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October/November • Year 35 • No. 5/2024

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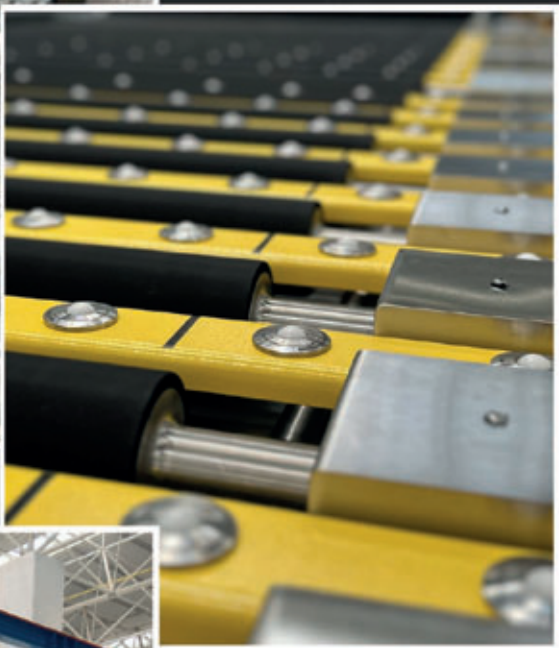
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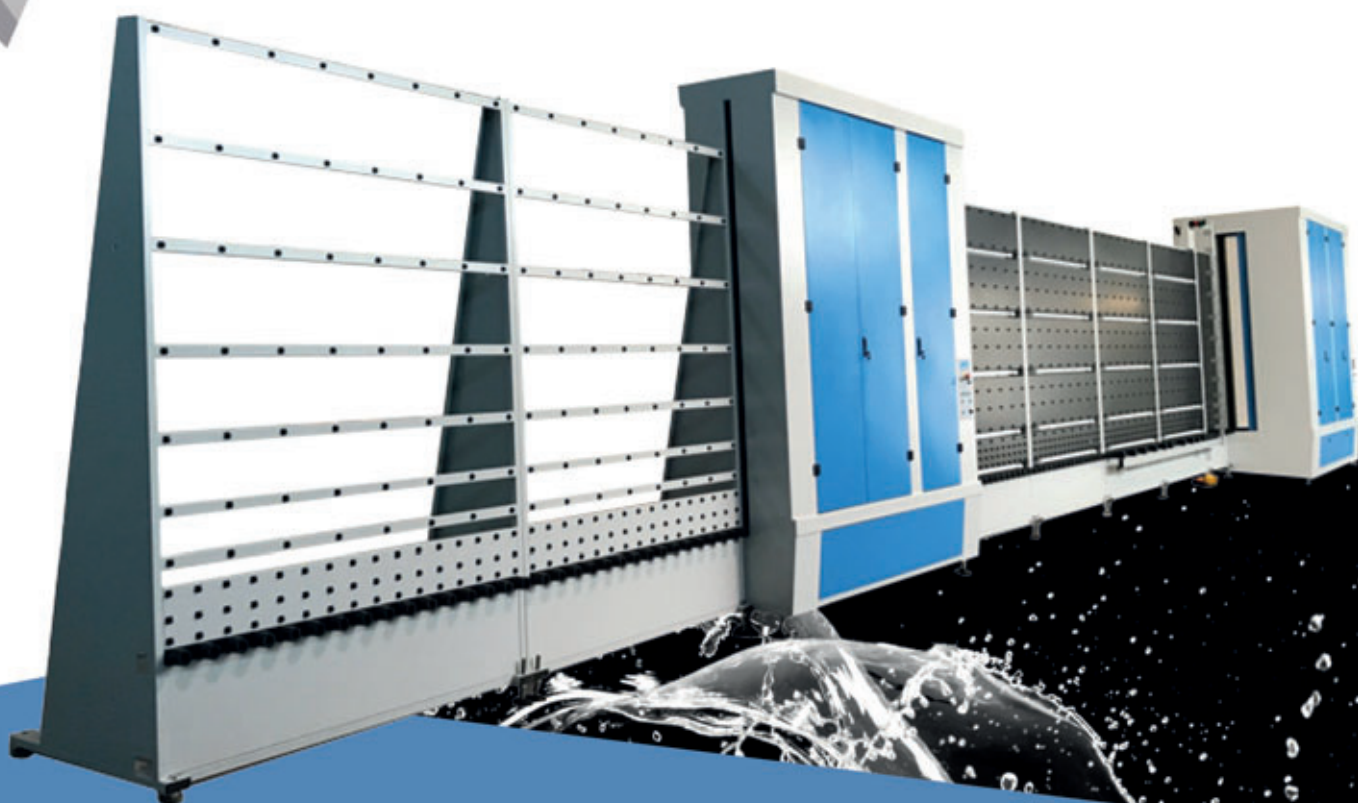
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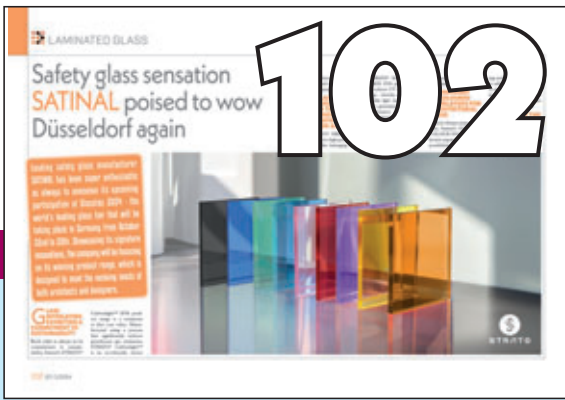
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**PUBLISHING DIRECTOR:** Arcangelo Altamura

**EDITOR-IN-CHIEF:** Marco Pinetti

**ASSOCIATE EDITOR**

Nicolaas François Fouché | [nick.fouche@glassonline.com](mailto:nick.fouche@glassonline.com)

**CONTRIBUTORS**

Alexander Roe, Jennifer Pressman, Alison David, Zoë Elaine Whitten

**ADVERTISING**

**ITALY:** Maurizio Lozza | [maurizio.lozza@glassonline.com](mailto:maurizio.lozza@glassonline.com)

**WORLDWIDE:** Luciano Molina | [luciano.molina@glassonline.com](mailto:luciano.molina@glassonline.com)

**GRAPHIC DESIGN**

Sonia Previato | [sonia.previato@glassonline.com](mailto:sonia.previato@glassonline.com)

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AGC GLASS EUROPE

# Announcement of collaboration with DOVISTA

**A**GC Glass Europe's Low-Carbon Glass has been selected by DOVISTA, a prominent industrial window maker, to produce and supply specific end-products in 2024. The new agreement underscores the growing interest in and recognised value of low-carbon glass, which helps industries reduce their carbon footprint and support their sustainability objectives. By integrating low-carbon glass products into its manufacturing processes, DOVISTA is taking a decisive step towards reducing its Scope 3 emissions and advancing its comprehensive sustainability roadmap.

AGC Low-Carbon Glass features a reduced Global Warming Potential of 5.5 kilograms CO2 equivalent per square metre (for 4 millimetre float glass). This represents a significant reduction compared to standard float glass, which has a GWP of 10.3 kilograms CO2 equivalent per square metre (for 4 millimetre float glass). When integrated into the manufacturing process of industrial companies, Low-Carbon Glass can effectively address Scope 3 emissions, which include indirect emissions that occur in their value chain. This approach is crucial for industries striving to meet stringent environmental regulations and sustainability targets.

"We are extremely proud of this collaboration with DOVISTA," said Bart Welvaert, Sales & Marketing Director AGC Glass Europe. "This collaboration is a clear validation of the effectiveness and importance of products with a reduced carbon footprint. We are committed to supporting our partners in their sustainability journeys and helping them achieve their environmental goals."

[WWW.AGC-GLASS.EU](http://WWW.AGC-GLASS.EU)

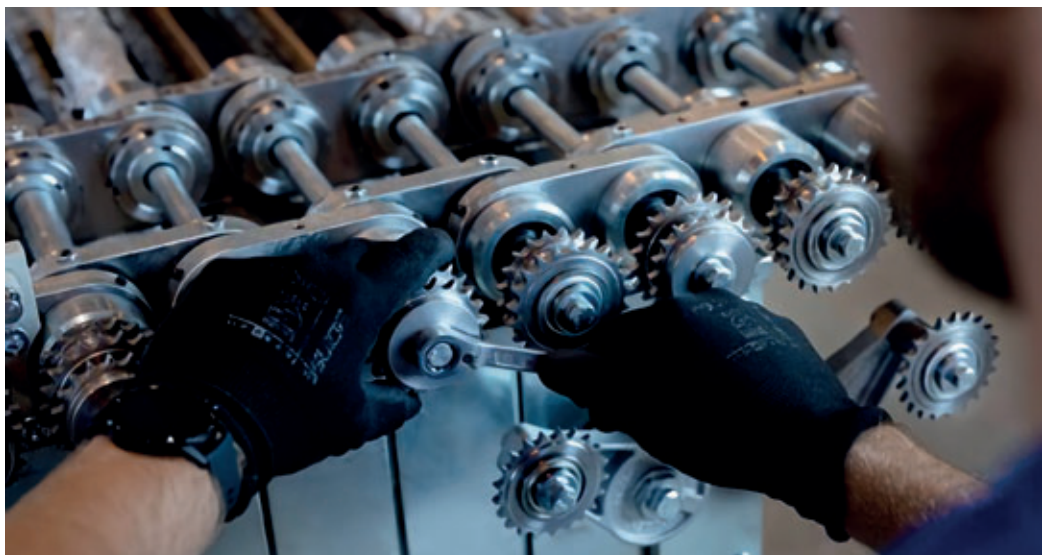
GLASTON

# Life-cycle support to TaiFin's installed base now begun

**A**rom October 1, 2024, Glaston started providing services and spare parts to TaiFin and HEGLA-TaiFin's installed base. Glaston Tampere in Finland has begun serving customers who run approximately 80 machines in total. By providing services for the TaiFin and HEGLA-TaiFin's installed base, Glaston has strengthened its capabilities in the Mobility Heat Treatment business as the majority of TaiFin customers operate in the Automotive segment. In addition, there are also TaiFin customers in other Glaston

customer segments with ongoing heat treatment projects. "Glaston has customers who also operate TaiFin machines. We started receiving customer queries to provide support for the TaiFin lines, too," said Sasu Koivumäki, Chief Sales Officer at Glaston. "Now we can also provide TaiFin customers with reliable, high-quality support to extend the life-cycle of their installed TaiFin lines for years to come."

[WWW.GLASTON.NET](http://WWW.GLASTON.NET)





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- Professional version of NorthGlass Heating & Temperature Control system with global adaptive overheating function<sup>1</sup>: With global restriction of total installed power, call idle power for local overload heating, to improve the efficiency of installed power use and the heating speed with the same installed power.
- The newly designed chiller ensures higher quenching and cooling efficiency, greater energy savings, better stress distribution, and reduced anisotropy.
- With "NorthGlass Tempering Cloud", customers can access remote technical support from our experts, download recommended recipes, and perform remote diagnostics on furnace's internal parameters (optional).
- Quenching fans designed with trituro (three-dimensional impeller) technology deliver superior efficiency and extended service life, while substantially lowering energy consumption and noise output.
- New partition of heaters, 50% more finer than that of 3G A(Advanced)-series furnace<sup>2</sup>, for more accurate heating temperature control and better quality of finished glass.
- The newly designed HMI pre-configured with comprehensive set of recipes offers significantly enhanced functionality that greatly simplify the furnace's operation with a more user-friendly interface.

1: When loading rate is below 80%.

2: Take the furnace data of B or E width as an example.



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GPD 2025

## Call for abstracts

**G**PD 2025 was held from Tuesday to Thursday, June 10-12, 2025, at the Nokia Arena, Tampere, Finland. With interactive sessions, two days of conference presentations and the Step Change programme, visitors received an unforgettable experience of networking, learning and professional development.

The GPD Team has announced its call for abstracts for the upcoming conference, which will focus on cutting-edge advancements and challenges in glass and glazing technologies.

GPD 2025 aims to deepen the understanding of glass's diverse role and significance in a global context. This way researchers can present their studies, innovations and case studies to a global audience of experts as they contribute to shaping the future of the glass industry.

Whether pioneering new products, addressing architectural challenges, or advancing glass engineering, this platform offers them a unique opportunity to showcase their work. By exploring the topics below they can align their abstract with the most relevant session and join the conference for impactful discussions to help define the future of the field.

Abstracts of maximum 300 words can be submitted via the online submission platform latest by November 1, 2024.



Upon submission, abstracts will be evaluated by the Programme Committee. Should they be accepted to the programme, authors will be invited to submit a full paper and to prepare an oral presentation for the conference. Additionally, their full paper will be added in the digital conference proceedings book.

Selected abstracts will be invited to publish a journal paper in the Glass Performance collection of the Glass Structures & Engineering journal, following a separate review and revision process.

### Key dates

- Abstract deadline: November 1, 2024
- Notification of abstract acceptance: January, 2025
- Paper deadline: March, 2025
- Presentation deadline: May, 2025
- GPD 2025 conference: June 10-12, 2025

[WWW.GPD.FI](http://WWW.GPD.FI)

CHINA GLASS 2025

## Empowering the green transformation

**G**The 34th China International Glass Industrial Technical Exhibition (**China Glass 2025**) will be held from May 26 to 29, 2025 at the China International Exhibition Centre (Shunyi Hall) in Beijing. At present, the recruitment work has fully started, and the official website of the exhibition has begun to accept booth reservations.

Founded in 1986 by the Chinese Ceramic Society, the China International Glass Industrial Technical Exhibition has been successfully held for 33 sessions. After 38 years of cultivation and development it has become a world-famous glass exhibition in terms of specialization, internationalization and scale - now offering commercially valuable exhibition and technical exchange as a business negotiation platform in the glass industry that provides an important basis for international consulting institutions to evaluate the development of the glass industry.

China Glass has become a 'barometer' and 'weather vane' of the global glass industry. A total of 877 exhibitors from 29 countries and regions participated in the 33rd China Glass Exhibition held in April 2024, with a display scale of 90,000 square metres, attracting professional visitors from 136 countries and regions and a total of 126,381 visitors - an increase of 18 percent over the →

← previous exhibition.

The 34th China Glass will have the theme 'Intelligent Manufacturing, Green Future,' facing the global glass industry mainstream manufacturers and SNEs as well as their innovative achievements. The 34th China Glass Exhibition is expected to attract more than 40,000 professional visitors from all over the world.

The overall exhibition scale of this exhibition will exceed 100,000 square metres, with more than 1,000 domestic and foreign manufacturers, the exhibition area will be set up according to the themes of innovative glass products and auxiliary materials, new energy glass and information display glass, intelligent deep processing equipment, new refractory materials and combustion technology, intelligent detection system, daily glass and art glass.

China Glass has always been rooted in the industry. It has deeply cultivated and served the industry, and the degree of specialization of the exhibition has been widely recognized by the glass industry at home and abroad, and has become an optimum exhibition platform for domestic manufacturers to compete for overseas markets and international manufacturers to explore the Asia-Pacific market. At the end of the last exhibition, the organizers received a large number of booth reservations, the booth reservation area reached 60,000 square metres, as of the date of publication, the global glass industry mainstream manufacturers have confirmed their participation.

China Glass is deeply committed to promoting the development of global glass industry trade and technical exchanges, providing professional services to the industry with the exhibition platform, actively expanding the quality resources of the industry chain and constantly injecting new momentum into the development of the glass industry.

[WWW.CHINAGLASS-EXPO.COM](http://WWW.CHINAGLASS-EXPO.COM)



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Hall 14 | Booth E59



Learn more about  
A+W iQuote,  
A+W Glass Lab,  
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QUANEX

## Tyman acquisition finalized

**Q**uanex Building Products Corporation recently announced that it had finalized its acquisition of the **British Tyman Group**. The merger leads to the creation of a comprehensive, more diversified solutions provider in the building products industry, that offers greater scale and reach and an expanded product portfolio.

“We are excited to welcome the Tyman team. This transaction accelerates our growth and value creation by delivering best-in-class solutions for OEMs in the building products industry,” said George Wilson, Chairman, President and Chief Executive Officer of Quanex. “Through the acquisition of Tyman as a combined company, our scale and reach will enable us to build on our leading positions across an enhanced offering of differentiated engineered components.”

Tyman plc, based in London, employs around 3,600 people and supplies hardware and sealing solutions for doors and windows, as well as access solutions for the building products industry in Europe, the UK, Ireland as well as North America. Quanex is represented in the European market through subsidiaries such as Edgetech Europe and Edgetech UK. These specialists in warm-edge technology supply insulating glass manufacturers worldwide with the foam-based, metal-free Super Spacer® spacer systems.

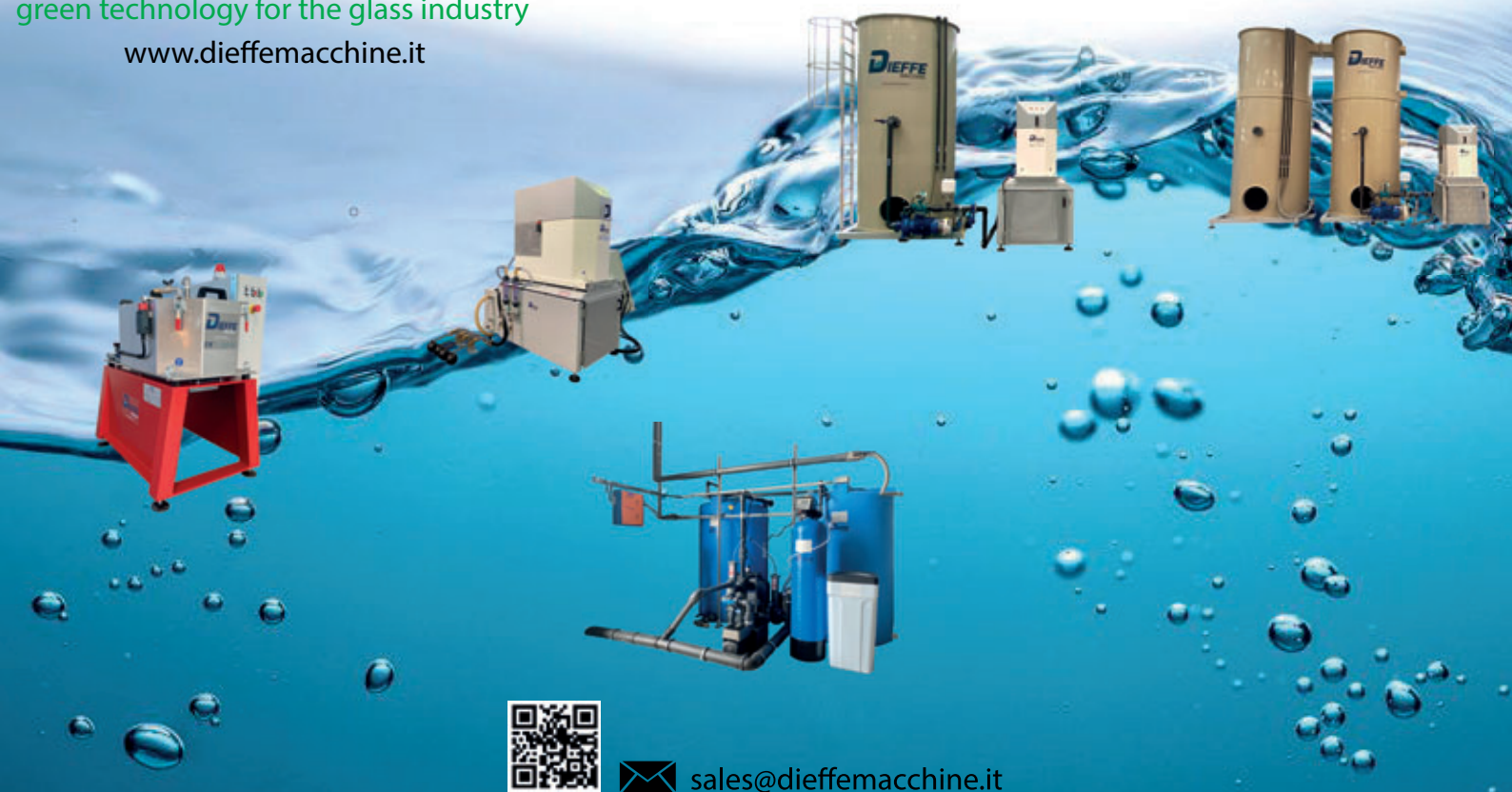
According to Quanex’s management, approximately 50 percent of the integration should be completed within the first 12 months. The company expects the acquisition to be meaningfully accretive to earnings within the first full year after closing.

[WWW.QUANEX.COM](http://WWW.QUANEX.COM)



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NSG GROUP

## Pioneering hydrogen plant planned in UK

**N**SG Group recently announced that Pilkington United Kingdom Limited, part of the Group, intends to use green hydrogen at its site and scale its production of low carbon glass from 2027 under pioneering new plans with Grenian Hydrogen.

The new hydrogen plant at Pilkington UK's Greengate Works site in St Helens would provide the furnace of the site with up to seven tonnes of zero-emission hydrogen each day. This would enable the company to eliminate 15,000 tonnes of carbon from its direct emissions each year, paving the way for the expanded production of low carbon architectural glass for buildings.

Plans to build the hydrogen plant powered by renewable electricity were put forward for public consultation last month ahead of Grenian Hydrogen submitting a planning application this Summer. It aims to start construction at Greengate Works in 2025 should the project be awarded funding under UK Governments Hydrogen Allocation Round 2 (HAR2), and to begin decarbonising Pilkington UK and the surrounding industry by 2027. The project at Pilkington UK is the first that Grenian will submit for planning permission.



[WWW.NSG.COM](http://WWW.NSG.COM)

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GUARDIAN GLASS & PRIVACY GLASS SOLUTIONS

## Launch of Lyto

**G**uardian Glass and Privacy Glass Solutions have entered into a joint agreement for the commercialization of Lyto™, the full blackout, between-the-glass, automated micro-shade technology designed and developed by Guardian Glass.

The innovative Lyto technology provides complete blackout in just a few seconds for windows, doors, privacy glazing in bedrooms and bathrooms, skylights and entry doors. The solution also has huge potential in buildings where control of daylight and the comfort and privacy of occupants is particularly important, such as healthcare and educational facilities.

Privacy Glass Solutions will produce and commercialize the product in the United States. Lyto™ is expected to be available by the end of 2024, initially available in one colour combination, white/off white. Additional colour combinations will follow after the launch.

### Main benefits of Lyto technology

- Fast and quiet: Lyto technology offers blackout at the touch of a button in just a few seconds. The shade is embedded between the glass and deploys motorlessly, using quiet electrostatic forces. Unlike other integral blind solutions, it has no mechanical parts that can fail due to wear.
- Easy to implement and control: with extremely low power demands, Lyto technology does not need to be hard-wired into the main power supply but can be battery-powered. Batteries can be upgraded with optional PV-solar power recharging. It can be activated by a manual switch, dedicated wireless remote controls or through connected smart home apps. Various levels of automation are available.
- Low solar heat gain: when deployed, the shade provides a very low solar heat gain. In most configurations, it can block over 95 percent (<5 percent SHGC) of the sun's energy when closed, to help maintain a comfortable indoor temperature.

### How Lyto technology works

The technology is sleek, adaptable and the shade is completely contained within a double or triple insulating glass unit. With no mechanical parts, this new shade solution isn't subject to mechanical failures. The shade is activated in seconds by passing a small current through the conductive layers creating an electrostatic attraction between the ultra-thin shade and the glass surface.

[WWW.GUARDIANGLASS.COM](http://WWW.GUARDIANGLASS.COM)

PUJOL 100

## D-GLASS: a new success story

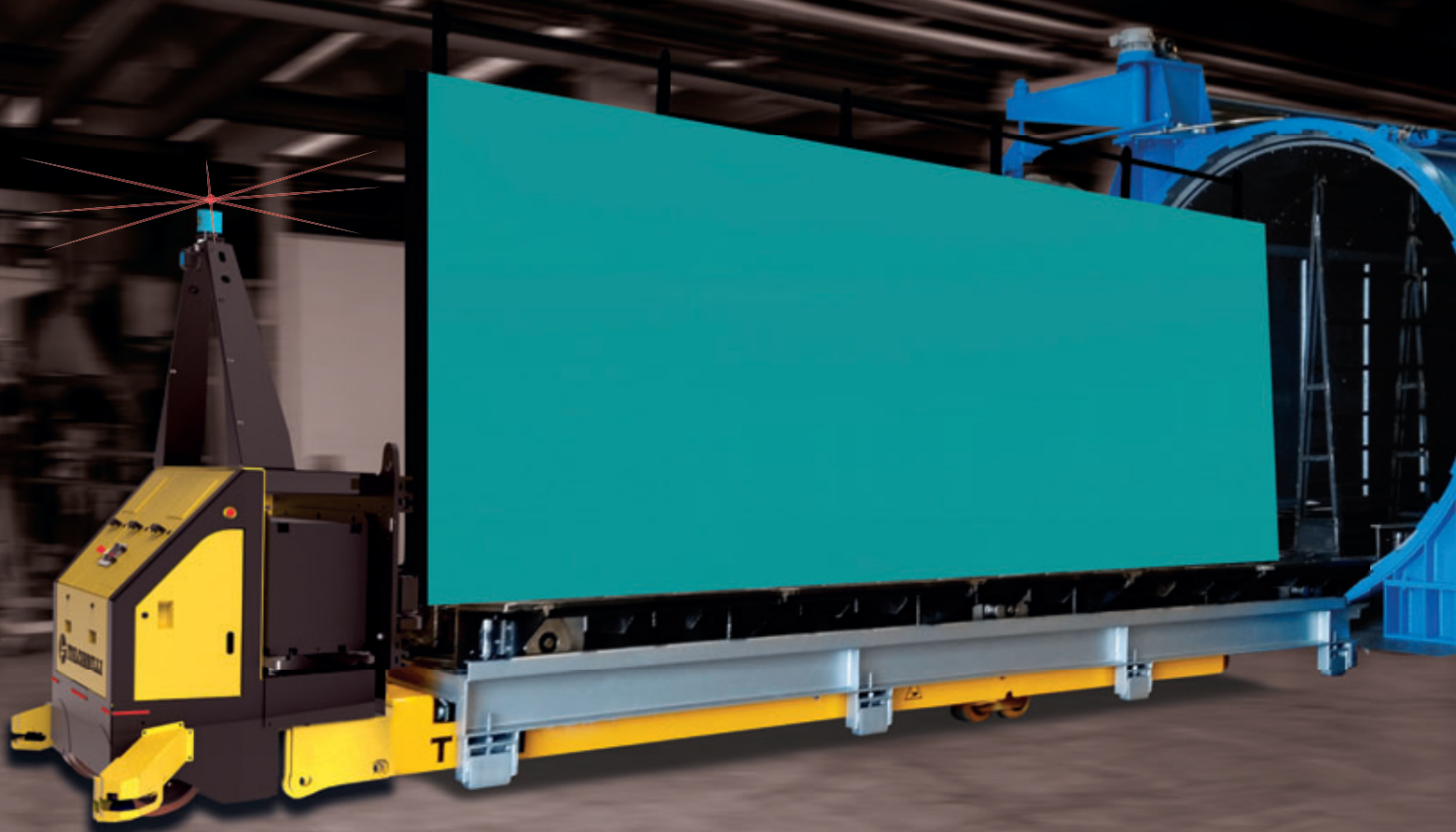
**H**ornos Industriales Pujol has commissioned a new Pujol 100 unit in the Belgian company D-Glass, a company founded in 2016 and since 2020, integrated in the Willy Naessens Group, which has allowed it to continue with an excellent growth trajectory since then.

