

# ROS

INTEGRATED ROBOTIC  
SOLUTIONS

 **INTERMAC**

# AUTONOMOUS TECHNOLOGY

AUTOMATION IS THE NEW INTERMAC CONCEPT THAT REPRESENTS THE PRACTICALITY OF THE NEW TECHNOLOGICAL INNOVATIONS DEVELOPED TO CREATE NEW BUSINESS MODELS BASED ON AUTOMATED, INTERCONNECTED PRODUCTION.

## INTERMAC OFFERS ITS CUSTOMERS PRAGMATIC SOLUTIONS FOR FACTORY AUTOMATION

ROS robotised solutions ensure a marked increase in production and total reliability of both the production process and loading/unloading operations, even in a wider context of industrial automation.

## ROS

- CONSTANT RELIABILITY OVER TIME
- OPTIMISATION AND SIMPLIFICATION OF THE PRODUCTION PROCESS
- VERSATILITY AND EFFICIENCY
- INTEGRATION IN THE PRODUCTION FLOWS
- INCREASE IN WORKING CONDITIONS AND SAFETY





# OPTIMUM INTEGRATION WITH THE ENTIRE MASTER RANGE

**A multitude of Intermac solutions  
using ROS.**

The ROS are designed to handle the sheets of glass or engineering stone, ceramic materials and granite in predefined times whilst still maintaining the same high quality, ensuring versatility and efficiency and making the operator's work on the machine easier.



Automatic machining waste unloading management.

# EFFICIENT PRODUCTION, WITH NO LIMITS

**Master + ROS** increase productivity and reduce production costs, thanks to:

- ▀ the possibility to work with twin stations, with piece loading and unloading while the machine is running
- ▀ reduced work time for the operator
- ▀ simplification of the work for the operator, who only needs to manage the racks at the start and end of the machining batch
- ▀ machining operations with no time limits (24/7).



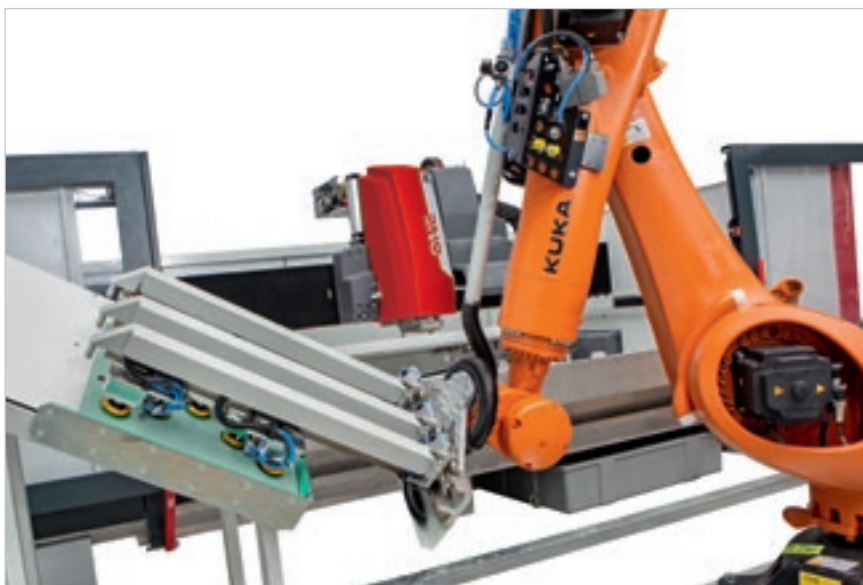
**The Master range can be perfectly integrated in a line with ROS.**

It's the ideal solution for those who need automated solutions combining flexibility, high production standards and respected delivery times - fundamental when producing medium/large batches (the household appliance field and the automotive and furnishing sectors).



# PERFECT INTEGRATION IN THE PRODUCTION FLOW

**Integrated lines and robotised cells redesign tomorrow's way of producing.**



Solutions like these can easily be integrated in the production flow, and are particularly suitable for in-line machining, where all their essential characteristics are brought to light.

