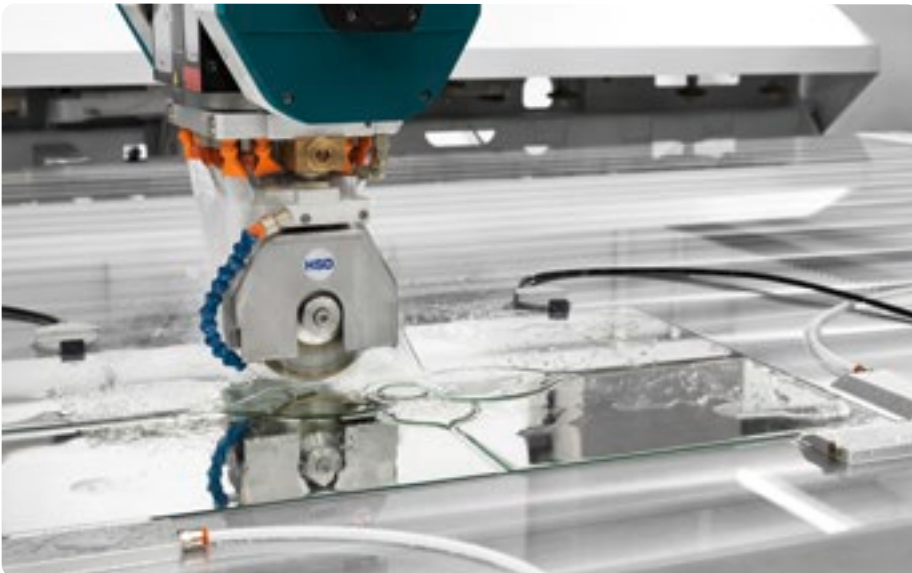
Polishing process is available with Pilot system and without it. Adaptive control technology to maintain the wheels pressure constant for all the shape.



Drilling

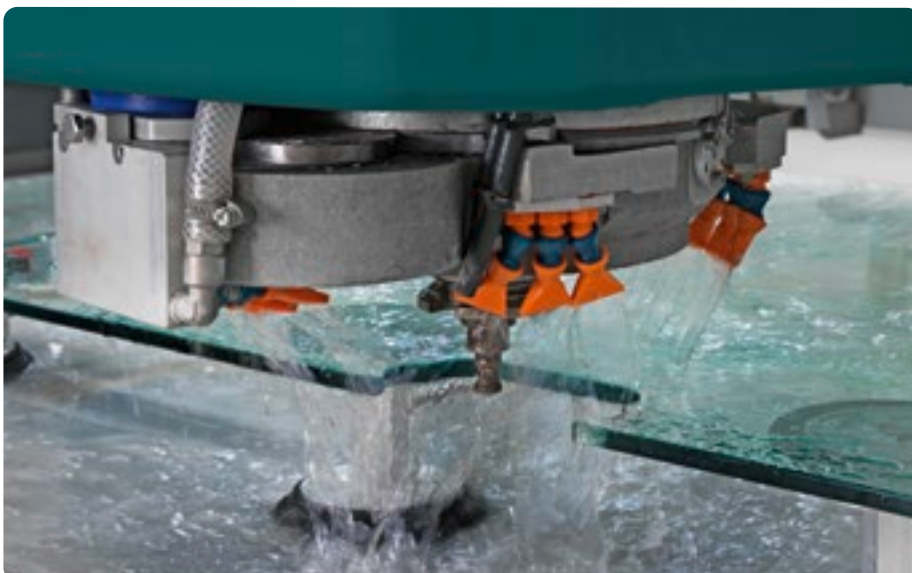
“Helix” your drill. Forget about limitations in drilling using Helix.

Our Helix tool offers numerous advantages with its innovative design, enabling precise drilling and countersinking of virtually any hole diameter. Engineered for speed and exceptional quality, it allows both operations to be performed without changing the tool. The optimized processing cycle by IC ensures seamless execution in a single step.



V grooving

V-grooving is an artistic process, offering variable width and depth to create visually striking effects, combining precision with creativity.



Milling

Front head works for milling and notches. Milling process for small glasses may not be possible, because it is not compatible with the suction cups positioning.



Monolithic,
laminated
and low-e
glass.



Smooth and stable

The rock-solid mechanical transmission, featuring linear guides, rolling screws, and racks, ensures smooth, vibration-free axis movements.

These advanced technologies are designed to deliver exceptional precision, speed, reliability, and robustness.



Speed and accuracy

For each axis, a functional, high-performance, and reliable transmission has been designed, using recirculating ball screws, 35mm linear guides, inclined tooth pinions, etc.

The chosen components are of high quality, while assembly and testing are carried out according to the high standards that have always distinguished our group and our machines.

Racks with double pinion

Designed for reliability and speed, the double pinion rack drive allows the axis to reach a speed of 70m/min, ensuring a drastic reduction in mechanical backlash and consequently exceptional movement precision.

X and Z axis transmission

Ball screw drive for both axis

X axes uses a 40mm diameter screw
Z axes uses a 32mm diameter screw



Mechanical Transmission

Y axis transmission with double rack

High Quality material:

Helicoidal, tempered, rectified.
Brings an extreme reduction of the cinematic backlash.
It also helps its recover during reverse motion

Reliability

Ensure bridge squaring:
Double pinion system avoid the risk of machine bridge twisting by the time.