D-Glass bases its offer on the production and installation of glass for interior and exterior glazing. D-Glass has positioned itself as a leading company in the installation of glass balustrade systems, combining safety with maximum transparency. The Belgian company has made an important investment that shows its clear commitment to quality in the choice of the

best machines for the processing of laminated glass, choosing a 40x28 Pujol 100 oven equipped with a complete assembly line and a glass washing machine as well as a clean room - reflecting an unequivocal commitment of the company to offer the highest quality of finished products and its commitment to saving energy costs.

[WWW.HORNOSPUJOL.COM](http://WWW.HORNOSPUJOL.COM)





# TPEN LGV SERIES

## AGVs for laminated glass production

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- > Autoclave glass unload
- > Handling of glass packs from stackers
- > Warehouses handling

### PLUS

- > Customized dimensions
- > Autonomous guidance
- > Low maintenance
- > Low profile platform
- > Obstacle detection system
- > AC technology
- > High maneuverability

### MAIN FEATURES

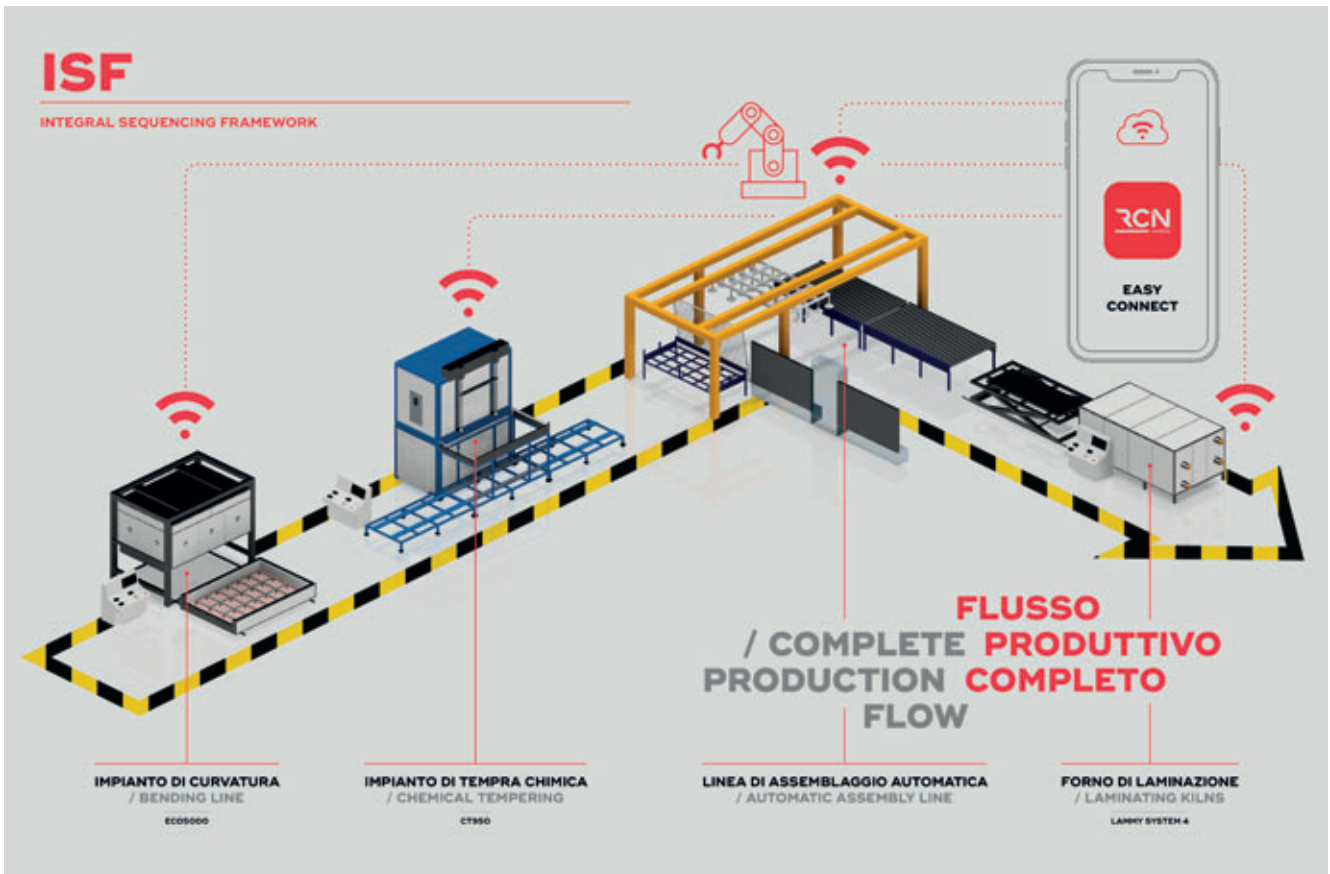
- > Heavy load capacity
- > Laser guidance technology
- > Integration with production lines
- > Automatic battery charging
- > AGV management software



RCN SOLUTIONS

# Innovations showcased at Glasstec 2024

**R**CN aims to produce machines running with less human interaction, limiting the presence to one operator for coordination. This means reduced work-load, safety at work, project of which RD CLEAN CONCEPT - the RCN's patented system for clean edges in lamination - is a key example.



RCN's production includes a wide range of glass laminating machines, in jumbo size and over, equipped with lifting platform, RD CLEAN CONCEPT, additional shelves and other optional that can be checked out at Glasstec.

Recent production also includes one loading conveyor, TETRIS, releasing glass sandwiches directly onto the lifting platform, thus reducing timing and handling especially of heavy or large sheets of glass.

REVA BF, the laminating interlayer owing superb transparency and adhesion. Based on RCN's chemical formula, REVA

BF has proved to be a successful product and, in combination with a professional service, allows high quality output.

The construction of one Rotary Bending System, a self-excluding twin-axled machine, four positions: loading/unloading, heat- →



← ing, bending and cooling, controlled movement and size of 4000x5500xH2000 millimetres, has been the first RCN's technological leap dated 2024.

Chemical tempering plays an important role in all those projects where safety is required. Three times stronger than any other hardening system, chemical tempering is a view on the future of special products, in important fields such as automotive and transport industry, in farmaceutical and building too; from thin glass, 0.5mm, to the thickest one.

All the company machines can also be combined into one complete production layout named ISF - integrated Sequencing Framework - for a full safety glass manufacturing.

[WWW.RCNSOLUTIONS.IT](http://WWW.RCNSOLUTIONS.IT)

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**Simtech**

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These bags suit also to drilled, shaped, curved, thick glass (bullet-proof)

Lamination with PVB, EVA, PU...



GLASTON

## Deal signed for three new FC Series E tempering lines in the UK

In August, independent and family-run **Cornwall Group** placed an order for new **Glaston FC Series E** tempering lines. The company was established over 45 years ago and currently employs 370 colleagues over 14 sites. Glaston will deliver the lines during 2025. The order has been booked in Glaston's Q3 2024 order book.

The tempering lines will be used to manufacture glass for residential windows, interiors and commercial architectural projects. The three furnaces are equipped with Glaston Autopilot, which enables a fully automatic tempering process. The operators simply need to insert glass thickness and type to the line – the Autopilot will automatically adapt processing parameters according to the processed loading to achieve an optimal result constantly.

Along with the line's high automation level, Glaston FC Series E delivers consistent glass quality thanks to its convection technology, Glaston Bora. This efficient circulated-air convection system ensures effective and accurate heating for processing all types of high-end glass.

Glaston will deliver the lines to three of the Cornwall Group's manufacturing sites - Mackenzie Glass in Bristol, Cornwall Glass Manufacturing in St Austell and **Forward Glass** in Birmingham.

"In addition to automation capabilities, Cornwall Group will be able to gain significant savings on energy consumption as Glaston's adaptive process optimization technology cuts energy consumption to very low levels," said Sami Kelin, Sales & Service Director at Glaston UK.

According to Mark Mitchell at Cornwall Group, "This is the largest single supplier purchase of plant and machinery in our company's long history and one which will cement our position as one of the UK's most reliable and established glass distributors, specialist processor and IGU manufacturer. We selected Glaston in part because of the tempering line's advanced Autopilot automation technology, which will help us with our production quality and reliability."

[WWW.GLASTON.NET](http://WWW.GLASTON.NET)

LISEC

## Dynamic load balancing, the key to efficient Lami cutting

How many cutting bridges do you need for the fastest laminated glass cutting? **LiSEC** says two - but both have to work together in a special way. Dynamic load balancing ensures the highest possible utilisation of two sequentially arranged bridges, thereby achieving peak performance that's almost unmanned: up to 140 square metres of laminated glass cut per hour in series production and

up to 75 square metres per hour in regular insulating glass production.

### Why load balancing?

As the cutting patterns both for series production and regular production of insulating glass generally contain more Y and Z cuts than X cuts, a separate cutting bridge for each cut would lead to a backlog at the second cutting bridge while the first bridge waits. This is where dynamic load balancing comes into play: It distributes the necessary cuts evenly between the two bridges in order to produce quickly and continuously.

### The main sections of the laminated glass cutting line

A DSC-A LoW-E deletion system for Low-E or solar control coatings is installed upstream of the cutting bridges. This →

← ensures that the edge deletion process takes place before the laminated glass is cut and does not affect the cycle time.

The two cutting bridges are arranged sequentially and can have different widths depending on production requirements (3.7, 4.7 or 6.1 metres).

- The first VSL-A laminated glass cutting system automatically cuts, breaks and separates both laminated glass traverses and residual panes in the X and Y planes in under 30 seconds for glass thicknesses of up to 16.76 millimetres.
- The second VSL-A laminated glass cutting bridge cuts, breaks and separates both laminated glass traverses and remnants in the Y and Z planes automatically in under 30 seconds for glass thicknesses of up to 16.76 millimetres. Special shapes can also be cut automatically.

#### The intelligence behind dynamic load balancing

Thanks to the dynamic load balancing, the machine reacts according to the situation and decides whether a cut should be made on the first or second cutting bridge. Factors such as the number of cuts per sub plate and the degree of optimisation (distribution and quantity of Y and Z cuts, number of remaining cuts or operator-related downtimes) are taken into account.

In this way, the workload is optimally distributed across both cutting bridges in order to produce continuously on both systems and thus always ensure the highest output: up to 140 square metres per hour for series production and up to 75 square metres per hour for regular insulating glass production.

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GUARDIAN GLASS

# Focus on innovations and partnerships at glasstec 2024

**G**uardian Glass will be showcasing a variety of customer service innovations at glasstec 2024, in Hall 10, stand A22. The world's leading event for the glass industry, opens its doors in Düsseldorf, Germany, October 22-25, 2024.

At the forefront will be a range of new and updated digital tools designed to provide customers with easy access to detailed information on glass products and applications. These tools facilitate the complete glass selection process from the early stages of a project to order placement.

### Key service innovations

Visitors to the stand can explore a range of new and updated digital tools and functionalities, including:

- A new project locator that allows projects that make use of Guardian Glass products to be located and viewed using Google Street View.
- A product selector tool to help navigate the Guardian Glass portfolio, select and compare products that meet the desired glass performance criteria and aesthetics.
- An updated product visualization tool to enable the preview and comparison of glass options in a realistic building environment.

### Innovative product solutions

A variety of innovative glass solutions and value-added products from Guardian Glass will be at the booth.

Guardian NEXA™ is the new lower carbon glass solution in Europe that helps reduce the embodied carbon of the built environment across a →



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- SERVICE AND ASSISTANCE





wide range of glazing applications. Guardian Glass range of lower carbon products includes the lowest one in this range, Guardian NEXA 6.

Other products from across the globe on display will be:

- Guardian SunGuard™ SNX 70+, the triple silver coated glass launched in 2023 in North America.
- Guardian UltraMirror Mirage™, a new high-quality, durable mirror designed to withstand various external environmental conditions and help achieve extreme reflectivity for architectural façade applications.
- The Guardian SilverGuard™ advanced coated glass range for car sun-roofs and windscreens.

Finally, Guardian Bird1st™, a range of bird-friendly glass solutions that help prevent birds from colliding with glass, will be presented to facilitate understanding of how deterrent patterns' impact the view of building occupants, together with some educational material on the behaviour of birds and their interaction with glass.

#### Stewardship in everything

The Guardian Glass team at glasstec 2024 will be meeting with visitors and customers interested in Guardian Glass solutions. Whether it's expanding knowledge, highlighting product innovation, or exploring the path to Stewardship, Guardian Glass' presence at glasstec 2024 will encourage attendees to see what's possible.

[WWW.GUARDIANGLASS.COM](http://WWW.GUARDIANGLASS.COM)

see us @ glasstec  
22 - 25 October  
Hall 17 / Booth A64

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- **Loading** - for manual loading or in combination with buffer storage or robot loading

EASTMAN

## Interlayer Saflex Evoca designed for EV applications

**E**astman has created Saflex Evoca, a platform that unites and expands the Saflex portfolio of interlayers specifically designed for EV applications.

Saflex Evoca offers a world of possibilities to elevate EV comfort, design and efficiency. Whether it's acoustic performance, solar control or colour, the company's platform of interlayers can help empower automotive glazing designers and glass suppliers to unlock their full creative potential with electrifying glazing solutions

With Evoca, automotive glazing designers and glass suppliers have a platform to create new possibilities and shape refined driving experiences. They have the power to improve efficiency, design and comfort - resulting in electrifying glazing solutions that can redefine the future of automotive innovation.

Saflex Evoca offers OEMs and glass suppliers an efficient approach to designing and manufacturing EVs. It helps meet consumer demands for sustainability while providing an exceptional driving experience with cabin comfort, quiet interiors and enhanced connectivity.

Saflex Evoca offers solutions that can help balance energy use - enhancing the performance of EVs. In addition, these advanced interlayers provide options that can help improve lamination yields for glass suppliers, ultimately contributing to the overall efficiency of EVs.

With Saflex Evoca, Eastman also remains committed to continuous improvement in the carbon footprint of its manufacturing and supply chain, providing glass suppliers flexibility in their glazing solutions.

[WWW.EASTMAN.COM](http://WWW.EASTMAN.COM)



DÜZCE CAM

## New solar glass production line opened

**T**urkish glass manufacturer **Düzce Cam** recently took an important step towards the renewable energy sector by setting its DCS Solar Glass Line into production - complete with an opening ceremony attended by many guests from the business world as well as project partners. The new production line once again proved Düzce Cam's environmentally friendly production approach and leadership in the sector.

The new production line is equipped with the latest technology and is designed to produce high-quality solar glass. With this investment, Düzce Float Glass aims to contribute to both the local economy and the energy independ-

ence of Turkey.

The new line, the third production line at the plant, has a capacity of 300 tonnes per day of solar glass.

Kasım Aktaş, Düzce Cam Chairman, and Ma Liyun, CTIEC CEO, talked about the importance of solar glass production.

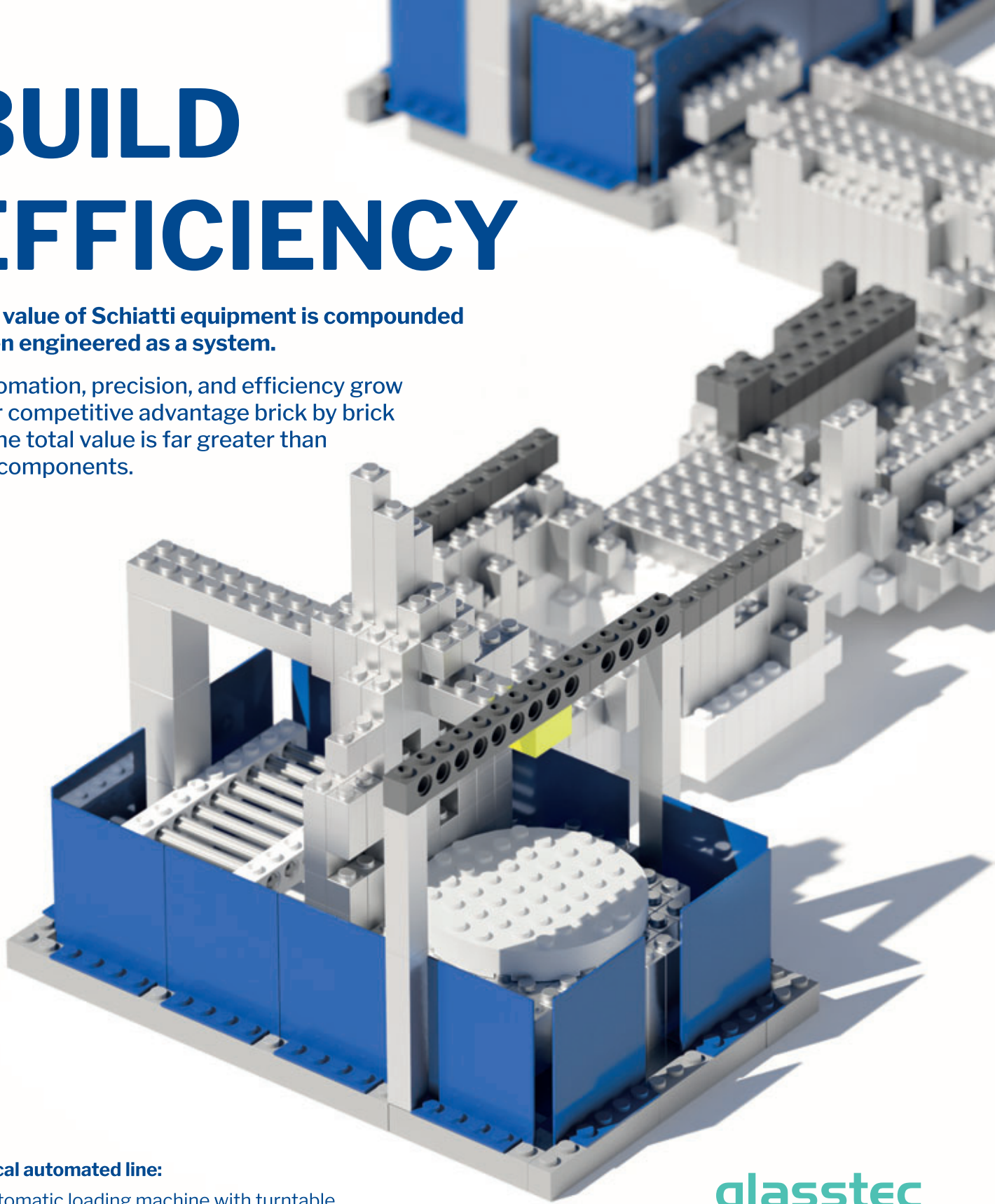
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- Double-headed drilling center with 4 drilling positions.
- Automatic unloading machine with turntable.

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FENZI GROUP

## Introduction of Fenzi India

The new sales hub, Fenzi India, with headquarters in Mumbai, is to allow the Fenzi Group to meet the growing demand of the Indian market - which already holds the technologies offered by all the business units in high regard, including the latest-generation sealants and warm edge spacers for high-performance IG units, chemical solu-

tions for the entire mirror-production cycle, decorative paints for all types of applications (automotive, architecture, interior design, home appliances, packaging), precious-metal inks, silver pastes and the best technology for digital printing on glass.

Known throughout Asia for its vast range of technologies and the superior quality of its product lines, as well as for its technical support team, which is available to those who work in all phases of glass processing and production. With this new headquarters, the Fenzi Group continues its successful expansion in the Asian market, where it enjoys a very strong and well-established presence - thereby strengthening its penetration in one of the most dynamic global arenas.

"India is a market with enormous potential for the entire Fenzi Group," said Matteo Padovan, Managing Director of the Group's Italian Headquarters. "As a country, it shows a strong tendency toward industrialization and urbanization, with infrastructure projects that are driving the Indian building and construction industries, with significant forecasts for growth, to the benefit of the entire glass sector. Our new presence in India fits perfectly into the Fenzi Group growth strategy. It will bring us even closer to our clients and boost expansion of the sales network and customer service in a very dynamic market."

[WWW.FENZIGROUP.COM](http://WWW.FENZIGROUP.COM)



IB VOGT & CORNING

## Collaboration announced on 88.78 MWp solar vPPA

International solar developer platform **ib vogt** has signed a virtual Power Purchase Agreement (vPPA) with **Corning Incorporated**, one of the world's leading innovators in material science, for a capacity of 88.78 MWp. The deal will supply electricity from the Pato solar power farm, located in the eastern region of Segovia, Spain, to the grid. Under the agreement, power consumption by Corning's

facilities will be offset with renewable electricity from the solar plant, eliminating the need for the physical delivery of energy directly from the farm to these facilities. The PV project was developed by **ib vogt** and will reach its commercial operation date by Q2 of 2025.

The Pato solar farm will produce about 215.6 GWh of clean solar power per year using bifacial single portrait tracker solar panels. This project will provide the equivalent of 55,000 households with green energy and prevent up to 47,000 tons of CO2 emissions every year over the project's lifespan.

In addition, **ib vogt** is engaging in a number of measures to mitigate risks to the environment on site. This includes



Anton Milner, CEO of ib vogt, expressed his appreciation to everyone who contributed to the successful completion of this PPA, especially Corning for their cooperation in advancing the energy transition in Europe.

The Pato solar farm is part of the Segovia cluster that totals 513 MWp with several projects in their final stages. Projects like Pato help to move

the creation of two ponds to provide water for wildlife, as well as to conserve the amphibian population. ib vogt is setting up a provision of nest boxes for owls and nest-boxes hidden in stone cairns for owlets, as well as erecting stands of native flora throughout the site.

Spain's 2050 goals of reaching national climate neutrality, 100 percent renewable energy in the electricity mix, and 97 percent renewable energy in the total energy mix.

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GLASTON & CORNING

## Partnership for ultra-thin architectural processing

**A** leader in the glass processing industry and the inventor of the Thermo Plastic Spacer (TPS®), **Glaston** has developed a new processing method suitable to install thin glass into triple insulating glass units. The construction industry's tightening regulations for energy efficiency demands more from the architectural segment. When older double insulating glass unit (IGU) performance is no longer enough to meet energy efficiency requirements, triple and quadruple IGUs are needed. Triple IGUs are a viable solu-

tion for new buildings, but often cannot be used to replace double IGUs in old buildings because the width of the triple IGU doesn't fit into the existing window frame.

With Glaston's TPS® technology, customers can produce triple IGUs using thin glass. The use of traditional soda lime glass as the middle pane in a triple IGU can be replaced with glass available in 0.5 millimetre thickness, like **Corning® ATG™ Glass**. Corning ATG Glass was developed by Corning Incorporated, one of the world's leading innovators in materials science. This glass is specifically designed for architectural applications and can be utilized in buildings where thin, lightweight, thermal-efficient, and damage-resistant features are required.

The final thin glass triple insulating glass product is similar to a standard double IGU in overall thickness but has the performance of a standard triple IGU with less weight and frame support needed. This makes thin triple IGUs featuring ATG Glass well-suited for retrofitting existing double →

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← IGUs. In addition to increased light transmission and energy efficiency, thinner glass also uses less material.

“By bringing together our ultra-thin Corning ATG Glass and Glaston’s extensive experience in glass processing technology, our customers now have a turnkey solution for producing thin triple and quadruple IGUs,” said Ron Verkleeren, Senior Vice President, Corning Emerging Innovations Group. “Corning’s commitment to bringing cutting edge innovations to the architectural segment through its collaboration with Glaston provides a great opportunity for us to broaden our current and future product offerings.”

Sasu Koivumäki, Chief Sales Officer at Glaston Corporation, said “Sustainability is high on our strategic agenda, and it is great that our technology is enabling further improvements in the energy efficiency of buildings, old and new. Thin triple IGUs, in a variety of shapes and sizes, have all the benefits of high-performance glazing: energy efficiency with high insulation, more light, slimmer and lighter packaging, less weight and material needed.

“Our development of the TPS® process for thin glass follows Glaston’s long history of providing ‘first-of-its-kind’ market solutions and has already been well received by customers.”

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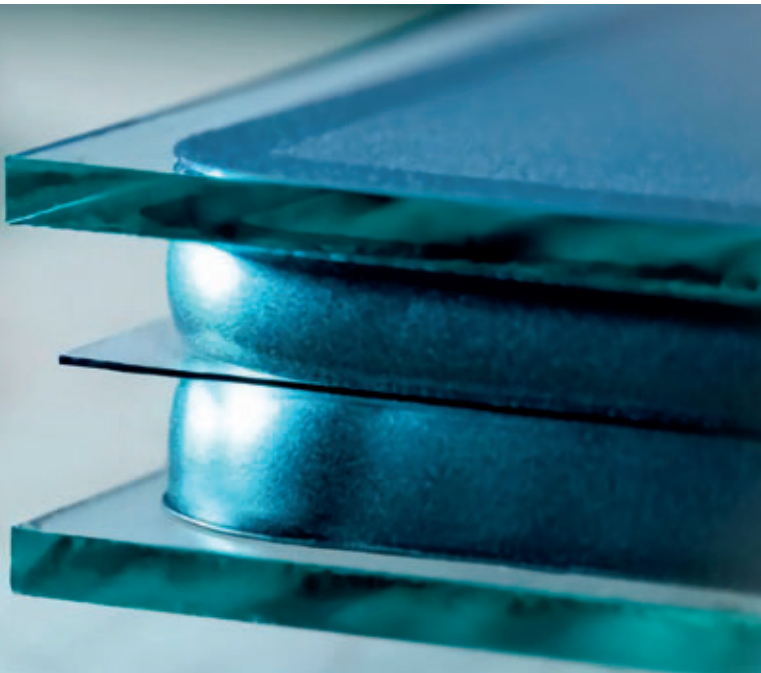


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VITRUM25

## A meeting place for the glass industry

**A** flagship sector of the heart of the glass industry, both throughout Italy and globally, **VITRUM** was proud to host the 24th edition of its international exhibition dedicated to the glass industry. Promoted by **GIMAV**, the event was held at Fiera Milano (Rho) from September 16 to 19. An association affiliated with Confindustria that brings together Italian suppliers of machines, accessories, equipment and special products for glass processing, GIMAV thus reaffirmed its role as a leading platform for the development of the industry through international events. Indeed, with the claim *At the Heart of Glass*, VITRUM25 positioned itself once again as the beating heart of the sector - offering a unique opportunity for both companies and industry operators to gather in a context rich in innovation, synergies and growth opportunities. New features in the layout and content strongly characterised the event - promoting business opportunities for all stakeholders.