The centring bench is available upon request, to enable a more precise grip on the piece.



A robot gripping element is available, with automatic suction cup positioning.



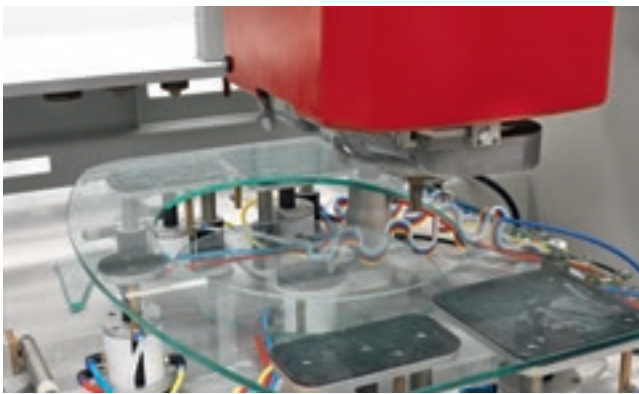
### Intelligent machines

that carry out repetitive cycles to reach a point of optimum production efficiency. ROS solutions combine versatility, efficiency and high investment returns.

# MAXIMISED PRODUCTIVITY

## ROS + MASTER with telescopic suction matrix.

The telescopic suction cups allow different types of sheet with different geometries to be processed in Batch One, within integrated lines and robotised cells, without having to worry about changing the machine setting every time. This means that different sheets can be machined in sequence.



## ADAPTS TO THE WHOLE MASTER LINE



The work table can be configured with up to 40 telescopic suction cups of differing sizes and shapes. They are automatically managed by the machine software and programmed via the specific CAM functions developed by Intermac.

There are 4 possible configurations:

- ▣ 10 telescopic suction cups
- ▣ 20 telescopic suction cups
- ▣ 30 telescopic suction cups
- ▣ 40 telescopic suction cups

Both telescopic and standard suction cups can be fitted on the work table simultaneously.





# FACILITATED OPERATIONS

Automatic tooling of the work table.

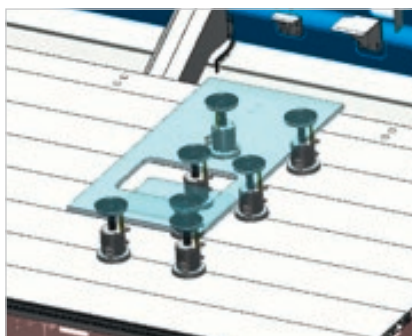
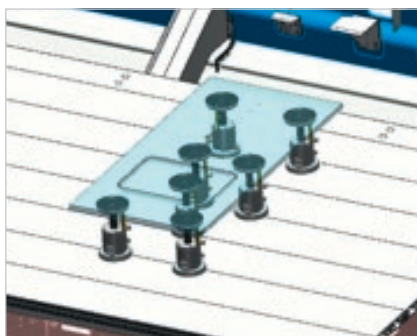


## CENTRING SYSTEM WITH AUTOMATIC SETTING

The CAM functions developed make it easier for the operator to position the piece in relation to the telescopic suction cup matrix, using different colours to indicate the suction cup status.

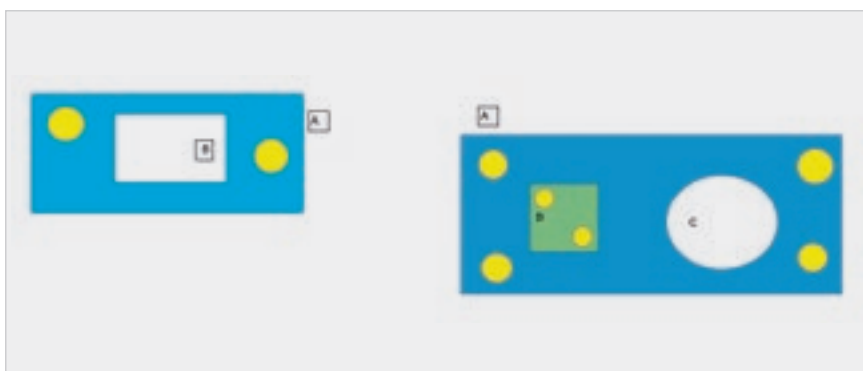
- ▶ suction cup active (green ●)
- ▶ suction cup active for waste (purple ●)
- ▶ suction cup disabled (grey ●)