Low thermal deformation:

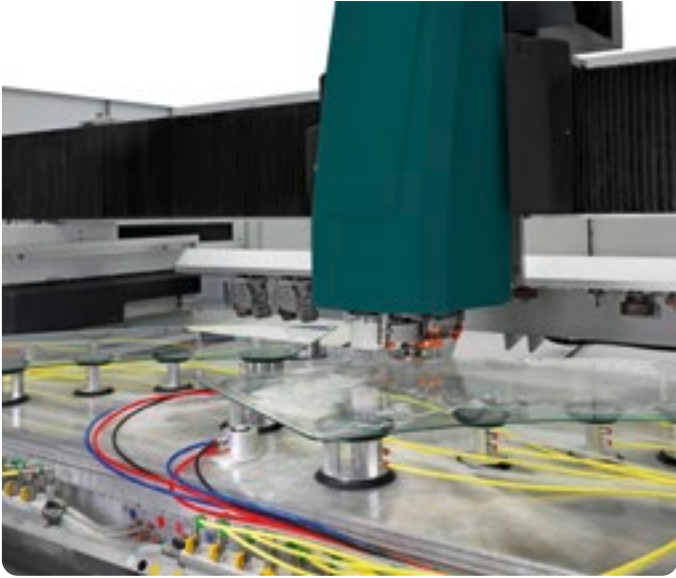
The rack, thanks to the full contact with the frame, has a faster cooling that reduce the mechanical deformation

High speed:

It allows a dramatic increase of axes speed and acceleration compared to other systems

Low noise:

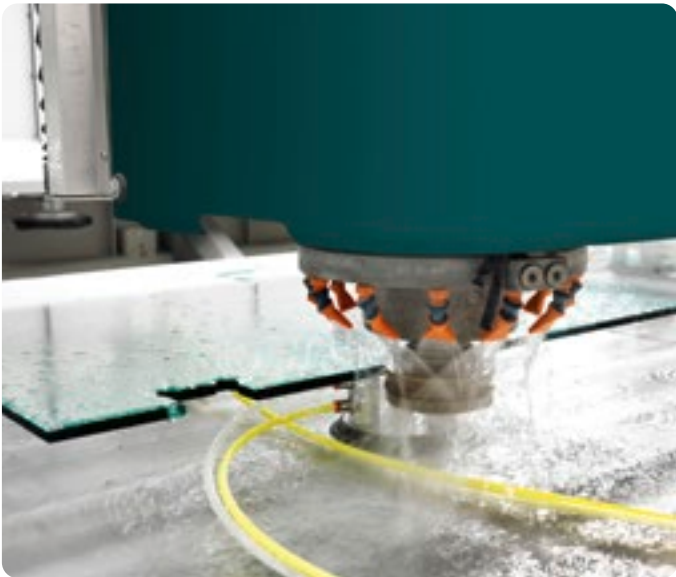
less movement noise means a more comfortable working area.



All you need is here

Depending on the glass size, you can place more pieces in the double stations, optimizing each step of the working cycle and, as a result, increasing production speed.

This flexibility allows you to efficiently process both a single glass door or a set of refrigerator brackets with ease.



Create your i/o logic - No matter which program Computerize your axes

Our axis control module (CNC) offers exceptional interpolation capabilities, allowing for highly precise movements tailored to specific requirements.

This ensures smooth, sign-free processing of parts. The reliable hardware is seamlessly integrated into the machine's PC, providing a perfect foundation for the custom-built machine interface, optimizing performance and delivering consistent results.



High water pressure, here it comes

The water pressure booster raises processing speed by up to 60%.

It features a circular crown with 2mm inclined holes, delivering a powerful, directional water jet precisely at the grinding wheel, enabling high-speed operations.

Effortless Tooling



Our machine is engineered for precision and efficiency, featuring advanced automation that streamlines tool setup and maintenance.

With its automatic tool sharpening system, it keeps tools sharp and ready for peak performance, all without the need for manual intervention.

Heidenhain presetter for tool measurement

Take precision to the next level with the automated tool presetter, designed to eliminate human error and ensure accurate length and diameter measurements.

With touch plate technology, this system minimizes the risk of damage to both the part and the machine, providing peace of mind and optimizing production efficiency.