### Outlook: a highly dynamic sector

As is highlighted by data from Assovetro and GIMAV, the sector remains extremely dynamic in Italy, positioning itself as the second largest manufacturer in Europe with a turnover of EUR 96 billion, to which an additional EUR 3 billion from the machinery and



technology industry for glass production is added. It employs 28,800 highly specialised workers, with an additional 9,000 in the technology segment: a supply chain that, overall, generates over EUR 12.5 billion in revenue and employs nearly 40,000 highly-specialised workers with a strong retention rate. Among the main areas of application for the sector is construction, which generates over EUR 1 billion in revenue across the entire supply chain and is expected to see significant growth in the near future. With the goal of reaching zero emissions by 2050 set by the Energy Performance of Building Directive, construction faces a crucial challenge that will impact the glass market, requiring a doubling of glass production for

construction and an increase in resources estimated at 7,000 additional employees. Glass will therefore play a key role in the ecological transition of construction and contribute to creating new job opportunities. The industrial sector of machinery and technologies for glass production and processing consolidated its growth in 2023, with a turnover approaching EUR 3 billion, confirming its role as a symbol of excellence in Made in Italy, demonstrated by its international market penetration, with exports accounting for two-thirds of total turnover.

### Unprecedented support for companies

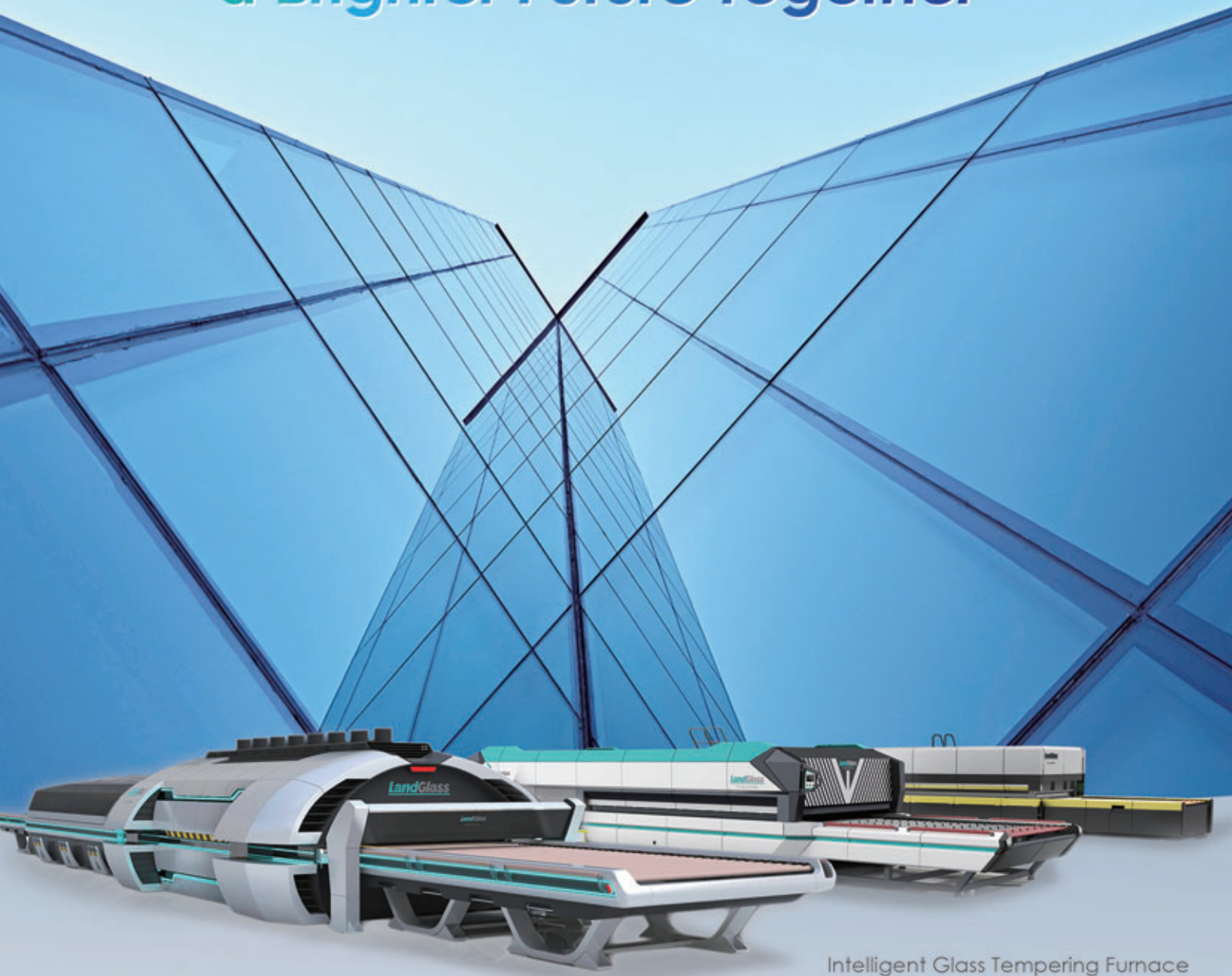
VITRUM25 stood out for its particular attention to the companies participating at the event. Through a series of carefully-designed facilities, businesses were able to maximise and enhance their presence at the fair - all while enjoying a comprehensive, advantageous exhibition experience. This included access to advanced digital platforms that enabled optimal management of client relationships, with dedicated tools and the possibility to connect in real-time with potential partners and clients. It allowed stakeholders to maximise business objectives, presenting their innovations and discussing the most relevant trends in the sector. In sum, VITRUM25 was hardly just a technological showcase. Instead it was a true business hub where each attendee company had the opportunity to expand its network and strengthen its brand identity.

[HTTPS://VITRUMLIFE.IT/](https://vitrumlife.it/)



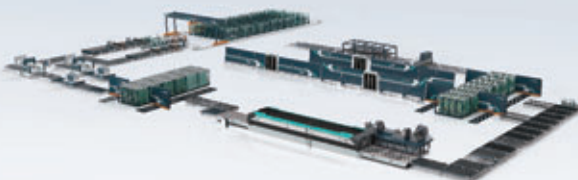
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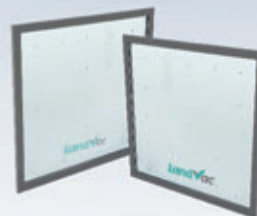


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**glasstec**

Hall 12, D59  
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# Glasstec to see **FOREL's** latest insulating glass triumph





An established global manufacturer of both flat glass machinery and processing technology after almost fifty years in business, FOREL's commitment to the world's most prominent international trade fair for glass grows in lockstep with its passion for automation through innovation as the company remains attentive to the same market requirements and megatrends that are reflected in its innovative products.

## **A MUST-SEE FOR ALL IN THE GLASS INDUSTRY**

With Glasstec scheduled to take place in Dusseldorf over late October with a focus upon such trends as decarbonisation, digitalisation and sustainability, Forel has confirmed its participation as it prepares to exhibit machinery and product solutions associated with today's manufacturing challenges. The company is proud to represent 'Italian Excellence' as its backdrop to automation with an important display of its knowhow, technology and production performance. Showcasing the very latest machine innovations with live demonstrations, Forel will also be introducing enhancements in vertical edge processing, production with Thermoplastic and a fully integrated logistics systems for completed glass units - directly from the end of an IGU line.



## THERMOPLASTICS INNOVATION: A NEW FOREL PATENT

Taking centre stage at the company's stand this year will be an important patent innovation that allows for the accurate placement, dimension control and management of Thermoplastic spacer beyond 20 millimetres - part of an automatic inline solution for double and triple glazed units. The development path that led to the latest enhancement began back in 2020 after the Forel R&D team succeeded in improving critical aspects associated with the process. From their research and analysis, the nuances of the extruded material were better un-

derstood and led to the innovative implementation of the production control buffer, which is positioned between the thermoplastic applicator and the coupling press. The purpose of the buffer is to consolidate the materials characteristics with best coupling performance without impacting the overall efficiency of the production line. This methodology delivers safer and faster pressing, even when the profile is extruded at 5.3 mm height and 20 mm plus spacer widths too. The need to expand the processing range of thermoplastic spacer was entirely client-led, with the new patent allowing for the precise extrusion of 20 mm plus spacer. This ensures that the extruded material is placed

in its optimal geometric position without any deformation. Another aspect that has been improved is the unloading phase of the completed unit. As the output performance of the line has increased so too has the need to handle the high production volume generated by the improved technology. Optimising the use of manpower is always a priority, which is why it was deemed necessary to increase the speed of unloading without using additional personnel or compromising safety.

## HANDLING AND MANAGEMENT OF COMPLETED GLASS UNITS

Automation, speed and safety are three key words in insulating glass produc-

tion and are all particularly important at the end of the line. Addressing this trio of points is the integrated Sorting and Stocking System for completed units - an innovative automatic logistics system which generates many production advantages. Especially useful in the manufacture of Thermoplastic IGUs, this warehouse module revolutionises the post production management of finished panels. Located directly after the sealing process, patented supports are automatically placed underneath the finished panel, thereby removing any misalignment or deformation of the glass panes during the sealant curing process. The completed unit then transitions automatically into the



warehousing system to be sorted and stored prior to their transport to site.

## **VERTICAL EDGE PROCESSING: FURTHER IMPORTANT UPDATES**

In addition to double glazing lines, Forel's entire range for vertical edge processing machines compliments the overall glass factory picture.

As the best selling product in this range, the Art. EM edge grinding machine receives a new feature that guarantees a step change in performance efficiency, namely the automatic tool cone changer - an upgrade which optimises the platform's level of automation. Here, combined with reduced tool handling, an eight-position cone magazine can be added to carry a varying number of tools per cone, thereby increasing both efficiency and productivity while being all delivered in a single option. The need to process different thicknesses of glass is a constant necessity with alternating orders. Now the automatic tool changing option affords processors an unquestionable advantage in the management and effective efficiency of this module. Another requested improvement to the vertical processing range has been the new Art. EG Arrissing Machine, which





will also be demonstrated at this year's Glasstec. It can now manage both ar-rissing and coarse edge grinding to meet the constant and progressive demand from the construction industry to flat edge grind laminated glass. Several features have been added to guarantee correct support, stability and positioning of the glass sheet that now allows for the quality application of this process.

### **PROFILE BENDER: FURTHER IMPORTANT UPDATES**

Further enhancements in the box spacer profile

involve the Art. PB automatic profile bender, which is equipped with the revolutionary Smart Arm - a stability device to support the profile during bending that avoids micro fractures at the corners. This ancillary module will be presented and demonstrated with an interesting software update that simplifies the user interface to facilitate a more intuitive interaction during set-up.

### **IN SUM**

As ever, entering the Forel stand at Glasstec has been conceived to offer an all-round immersive experience, detailing the latest innovations in both thermoplastic

spacer and vertical edge processing automation. The configuration of the Insulated Glass Unit line and all other machine modules will give visitors a first-hand experience of the glass factory of the future. Such Forel expos are the result of months of collaborative planning by the entire Forel team. Indeed, show attendees can expect to attend daily scheduled, live demonstrations - all while taking the occasion to learn more from industry experts and enjoying Forel's legendary hospitality. Visitors will have no shortage of opportunities to visit Forel at stand D13/D17 in

Hall 16 - experiencing the knowledge, advice and professionalism of the entire Forel team. In 2024, Forel aims to show itself as not just one more machinery manufacturer but a working philosophy that's based upon commitment, investment and innovation - all as joint creator, with its customers, of the factories of the future.



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# From family business to global player: HELIOS QUARTZ's evolution

Highlighting HELIOS QUARTZ's strategic expansions, multidisciplinary innovation and tailored solutions, as well as recent milestones that include investments in production marked by a celebratory gala, Helios Quartz CEO Armando Giro speaks here to GTI Senior Editor Nick Fouché about the group's 85-year journey to its current ranking as a global leader in quartz glass and infrared technology.





**GTI:**  
**G** **ARMANDO,**  
**REGARDING**  
**THE BIOGRAPHY**  
**OF HELIOS**  
**QUARTZ, WHAT**  
**CAN YOU TELL**  
**US ABOUT ITS**  
**HISTORY?**

*Armando Giro:* Helios started in 1939, during WWII. My grandfather took it over from a Swiss citizen who wanted to return to Switzerland. Back then, the company specialised in quartz glass. Between 1980 and 2000, we extended our footprint abroad - first to Mexico, then to China. So from what was initially a specifically European context, my father transformed Helios into an international company, such that it started to generate a significant turnover abroad. I've been CEO of the group

since 2015. Production for the Helios Quartz group is both in Switzerland and Italy, which was our strategic decision to meet the requirements of clients who needed their suppliers close by. Now, we also have Helios in mainland China and Turkey. We're also fully integrated: beginning from the raw ma-

terials, we create the filament and then customise. In the 60s we started with manufacturing lamps. Then in the 70s and 80s my father developed appliances. The 2000s saw us specialising much more in the lamp that's used inside the application itself - essentially making the best one for whichever application we were working with.

**GTI:** Moving to what sets Helios Quartz products apart from the competition: what makes the group's solutions so special?

*AG:* That's easy. It's the infrared that's behind our best product. Over the last 20 years, we've offered a premium product, given that we work in a niche market - essentially providing our clients with tailor-made solutions in the infrared module. In a nutshell: whether we're speaking UV or infrared, I give you the lamp that you will use for the system in, say, a steel cabled box within your machine. I then assemble the lamp system for you, whether it be cooled by water or air,

whereupon I also give you the heating system - as well as your control system according to the optimization you need. So it's turnkey in every sense, but it's also the most premium system that's out there today. All this means that we only work according to particular client needs and unique specifications in each case. So it's no wonder we have 80,000 product codes to match variable machine performances. When we examine heating systems, those can be very specific, which is why our specialised know-how lies in being able to meet very particular specifications for very different machines. Here we need to be multidisciplinary. What works in wood can potentially be applied to automotive or plastic. Indeed, it's precisely by that multidisciplinary expertise that we're able to offer the possibility to innovate in very different industries. In this way, we become the pliable instrument in their hands that gives them the practical working tools to develop their goals. In other words, we work across indus-





tries in every market sector - essentially providing solutions in everything from printing to gas to wood. The list is interminable. We also work with OEMs - usually starting from ambitious projects that come from R&D, whereupon we move to mass production once that's become possible for us, having effectively become the drivers of the process.

**GTI:** Could you explain how Helios Quartz has approached its investments in recent years?

**AG:** Well, from the early 2000s we invested a lot in production, which means we revamped all our machines. Thereafter, we established excellent quality control. We're now ISO-certified with complete traceability of our products, with every one seri-

alised. With its number on each lamp we produce, we know exactly which raw materials were used, which operator produced it, and exactly when - all essential for recalls should any problems arise which, to date, has fortunately never happened.

**GTI:** Tell us about the expansion of the Cambiago plant.

**AG:** What we decided to do here at the Cambiago site between 2020 and 2022 was make a big investment for our Italy site. Back in 2005, we moved here from central Milan, which was during my grandfather's time. Logistically, that was an important decision because it immediately made us well-positioned for east-west traffic nationwide but also for transport to the

north - so we could take full advantage of the Lombardy highways. Here, we've built three new warehouses - all to increase lamp production but also to meet the demand for our solutions that come from our clients. Of course, these warehouses have represented a significant investment.

**GTI:** You recently celebrated an important milestone at Helios Quartz. Can you tell us more about it?

**AG:** Sure! Almost certainly you're referring to our 85th anniversary as a company, which we celebrated in grand style here at Cambiago at our gala event on September 12th. That was a great bash, which we mainly dedicated to our amazing employees from all over the world. In that sense, it turned out to be a mega team-building moment

during which we were also honoured to host some of our suppliers and strategic historic partners, as well as various collaborators from the finance community. The gala was our way to jointly celebrate a shared success story - having all manned the tiller so winningly over these past eight-plus decades in business.

**GTI:** What would you say is unique about the Helios Quartz team?

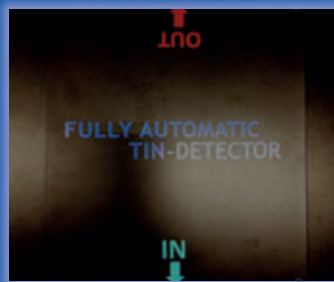
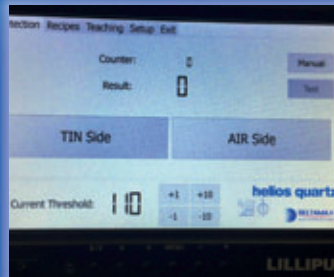
**AG:** To answer that question I'd need to begin by saying that Helio-Quartz self-identifies as a small multinational. That's because we experience many of the difficulties any multinational would typically experience, given that the group now includes various companies. That notwithstanding, we're proud to still have the flexibility of a family business in which any decisions that are taken can be immediate. That peculiar business model facilitates the quality of support we can give to business investors while affording us the kind of robust resources that will meet the opportunities out there that can drive growth.



Via delle Industrie 103/A  
20040 Cambiago MI  
ITALY  
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According to estimates by environmental organisations, well over a billion birds worldwide die every year as a result of collisions with glass, given

With the Laserbird, standard glass can be upgraded to bird protection glass or mobile radio-compatible glass via app controls.



Confronting 'head-on' the critical issue of bird collisions with glass that claims over a billion lives annually, HEGLA BORAIIDENT will be proudly putting its transformative BIRDFriend Mobile on display during Glasstec 2024, which leverages advanced laser technology to retrofit existing surfaces with effective bird protection - all while enhancing safety and preserving aesthetic appeal.

The Laserbird uses laser processing to produce bird protection glass, heatable glass or even mobile radio-permeable panes without any set-up time.



that they are unable to recognise the transparent and reflective panes as obstacles. Using a laser printing process, HEGLA boraident from Halle (Saale), Germany, offers a solution for making windows, panes and facades visible to birds. At Glasstec 2024, the company

will be presenting its BIRDFriend Mobile, which can also retrofit existing surfaces with bird strike protection.

### PROTECTIVE PATTERN ON THE OUTSIDE

HEGLA boraident has specialised in the functionalization of glass for more than

20 years and is one of the pioneers of laser processing. "In our search for a functional and aesthetic solution, we tested many applications until we finally developed an effective process with the UniColor laser printing process," explains Head of Development Thomas Rainer. With this technology, the

pattern is created by a laser that transfers ceramic particles from a transfer strip to the outside of the glass. This creates a uniform geometry of dots at intervals of five to ten centimetres, which is barely visible to the human eye but has the following threefold protective effect for birds:

1. Visual barrier: The dis-



tance between the dots is smaller than the wingspan of birds, making it seem impossible to fly through.

2. Interrupted reflection: The dot pattern interrupts deceptively real reflections of the surroundings, such as trees or bushes, which could attract birds. The coating on position 1 (outside) ensures that the protective dots remain recognisable, regardless of the position of the sun and reflections on the pane.
3. Altered UV reflection: The pattern visibly changes the UV reflection for birds and provides a further warning

signal through additional light dispersal.

The opaque or semi-transparent print is scratch proof, light-resistant and weather-proof, resulting in a promised effectiveness of more than 30 years. Other product features include the fact that processing is always carried out on the outside (position 1), so that the pattern remains recognisable, even in case of strong reflections and poor sunlight.

### SCIENTIFICALLY-CONFIRMED EFFECTIVENESS

The efficacy of the bird-protection glass was certified in

2022 through scientific tests carried out by the American Bird Conservancy (ABC). Various glass structures and coatings were tested. “A special feature of our gentle process is that the glass surface remains completely undamaged and the stress properties remain unaffected,” emphasises the laser specialist with many years of experience. Here the value-added finishing of the glass or the insulating unit is carried out in a stationary position with the Laserbird processing system, which can not only functionalise bird protection but also mobile

radio-permeable or heatable glass, to give another example. The parameters are stored in the app control system and finishing takes place without set-up times.

### BIRD PROTECTION GLASS: MOBILE RETROFITTING SOLUTION

At Glasstec 2024, the company will be presenting its newly-developed BIRD-friendly Mobile for the first time, which can retrofit facades, windows or glazing with bird protection. Both the flexibility of the pro-







**Bird protection pattern in laser print at position 1: threefold protection for birds and pleasing aesthetics for people.**

cess and the system enable the imprint to be applied without having to remove or replace the glass panes. The mobile printing device is attached to the facade so that the pattern can then

be revealed. “Sustainability and bird protection are now more relevant than ever before,” Rainer asserts. “There is great interest in such a solution, especially for public, commercial and prestigious buildings, as

dead birds in front of properties are neither attractive nor appropriate.” The option of retrofitting is also attractive for buildings where the original appearance is to be preserved or where replacing the glazing is not

economically or ecologically justifiable. Demand for bird protection has increased internationally and in some countries, such as Sweden, it is now regulated by law. “With our mobile solution, we support the subsequent functionalization of existing glazing and are pleased to be able to provide an impetus for nature conservation,” Rainer explains. “We are looking forward to Glasstec - exchanging information with the industry and catching up with many customers and interested parties.”



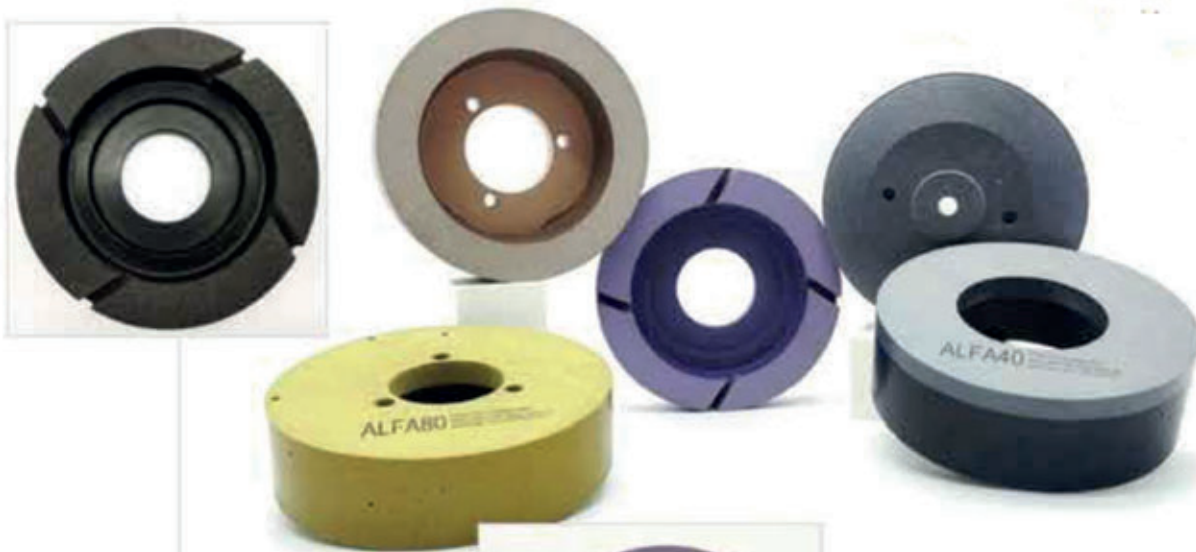
**The opaque or semi-transparent dots are printed at intervals of five to ten centimetres and indicate an obstacle to birds.**

Industriestr. 21  
37688 Beverungen  
Germany  
Tel.: +49-345 4782 35-0  
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# DAILY NEWS

ALFA: the new line of cup wheels manufactured by Italmole

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**A**

AUTOMATION

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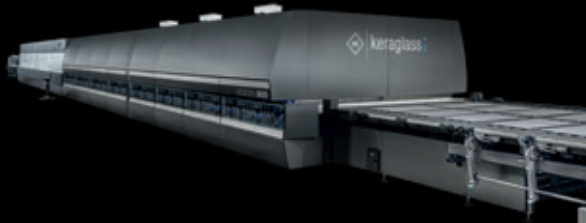
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**keraglass**

# Historical machinery success sees **EMAR** over its three-decade mark



With more than thirty years of leadership in flat glass machinery, EMAR continues to export to more than 50 countries. With a heightened focus upon research, development and innovation, it provides tailored solutions from advanced automatic lines to cost-effective machinery - all proudly Made in Italy. The group's real-time support ensures seamless, sustainable production.

For more than three decades now EMAR Group has stood at the forefront of flat glass machinery design and production, exporting to over 50 countries and generating more than 90 percent of its revenue from global markets. With a state-of-the-art 4,000 m<sup>2</sup> production facility, the company is built upon a strong foundation of research and development - consistently investing in technological advancements and customer service excellence. At the core of EMAR's success is its dedicated research and development arm, E2LAB, which focuses on enhancing the functionality and performance of every machine. EMAR's solutions are tailored to meet the specific needs of each customer, ensuring high efficiency and maximum productivity. Pri-

oritising both design and material quality, EMAR ensures that its machinery not only meets rigorous technical standards but also improves the working environment for operators. To date, the company has manufactured over 5,000 machines, delivering a wide range of solutions for double and triple glazing. Moreover, EMAR specialises



in custom systems for photovoltaic panel production, with machinery designed to meet highly specific client requirements. Every machine in EMAR's portfolio is proudly 100 percent Made in Italy.

### **ALWAYS CONNECTED: REAL-TIME SUPPORT FOR SEAMLESS OPERATIONS**

EMAR Group is committed to providing more than just machinery; it delivers a holistic support experience through remote connectivity and personalised customer

care. All automatic lines are designed to remain constantly connected to EMAR's support team via a simple internet connection. This connectivity enables real-time troubleshooting, reduces downtime, and ensures continuous production, while maintaining operator safety. With this 'always by your side' approach, EMAR provides peace of mind to its clients - ever ready to assist whenever needed, no matter where the machines are located. Indeed, by monitoring machinery in real time





EMAR offers immediate assistance and can even bypass certain sensors to keep production running smoothly when issues arise.

### **TAILORED SOLUTIONS FOR EVERY BUDGET**

EMAR Group provides a comprehensive range of solutions, whether advanced automatic lines, cost-effective semi-automatic machines, or the Eco series for businesses seeking affordable yet high-quality machinery.

The Eco series offers an excellent option for those looking to optimise production processes without compromising on quality or performance.

### **CUTTING-EDGE INNOVATION: ADVANCED AUTOMATIC LINES WITH GAS**

One of EMAR's most recent innovations is its advanced modular automatic lines for double-glazing production, featuring panel presses, gas

loading and remote monitoring which are up to 2500 mm in height.