In this way, once the suction cups have been positioned, the operator can make any necessary adjustments compared with the initial configuration.



## WASTE MANAGEMENT

During the machining operation, the waste material is managed automatically. This means the next machining task can be started without the operator's intervention as the waste is automatically unloaded.

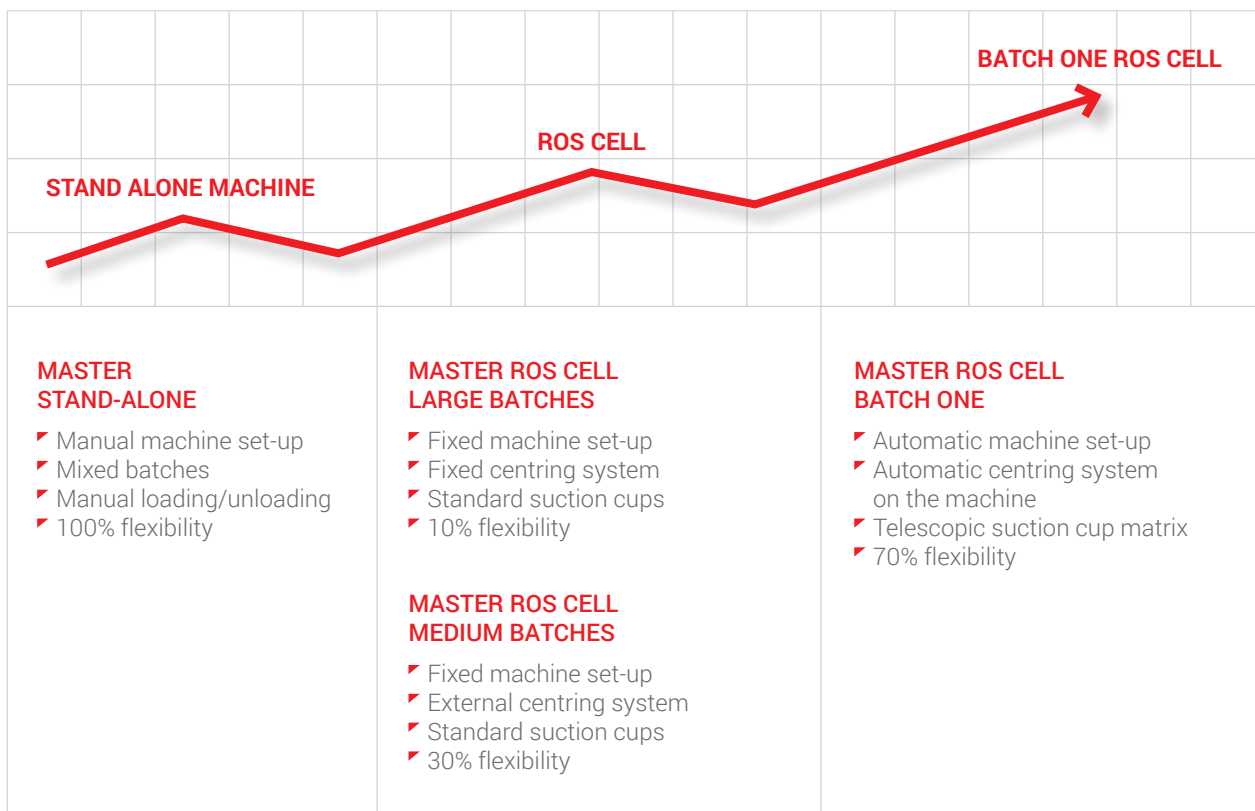


## PIECE-TRACKER

The piece-tracker system identifies piece rotation automatically. The stops are not therefore needed, and the telescopic suction cup matrix is used to centre the piece to be machined.