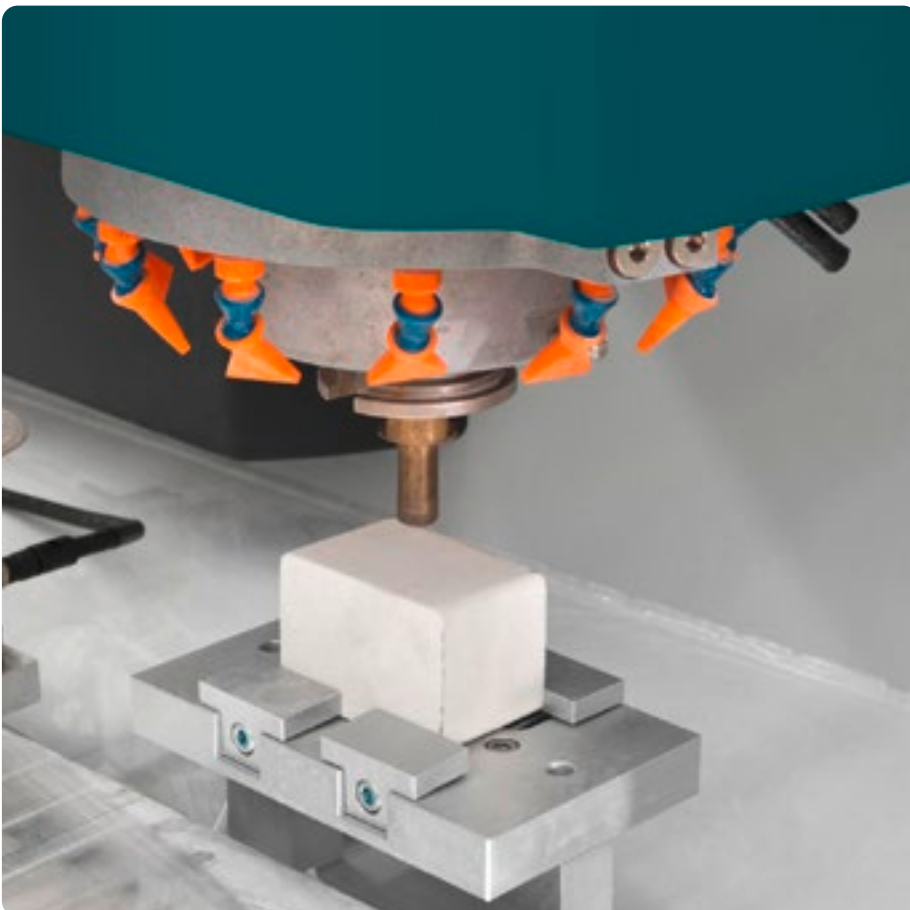


Drill bit regrinding device

The automatic redressing cycle operates seamlessly within the machining process, periodically monitoring drill bit wear and initiating redressing procedures as needed.

This automated approach eliminates the need for manual intervention, saving valuable time and reducing the risk of human error.

By restoring sharpness to drill bits on the fly, the machine maintains optimal cutting efficiency, ensuring consistent, hi-quality machining over time.





Diamond wheel dresser

Designed to refresh the diamond surface of the wheel, this feature ensures consistent cutting quality and extends the lifespan of diamond tools.

The redressing cycle activates after a predetermined machining distance, gently renewing the diamond surface of the wheel without interrupting production, to grant an high-quality finish throughout extended production runs.



Polishing wheel dresser

The redressing device is strategically programmed to activate after a predefined interval, automatically refreshing the polishing wheel's surface without interrupting production.

It reduces the top and bottom lips that naturally form on polishing wheels as the center wears down.

By eliminating the risk of irregularities and shadowing effects, users can achieve uniform finishes across glass sides, enhancing aesthetic appeal and quality of the product.

Electrospindle

HSD ES796 unit featuring:

15 kW Power:

robust 15 kW power output, ensuring reliable and efficient performance for demanding applications.

DPC Technology (HSD Patent):

Dynamic Power Coupling technology, optimizing cooling and extending the machine's lifespan.

Ceramic Bearings for Long Life:

Designed with high-performance ceramic bearings that minimize wear and tear.

Stainless Steel Shaft:

Built with a corrosion-resistant stainless steel shaft, offering enhanced strength and reliability.



Spindle

Model: HSD ES 796

15 kW Power:

Equipped with a robust 15 kW power output, ensuring reliable and efficient performance for demanding applications.

Stainless Steel Shaft:

Built with a corrosion-resistant stainless steel shaft, offering enhanced strength and reliability, making it ideal for long-term use in challenging conditions

Ceramic Bearings for Long Life:

Designed with high-performance ceramic bearings that minimize wear and tear, providing superior durability and ensuring a longer operational life even in the most demanding environments.



Optical glass reader

The glass shape must have at least two perpendicular sides for the reader to accurately detect its outline.

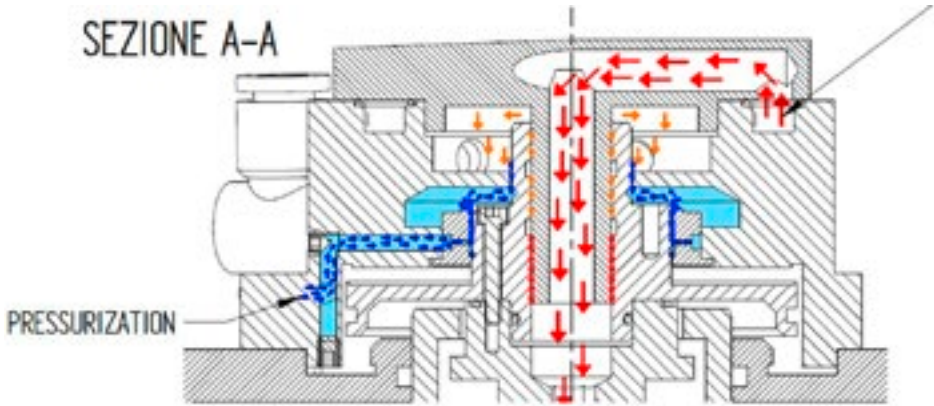
Once detected, the shape can be imported into IC to apply the desired processing.