These lines are customisable, offering a range of configurations to meet the demands of various glass production applications. Comprising 4-metre modules, the lines incorporate anti-cut rollers with friction components to ensure smooth operation and operator safety.

- The washing machine body is made of powder-coated stainless steel and measures 2.9 metres in length.
- All water-contact components are corrosion-resistant, featuring six 160 mm diameter brushes with steel shafts and aluminium supports.
- The water management system consists of three washing zones, each equipped with tanks, pumps, filters, and internal stainless-steel components. The tank design minimises water consumption by reusing wastewater between sections, with a thermostat-controlled heating system standard across the entire range.
- A drying fan is installed in an insulated box to reduce noise and features a damper for airflow management, maximising energy savings during processing stops. The working speed is fully adjustable and controlled by an electronic system that maintains constant torque, regardless of weight variations.
- An inverter-controlled transport system enables higher processing speeds, significantly reducing waiting times during glass movement and improving overall efficiency.
- An integrated LED lighting system ensures precise inspection by highlighting any imperfections on the glass.
- A laser sensor ensures precise positioning of the profile, while pneumatic





pistons, controlled by oil-filled clearance adjusters, are guided by sensors detecting the glass thickness, allowing seamless groove positioning without adjustments for different thicknesses. The measurement

module automatically detects all necessary parameters to calculate the required gas volume.

- The 3.6-metre panel press features anti-cut friction rollers and a work surface that moves on a sliding sys-

tem with recirculating ball bearings. Spiral clamps, connected by a high-precision belt, ensure perfect parallelism for both small and large glass panes.

- An electronic system controls the press-

ing force using micro torque adjustments from a Brushless motor for optimal results, automatically adjusting the force based on sensors reading the glass dimensions, managed



by advanced self-regulating software.

- The EASY TOUCH control panel, featuring a user-friendly touchscreen, allows operators to control the working process, adjust machine parameters, and monitor component performance.
- The fixed exit section consists of a 4-metre module where glass is transported on anti-cut rollers mounted on friction components to enhance operator safety. The machine includes a self-learning system for measuring glass dimensions, enabling automatic gas loading with customizable adjustments via the control panel. Designed for seamless integration, the machine can be connected to other work modules.

## A PARTNER IN INNOVATION AND SUSTAINABILITY

By focusing on innovation, customization and unrivalled customer support, EMAR Group has become the ideal partner for businesses seeking to optimise their glass production processes. From fully-automated lines to cost-effective machinery, EMAR delivers top-tier quality and flexibility in every solution. The company's 'Always Connected' feature ensures continuous monitoring and real-time support, minimising downtime and keeping production on track. EMAR is also committed to sustainability, integrating water recycling systems, thermostat-controlled heating, energy-efficient inverters, and brushless motors into its machinery. These

features not only reduce environmental impact but also enhance operational efficiency, making EMAR a leader in green technology within the flat glass industry. For cutting-edge technology, reliability and a commitment to sustainability, EMAR Group offers optimum solutions for modern glass production.

**EMAR**  
GROUP

Via del Lavoro 2/B  
20060 Pozzo D'Adda MI- ITALY  
Tel. +39-02-90967625  
info@emar.it  
[www.emar.it](http://www.emar.it)



### WATER RECOVERY

Water is a precious resource - The washing system is designed for a double reuse of water, avoiding unnecessary waste while maintaining optimal quality at the end of the process.



### LONG-LASTING

Attention to durability over time is synonymous with quality - All parts of the machine in contact with water are made of powder-coated stainless steel, brush supports and tools in aluminium, stainless steel pipes, and brass foraging nozzles.



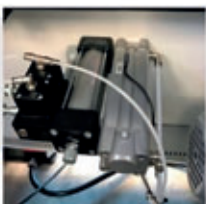
### SAFE TRANSPORT

The safety of the operator is fundamental, but the glass has to be moved for processing. The system adopted allows the glass to be blocked at any time with the rollers moving. All this thanks to an innovative type of transportation.



### LASER PRECISION

The manual component of the line is in the assembly module where the operator places the profile. It is therefore essential to give all the references to the operator quickly and precisely. Thanks to the laser reading system it is possible to have high positioning precision and therefore reduce processing times.



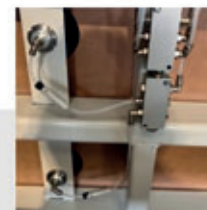
### SIMPLE AND RELIABLE

The assembly guarantees perfect positioning of the profile bar through this new system using a mix of pneumatics and hydraulics.



### ROBUST BUT FAST

The press body is made up of a network of steel tubes designed to avoid any twisting of the machine during the pressing phase. The movement is managed by a zero-backlash toothed belt which distributes the force from a four-point BRUSHLESS motor anchored to the moving table. The result guarantees perfect parallelism in the pressing phase.



### RELIABLE GLASS GRIP

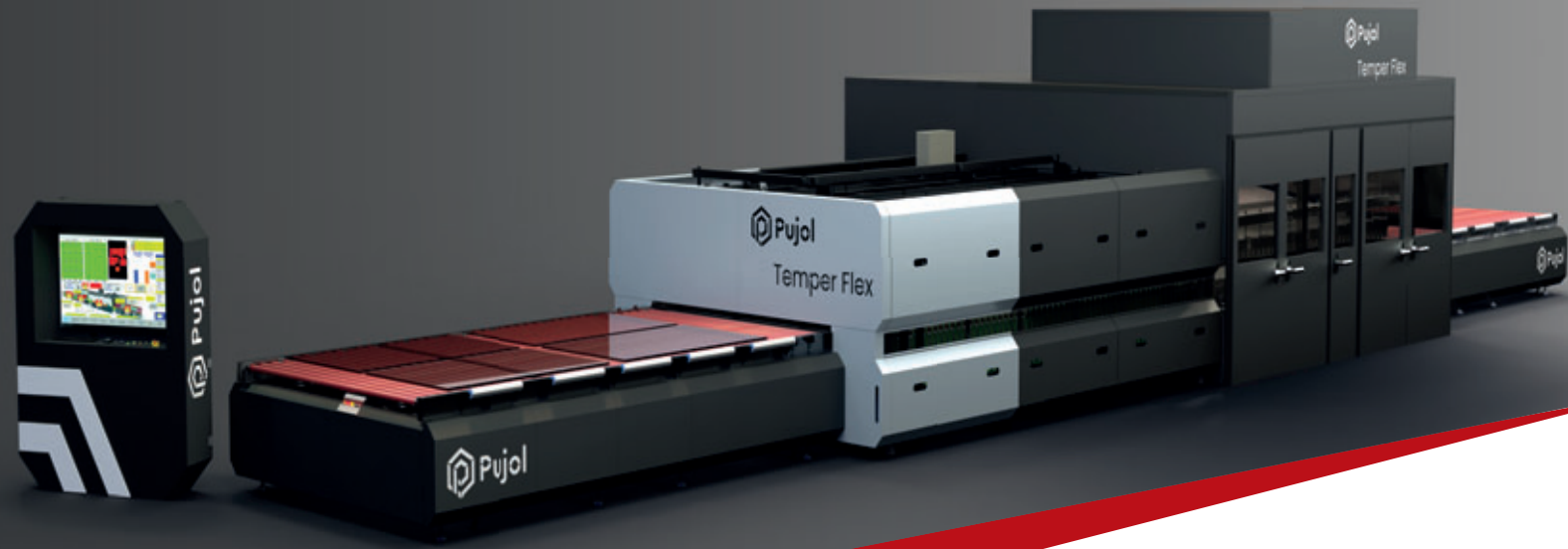
The glass is kept firmly anchored to the moving surface thanks to the vacuum generated by several independent rubber suction cups. Thanks to this decentralised vacuum system, the release of the glass is avoided in the event of a fault.



### TOUCH SCREEN COMMANDS

The EASY TOUCH control panel is simple and intuitive and allows the operator to manage the entire line and control all the parameters of the machine. Thanks to this system the machine can be connected to our headquarters for maintenance and any machine downtime resolutions.





# Pujol Temper Flex engineered by **Teknokilnes**

**TEMPER FLEX. The first glass tempering oven on the market with high productivity and high installed power, able to adapt to produce with low energy consumption and low installed power if the customer requires it.**

- ◆ High flexibility.
- ◆ High quality of the finished product.
- ◆ Higher profits per square meter of glass produced.
- ◆ Low maintenance costs.
- ◆ Better return on investment.

# PUJOL's Temper Flex: a revolutionary glass tempering oven

TEMPER FLEX is the first glass tempering oven on the market with high productivity and high installed power, able to adapt to produce with low energy consumption and low installed power if the customer requires it.

**A** pioneering glass tempering oven on the market that offers both elevated productivity and high installed power, Temper Flex can adapt to produce with low energy

consumption and low installed power if the customer requires it. Indeed, at the energy level there are currently two completely different types of ovens on the market depending upon consumption range or installed power, namely:

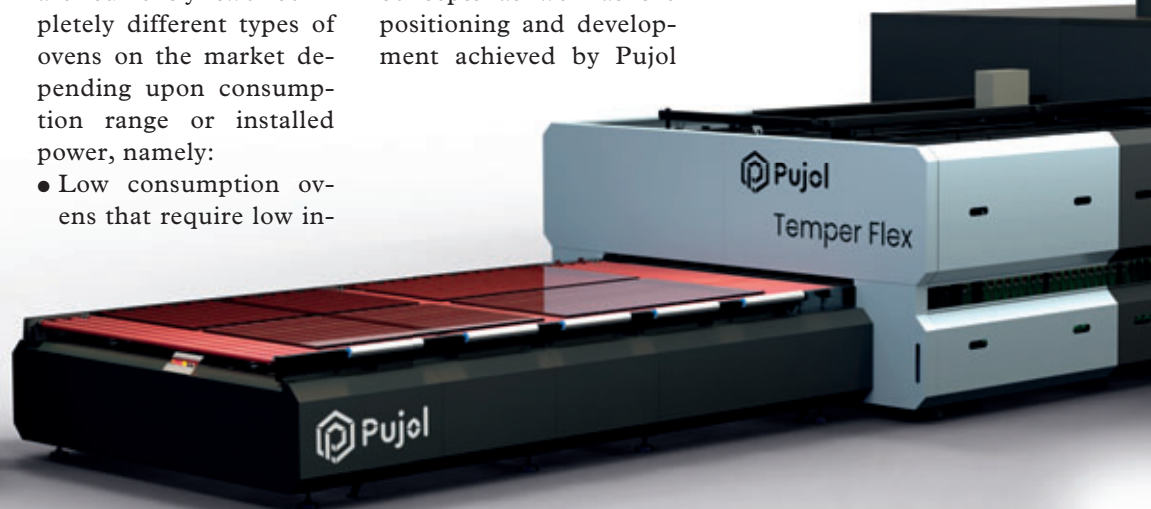
- Low consumption ovens that require low in-

stalled power.

- High productivity ovens that require high installed power.

To understand both oven concepts as well as the positioning and development achieved by Pujol

Group after the acquisition of the glass division of the Italian company Tekno Kilns, it is necessary to clarify some con-



cepts that will facilitate understanding of the advantages and disadvantages of working in each of the ranges of work described above.

### **REQUIRED ELECTRICAL OR TRANSFORMER POWER**

This is the maximum kW required for the kiln to temper according to the detailed production specifications. Low consumption ovens always refer to the machine consumption not to the sqm consumption.

### **INSTALLED POWER (KW)**

This is the amount of all the components that make up the machine. Such information is very important, since it will determine the capacity to increase production in

the future should the required maximum transformer power be lacking.

### **ENERGY CONSUMPTION SQ M (KWH)**

Efficient energy consumption, regardless of the installed power, depends upon the following two factors:

- The design of the oven and the Quenching (air blowing). That is, the machine is designed to maximize energy transfer (more on this later).
- Optimization of the load. The higher the load, the lower the sqm energy consumption. Therefore, it is recommended to compare actual load percentages to compare the consumption of different ovens or systems.

Reviewing these concepts and clearly understand-

ing that a mass of glass (regardless of its power) will always need the same calories to be heated and the same air pressure to be tempered, it can be concluded that the required electrical power or consumption ratio is proportional to the production and independent of the consumption per sqm; therefore, the higher the installed power, the higher the production and the better the return on investment, regardless of the sqm consumption.

### **ADVANTAGES OF A FLEXIBLE OVEN WORKING AT DOUBLE INSTALLED-POWER RANGE**

Based on the premise that a high production oven, although it has a higher manufacturing cost, provides a higher return on investment, Pujol has developed Temper Flex. This is a high production oven that can work at two speeds (Eco speed and Sport speed) - each related to the installed power required.

### **ECO SPEED (LOW CONSUMPTION)**

- Used when the customer's required power is limited and cannot grow and/or when the full power of the contracted transformer is not initially available.
- It helps to grow with the demand. For exam-

ple, when an oven is initially purchased, the actual sales are unknown, so it is not necessary to invest in the high production transformer until the necessary sales are available to amortize the investment in a larger transformer.

- The oven has the capacity to grow without having to change it. For example, should limited installed plant capacity result in moving to another plant, the oven will be fully equipped to adapt without any cost to higher production as necessary.
- Greater revaluation of sale, when acquiring an oven, it is not known if the company to which a second-hand oven is sold has high or low installed power. The higher the range, the greater the possibility of sale and the greater the profit or return.

### **SPORT SPEED (HIGH INSTALLED POWER)**

- The higher the production, the higher the return on investment. Logically and independently of the design of the machine, the higher the production and the same sqm consumption (the design of the machine energy efficiency is not taken into account), the better the return will be.
- Increased production





capacity, providing a greater business opportunity in terms of service in terms of delivery times and increased customer base.

- Logically, when designed for a higher production speed, materials and components must be of high quality, which means improvements in tempered glass production.

In conclusion, having

two working speeds allows for adaptation of the energy to the production of the moment, thereby reducing consumption. It is not always convenient to run the machine at 100 percent of its capacity, as there are jobs that require downtime that makes it better to slow down production and use less energy to avoid bottlenecks. The greater the flexibility, the greater the

opportunity to maximize profits. A well-designed energy efficient oven results in lower energy costs and an accelerated return on investment.

### WHAT IS ENERGY EFFICIENCY IN AN OVEN AND WHAT DOES IT DEPEND ON?

Energy efficiency refers to the amount of energy an oven is able to convert into useful heat and is related to sq m consumption. Energy efficiency will depend mainly on the design of the machine for heat utilization, as well as the load on the kiln or the flexibility of the kiln to adapt to the rate required at any given time and according to demand. Good thermal efficiency optimally combines heat transfer by conduction, radiation and convection. Here's why Temper Flex has been designed to increase the profit per unit produced, mainly thanks to:

- Removal of the protective iron plate of the resistors. Many furnaces, in order to avoid the deterioration of the resistors after the breakage of a glass in the furnace, place an iron plate to preserve the life of the resistors. Thanks to the design of lower resistors using a system of ceramic modules with embedded high density and high thermal transfer resistors, the metal

plate is eliminated and the heat transfer to the rollers is direct, thus increasing the thermal transmission by conduction while reducing consumption and providing speed to the process by switching on and off the machine, temperature change, etc.

- Design of the upper heaters by high-performance matrix panels and the integration of a series of Kanthal rod heaters of large diameter and high power W/sqm. This design avoids the mechanical deformation of the resistors, reduces the maintenance cost and at the same time increases the useful life of the heating equipment to a period of more than 12 years. In addition, Pujol offers an extended warranty of five years of useful life of the resistors for customer peace of mind.
- Use of the latest generation of high-quality insulating materials reduces energy consumption by helping to maintain thermal stability, reduces costs by avoiding energy losses and minimizes wear of internal components, thus extending the equipment's useful life.
- The continuous convection system distributes heat evenly and

avoids hot and cold spots. Its control is very precise as it allows controlling the temperature and flow rate.

- The transformer power requirement control software allows flexible adjustment of the oven according to the desired production or consumption or the customer's installed power. Working at two speeds allows to adapt the installed power and to optimize the cadence to the times of the auxiliary machines in order to reduce the sqm consumption while avoiding production bottlenecks.

## HOW TEMPER FLEX ACHIEVES BETTER PLANIMETRY AND ANISOTROPY IN GLASS

Temper Flex is an oven designed to obtain glass quality based on planimetry and anisotropy. The quality of tempered glass is determined by the best planimetry and the lowest anisotropy at the lowest possible cost. Planimetry requires precise temperature and cooling control, homogeneous heat distribution and a high-performance automated system, while better glass anisotropy is achieved by reducing internal stresses and visual distortions caused mainly by unequal cooling. To achieve this, Temper Flex has been precisely de-

signed, obtaining a quality standard that differentiates it from other machines on the market

for the following reasons:

- The reduction of the roller diameter. Thanks to the high thermal insulation system used, it allows to reduce the distance between oven walls avoiding the buckling of rolls and favoring the distance between rollers axes. The smaller the diameter of the rollers, the smaller the distance between centres - with more to be gained by favouring the heat transmission and avoiding undulations on the glass.
- Through a better heat uniformity obtained by the innovative system of embedded and matrix

heating elements that make the oven surface radiate homogeneously and independently according to the load requirements.

- Due to an exhaustive adjustment of the fan motor speed in cooling according to the thickness of the glass to be tempered and the required production speed, avoiding uneven stresses and consequently improving the surface quality of the tempered glass.
- By means of a production optimization software that monitors and controls the energy consumption for further optimization and cost analysis.
- Advanced cooling control by independently adjustable air nozzles

on the entire surface of the glass.

- It can be concluded that Temper Flex is a high added-value product designed to provide real answers to the needs of professionals based on 5 main axes, namely:
  1. Return on investment
  2. Savings and profitability per square metre of glass produced
  3. Quality of the finished product
  4. Production flexibility
  5. Maintenance costs.



C/ del Pla  
108-110 Sant Feliu del Llobregat  
08980 Barcelona - SPAIN  
Tel.: +34-936 855-672  
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## Pujol 100 PVB+ & full automatic lines

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- Fixed energy costs independent of production volume.
- Cost reduction owing to greater energy efficiency, when compared to traditional autoclave systems.
- Maximum precision and reliability.
- Reduction of raw material costs, requires fewer layers of film than PVB tempered glasses.
- It does not require a pre-laminate line.
- Requires less plant space.
- Minimal operator effort.
- High production rates.
- Ready for Industry 4.0.

# E-D 101

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- ✓ Faster grinding and polishing with 2 simultaneous heads
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## BEST IN VERTICAL GLASS MACHINERY

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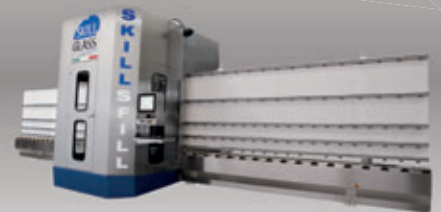
**DRILL 101**

### CNC Drilling



**DRILL 1600**

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**SKILL SFILL**

# Remote sandblasting control: FRATELLI PEZZA's MistralApp drives automation

## **M**ISTRALAPP: THE DIGITAL REVOLUTION FOR AUTOMATIC SANDBLASTING MACHINES

In fully-automatic sandblasting cabins, the MISTRAL EV+ is the latest version of the Mistral series. Compatible with Industry 4.0, it allows for all the benefits of the MistralApp - an innovative web application for remote programming via PC or tablet. This service represents an important support for glass

factories seeking to optimize planning and processing times - thereby significantly reducing both production costs and consumption. Its main advantages include the ability to:

- create programmes remotely without interrupting the process;
- provide a preview of glass to be processed and programmed areas;
- name and copy programmes without having to rewrite them each time - all while using them with glass of different sizes;

- save an unlimited number of programmes - all of which retrievable;
- share programmes to identify the best configuration for each process.

### **GLASSTEC 2024**

At Glasstec 2024, the MISTRAL EV+ series will be presenting a software update that brings operational advantages for the user. In particular, these include:

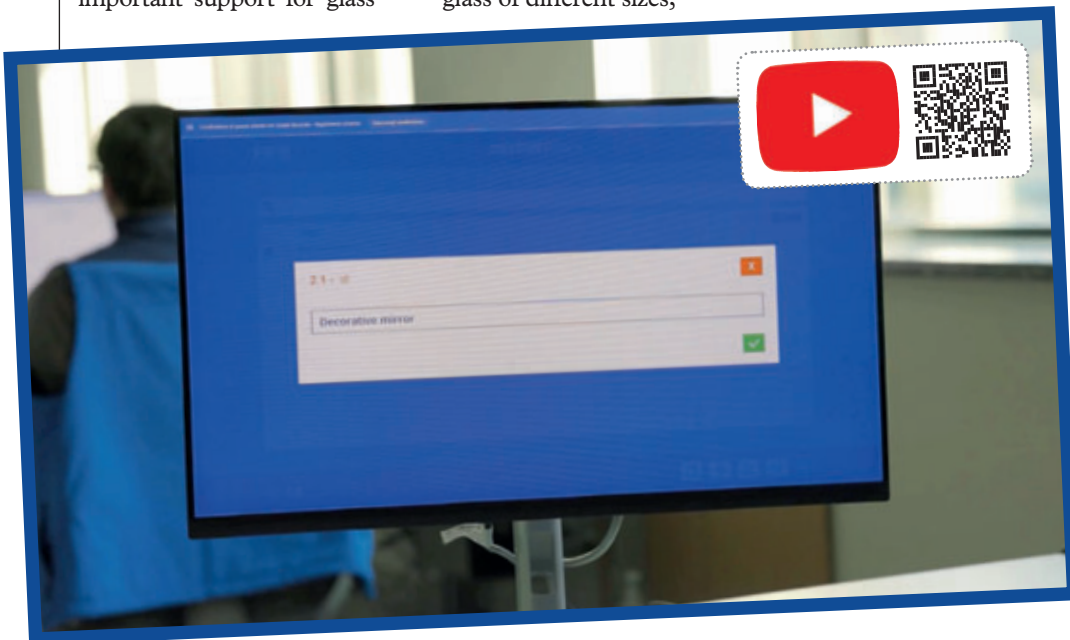
- the consumption of secondary compressed air that's been optimized by

reducing it by up to 75 percent with clear economic and ecological advantages - all while also allowing the cabin to be managed with less powerful compressors;

- a created configuration that's dedicated to LED mirror processing which ensures safe and defect-free processing;
- a drawing that's uploadable to the MistralApp web application - thus making programming of the sandblasting areas both easier and faster.

### **OPTIMIZATION OF THE LED MIRROR MANUFACTURING PROCESS**

The possibility to programme up to 50 sandblasting areas, even of different types (thick, shading, deep engraved), offers various decoration options while allowing for reduced LED mirror production process





Among FRATELLI PEZZA's solutions emphasizing sustainability and energy efficiency for multiple materials that include glass, marble and solar panels, the company's innovative Mistral EV+ sandblasting range offers Industry 4.0 compatibility, reduced energy consumption and enhanced LED mirror processing. Key features here include remote programming, MirrorProtection for spark prevention and bird-safe glass patterns - all of which will be on display at this year's Glasstec.

times. For example, four sandblasting areas can be programmed to correspond with the classic 'perimeter frame' which is then backlit - allowing for a drastic reduction in processing times coupled with significant savings in abrasive material, compressed air and all wear elements.

### GOODBYE TO SPARKS, WITH MIRRORPROTECTION

As a system that's integrated into the MISTRAL EV+ and ZEPHIR+ sandblasters, MirrorProtection limits the build-up of static electricity within the cabin - preventing the formation of sparks during mirror sandblasting which, when hitting the surface of the item, would otherwise damage it irreparably. This means a significant reduction of scrap, thus reaping great economic benefits while also promoting sustainability.

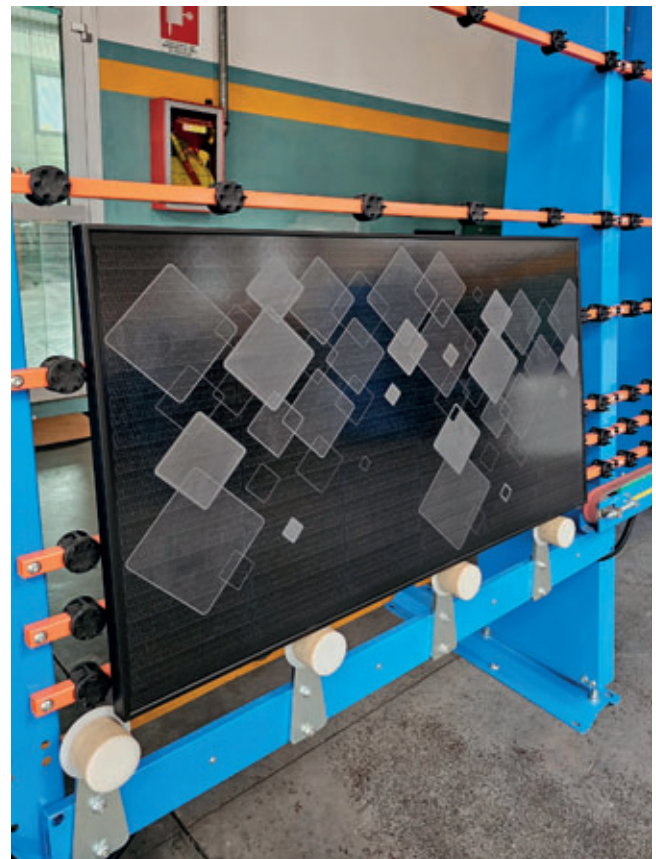
### SHADING SANDBLASTING FOR SHOWER BOXES, BALUSTRADES AND INTERIOR DESIGN

The cabins of the MISTRAL EV+ series are

equipped with the shading sandblasting feature - which is widely-used in bathroom furniture in the production of shower enclosures, balustrade and design solutions, as well as the fittings sector. The machine automatically varies the working pressure according to set parameters, resulting in a shaded effect of superb aesthetic quality.

### REDUCING CONSUMPTION AND RECYCLING

Fratelli Pezza sandblasting machines have always stood out on the market in terms of energy savings too. With an eye towards Industry 5.0, the latest version of the MISTRAL EV+ and ZEPHIR+ automatic sandblasting machines will reduce the consumption of service compressed air ensuring stability and improve sandblasting accuracy - even with less efficient compressors. Here the aim is not only cost saving but also consumption reduction, which further avoids waste while protecting the environment. Fratelli Pezza sandblasting cabinets maximize the efficiency of abrasive material - all



thanks to a system that recovers and recycles it to the point that it is reduced to powder that's then captured by filters. Fratelli Pezza sandblasters offer an effective solution for recycling damaged glass. Indeed glass with surface defects can be sandblasted and returned to the market with a new look - adding value for glassworks. This process not only reduces

waste. It also contributes to greater environmental sustainability.