# PERFECT INTEGRATION IN THE PRODUCTION FLOW

Integrated lines and robotised cells redesign tomorrow's way of producing.



**Daily productivity**  
1 work shift (8 hours) with Master ROS cell

PRODUCTION OF A CARAVAN WINDOW (dim. 2000x800x10mm)

+ 57%

MACHINING OF A DOOR (dim. 2000mmx800mm)

+ 27%

MACHINING OF A KITCHEN TOP (dim. 600mmx400mm)

\* 82%

# PROTECTION AND SAFETY FOR ALL MACHINING OPERATIONS

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



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

With Master machining centres, the operator is protected by:

- ▀ Active safety features in the front protection devices and rotation magazine.
- ▀ Ergonomic front guards of a suitable height that are also explosion-proof (certified by external bodies with "detonation" tests).
- ▀ Side and rear guards made of a metallic material subjected to special anti-corrosion painting cycles.
- ▀ Electric and pneumatic systems fully integrated in the machine and protected by closed doors.
- ▀ No access to moving machine parts.
- ▀ A clean working environment (water and machining residues are not dispersed).
- ▀ Reduced noise levels, fully complying with the machinery directive.

# 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

**90%**

OF MACHINE DOWN CASES  
WITH RESPONSE TIME  
UNDER 1 HOUR

**+100**

EXPERTS IN DIRECT  
CONTACT THROUGH  
REMOTE CONNECTIONS  
AND TELESERVICE

**92%**

OF SPARE PARTS ORDERS  
FOR MACHINE DOWNTIME  
PROCESSED WITHIN 24  
HOURS

**+50.000**

ITEMS IN STOCK IN THE  
SPARE PARTS WAREHOUSES

**+5.000**

PREVENTIVE MAINTENANCE  
VISITS

**80%**

OF SUPPORT REQUESTS  
SOLVED ONLINE

**96%**

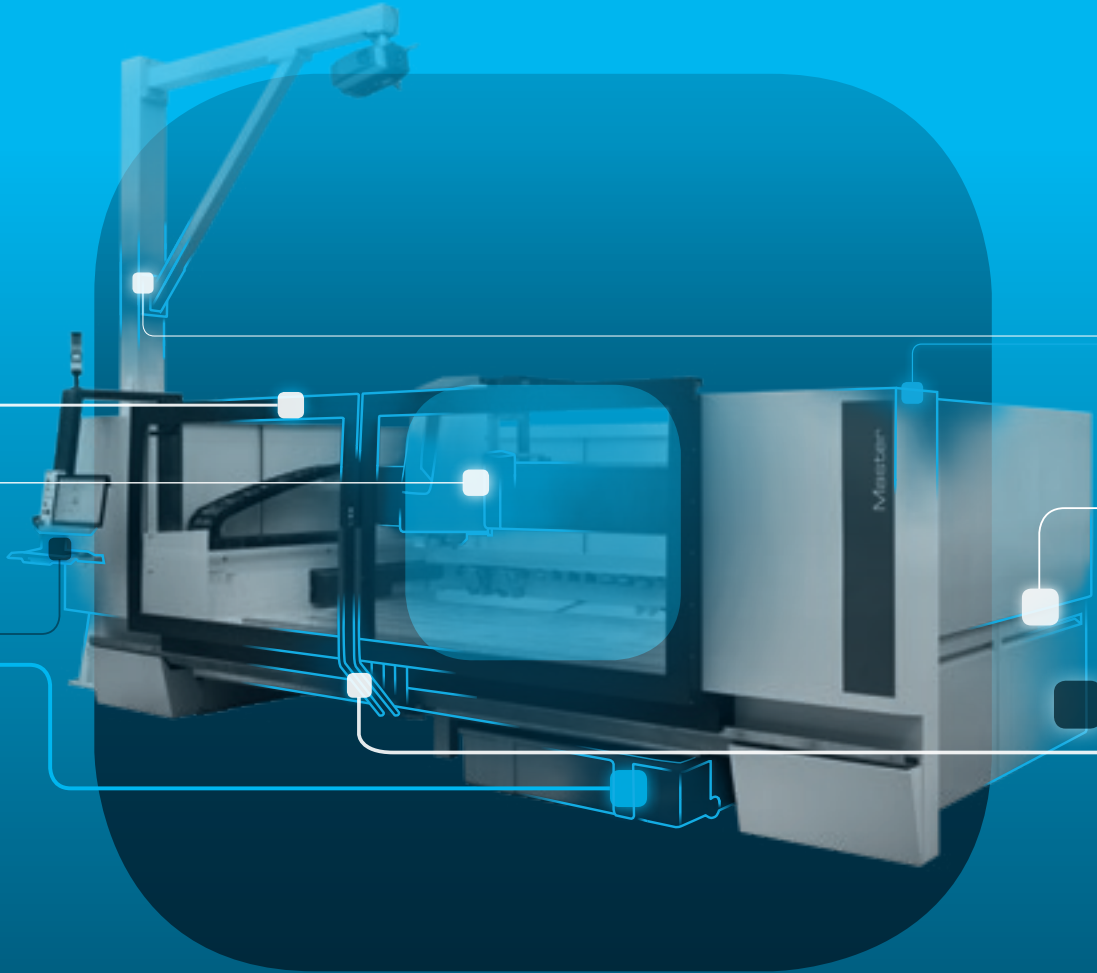
OF SPARE PARTS ORDERS  
DELIVERED IN FULL ON TIME

**88%**

OF CASES SOLVED WITH  
THE FIRST ON-SITE VISIT

# 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**

# INDUSTRY 4.0 READY

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

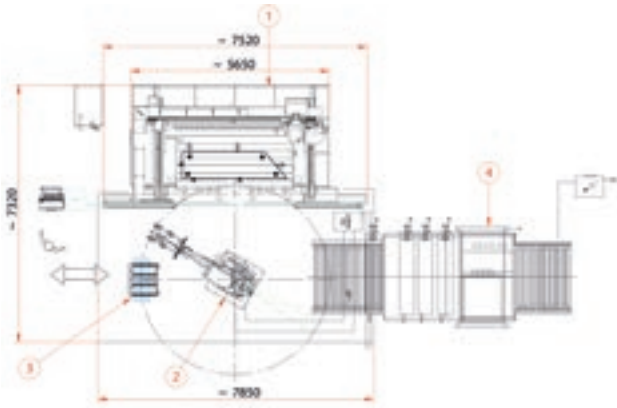


Intermac's commitment is to transform our customers' factories with real-time technology, ready to guarantee digital manufacturing opportunities, with smart machines and software packages becoming vital tools that facilitate the daily tasks of people all over the world processing glass, stone, metal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

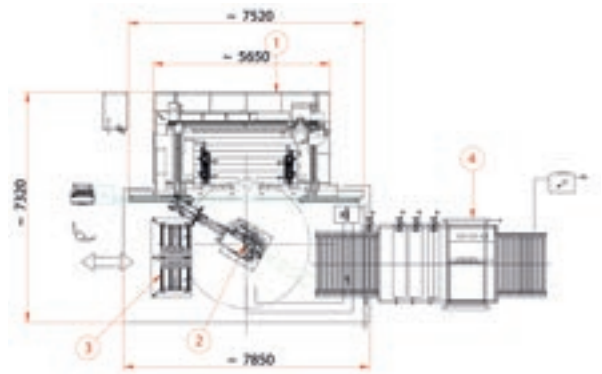
AND THAT MEANS BEING 4.0 READY.