Double cooling system:

External cooling:
Independent external closed-circuit system with liquid coolant (Glycol-based) via an air-air heat exchanger. The cooler is located on the beam. Liquid circulation is explained in the left picture.

Internal cooling:
Internal system with clean water which arrives directly inside the tool. Increased water flow rate for better cooling.



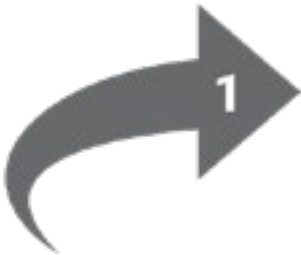
DPC Technology (HSD Patent):

Features the innovative DPC (Dynamic Power Coupling) Technology, a patented rotating coupling system that enables the seamless passage of water through the motor, optimizing cooling and extending the machine's lifespan, featuring:

High water passage on the electrospindle for a better tool cooling

HSD Patent: sealing system without contact

Pressurization to avoid water or dust obstruction into the spindle





The C axis

The fully integrated C axis, along with the appropriate aggregates, enables engraving with excellent results.

By harnessing the power of aggregates, the C Axis enables users to overcome the constraints of traditional machining methods, expanding their capabilities and propelling them towards new levels of innovation and craftsmanship.

Equipped with unlimited rotation capabilities, brushless motor drive, and a hollow anti-rotation pin for optimized water passage, this machine ensures superior cooling during processes, enabling precision and efficiency.

Multiprocessing needs 4

The built-in head support with the 4th axis unlocks versatile V-grooving capability.

This makes the Multi Up a multipurpose solution.

Perfect for customers seeking to meet different production needs with precision and efficiency.

Laser projector

The laser projector precisely marks the positions of the suction cups and stops on the surface, streamlining the setup process.



Follow the laser for set up

The cross laser device precisely indicates where to position the suction cups and stops on the table, allowing for time savings during machine setup and increasing operator safety.

Aggregates

The 4th axis allows for the attachment of aggregates (for engraving) that transmit the spindle rotation vertically, thereby extending the capabilities of the Multi Up.





Dynamic Lock

Designed for small glass pieces, this system features a mechanical clamp with a pneumatic locking system and special cones for handling and processing. It can handle pieces as small as 30mm x 30mm.



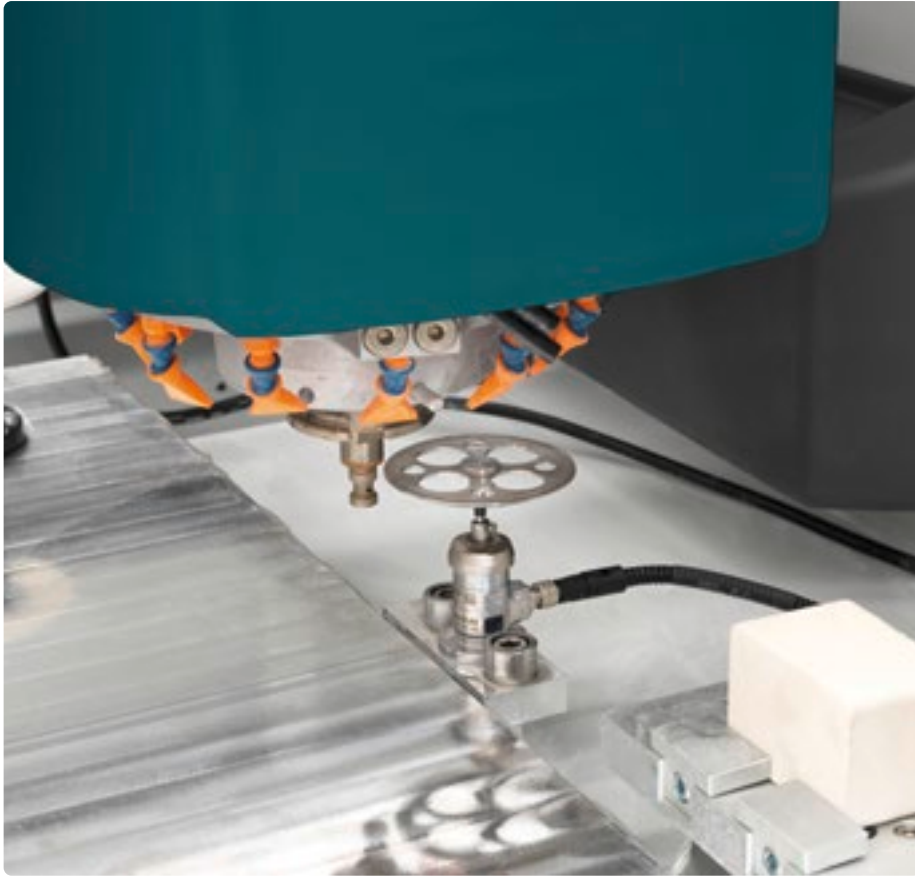
All the tools you need

You can select from various tool magazine configurations, offering up to 39 tool positions.

Such versatility optimizes your workflow by having all the necessary tools readily available, or you can save space by opting for the side tool rack, tailored to meet your specific production needs.