### SANDBLASTING OF PHOTOVOLTAIC SOLAR PANELS

A new industry trend is that of solar panel sandblasting, a technique that allows for the opacification of the surface without jeopardizing its effectiveness in attracting the solar rays.



## PROTECTIVE COATINGS FOR SANDBLASTED, NON-SANDBLASTED GLASS AND SOLAR PANELS

Fratelli Pezza nanotechnological water-repellent and anti-fingerprint treatments are designed to offer maximum long-term value. Here there is a specific trio of products for sandblasted glass as well as for float, clear and extra-clear glass, namely:

- **MIX30 PRO:** designed for sandblasted glass. This is a Mix30pro anti-fingerprint treatment that lasts for over 6500 washes - equivalent to 18 years of daily cleaning;
- **Ghostglaze:** for clear, extra-clear and acid-etched glass, Ghostglaze offers the same impressive durability of 6500 washes or 18 years of uncompromising reliability;
- **Sprayglaze:** for clear glass with automated application, Sprayglaze stands out

Here it's also possible to carry out decorations that embellish and personalize the solar panel itself.

### BIRD-SAFE SANDBLASTED PATTERNS

An increased use of glass within the building sector now poses a serious threat to birds owing to its transparency and reflectivity. To reduce bird collisions against glass facades, Fratelli Pezza provides a solution that's widely used in the sector - making the glass surface more visible from all angles and in all weather conditions. Thanks to special Amacor moulds it is possible to sandblast strips or other surface patterns - rendering the glass facade sufficiently visible to birds to significantly reduce collisions. Light sandblasting, too, will greatly reduce reflectivity of the glass while yielding a pleasant aes-

thetic effect to the facade. Used on the automatic sandblasters of the MIS-TRAL EV+ and ZEPH-IR+ lines, Amacor moulds will allow the glass surface to be decorated without any need to stick a mask to each glass - all with much-reduced production times and process costs. Sandblasted glass is the most reliable, time-tested method for making glass facades bird-friendly and at the same time aesthetically pleasing. Whereas the greater roughness and porosity of any sandblasted surface would typically attract dirt, application of the protective coating Mix30Pro will avoid this problem - making it water-repellent and resistant to both dirt and limescale.

### NOT ONLY GLASS

With FP sandblasters it's possible to process a lot of materials other than glass. Depending upon material

type, hardness and surface finish (smooth, rough, white, coloured) the customer can obtain different effects and results. Check-out some of the materials that can be treated:

- Mirrors
- Marble
- Ceramic
- Wood
- Metal
- Leather
- Fabric
- Plastic
- Plexiglass



with over 14,000 washes, which means more than 35 years of protection and brightness. Applied to glass intended

## MARKING DEVICES FOR GLASS AND MIRRORS

The need to identify glass with special features has

ing line for flat glass since the 1990s, which affords it extensive experience with this application type. The production range has im-

## THE MANUAL/PORTABLE SERIES

This series is made up of two models: the Marker 101T can make marks up to 25 mm in diameter, the Marker 301T up to 30 mm. Both are equipped with a timer by which the desired sand-jet duration can be set. Once the set timer period elapses, the flow will stop even if the operator continues to press the control lever. Portable marking machines allow for marking even on already installed glass - all while offering maximum flexibility during factory use.

## THE EASYMARKER+ SERIES

Companies that deal with mass production and must automate the process and/or interconnect the machinery to the company's production network will find an

for photovoltaics, these coatings prevent dirt, lime and impurities from adhering to the surface, thereby maintaining panel efficiency and making the item easier to clean. In addition, sandblasting solar panels not only reduces glare but also give buildings a sleek, modern look - making them compatible with landscape protection. For the regular maintenance of sandblasted glass treated with MIX30PRO, the Fratelli Pezza team developed LongCare30. This nanotechnological product not only effectively cleans sandblasted glass. It also revives and extends the protective effect of MIX30PRO.

made glass marking an essential element in the sector. Indeed recent years have seen national and international regulations regarding the different types of glass become increasingly stricter. Fratelli Pezza has had a sandblasting mark-

proved and expanded over time, with automatic marking units being added to the catalogue. Such equipment is suitable for coupling to any glass processing machinery, whether vertical or horizontal.





optimum solution in one of the automatic models of the EASYMARKER+ series. These marking devices are equipped with 4.0 software, which allows production data to be downloaded for statistical and control purposes and interconnection of the device to the company's network. Thanks to that

interconnection, it is also possible to send a pulse to the marking machine - prompting it to start, fully automatic, without the presence of an operator. The automatic line consists of two models, namely EASYMARKER EV+ that can be combined with vertical machinery (washing machines, drilling ma-

chines, etc.) and EASYMARKER UP+ which has horizontal machinery (tempering furnaces, cutting tables, etc.). Each model is available in a version that allows for logo imprinting of up to 25 mm in diameter.

### AUTOMATIC MARKING

Easymarkers EV+25 and UP+25, together with EV+30 and UP+30 in their 30 mm versions all constitute automatic marking equipment that's used increasingly in the LED mirror industry. Setting the sandblast duration proportionate to the paint type that covers the back of the mirror makes it possible to have the shape of

the power button or any other symbol appear on the front of the mirror. Finally, the great advantage of a sandblasting marking system is that it can provide a very high quality, clean and indelible mark. It is also possible to mark the edge of the glass if the thickness allows it.



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Via Ing. V. Balduzzi, 29  
24023 Clusone Bergamo  
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**HALL 15  
STAND 15E12**

# Installation of **FILTRAGLASS** water filtration system in Denver

Since its founding, Filtraglass has sought to offer excellent water filtration systems that enhance the glass industry's operations, always with a dual objective, namely that of reducing environmental

impact by reusing water and converting glass dust into recyclable waste - all without needing to stop the machines. This last feature is particularly appealing to glass manufacturers given that the ability to clean the



With the deployment of its DG.365 model at Elevation Glass in Denver, Colorado, FILTRAGLASS marks a significant success story for a system that allows for continuous operation without halting production, boosting productivity while recycling water and converting glass dust into recyclable waste - all in alignment with current environmental sustainability goals.

water used during glass processing without halting production saves on maintenance costs and prevents downtime, thereby boosting productivity - a primary goal for any large company.

### **A VICTORY FOR AUTOMATION**

This describes the case with Elevation Glass, a US company located in Thornton (Denver, Colorado) that specializes in such architectural glass applications



tion system collects the water used by the machines in a tank. From there, it moves to the pressure cylinder, which houses the filtration column that separates water from glass dust. Clean water, ready for reuse, is transferred to a new section of the tank, while the dust is trapped in the filter mesh. This entire water recycling process is cyclic and automatic, meaning it requires no personnel and does not need production to stop. Filtraglass's water treatment systems are designed with the glass industry's needs and the environmental challenges facing our planet in mind. Consequently, more and more glass manufacturers are becoming interested in the Vilamalla-based company's systems and decide to install them in their machinery to benefit from water savings and increased productivity, among other advantages. Furthermore, Filtraglass understands that the glass industry consists of companies with diverse requirements. Therefore, it customizes its water filtration systems, given that personalization represents a value that is highly sought after by clients.



as custom shower enclosures, stair railings, screens and mirrors, among others - customizing them to meet client needs. The company has opened a new, fully-automated glass manufacturing plant to better meet market demands, with productivity numbered among its main objectives. Therefore, one of the aspects that has most satisfied Elevation Glass about Filtraglass's water treatment systems for the glass industry is that it recycles water without needing to pause machine activity. Thus, the companies from Thornton (Denver) and Vilamalla (Girona) have started working together with the installation of the DG.365 model and a tank with a capacity of approximately 12,000 litres of water that are capable of supplying up to four edgers and one beveler.

### SYSTEM SPECS

This industrial water filtra-



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# Countdown to Glasstec has **KERAGLASS** team already fired up



**K**eraglass has officially announced its participation at Glasstec 2024, which is scheduled to take place in Düsseldorf from October 22 to 25. The company will be prominently positioned in Hall 16, Stand 16 B42, where its organisers plan to showcase an extensive

range of cutting-edge glass processing products and solutions within a 700 square metre exhibit space. Indeed visitors to the stand will have the chance to explore a variety of advanced

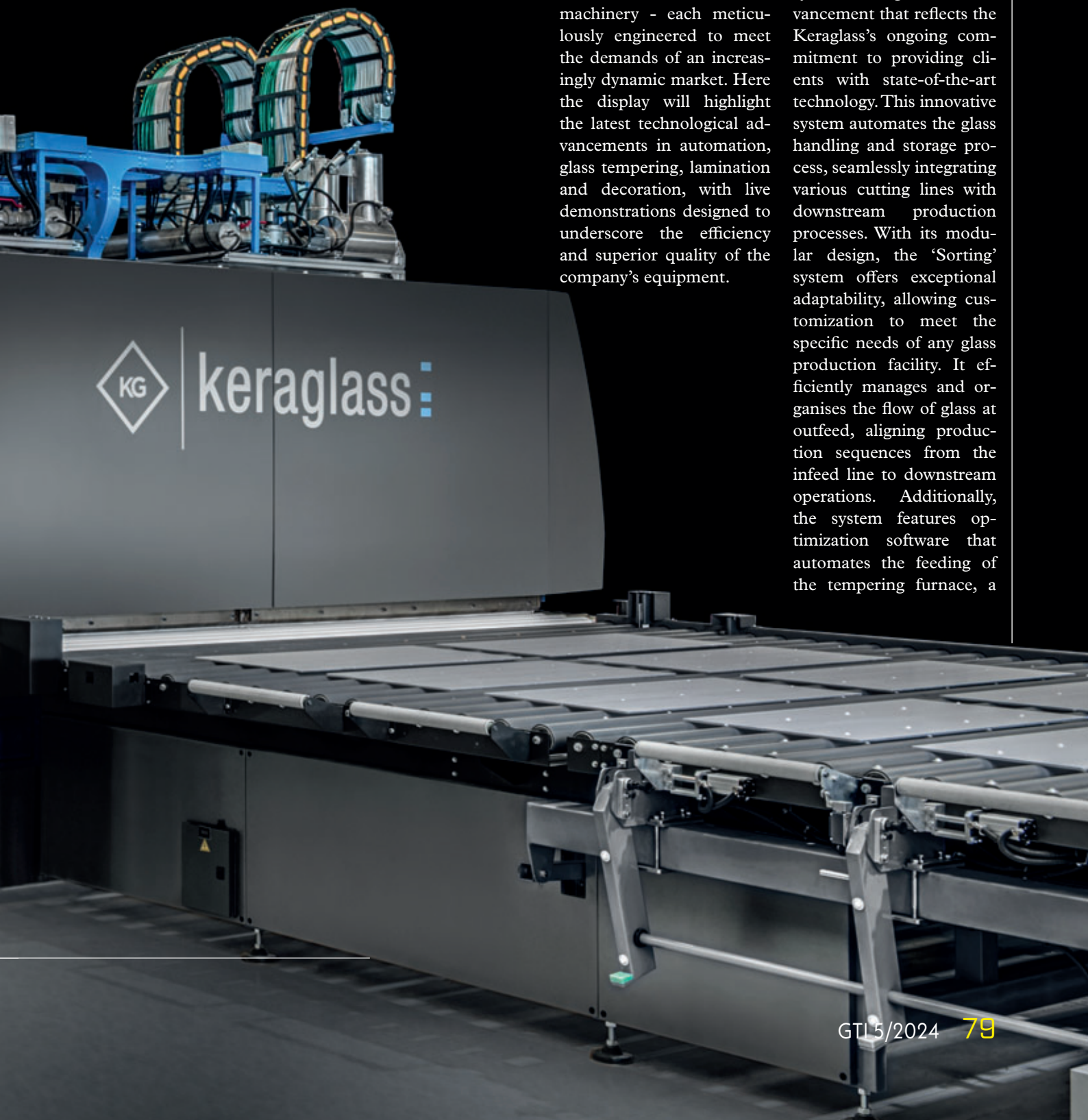


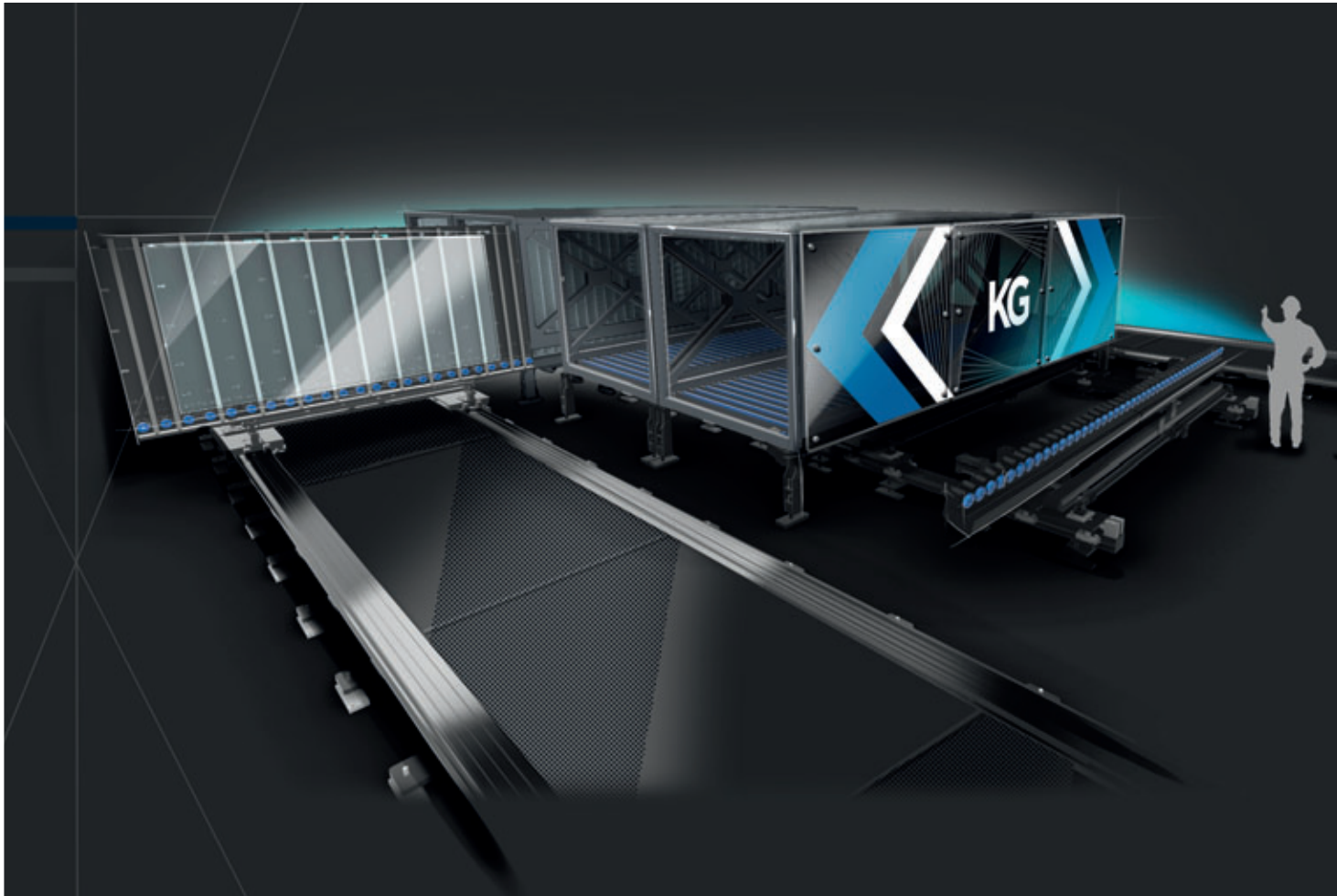
Showcasing its cutting-edge glass processing technology in Düsseldorf this year, KERAGLASS is set to have both its innovative 'Sorting' system and its advanced 'Vision 900' furnace on display. Visitors to the trade fair can explore live demonstrations while engaging with experts - all highlighting the company's commitment to efficiency, innovation and quality.

## **SORTING SYSTEM**

machinery - each meticulously engineered to meet the demands of an increasingly dynamic market. Here the display will highlight the latest technological advancements in automation, glass tempering, lamination and decoration, with live demonstrations designed to underscore the efficiency and superior quality of the company's equipment.

A key highlight of Keraglass's presentation will be the introduction of the groundbreaking 'Sorting' system, a significant advancement that reflects the Keraglass's ongoing commitment to providing clients with state-of-the-art technology. This innovative system automates the glass handling and storage process, seamlessly integrating various cutting lines with downstream production processes. With its modular design, the 'Sorting' system offers exceptional adaptability, allowing customization to meet the specific needs of any glass production facility. It efficiently manages and organises the flow of glass at outfeed, aligning production sequences from the infeed line to downstream operations. Additionally, the system features optimization software that automates the feeding of the tempering furnace, a





feature that stems from Keraglass's relentless investment in research and development. The 'Sorting' system promises to significantly enhance operational efficiency, optimise space utilisation, accelerate production, and ensure even higher quality in the final products.

### **VISION 900 FURNACE**

In addition to the 'Sorting' system, Keraglass will also be showcasing its flagship systems

at the exhibition. These include the 'Vision 900' furnace, known for its excellence in tempering. The 'Vision 900' furnace has set a new standard in the tempering furnace industry, delivering unmatched quality and efficiency. It boasts an emissivity of 0.01 for large-scale Low-E glass, combining high performance with aesthetic elegance and offering unrestricted operator visibility. The furnace is equipped with a 500°C

preheating convection chamber system, which ensures flawless heating of the latest generation Low-E glass. This enhancement boosts plant productivity by 30 percent while further reducing energy consumption. At the heart of this machine lies the 'Supervision Intelligent' system, which provides live-sight control, enabling operators to monitor each stage of the process in real time. This capability ensures defect-free

finished glass that meets the highest standards, making it ideal for creating glazed coverings for modern buildings that prioritise energy efficiency and environmental sustainability.

### **DECORATION**

Trade show attendees will also have the opportunity to see the 'Vivida' digital inkjet plotter in action. This state-of-the-art machine is designed for high-definition glass printing and is tailored



to exceed the demanding standards of high-end architecture, design, furniture, automotive, and home appliance sectors. 'Vivida' stands out as the ideal digital printer for reproducing any image on glass with exceptional precision and clarity. Complementing its digital innovation, Keraglass will present its traditional models for screen printing and coating. The stand will feature the 'Decoglass' automatic screen printing machine, which is specialised in handling large-sized glass up to 3210x6200 mm, and the

'Rainbow' roller coating machine, known for its ability to precisely control coating thicknesses to achieve the desired effects.

## STAND TEAM

Keraglass has extended a warm invitation to industry professionals to visit their stand at Glasstec 2024 to discover firsthand how the company's innovative, reliable solutions can empower their businesses. To that end, a team of expert technicians and sales professionals will be on hand to answer questions and discuss

how the company's offerings can be seamlessly integrated into existing production processes. As such, the event presents a prime opportunity to explore the latest trends and innovations in the glass industry - all with a spotlight on Keraglass's leadership within its sector.



**keraglass**

Via Sassogattone, 13/A  
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Booth C42/Hall 16

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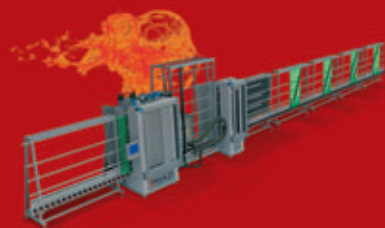
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# TRISTAR GLASS opts for TUROMAS to expand its production capacity at its plant in Dallas, Texas

Tristar Glass, a leading architectural glass manufacturer in the U.S., has strengthened its production capacity at its Dallas plant by acquiring smart machinery from Spanish manufacturer, Turomas. This strategic partnership, driven by high demand and the need to improve operational efficiency, includes the installation of two RUBI 517C cutting tables and an SR-07 storage system.



Founded in 2005, Tristar Glass, Inc. is an architectural glass manufacturing company located in the south-central United States. With three plants spanning two states, Tristar Glass has more than 390,000 square feet of manufacturing space and employs over

250 people.

Tristar Glass began operations in Tulsa, Oklahoma, and quickly expanded its presence to Dallas and Houston, becoming a benchmark in the manufacture of insulating and high performance glass, with certifications from Vitro and Guardian. Its success is based on the excep-

tional quality of its products and the satisfaction of its customers, constantly adapting to their needs and paying special attention to the final results of each project. Its products are integrated into some of the most important infrastructure in the United States, from schools and hospitals to government facilities and commercial buildings across the country.

To maintain its standard of excellence, the company continuously invests in state-of-the-art automated equipment, ensuring that its customers receive glass of the highest quality in the shortest possible time. It is in this context of commitment that the partnership with Turomas arises.

**TRISTAR'S PARTNERSHIP WITH TUROMAS: INTERVIEW WITH ROB CARLSON, HEAD OF ENGINEERING AT TRISTAR GLASS**

In a high-demand environment, the company identi-

fied the need to improve its production capacity and operational efficiency. Therefore, during its expansion phase at the Dallas facility, Tristar Glass decided to invest in smart machinery for the storage, loading and cutting of glass from the Spanish manufacturer Turomas.

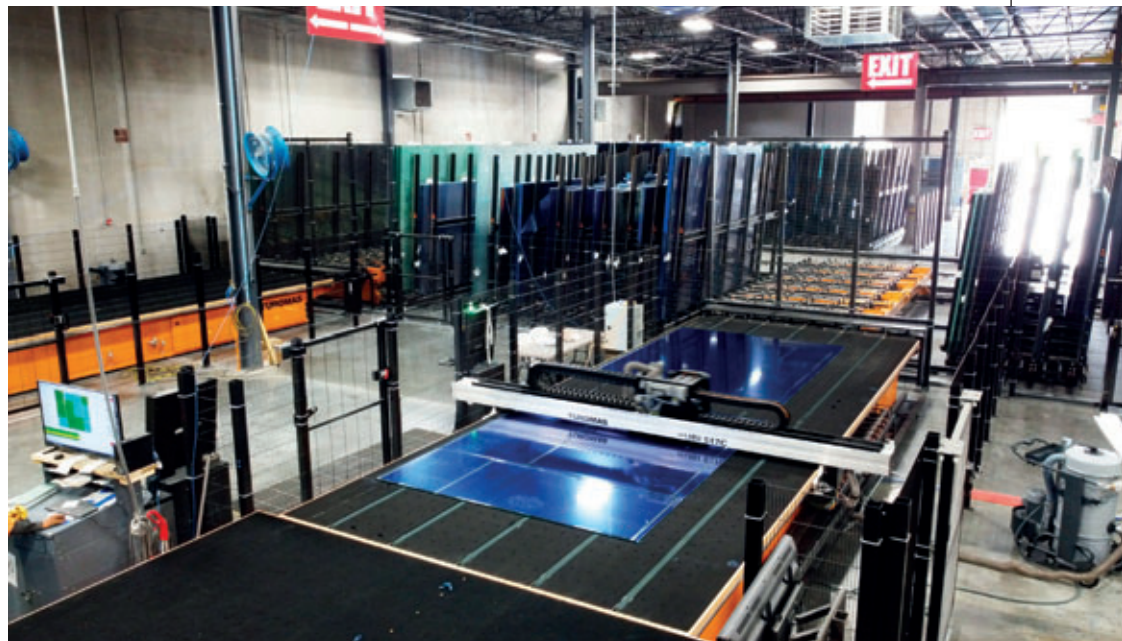
In collaboration with IGE, TUROMAS' U.S. distribu-

tor, a detailed study of the customer's specific needs was conducted and a customized project was developed to meet all of Tristar Glass' requirements.

"Whenever we have seen TUROMAS machinery at the Glasstec and GlassBuild shows, it has always caught our eye because of its design and speed, as well as having a very good reputation," said

Robert Carlson, head of engineering at Tristar Glass.

Tristar Glass has acquired two RUBI 517C cutting tables equipped with linear motors and ACR low-coating removal system, specially designed to work with Easypro and TPF protective coatings. To feed these tables, an SR-07 rack shuttle storage system with 55 positions has been installed,



capable of storing up to 880 tonnes of glass. In addition, it has an external reloading position that makes it possible to reload the warehouse without stopping the loading cycle.

Both the cutting lines and the smart storage system can work with two standard glass sheets or with one jumbo glass sheet, which increases the versatility of the system and improves daily operability.



“The SR-07 can store jumbo packs or two standard glass packs, which gives us great storage capacity and flexibility. We can have two different packs and load either position within the same rack. Also, by moving the entire rack in front of the cutting table, it is very fast to cut large quantities of glass at a time.”

The TUROMAS software has also been implemented with the StockGlass tools, which allows access to real-time stock information in the Tuomas warehouses. And LinkGlass, which automates the production

sequence, eliminating the intervention of operators in the selection of work orders and load scheduling.

### THE INSTALLATION OF THE TUROMAS MACHINERY AT TRISTAR GLASS: A PROCESS THAT SURPASSED EXPECTATIONS

Robert Carlson highlighted the skill and speed of the Tuomas technical team, who completed the installation in record time. “One of the most remarkable things about TUROMAS was the speed

of the installation and the experience and technical ability of the people who came to work with us. We have worked with many different brands and peo-



ple, and these guys worked tirelessly during the installation, managing to complete it in a time frame I thought was impossible.” “TUROMAS technical support has become invaluable to us and will be a key part of our partnership.”

### LOOKING TO THE FUTURE

The partnership between Tristar Glass and Tuomas is a clear example of how investment in technology can transform a company’s operations. With the installation of the TUROMAS cutting and storage machinery, Tristar Glass is prepared to face future challenges and continue

its expansion by demonstrating that innovation and quality are essential to remain at the forefront of the glass industry.