# A SOLUTION FOR EVERY NEED

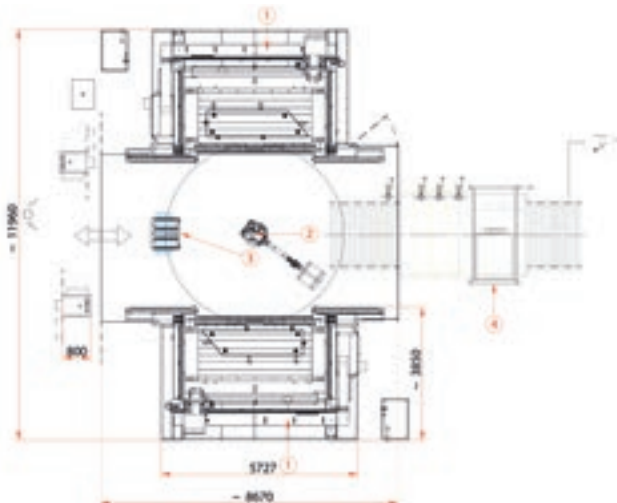
CELL 1 ROBOT + 1 SINGLE-STATION MACHINING CENTRE



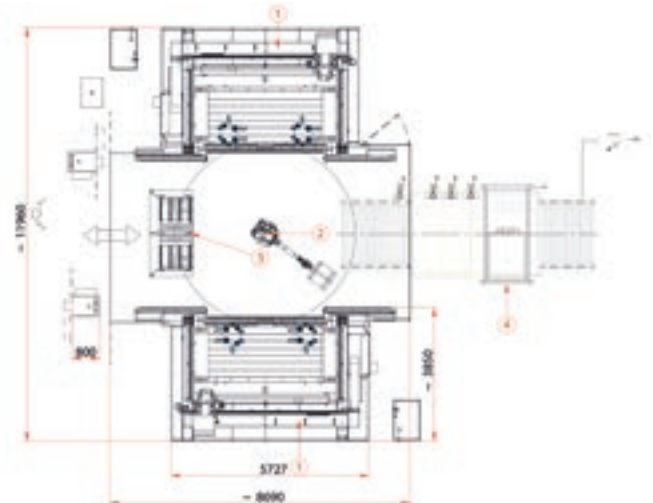
CELL 1 ROBOT + 1 TWIN-STATION MACHINING CENTRE  
(the sheet is replaced while the machine is running)



CELL 1 ROBOT + 2 SINGLE-STATION MACHINING CENTRES



CELL 1 ROBOT + 2 TWIN-STATION MACHINING CENTRES  
(the sheet is replaced while the machine is running)



- ① CNC machining centre
- ② Anthropomorphic robot
- ③ Racks
- ④ Washing machine

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.

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).  
MASTER 33 - 38 - 45  
Uncertainty of measurement K = 4dB (A)

The measurement was carried out in compliance with UNI EN ISO 3746, UNI EN ISO 11202 and subsequent amendments. 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.



# MADE WITH INTERMAC

## TAV (TOUT L'ART DU VERRE) AND INTERMAC TOGETHER TO CREATE A SOLID EXAMPLE OF SMART MANUFACTURING

The French colours distinguish one of the most interesting 4.0 technological collaborations, combining the excellences of industrial automation and robotics with the most advanced production processes. Right opposite the current site of TIV (Tout l'Intérêt-duVitrageisolant), based in Treize-Septiers (in the French city of Nantes) the ambitious project of Jean-Yves Glumineau has taken shape: a brand new "TAV" (Tout l'art du verre) flat glass transformation system. An innovative project characterised by the maximum process automation, to create a real Smart Factory. The new plant is fitted out with specialised technologies for cutting, grinding/polishing, ceramic printing, and glass enamelling and tempering: new machining operations that have extended the product range already offered by the parent company TIV. These new operations are aimed in particular at interior designers, furniture makers, blacksmiths and manufacturers of large façades and glass door/window frames. Advanced

machining technologies, connectivity, tools for simulating products and processes, preventive traceability: these are the main topics that Intermac and TAV have focused on for their ambitious road to automation, integrating resources and innovative know-how.