Optional tool racks

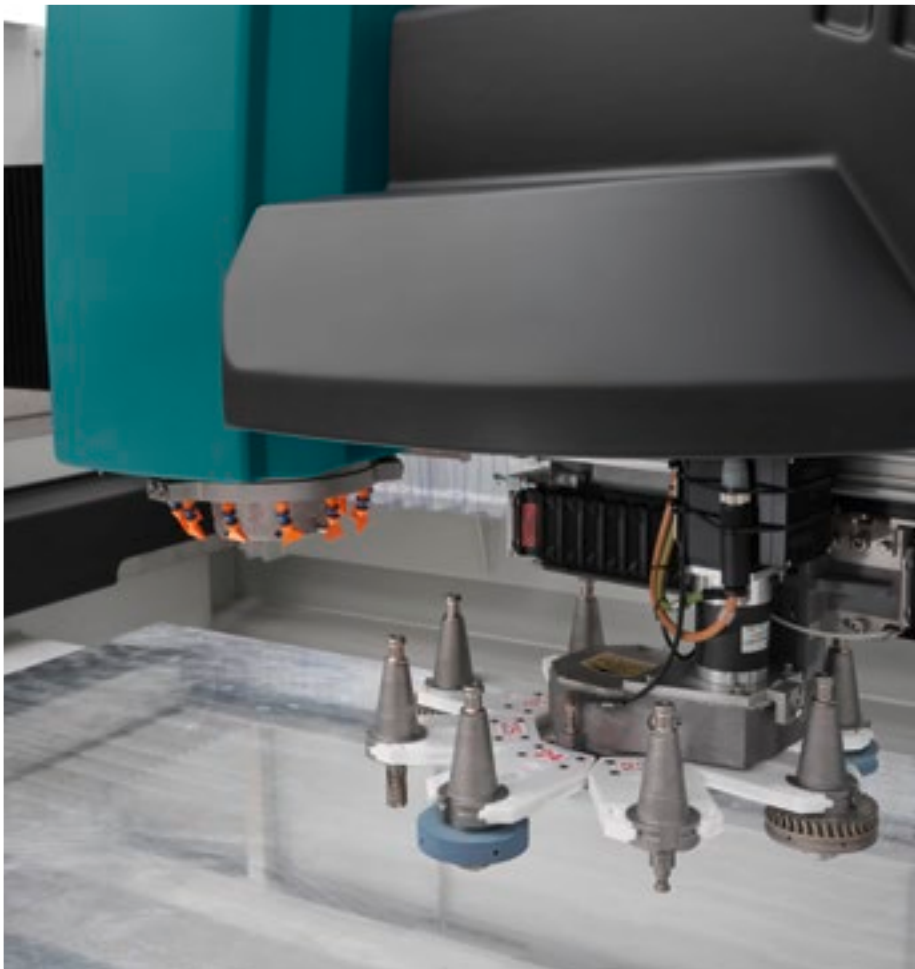
The machine can be equipped with different types of tool magazines to increase productivity and thus reduce setup times.



Effortless Tooling

We have designed our machine with precision and efficiency not only in machining operations but also in tooling setup and maintenance.

With advanced automated systems designed to streamline tooling setup and redressing processes, this machine ensures that tools remain sharp and ready for optimal performance without manual intervention.



Rear tool rack

It is the standard model with high capacity. It holds up to 31 tool holders, depending on the machine model and size.

Side rotative tool rack

is the retractable model, which allows for up to 14 tools to be stored without taking up space inside the machine.

* It's included in the machine's standard setup.

On-head tool rack

It is the fastest storage system, ideal for those requiring quick tool changes and high-volume production.

Tool changes occur in just a few seconds without the need to move the axes. It holds up to 8 tool holders, depending on the machine configuration.



Lubrication system

The main movement axes, including guides, sliding blocks, and screws, are automatically greased during operation.

The CNC-controlled grease pump ensures regular lubrication cycles, extending the lifespan of all components.



Vacuum switch

It ensures safe operation by stopping the process if the vacuum level holding the glass drops below a certain threshold, which could otherwise damage both the glass and the machine.

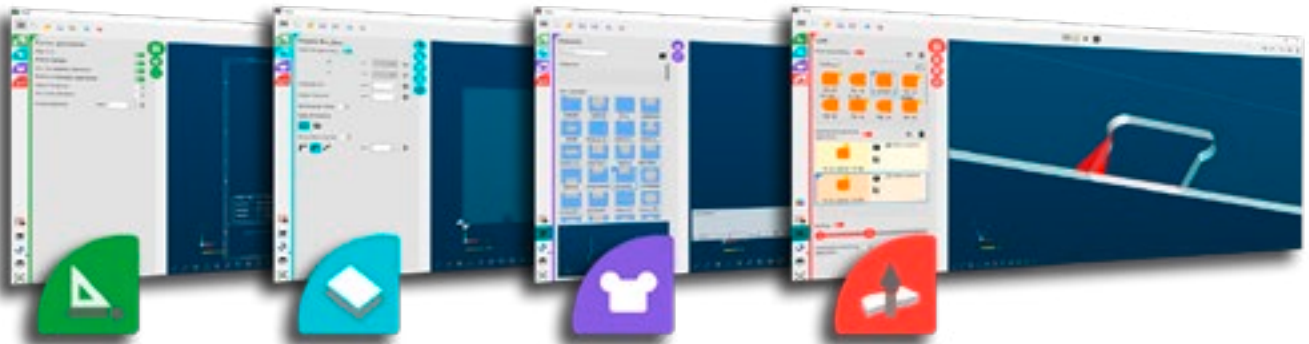
Maximum efficiency, safety, and continuity during glass processing





From idea to production in just 5 step

A comprehensive software package designed to simplify the programming phase, streamlining the process into just five intuitive steps.