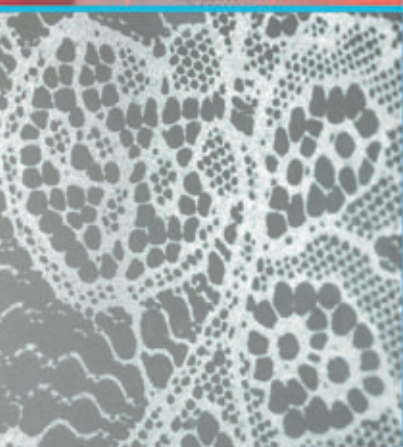


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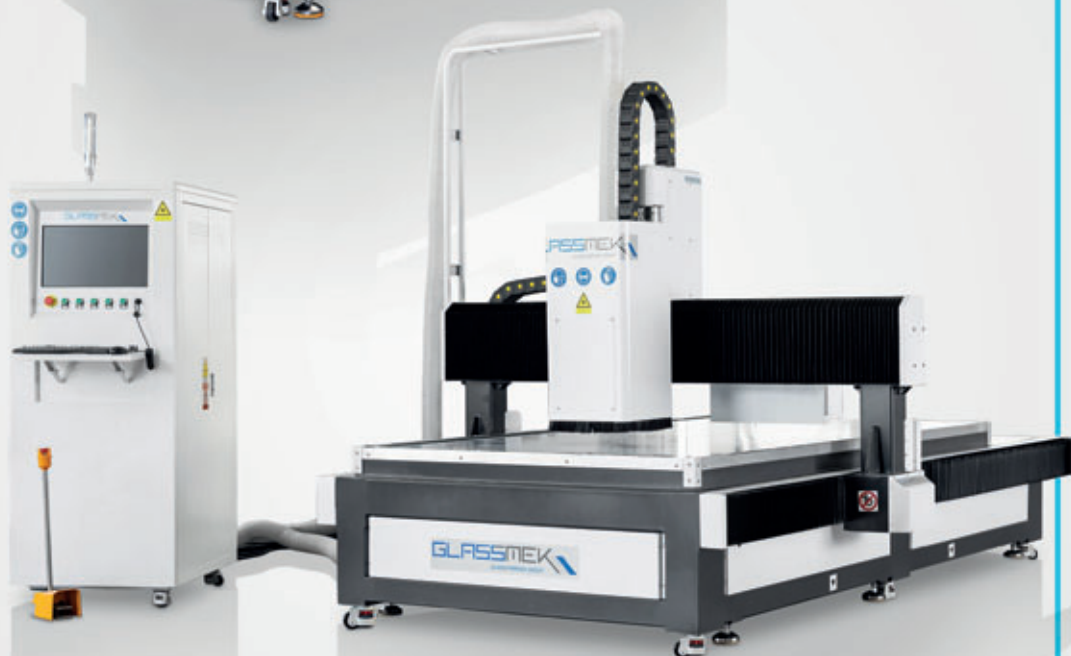


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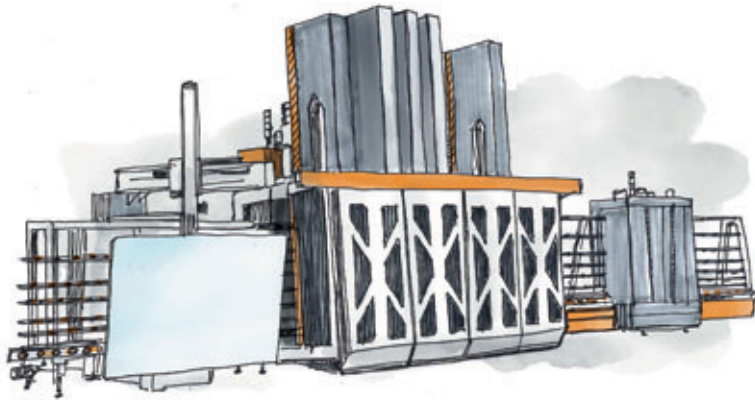


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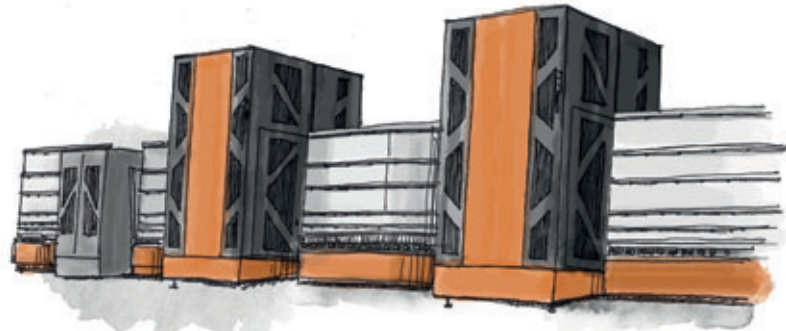
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## INDUSTRIAL REFRIGERATION GLASS LINE



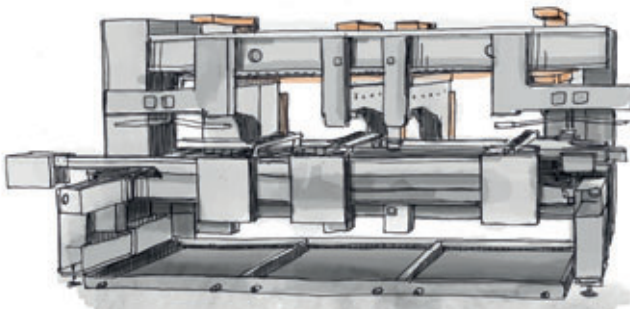
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## SHOWER DOORS AND BUILDINGS LINE



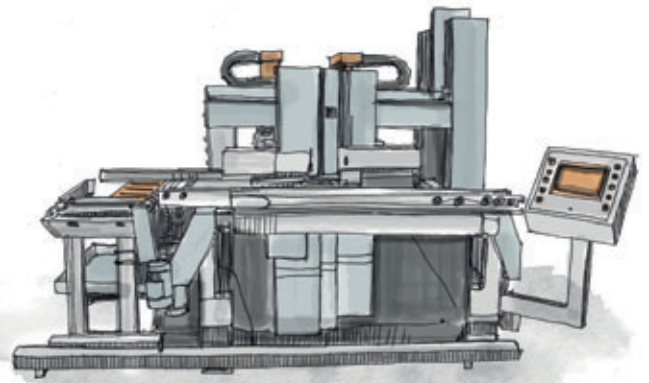
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## INDUSTRIAL CAR BODY GLASS LINE



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## HOUSE HOLD APPLIANCES GLASS LINE



# Streamlining glass processing: **LATTUADA** presents breakthroughs at Glasstec

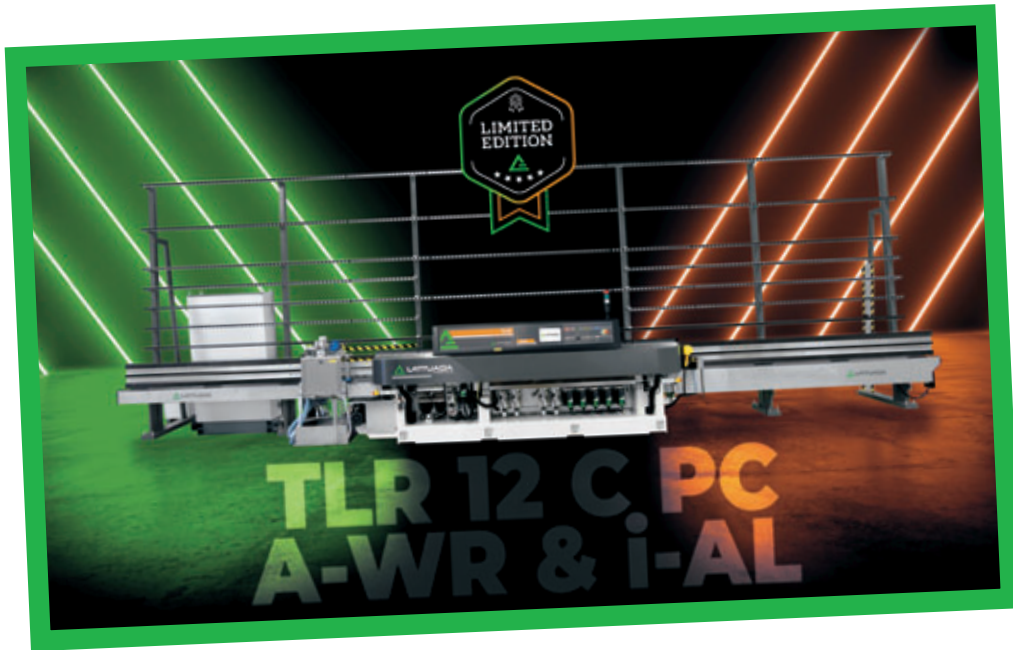
## **M**ODEL TLR 12 CPC

The first will be a straight-line grinding machine, model TLR 12 C PC: a concentrate of innovation and technology. Four major macro areas of innovation, in turn then declined into different options and details that visitors will be able to discover at Lattuada's booth:

- automatic predictive maintenance
- IoT system

In Dusseldorf this October, LATTUADA will mainly be focusing on two of its limited edition models - each exhibited with its new look and very peculiar configuration. Both demonstrate Lattuada's insatiate impulse to provide state-of-the-art solutions that deliver high efficiency, cost savings and reliability to glass industry professionals.

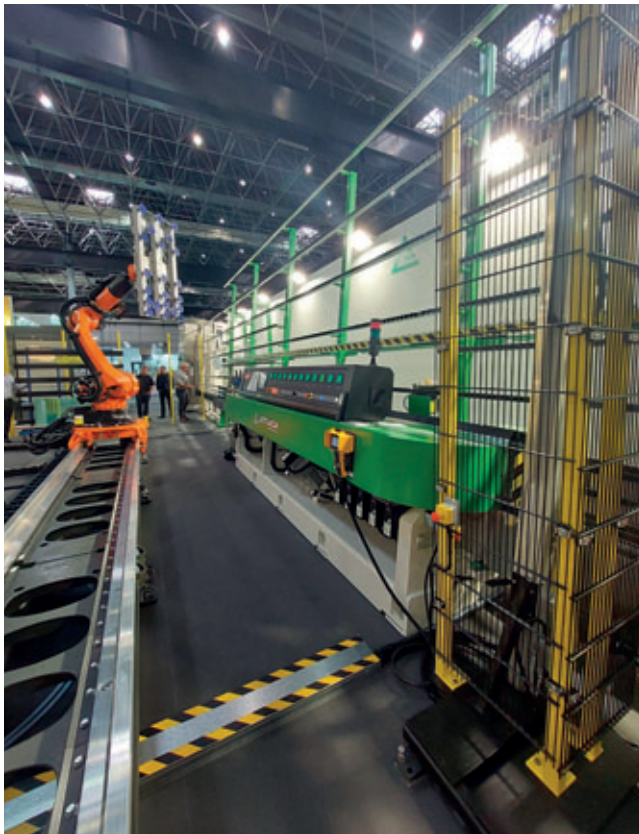




- new software for automation solutions
- control of energy consumption

### A-WR AND I-AL

This edger will then be equipped with Lattuada's A-WR System and i-AL



package, for a fully automatic wheel adjustment and a fully automatic management of all processing parameters: the operator only sets the thickness and all other parameters are automatically set by the system and are fully customizable, depending on the production and quality required.

### ROBOTIC SOLUTIONS

Last but not least, it will be part of an LRS: a Lattuada-Knittel robotic line. In front of the edger, a Kuka robot will be moving on the seventh axis, and in-line will be an open-top washing machine, model OT 2000/300/4S. This specific line is dedicated to customers wishing to increase the level of automation in their grinding department. It can reach a productivity of up to 130 m/h, considering, for example, a speed of 3 m/min and glass panes with dimen-

sions: 1600x600x8 mm and 1000x2000x8 mm. A new feature is a device for checking the correct position of the glass edge. The customer can load the glass onto the rack even without using a reference/zero point, only approximately in the centre of the rack. Thus, when rotating 90°, the bottom edge can be a little higher or lower than the standard zero line. This is the task of this new device: to check, before loading the glass, the actual position of the edge to ensure a safe and smooth load. A very interesting option is an advanced, state-of-the-art vacuum technology, which saves around 85 percent of energy compared to standard systems. Compared to other lines, the robot that moves the glass is not fixed to the floor but runs at very high speed on a dedicated track. The special design of the track allows the robot to reach a maximum speed of 2.35 m/s. The line can only be operated by one operator, who only has to load a rack and start the line; all the glass will be automatically processed on all four sides and unloaded onto another rack or sent into a washing machine. The line can also communicate with the operator via a pager. This solution combines the full automation usually offered by a closed cell with two edgers and two robots, but with a smaller footprint and reduced budget. It can almost match the same pro-

ductivity, but with the advantage that no operator has to handle the glass manually. With the Lattuada-Knittel solution, the customer can achieve multiple benefits: optimization of production and consequent reduction of costs as it requires only one operator (reduced labour costs and increased safety), greater energy savings (compared to other solutions), and increased productivity. Thanks to its ease of use, applicability to standard grinding machines with standard maintenance, reduced downtime, and high speed (up to 5 m/min), it guarantees continuous production.

### MODEL GAMMA 713 PC

The second very special machine in a limited edition will be a bevelling machine, model GAMMA 713 PC: the very first beveller in the world equipped with Lattuada's A-WR system, offering a fully-auto-

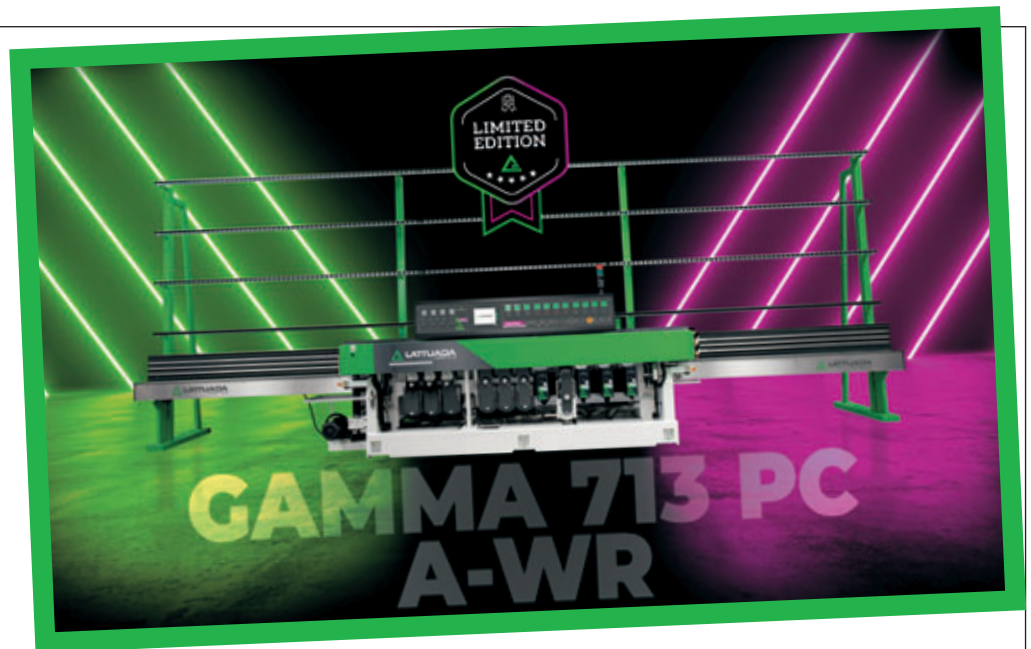
matic management of diamond wheel adjustments.

### WASHERS

Lattuada is not focused on grinding alone. Its range of vertical washing machines includes several series designed to meet a wide variety of requirements. The open-top washing machines represent the best multi-purpose machine for the medium-light glass industry. The maximum washable height is either 1600 or

2000 mm, and the models can be equipped with two, four, or six brushes. They are available either with motorised thickness adjustment from 3 to 40 mm or with mechanical thickness adaptation from 3 to 15 mm (with 19 mm available upon request). Designed to be positioned in the highest segment of the market, the closed-top washing machines are the best choice for medium-heavy industry and high-intensity use. Available in 2600 and 3300

mm height models, with four or six brushes, they can wash glass panes with thicknesses ranging from 3 to 80 mm and handle weights up to 2,000 kg.

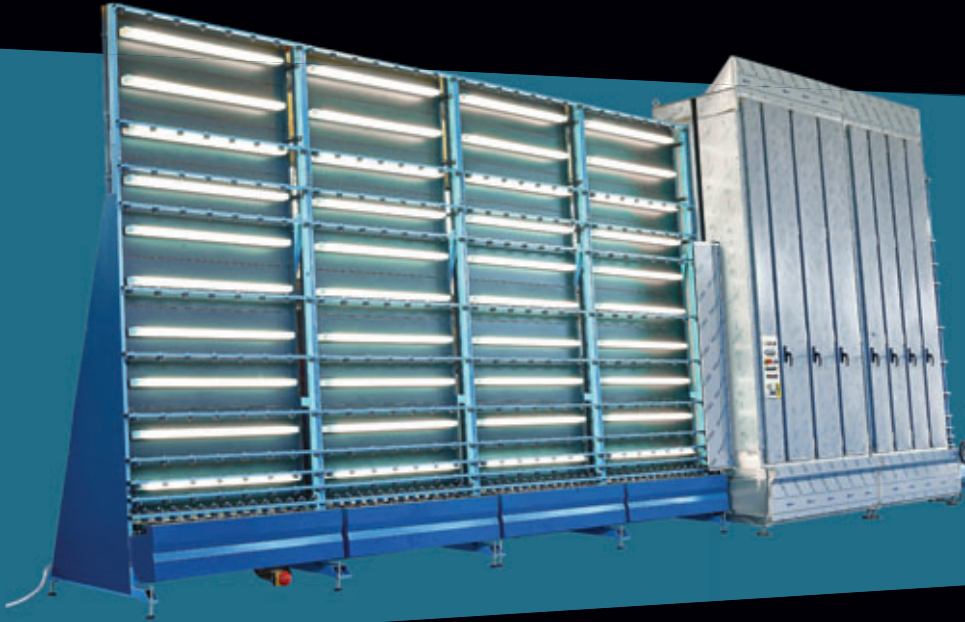


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# STEFIGLASS

## LV 3300 JUMBO



**Stefiglass propose you  
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washing machine  
LV 3300 JUMBO**

- Two-part machine: washing and drying.
- Easy installation and transport thanks to its modular format.
- Equipped with 6 brushes for washing with high-performance hydraulic pumps. Pump impellers mounted only in stainless steel.
- Drying is provided by a 22 kW ventilation system.
- The brushes are driven by the inverter system with acceleration/deceleration to optimize the mechanical performance and reliability over time.
- The top is made of tubular AISI 304 scaffolding bearing and reinforced with stainless steel laser-cut sheets. This ensures high operating speed with greatly reduced vibration.
- Working speed from 1 to 5 mt/min

This is a vertical washing machine optimized for cleaning large glass sheets, especially suitable for heavy and continuous use. Thanks to its 6 brushes, it meets the standards for industrial cleaning. Particularly suitable for on-line applications, it can also be combined with robotic systems. Made exclusively in closed top version, it allows to wash a glass minimum of L = 450 H = 250.



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# LPA - LAMINATED GLASS LINE

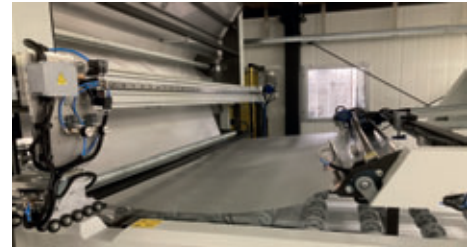
Fully automatic glass squaring, assembly, PVB laying and cutting



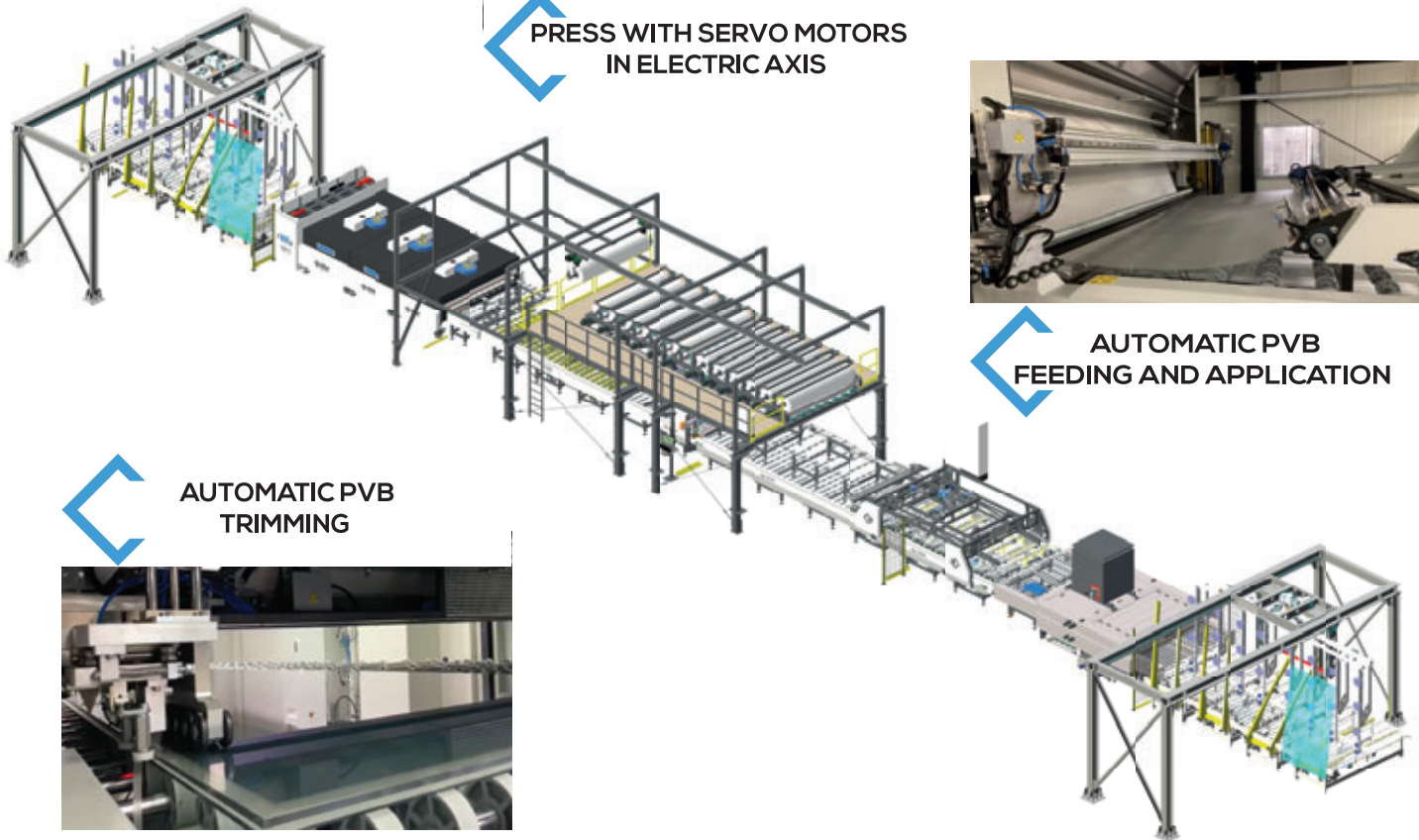
FORCED AIR CONVECTION OVENS FOR UNPARALLELED PRE LAMINATION QUALITY



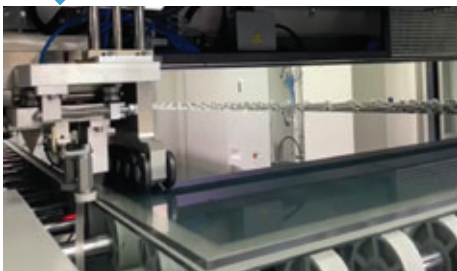
PRESS WITH SERVO MOTORS IN ELECTRIC AXIS



AUTOMATIC PVB FEEDING AND APPLICATION



AUTOMATIC PVB TRIMMING



MODEL	MAX GLASS SIZE	SHAPE
LPA 2651	2600 x 5100 mm	STRAIGHT, U, Z
LPA 2860	2800 x 6000 mm	STRAIGHT, U, Z
LPA 3360	3300 x 6000 mm	STRAIGHT, U, Z
LPA 3390	3300 x 9000 mm	STRAIGHT, U, Z
LPA 33120	3300 x 12000 mm	STRAIGHT, U, Z

## GPM AUTOMATION SRL

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# BOVONE and BIVETRO team up to optimise glass lamination

Putting their unique accent upon the key role technology plays in improving the quality and efficiency of production processes, a new glass laminating plant supplied to BIVETRO by BOVONE has now become an important industrial glassworks in Turin, Italy - a prime example of how collective intelligence can lead to excellent results within the sector.

## **A** **N**AMBITIOUS **I**NDUSTRIAL **P**LAN

Since 2015, Bivetro has embarked on an ambitious industrial renewal plan to increase its productivity and capacity, thereby responding to increasingly complex orders. The company operates over an area of more than 12,000 square metres and focuses mainly on the contemporary architecture and building segments - managing both



large construction sites and private residences. The size and quality of the products are the hallmark of Bivetro's business which, together with Bovone's new rolling line, has managed to achieve important new goals while optimising production efforts. Says Bivetro Managing Director, Carlo Giacone: 'Our partnership with Bovone is based first and foremost upon product quality, of which we were already aware thanks to their edging machines, which have already been in operation at our plant for years. Then the competence of the technicians, their extreme availability and dynamism and, finally, the geographical proximity to the company. That

has allowed us to intervene in a very short time to improve installation following our further requests for modifications and implementations. Thanks to this installation, we have both reduced processing times and increased production capacity without ever neglecting quality.'

### TECHNOLOGY AT THE SERVICE OF BIVETRO NEEDS

The new laminating line supplied by Bovone was designed to meet specific operational and production needs. Capable of processing glass sheets up to jumbo sizes of 6,000 x 3,210 mm, the plant represents the technological cutting edge in the field of glass lamination. In addition

to its ability to handle large sizes and volumes, it is equipped with advanced features that allow each step of the process to be optimised. One of the main advantages of the Bovone plant is its modularity. The U-shaped layout, specially chosen to fit the space available in the new Bivetro plant, guarantees unprecedented operational flexibility. The integrable modules allow the line to be customised to the customer's specific needs, offering the possibility of adding new components or replacing existing ones with ease. These modules include dedicated areas for loading, unloading, plate washing, glass-foil assembly and tempering with Bovone's new generation

HRC hybrid furnace that optimises the lamination process and minimises energy consumption.

### VERSATILITY AND PRODUCTIVITY: STRENGTHS OF THE BOVONE PLANT

The versatility of the new lamination line allows Bivetro to tackle very different jobs, both in terms of slab size and applications. Slabs processed with this technology are used not only for architectural parapets and facades, but also for large infrastructure works. As Carlo Giacone confirms: 'The plant performs so well that it is very forgiving - even for an operator who has not yet gained the necessary experi-





ence to use it to its full potential. With the new system, we can achieve faster production times and higher quality than with the previous systems.' Indeed the same This versatility translates into a major competitive advantage for Bivetro, which can handle large production volumes

and complex machining while maintaining very high quality standards. Productivity was another key factor in the investment in the Bovone plant. The reduction in downtime and minimal maintenance required by the plant has allowed Bivetro to increase the

number of projects handled without increasing operating costs.

### THE VISION OF FEDERICA BOVONE

For Bovone, the successful collaboration with Bivetro is an example of how quality and technological innovation can meet the

needs of the global market. Says CEO of Bovone, Federica Bovone: 'Our technological offer is designed to anticipate the needs of the market. The collaboration with Bivetro is a perfect example of how our innovative approach, combined with constant attention to specific customer needs, can lead to tailor-made solutions that guarantee high productivity and great quality.'