«Our goal in this new context was to have everything in line and no longer have to handle the glass. We needed new, technologically pioneering equipment to eliminate the time wasted in transferring the glass sheets from one machine to the other, minimising the manual movement of the glass and thereby avoiding a situation where the operator spends most of his time pushing carriages rather than being efficient and productive on the machines.»

Jean-Yves Glumineau, owner.

The challenge of the TAV project (the result of an investment of 5 million Euros) was to bring together a huge range of skills and develop a high level of automation by adding ro-

botics. The machines that make up the automation process optimise their performance constantly and continuously. The Intermac solutions offer the customer the certainty of knowing exactly what is produced and the efficiency level reached. Automation reduces error risk and manual interventions to zero, enabling a leaning towards perfect production output. And not just that: the customer can now know the order processing time and maximise it to meet the requests of the market in the shortest possible time. In particular, to meet the need for the maximum flexibility there is a Batch-One process that optimises production, personalising even big production batches. This means that TAV can quickly adapt its production to the changing demands and requirements of the market. «We wanted all the machines to be able to communicate with each other, working in a coordinated way without the intervention of the operator. And we've done it brilliantly.»



# MADE WITH INTERMAC

## GLASS BECOMES THE STAR OF THE SHOW, THANKS TO THE PERFECT LINK BETWEEN TECHNOLOGY AND ROBOTICS.

Automation in glass - the keystone to machining and producing design objects and façades.

Founded in 2001, Glas Ahne, a German company based in Pirna, has been creating and processing glass for over 20 years to make interior design items and windows: projects that give rise to resistant, secure structures that are transparent and high-performing, combining aesthetics and practicality in the most sublime way. "We mainly process glass for interior design and façades. After changing our location twice and extending our production area, in 2010 we finally built a new production plant of 600 square metres at our Hugo-Küttner-Straße HQ. In 2013 we put up another building there, giving us a total of about 1000 square metres for our production work. We're guided by one single aim - to produce and process glass, and that means we make the very glass we process: cutting, grinding, smoothing, stratified glass", explains René Herbst, managing director of Glaswerkstätten

Frank Ahne GmbH. The company specialises, in fact, in the design and implementation of personalised solutions for the construction and furnishings sectors. "Our customers are above all joineries and engineering and healthcare companies, for whom we make partitioning walls for bathrooms and kitchens, or glass versions for offices", continues Herbst. Glas Ahne has chosen to produce its own glass and process it in-house because of the constantly growing demand: "This decision allows us to control the entire production process, from cutting through to the end product, meaning that our quality control system is monitored at all times."

The extension of our production area coincided with the purchase of new machinery, with the attention focused in particular on the Genius LM cutting bench and the Master 45 machining centre. "When we transferred our production site, we decided to be the first to use an Intermac cutting table. This opened up possibilities that, as a small firm, we hadn't ever known.

In 2012 we purchased a Master 45 5-axis CNC machine from Intermac, because we wanted unvarying interfaces between the machines so that our production personnel would all have the same level. That was the determining factor that persuaded us to go with Intermac." In 2018, the German company seized the chance to automatise its production thanks to the purchase of a collaborative robot that works with the Master machining centre: "We discovered that automation with robotic technology linked with CNC technology is the best solution for us; it frees our production personnel from all the routine tasks. We opted for Intermac for that reason as well", continues Herbst. Increased production, flexibility, reduced overall dimensions and varied processes: there's a multitude of advantages in using a robot. "We don't see Intermac just as a machine supplier, but as an experienced and competent partner that can give us the best advice about what we need, like in the case of the collaborative robots", concludes Herbst.



# LIVE THE EXPERIENCE

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**