Simple yet powerful programming

From drawing simplification to automatic tooling... Production is just few clicks away

A comprehensive software package designed to simplify the programming phase, streamlining the process into just five intuitive steps. User-friendly features enable powerful programming without the need for extensive training, helping operators avoid costly mistakes. This intuitive approach ensures a shorter learning curve and a faster production ramp-up, maximizing efficiency from the very start.



SIMPLIFY



IDENTIFY



APPLY



PROCESS



EXECUTE

Seamless Programming in 5 Steps:

Simplify – Automatically correct and refine geometries.

Identify – Detect the drawing shape and generate the specific piece.

Apply – Parametrically position notches and hardware elements.

Process – Assign optimal machining sequences and drilling operations.

Execute – Calculate the complete process while preventing collisions between supports and tool paths.

Efficiency has never been this simple!

Transform your ideas into ready-to-run programs effortlessly.

Our intelligent software identifies your part, applies machining operations, optimizes suction cup placement, and generates the machine program, so all you need to do is load the glass and start the cycle!



No more mistakes

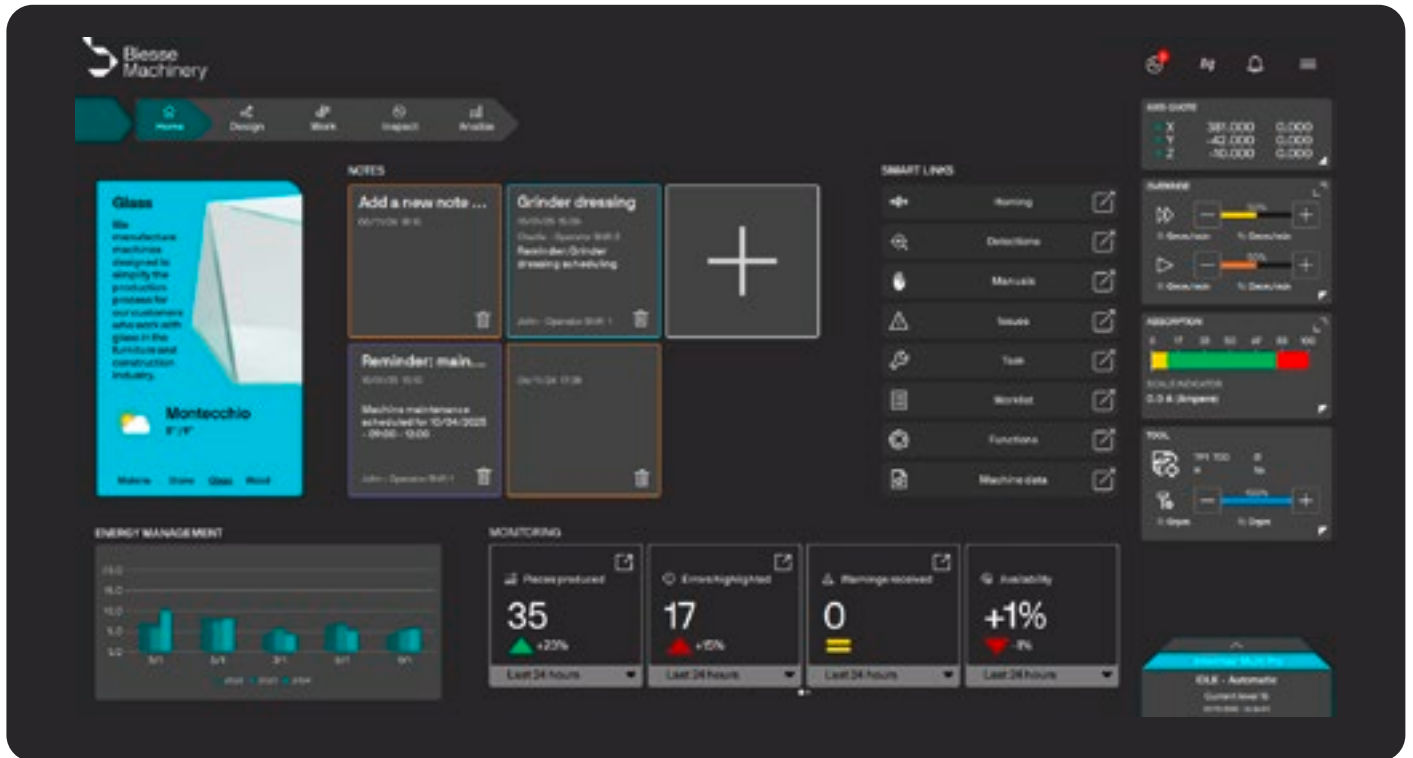
The integrated CAM simulation enables operators to preview tool paths and virtually run programs before real machining, preventing programming errors and possible suction cup collisions.

Real-time axis positions and machining speeds are displayed for a realistic, detailed representation of the process.