Via Molare 23/C  
15076 Ovada AL - ITALY  
Tel.: 0039-0143-837-511  
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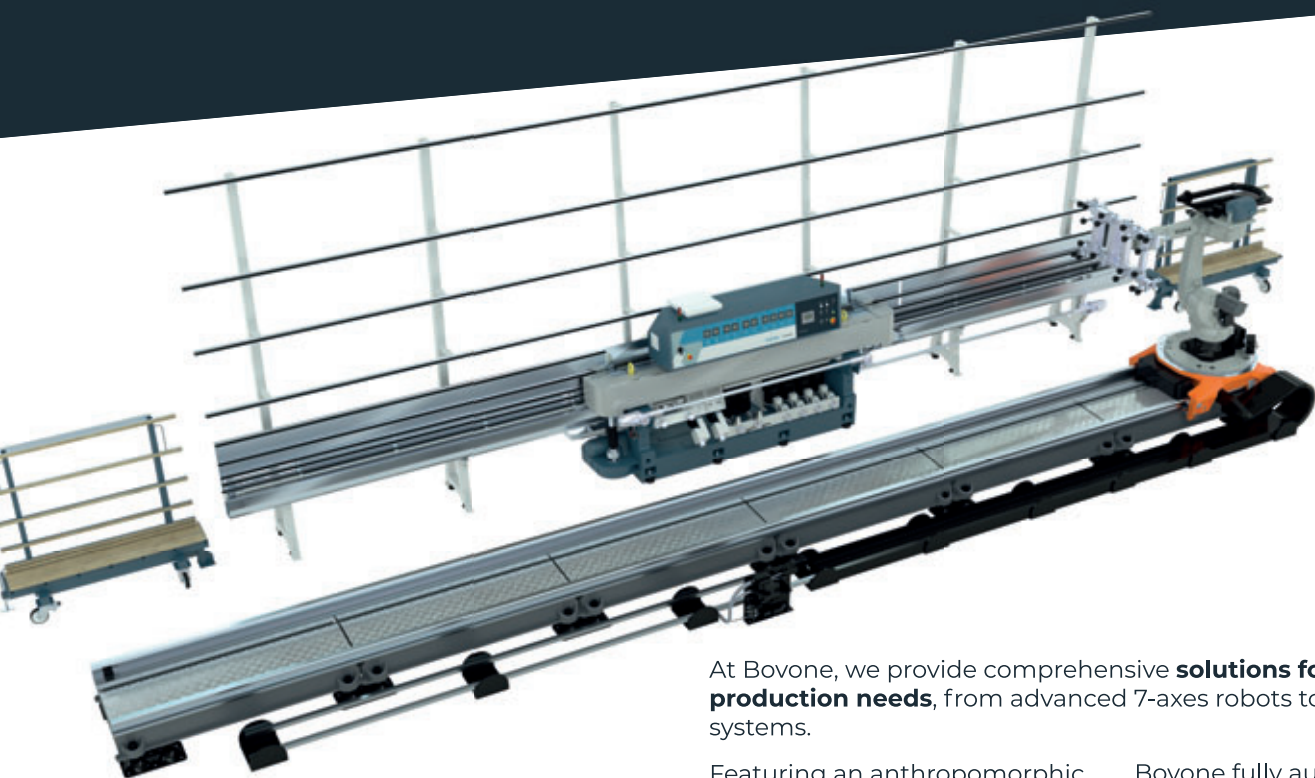
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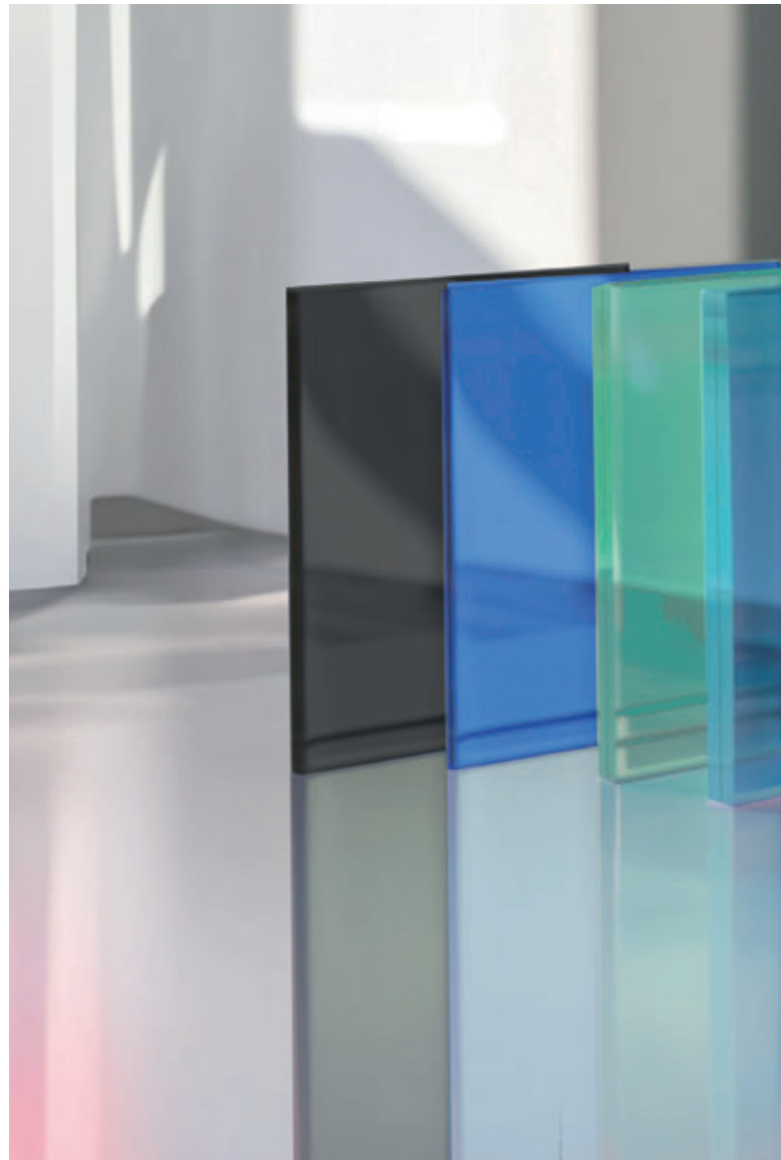
# Safety glass sensation **SATINAL** poised to wow Düsseldorf again

Leading safety glass manufacturer SATINAL has been super enthusiastic as always to announce its upcoming participation at Glasstec 2024 - the world's leading glass fair that will be taking place in Germany from October 22nd to 25th. Showcasing its signature innovations, the company will be focusing on its winning product range, which is designed to meet the evolving needs of both architects and designers.

## **G** LASS INTERLAYERS EXHIBITING A COMMITMENT TO SUSTAINABILITY

Rock solid as always in its commitment to sustainability, Satinal's STRATO®

Carbonlight™ EVA product range is a testament to that core value. Manufactured using a process that significantly reduces greenhouse gas emissions, STRATO® Carbonlight™ is an eco-friendly choice





for architects and designers who seek to minimize their environmental impact.

### **A GLASS INTERLAYER FILM THAT EXUDES A BREATH OF FRESH AIR**

STRATO® FRESCO is an innovative high-performance EVA film belonging to the

STRATO® SOLAR CONTROL EVA product range. It reduces UV and NIR energy - thereby allowing high visible light transmission. A new generation of elevated-performance EVA film, it uses nanoparticle technology and has been formulated to give efficient solar control properties to laminated safety glass. STRATO® FRESCO can replace low-

emission glass, reducing the heat transmission.

### **A SYMPHONY OF COLOURED INTERLAYERS FOR ARCHITECTURAL GLASS**

With its vibrant array of colours, Satinal's STRATO® COLOUR EVA New Collection expands the creative possibilities of glass, allow-

ing architects and designers to add a touch of personality and style to their projects in a way that transforms safety glass surfaces into stunning visual accents.

### **ENHANCING THE STRENGTH AND VERSATILITY OF GLASS**

STRATO® RIGIDO is a special structural interlay-





er that ensures one of the highest levels of protection against strong impacts. Even if the glass component breaks, the laminated structure is not weakened, such that the stability and safety of the product remain preserved. STRATO® RIGIDO must be laminated with two sheets of STRATO® EVA films to achieve optimum mechanical, adhesive and optical properties. Ensuring the adhesion of STRATO® RIGIDO to glasses, STRATO® EVA is a thermosetting material. It creates three-dimensional bonds at molecular level during the lamination process such that STRATO® EVA laminated glass is rendered

structurally safe. Indeed, combined with the stiffness of STRATO® RIGIDO, the great mechanical properties of STRATO® EVA allow for the lamination of any glass thickness, thereby guaranteeing the same 'any time' structural loading - over time.

### A COMPREHENSIVE LINE OF OVENS FOR GLASS LAMINATION AND MORE

Present at Glasstec this year, a team of TK technicians will be available to demonstrate the use of TK ovens - simulating the first stages of preparation of a laminated glass as well as the use of a 100 percent made in Italy silicone vacuum bag lamination oven.

### A PERFECT PARTNER FOR ARCHITECTS AND DESIGNERS

Satinal's presence at Glasstec 2024 underscores its commitment to providing architects and designers with cutting-edge glass solutions that can combine functionality with aesthetics. Here's why the company's innovative products and expertise make it an ideal partner for creating truly inspiring glass designs.

### HALL 11, BOOTH K49

This year, Glasstec visitors to Satinal's stand can expect:

- Interactive product demonstrations: first hand

experience of the latest innovations, with insights into their unique features and benefits.

- Expert consultations: engagement with Satinal's team of knowledgeable professionals to discuss specific project requirements and receive tailored advice.
- Inspirational design: a wealth of creative ideas for incorporating Satinal's glass solutions into architectural projects.

The trade show will have the Satinal team inviting architects, designers, construction professionals and industry enthusiasts to shape more sustainable and aesthetically inspiring building projects with them.

## ABOUT SATINAL

Satinal is a leading Italian manufacturer of 100 percent made in Italy STRATO® EVA interlayers. To meet the needs of its customers the company offers a wide variety of products. In-house quality controls, all performed within Satinal's R&D Lab, aim to guarantee perfect adhesion of the material to the glass surface. Here the rich experience acquired by Satinal in the treatment of EVA-based materials is essential to the mastering of potential applications that can exploit their characteristics fully.

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"We have tested many "easy clean" glass coatings for application on the shower doors we manufacture. Unelko's Invisible Shield Coatings are the best performing, easiest to apply and most competitively priced coatings on the market. We value Unelko as a partner with great integrity and passion for protective Nano Scale Technologies." -J. Pearson, Commercial Director of Roman Shower Doors, United Kingdom

"The test results were overwhelmingly positive for use on windshields." -Sarrah Daouadji, Category Mgr of St. Gobain/Sekurit

"We have been servicing the glass industry for over 40 years globally. We represent global manufacturers of architectural glass. Unelko's coatings are cutting edge and their products' protective benefits, repellency, durability and scratch resistance properties exceed all other coatings. It has helped us earn the trust of prominent names in the glass industry." -Mark Evitt, Managing Director of APQ

"What convinced us to work directly with Unelko over other coating manufacturers was the proven greatness and wide range of the products they have developed. Invisible Shield PRO 15 Glass Coating performance exceeds any other coating that we have tested. If you want to be the best, you must work with those who are the best in the market. We believe UNELKO is a leader in Advanced Surface Care. They care about their fabricators/processors, distributors and end use customers. Their great-performing products keep the end use customer very satisfied." -Piotr Plata, owner of Krysztal Glass.

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# Compact 4C Series from **CUGHER** integrates print quality control

**CUGHER GLASS** recently gave a heads-up for the presentation at Glasstec of its latest innovation, namely the Compact 4C & QVS. Designed to revolutionize the world of printing on square and rectangular glass, this series is engineered for glass manufacturers who are after both reliability and high performance. Ensuring consistent productivity, it stands out for its ability to process glass of varying sizes.

## **C**OMPACT 4C: VERSATILITY AND HIGH PERFORMANCE

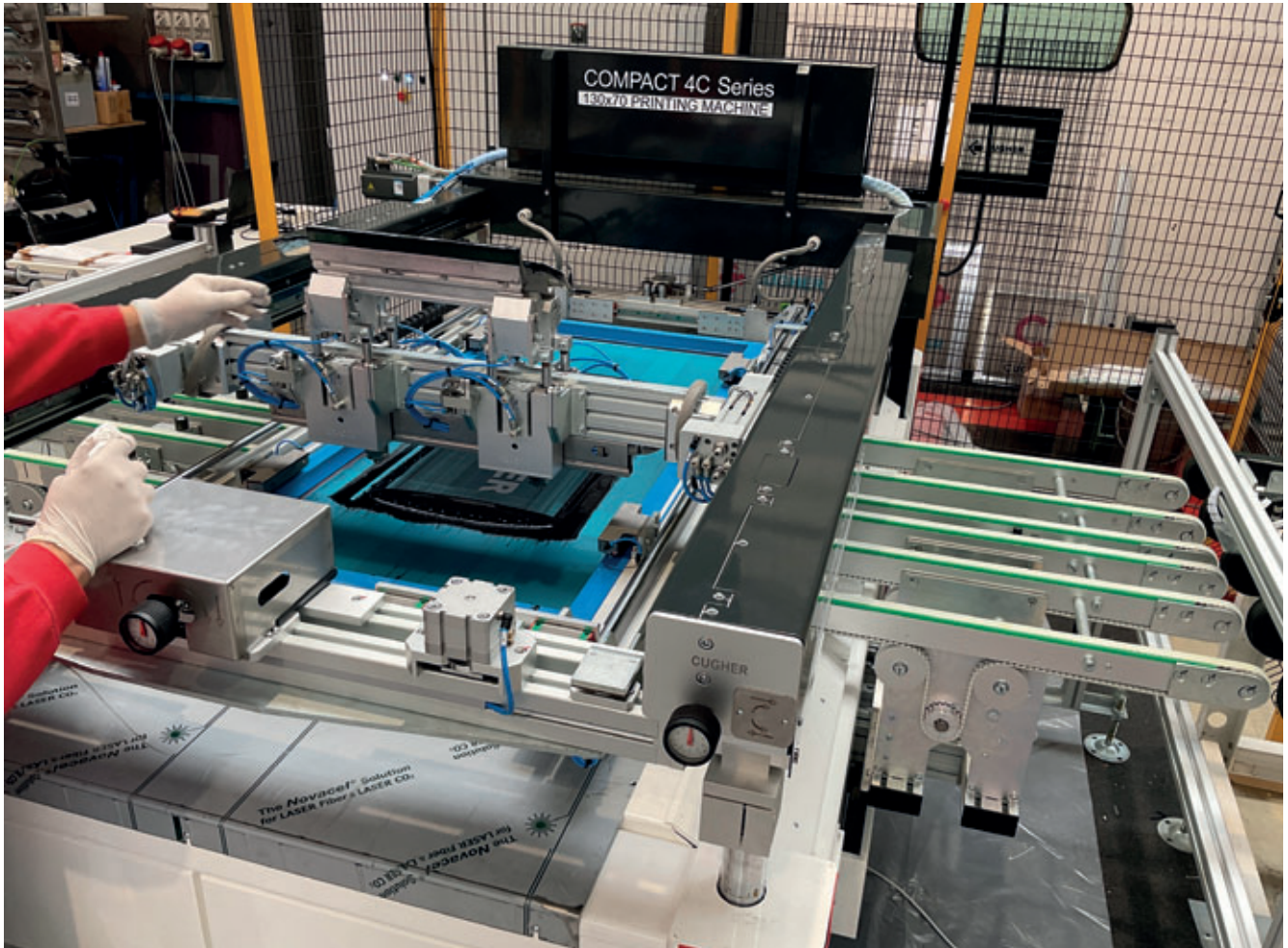
A key innovation of Cugher's new Compact 4C series is that it can handle larger glass sizes as compared to the base model - all while maintaining unaffected printing performance. Indeed the print module, equipped with the Cugher E2E (Edge to Edge) system, allows for the kind of edge-to-edge printing that's only achievable through screen printing.

## **ADVANCED FEATURES AND PRINTING PRECISION COMPARED TO BASIC MODEL**

The Compact 4C has been equipped with the following features:

Frame washing and extraction that won't lose registration coupled with rotation of the printing carriage for squeegee and scraper replacement are just some of the innovations designed





to improve operational efficiency and reduce format setup times. The printing phase is highly precise, with a tolerance between pieces of +/- 0.08 mm. All printing parameters, from pressure to squeegee and scraper speed, are set through the operator panel - making machine setup extremely fast.

### **EFFICIENCY AND QUALITY ALL IN ONE MACHINE**

The Compact 4C is not only swift and precise but also extremely efficient. It

can process up to 550 pieces per hour for glass sizes of 1150x700 mm - making it ideal for high-volume production in shorter times. Additionally, the machine can be integrated with innovative vision systems for quality control - both for glass and print, thereby ensuring high and consistent standards.

### **A COMPETITIVE ADVANTAGE**

One of the main advantages is its extraordinary flexibility offered at an incredibly

affordable cost. This means customers can achieve exceptional results while saving at the same time. The Compact 4C transforms production processes efficiently and economically.

### **MACHINE VERSATILITY**

The machine is ideal not only for the home appliance sector but also for all industries requiring printing on rigid materials and symmetrical shapes. Indeed with this machine, users can undertake any production

challenge with both ease and precision.

### **TAKING PRODUCTION TO THE NEXT LEVEL**

With this system, print quality control (PQVS) is integrated into the machine such that every detail of the print is monitored with precision - thereby ensuring flawless results while minimizing waste. The PQVS (Print Quality Vision System) is an automated system for print quality verification on glass - suitable for both



screen printing and digital printing. Designed for use in automotive, home appliance and architectural applications, it can also ensure print quality on other rigid materials, both transparent and opaque, such as polycarbonate or aluminum. Various sensitivity zones can be defined across the glass surface, allowing for higher sensitivity settings in specific areas like logos, barcodes and other critical elements. All areas of the glass get inspected and compared with

the tolerances specified in the glass inspection recipe.

### KEY FEATURES

- Installation

The system can be installed at the centre of the precision conveyor belt, provided there is sufficient space for both the cameras and illuminator. The system is available in four standard sizes (1000-1300-2000-2600 mm).

- Technical specifications

The system offers a reso-

lution of 80µm (300 DPI) @2600mm and can accurately verify the quality of the design, detecting circular spots as small as 0.15 mm<sup>2</sup>. It can identify: 'Stains' or 'spreading' of design details caused by excess ink in screen printing. Discoloured spots, holes or missing parts of the design. Different sensitivity zones can be defined across the entire surface of the glass, allowing higher settings in specific areas such as logos and barcodes. An additional optional metrological control is available to measure the distance between the print and the edge of rectangular glass.

- Automation and quality control management

PQVS software can communicate with the printing machine's PLC, so sending predefined signals to activate specific functions. Defective areas and captured images can be displayed on a high-resolution 42" monitor (optional). The operator

can navigate the entire glass surface and, if necessary, zoom in on selected areas to analyze image details.

### QUALITY CONTROL

Once acquired, the image is analyzed using a specially-designed and created inspection recipe that's established during initial setup. Image processing is handled by a dedicated computer system. The system automatically divides the reference image of the glass into such specific areas as 'Near the Edge', 'Print Spots', 'Black' and 'Clear Glass'. For each of these areas, the operator can set different defect tolerance levels - allowing for precise quality control tailored to the various parts of the glass. With an additional software option, metrology algorithms can be used to measure and verify the external dimensions of the glass. This includes checking the width, height as well as the positioning and diameters of holes - ensuring that all measurements precisely meet the design specifications. Here, in all its machines, Cugher strives as always to drive superior printing quality that will also achieve total control over the production process.



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# IOCCO expands its footprint

## THE PATH OF CONTINUOUS IMPROVEMENT

Questioning oneself and learning to self-critique are essential steps for business growth. This mindset has allowed one company based in Cupello, in the province of Chieti, Italy, to establish itself in international markets - becoming a key supplier to major automotive players and beyond. The company's founder and general man-

Key in automation supplier for automotive glass player IOCCO excels by continuously analyzing and improving its products. The company has continued to expand with its focus upon training, research and cutting-edge technology like that of the Bag Furnace. Today its commitment to innovation ensures high-quality production - positioning it as a key supplier to major automotive manufacturers.



ager, Massimiliano Iocco, has always believed in the importance of training and research. These values have helped the company achieve high industrial standards in the automotive glass sector - introducing innovations that have garnered global recognition.

## NEW INNOVATION CENTRE

The company's success story in Cupello begins with a commitment to high-level training. This approach not only develops the talent of its employees but also forms the cornerstone of the company's operational philosophy today.



Founder and General Manager



Vacuum Bag Furnace and HMI station

The goal was to prepare technicians and technologists capable of facing significant challenges,” explains Iocco. “The concrete results we achieved gave us the strength to present our innovative solutions to an expanding clientele, thus translating our technologies into actual products.

We have a strong business relationships worldwide especially in Europe, where our brand enjoys considerable recognition, in China, Mexico and both North and South America.”

### THE BAG FURNACE AND HMI STATION

Among the company’s most advanced solutions, the Bag Furnace stands out for its unique characteristics and performance. As Iocco explains: “The Bag Furnace, now widely used by glassmakers, is a machine that removes

air from laminated glass through a precise technological process, sealing the edges before the autoclave stage. This de-airing process allows for the flexible production of windshields, sunroofs, sidelites and backlites, thereby enabling model changes without halting production. The system monitors every stage, including vacuum levels and temperatures, and reacts automatically to anomalies - ensuring continuous, high-quality production. It can produce side glass every 9 seconds and windshields or backlites every 18 seconds, and it can laminate glass as thin as 0.7mm with up to seven interlayers.” Thanks to advanced sensors and artificial intelligence, the

Bag Furnace system calculates optimal production parameters, tracking the entire process for each product and adjusting as needed. Compliant with the European Commission’s directives on Industry 5.0, this represents a significant leap in usability. The system’s management software, developed by Iocco, simplifies machine setup and maintenance, while also optimizing energy consumption when it exceeds production re-

quirements. To complete the process, Iocco also provides robotic assembly lines, combined with artificial vision systems and CNC machines for cutting interlayers. These fully-automated lines ensure production continuity and product quality. This expertise has allowed Iocco to launch systems capable of shifting the commercial balance in automotive glass production, securing partnerships with major global glass manufacturers.



Bag Furnace 9 seconds unloading robots

Automatic assembly line for multilayers automotive glass



Vacuum ring furnace



## MEETING MARKET DEMANDS

In response to growing market demand for cost-effective de-airing systems, Iocco also developed a reverse-engineered version of the traditional Ring Furnace, commonly known as the ‘green snake.’ This system is de-

signed for the production of medium- and large-sized glass, such as windshields and sunroofs. “We upgraded the vacuum distribution system, making it more efficient in extracting air from the glass in less time,” says Iocco. “Indeed in its most advanced configuration, the

Ring Furnace includes fully-automated systems for disassembling rings, inserting spacers, loading glass onto autoclave racks and recirculating the rings from the unloading to the loading and assembly positions.” Though primarily focused on automotive glass, Iocco’s scope is not

limited to this sector. The company remains open to opportunities in other industries as they arise. After a recent trip to Shanghai, Iocco noted the increasing intensity of the electric vehicle market abroad, especially in terms of demand for specialized glass products. “To stay ahead and meet the demands of major international players, it’s essential to continuously scrutinize and adapt our business dynamics,” says Iocco. “In short, the ability to critique your own products must become a part of company culture. I believe it’s a great act of responsibility toward our customers. At Iocco, this practice is standard. Unlike many competitors, we embrace open innovation - developing unique solutions while engaging with the market.”

## COMPREHENSIVE LINES FOR ADDED VALUE OPERATIONS

In addition to its core innovations, Iocco offers complete production lines for various value-added processes, including:

Alessandra Petrucci (Sole Director), Massimiliano Iocco (Founder and General Manager)



Robotic cell



14 A42. This proactive approach to industry events underscores its commitment to staying at the forefront of the automotive glass market. Indeed it is through constant self-assessment, open innovation and a steadfast dedication to training and development that Iocco is continuing to drive advancements in automotive glass technology - positioning itself

- Bright finishers assembly
- Assembly of centering pins and spacers
- Application of long-life primers
- Polyurethane extrusion along the glass periphery
- Installation of seals, bond-on lace, and finishers
- Assembly of connectors for alarms, faxes, antennas and heating circuits
- Grommet assembly
- Attachment of various accessories, such as brack-

- ets and pins, to support different devices
- Encapsulation using materials like polyurethane (PU), thermoplastic elastomers (TPE) and polyvinyl chloride (PVC)

### ROBOTIC INNOVATION AND FUTURE VISION

Looking ahead, Iocco remains committed to pushing the boundaries of inno-



vation. The company plans to invest heavily in research and development in the coming years. "On average, over the last four years, we've invested around 11 percent of our turnover into R&D," shares Iocco. The company has also established an innovation centre, which aims to train new professionals capable of integrating seamlessly into its operations. "Our goal is to continue enriching our team with the skills necessary to drive further change," he adds. The company will showcase its innovations at Glasstec in Düsseldorf from October 22 to 25, 2024, at Booth

as a key player in a global market.



Via Del Progresso,1  
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# HIGH PERFORMANCE CNC MACHINES AND UNIQUE INTEGRATED LINES FOR GLASS PROCESSING



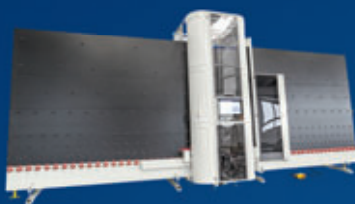
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CUTTING TABLES AND CUTTING LINE



SEAMING MACHINES



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# Laminated glass cutting has **CMS Sprint** showing its colours

**T**he CMS Sprint is a 5-axis CNC cutting machine equipped with a diamond disc - designed to enhance productivity in the processing of laminated, fire-resistant or safety glass. This versatile machine enables precise cutting of square, rectangular, or polygonal glass, performing both vertical cuts and 45° inclined blade cuts.