Human Machine Interface

A revolutionary interface enhances the user experience of Biesse machines, streamlining production processes like never before.

This innovative system achieves its goal through improved usability, clear communication, and intuitive guidance, empowering operators to work more efficiently and with greater confidence.

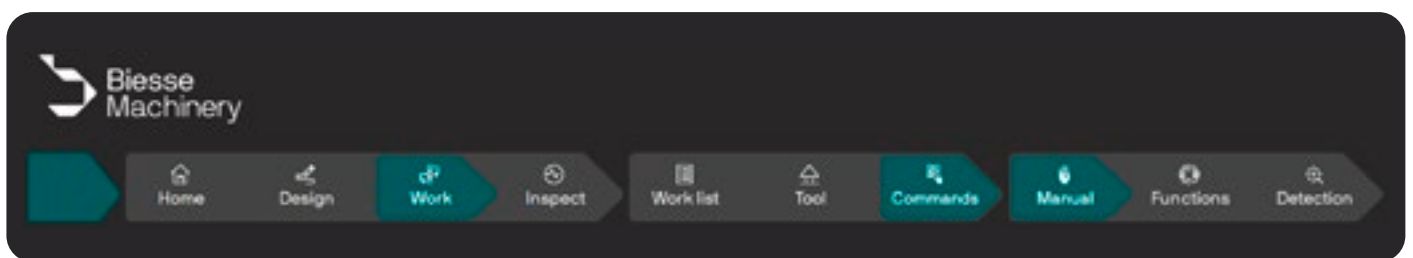


Your digital co-worker

The new Biesse Human Machine Interface. A simple and unique interface for Biesse machines.

A revolutionary interface enhances the user experience of Biesse machines, streamlining production processes like never before.

This innovative system achieves its goal through improved usability, clear communication, and intuitive guidance, empowering operators to work more efficiently and with greater confidence.



Simplify your navigation

Effortlessly browse through the interface with breadcrumb-style navigation, ensuring a smooth user experience. The always-visible path helps you stay oriented and quickly access key features.

One solution, multi machinings

A standardized interface across all machines simplifies operation, ensuring seamless user experience and smooth transitions between different models.

This consistency significantly reduces the learning curve for operators, especially helpful in high-turnover environments.



Configurations



This document includes information about optional features. Scan the QR Code to access the configuration scheme and verify standard and optional equipment.

Technical Specifications

		33	38	45
Working area	[mm] [in]	3300 x 1600 (*) 129.92 x 62.99 (*)	3800 x 2000 (*) 149.61 x 78.74 (*)	mm 4500 x 2500 (*) in 177.17 x 98.43 (*)
Z axis stroke	[mm] [in]	465 18.31	465 18.31	465 18.31
Operator unit	[Kw]	15 spindle by HSD iso 40	15 spindle by HSD iso 40	15 spindle by HSD iso 40
Maximum number of tools on racks		23+8=31	27+8=35	31+8=39
Axes		3 / 4 (opt)	3 / 4 (opt)	3 / 4 (opt)

*Maximum working area with peripheral wheel of 100 mm/3,94 in of diameter

The sound pressure levels detected from the operator station are shown in the table below. The values indicated may vary according to certain parameters: the nature and size of the material, the type of tools used. Sound pressure level on operator workstation (LpA) **Milling 78 dB (A)**. Sound pressure level on operator workstation (LpA) **Milling with circular blade 77 dB (A)**. Reference standards: **UNI EN ISO 3746**, **UNI EN ISO 11202** and subsequent modifications. Measurement uncertainty **K = 4 dB (A)**. The noise levels indicated are output levels and do not necessarily represent safe operational levels. Even though there is a relation between emission levels and exposure levels, this cannot be reliably used to establish whether 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 emissionsources (e.g. the number of machines and machining operations nearby). This information allows the machine user to make a better assessment of the risks and dangers.



Overall dimensions

		33	38	45
H	[mm]	2820	2820	2820
	[in]	111.02	111.02	in 111.02
L	[mm]	6250	6750	7450
	[in]	246.06	265.75	293.31
W	[mm]	3900	4940	5470
	[in]	153.54	194.49	215.35

Beyond machines. Value that works longer.

Biesse Customer Care delivers global expertise and local support, every day, everywhere, to protect your investment and enhance long-term machine performance.





Services

- Installation & Warranty
- Remote assistance
- On-site assistance
- IoT Services



Maintenance

- Machinery maintenance
- Components maintenance



Components

- Spare parts
- Upgrades & Modernization
- Tooling
- Software



Training

- In-person coaching
- Customized education
- Remote training

Founded in Italy in 1969
International natives

We simplify your
manufacturing
to make the process
of any material

Your ing process potential al shine

We are an international company that manufactures lines, machinery and components for making products, enhancing the potential of a wide range of materials.

Thanks to our rooted competence nurtured by an ever-growing worldwide network, we support your business evolution - empowering your imagination.

Master of materials

Join the
Biesse world.

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Biesse Material·HUB

Network

Biesse Material Hubs are multi-material spaces designed to experience our company and our complete product portfolio in a unique and engaging way.

A place to explore technologies, share ideas and find the right solution for you.

The world map reflects our identity as 'International Natives', showcasing our global presence through Biesse Material Hubs and showrooms worldwide.



Biesse Material Hub



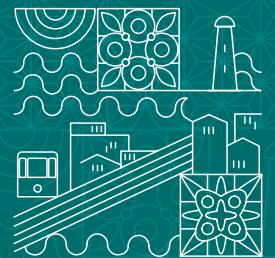
Showroom



Reserve your visit in one of our multi-material spaces around the world



Canada | Toronto

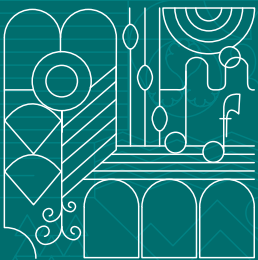
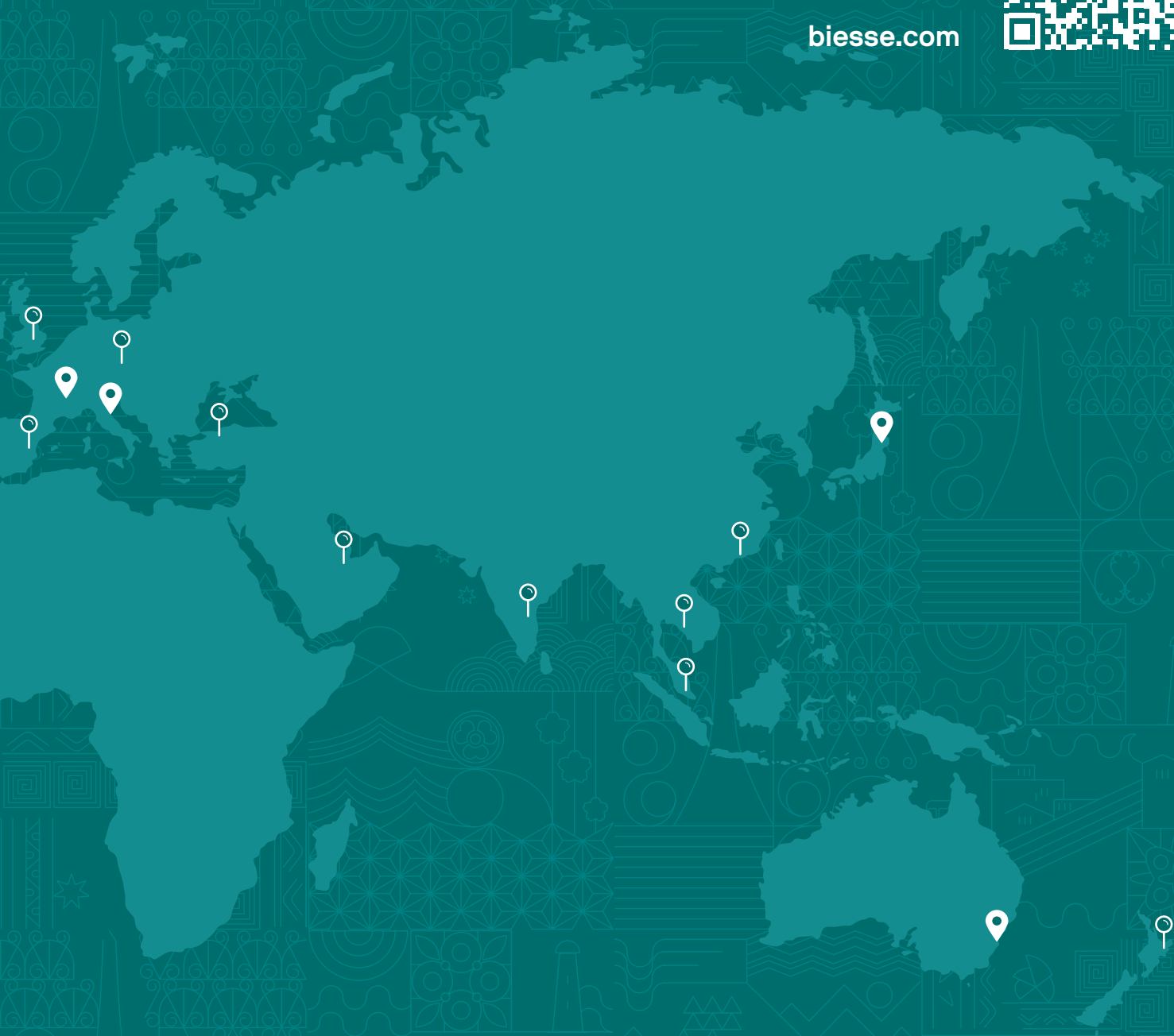


Portugal | Porto

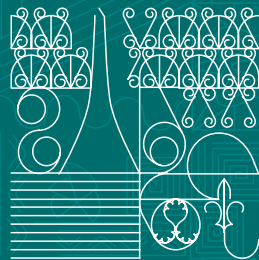
Join the Biesse
Material Hub
experience



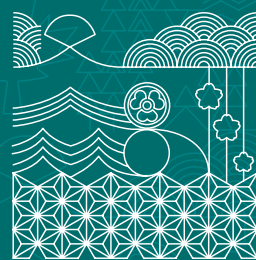
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Italy | **Pesaro**



France | **Lyon**



Japan | **Osaka**



Australia | **Sydney**

Note

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Note

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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.



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