## **A CHARACTERISTIC VERSATILITY**

With its adaptability, the CMS Sprint integrates seamlessly into any production context, catering to various customer re-

quirements. It is available in several configurations: with manual loading and unloading, automatic loading and unloading via anthropomorphic robot, or automatic slab transfer through roller conveyors to washing stations. To further enhance efficiency and safety, the CMS Sprint comes equipped with an onboard vacuum manipulator that moves and spaces glass sections after cutting. This feature simplifies operations, speeds up the process - all while significantly improving operator safety

A trailblazer CNC machine that's designed to process laminated, fire-resistant and safety glass, CMS Sprint features an advanced onboard vacuum manipulator and cuts glasses thanks to dedicated diamond discs. It offers fast, precise cuts while boosting productivity by 33 percent, being ideal for versatile, high-performance glass cutting operations

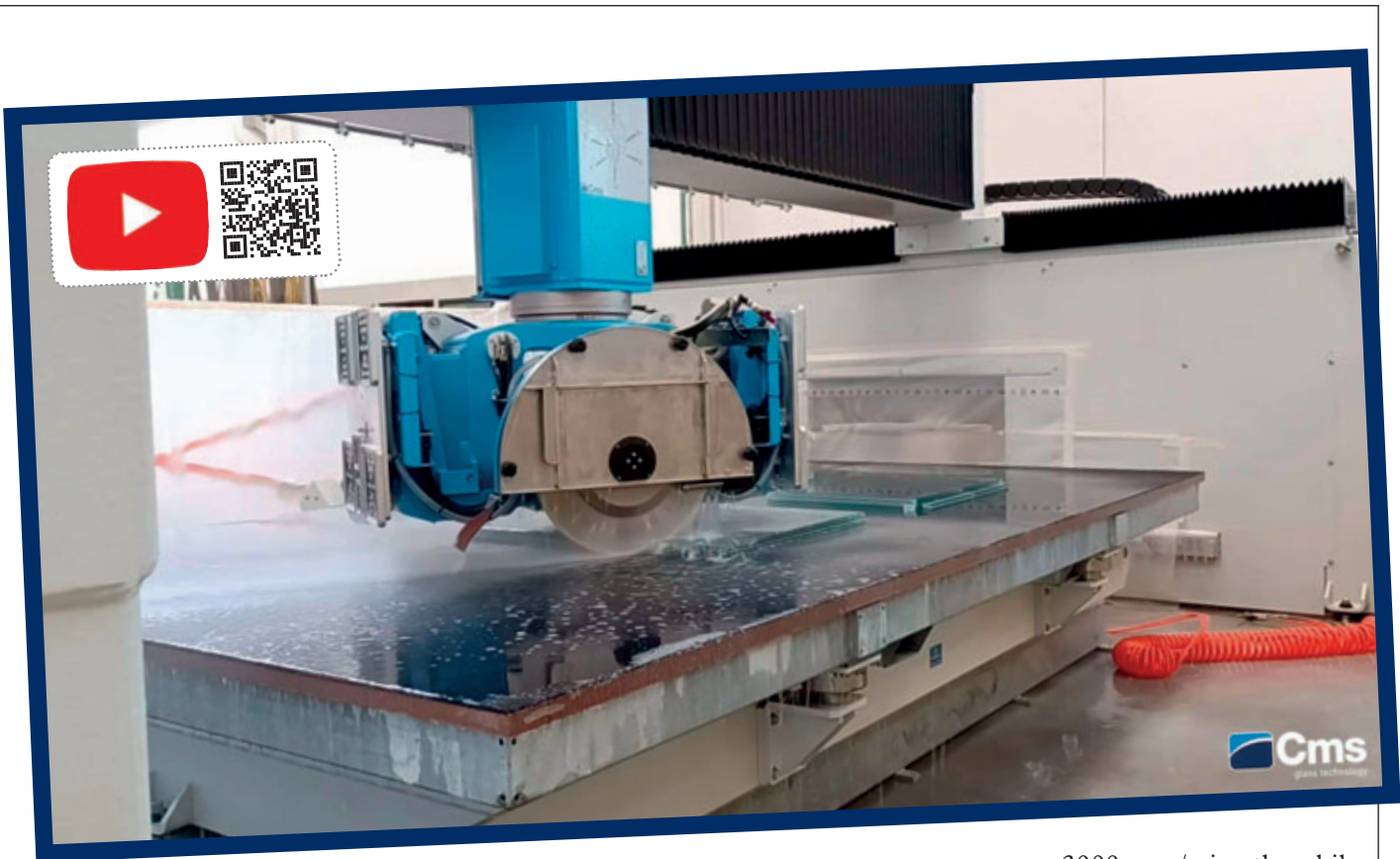
by eliminating the need for manual intervention in separating the glass after each cut.

## **PROPELLING PRODUCTIVITY**

Key benefits of the CMS Sprint include a maximum cutting speed of



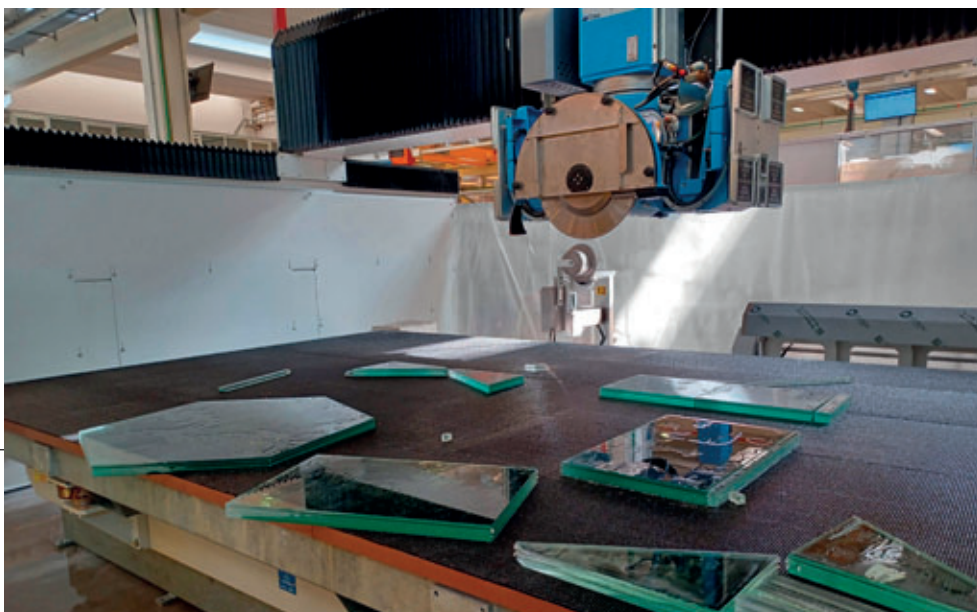




## ABOUT CMS

CMS Glass Technology is an industry leader in the field of flat and bent glass processing, with technologically advanced solutions such as horizontal and vertical CNC machining centers, cutting tables, seaming machines and waterjet cutting systems. Thanks to its tradition and experience, CMS Glass Technology provides anything from standard machines to tailor-made, fully automated systems to meet customer needs. The main fields of applications are architecture, interior decoration, aerospace, automotive and marine industry.

3000 mm/min, the ability to process glass with thicknesses up to 100 mm (depending on the cutting disc), and a 33 percent increase in productivity thanks to the on-board manipulator. These features make the CMS Sprint the ideal solution for fire-resistant and safety glass cutting, providing superior performance and operational efficiency.



Via A. Locatelli, 123  
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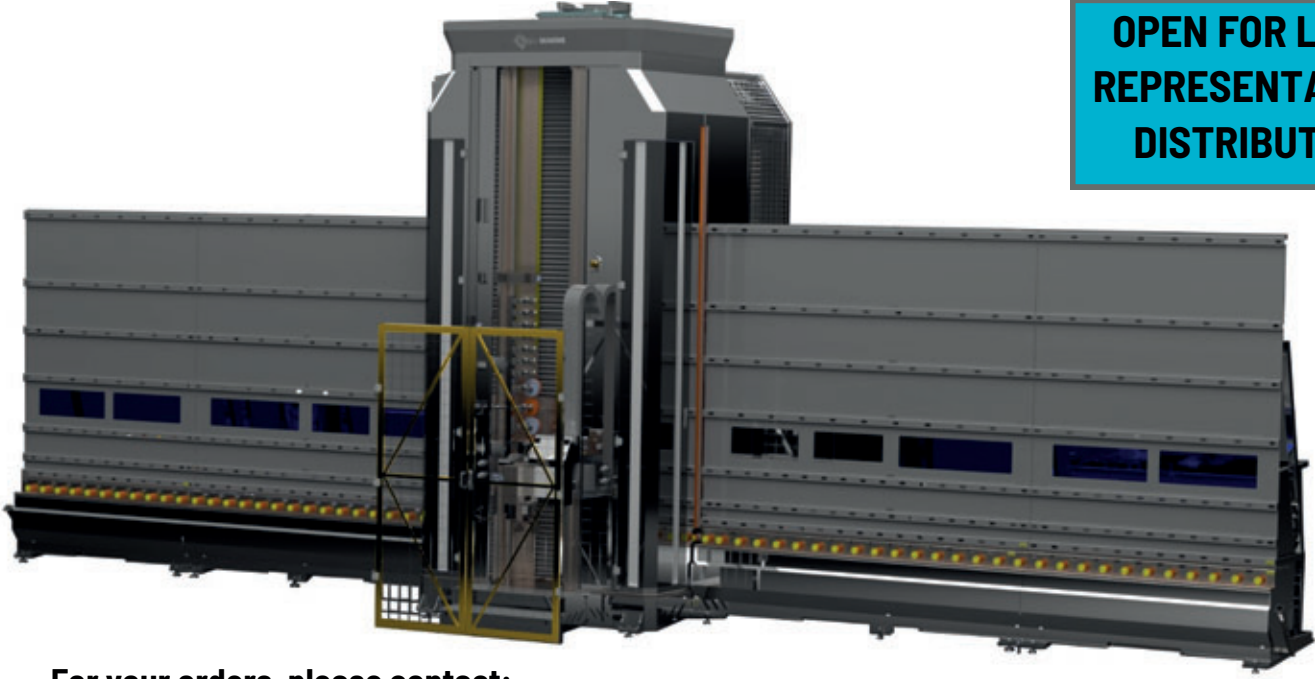
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# Revolutionizing glassworks: SCHIAVO's leading industry 4.0 machines

A prominent player in the production of machinery for washing, lifting and processing flat glass, Schiavo has been a cornerstone of the industry for over 40 years. Located near Milan, the company proudly maintains a 100 percent made in Italy production standard. Its extensive offering includes vertical and horizontal washing machines, vertical CNC drilling and milling machines, vacuum lifters, ma-

nipulators and equipment designed for insulated glass production.

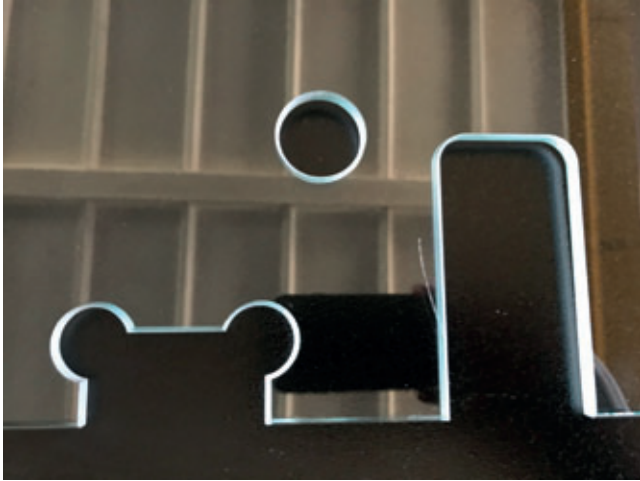
## VERTICAL CNC DRILLING/MILLING MACHINE

At the forefront of Schiavo's technological advancements is the FV1000 vertical drilling-milling machine, a sophisticated four-axis CNC system that empowers glassworks to execute a variety of cuts, holes and shapes - all necessary for installing

With its product range of industry 4.0 solutions that includes vertical CNC drilling/milling machines, vacuum lifters and washing machines, SCHIAVO stands out for precision, safety and innovation. The company's equipment is designed for high-performance glass processing - delivering advanced automation and superior quality across various applications.



hinges, locks and other accessories on glass doors and furniture. The FV1000 can create such intricate designs as squares, circles, rounded corners, corner cut-outs, 'Mickey Mouse' shapes, U-shapes and more. The FV series stands out with its extensive built-in shape li-



## VERTICAL AND HORIZONTAL WASHING MACHINES

Washing machines are among Schiavo's core products and top sellers - available in a range of models to suit various needs. The vertical washing machines come in five models, namely EASY, TOP, WD, PLUS and HYDRO, while the horizontal washing machines include a single model, HTL, known for its high quality and performance.

glass heights ranging from 1600 to 3300 mm and handles thicknesses of up to 20 mm. Constructed entirely of stainless steel, it guarantees durability and high-quality output.

- The WD model features adjustable thickness via a hand crank and is suitable for glass heights of 1600 and 2000 mm.
- For those requiring superior durability, the PLUS model is available in sizes from 1600 to 3300 mm - also accommodating glass thicknesses up to 20 mm.
- The HYDRO model serves as Schiavo's flagship vertical washing machine, engineered for high performance and reliability. It is designed for in-line integration with other machinery and classified as an Industry 4.0 machine, complete with remote assistance and data

brary, where all shapes can be modified and saved as new. This versatility is enhanced by the ability to import ISO or DXF files from any computer via LAN, Wi-Fi or USB. The machine's 'direct drawing' procedure allows operators to modify stored templates easily by inputting relevant parameters - ensuring a straightforward operation that requires no specialized training. Equipped with a pneumatic clamp for automatic glass

positioning, the FV1000 minimizes manual handling - operators need only load and unload the glass. All other functions are automated - streamlining the process significantly. The FV1000 is also classified as an Industry 4.0 machine - underscoring Schiavo's commitment to modern manufacturing technologies.

- The EASY model is the most basic and cost-effective, accommodating glass heights of 1600 and 2000 mm, making it an ideal choice for those seeking a strong quality-to-price ratio.
- The TOP model caters to



HYDRO2600.6



exchange capabilities. The HYDRO model handles glass heights from 1600 to 3300 mm and thicknesses up to 40 mm.

- The HTL series is engineered for high quality and performance, featuring a robust structure that ensures superior washing capabilities. Designed to last longer than many competitors, the HTL machines are subjected to meticulous functionality analysis and detail-oriented design. They excel in providing optimal washing quality, whether in-line with other machines or operating as stand-alone units and are available for glass widths ranging from 500 to 3300 mm with thicknesses up to 40 mm. The HTL model is also recognized as an Industry 4.0 machine.

## VACUUM LIFTERS

In addition to washing machines, Schiavo has invest-

ed significantly in research and development for its vacuum lifters, prioritizing safety - particularly in construction environments. A variety of models and options are available to address diverse glass sheet lifting needs. Each vacuum lifter is characterized by a robust steel structure, dual safety circuits and a double vacuum tank - ensuring secure handling even during power outages. The devices include audible and visual alarms that alert operators when the vacuum level is sufficient for lifting or if there is a decrease, signaling potential danger. Schiavo's vacuum lifters are categorized into fixed, manual and motorized devices, with capacities ranging from 180 to 2000 kg and beyond - depending upon specific requests. Additionally, specialized models are available for lifting structural triple-jumbo in-

HTL1600

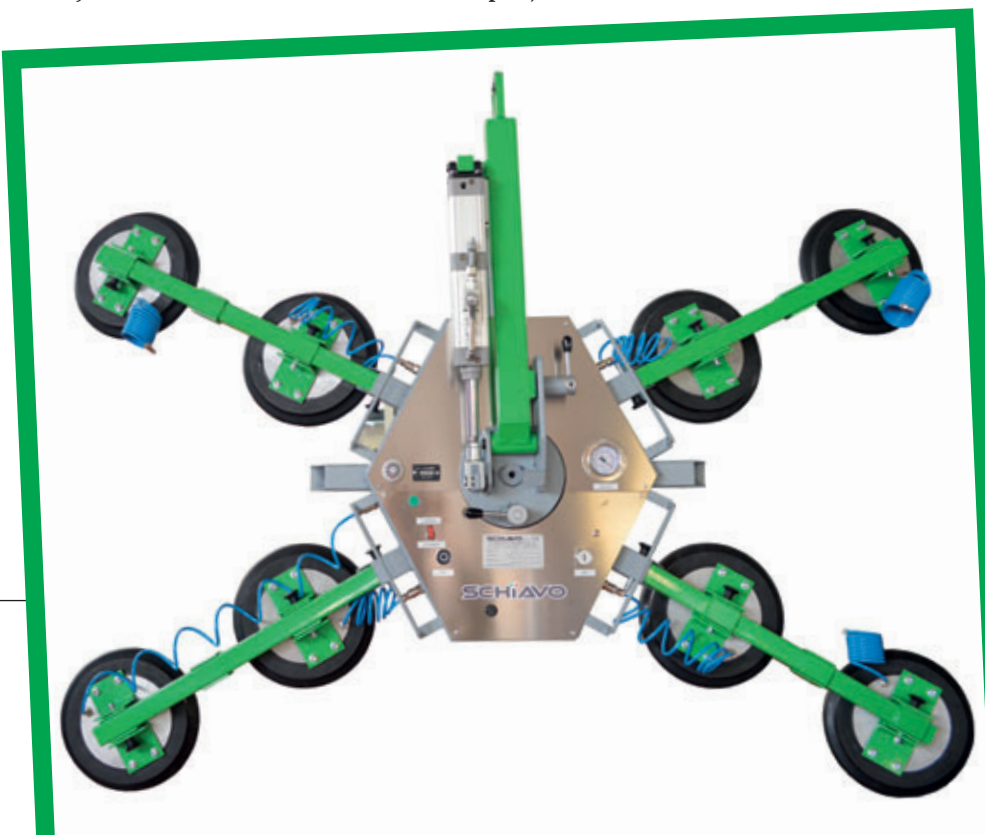


sulated glass panels, capable of handling dimensions up to 6000x3300 mm.

## IN SUM

With a legacy of innova-

tion and quality, Schiavo continues to be a leader in the glass machinery industry - offering state-of-the-art solutions that meet the evolving needs of glassworks worldwide. Its unwavering commitment to excellence ensures that customers can rely on the company's machinery for efficiency, safety and superior performance in their operations.



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Robecchetto con Induno  
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**HYDRO**

Vertical washing machine



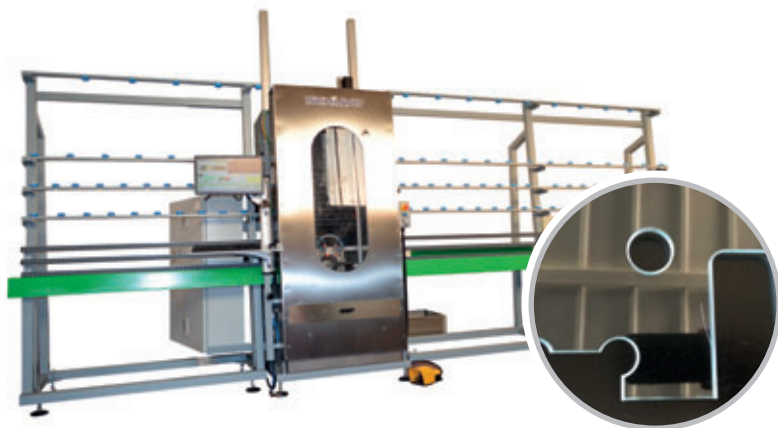
**HTL**

Horizontal flat glass washing machine



**FV1000**

Vertical milling and drilling machine



**GEBI**

Vacuum lifter



**SCHIAVO**

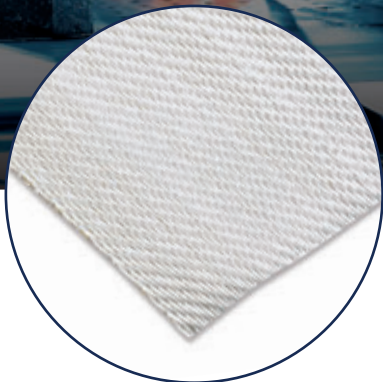
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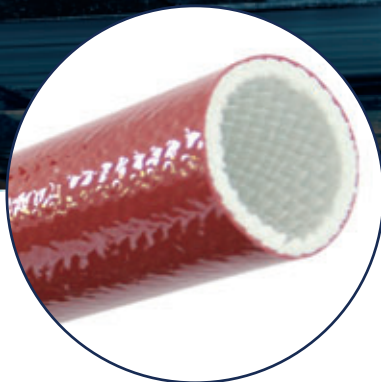
# Textiles for the glass industry

Textiles for the glass industry used to cover and line rollers and ovens for tempering flat glass and for covering bending moulds and pliers for transferring hot glass.



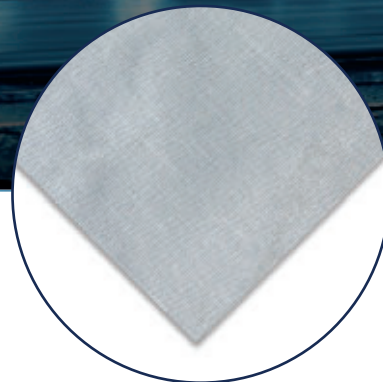
## Cod. 1040VS SILICA CLOTH

Silica cloth is made with silica yarns. The silica yarns are made of continuous glass fibres with a diameter of 6 µm and over, and with an additional treatment to increase the overall proportion of SiO<sub>2</sub> to over 94%. The product is used as a reinforcement for composite materials, and as an acoustic, thermal, hydraulic and electrical cable protection insulator. Under normal conditions it has good chemical stability.



## Cod. 3267R PYROTEX® SLEEVES

Based on braided glass fibres, the Pyrotex® sleeve is covered with a thick layer of red silicone rubber. The rubber reduces energy loss and has a good resistance to abrasion. It resists temperatures up to 260°C. The outer coating based on silicone rubber provides a high level of resistance to abrasion and is used particularly to protect hydraulic cooling pipes, cables for electric circuits and for the movement and handling of highly superheated metals and molten slag.



## Cod. 3240VT020 GLASS CLOTH

Texpack® VT glass cloths consist of 100% textured and/or volumised glass yarns for temperatures of up to 550°C. Having undergone special finishing treatments, they comply with various requirements for use as heat insulation at high temperatures. Completely non-combustible and providing high level mechanical characteristics, they resist temperatures of up to 550°C. They are chemically stable and corrosion-resistant.







# VITROSEP

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**CLEAN WATER**



**DRY WASTE**



**LOW VOLUME**



# Glass powder filtration optimized by patented **VITROSEP** technology

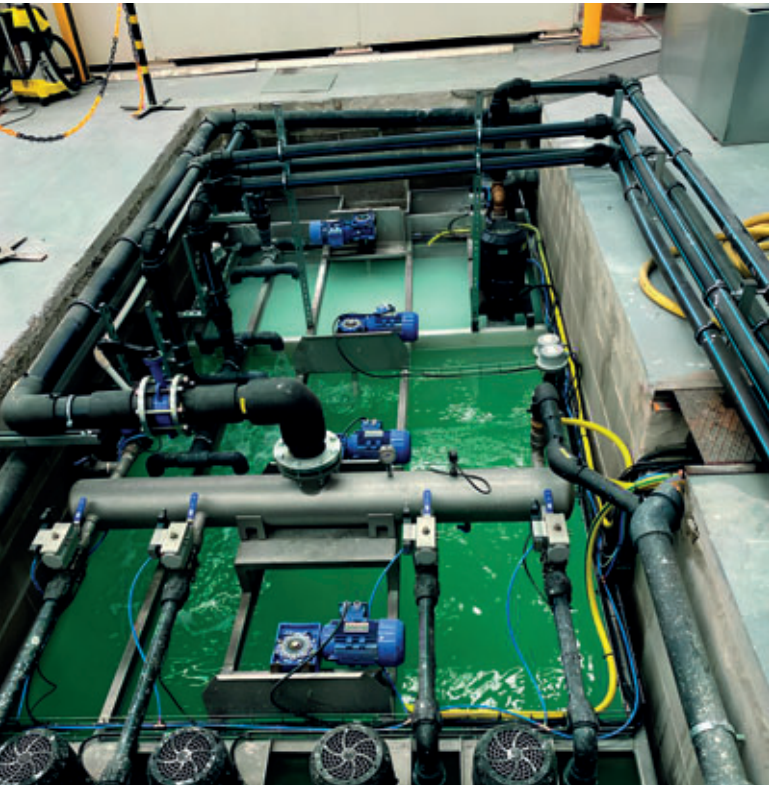
Setting new standards of water treatment efficiency in the glass industry by addressing the long-standing obstacles to separating glass powder from water in polishing processes, VITROSEP's system of advanced filtration, automation and visionary software accelerates effective operations that both enhance glass quality and promote sustainability.

An enduring challenge within the water treatment field is that of separating glass powder particles from the water used in glass polishing processes, which has always provoked an ongoing search for effective solutions. Here, for a problem that has puzzled the industry for years, a solution has finally been found in the patented VITROSEP system - an innovative system that not only addresses the issue effectively but also ensures stable operation through the implementation of sensors, automation and cutting-edge software.

## **DIFFICULTIES OF PARTICLE SEPARATION**

Glass powder particles are notoriously difficult to separate from water. In the glass industry, vast amounts of water are used in polishing processes, which results in the incorporation of glass particles into the water. The presence of these particles can damage equipment, affect glass quality, increase costs, and, if an efficient method is not used, become an environmental risk. Until





the arrival of VITROSEP, the total separation of glass particles was considered an insurmountable challenge.

### LEVERAGING AUTOMATION IN FILTRATION

What distinguishes VITROSEP is its comprehensive approach to addressing this problem. Instead of relying on traditional methods such as centrifugation or sedimentation, the system uses advanced and highly effective filtration. Automation is another crucial aspect of VITROSEP. High-precision sensors constantly monitor process parameters and ensure optimal separation. Additionally, automation allows the system to operate continuously without human intervention, significantly increasing the efficiency and reliability of the process. The software developed specifically by VITROSEP is key to its stable operation. This software not only controls valves, pumps, and other components, but also collects and analyzes real-time data. The ability to adapt to variations in water quality and the concentration of glass particles ensures that VITROSEP is an extremely reliable solution in various operating conditions. Furthermore, the software provides operators with a detailed view of system performance, facilitating informed decision-making and process optimization.

### AN ENTHUSIASTIC RECEPTION

VITROSEP has been warmly

received in the glass industry, where it has proven to be a revolutionary solution for water treatment. The advantages of this system are clear. Reducing glass particles in the water not only improves the quality of the glass produced but also extends the life of equipment and reduces maintenance costs. Additionally, by reducing the consumption of water, grinding tools, and energy, VITROSEP contributes to sustainability and compliance with increasingly stringent environmental regulations.

### TAKING INNOVATION SERIOUSLY

In sum, VITROSEP is much more than a simple water treatment solution for the glass industry. It is a patented technology that has overcome a major challenge and revolutionized how this problem is addressed. With its comprehensive approach combining the separation of solids, automation, and advanced software, VITROSEP has proven to be an extremely reliable and effective solution. In a world where sustainability and efficiency are essential, VITROSEP stands out as an example of innovation that benefits both the glass industry and the environment.



C/ Garrigàs, 9-A  
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Figueres (Girona)  
SPAIN  
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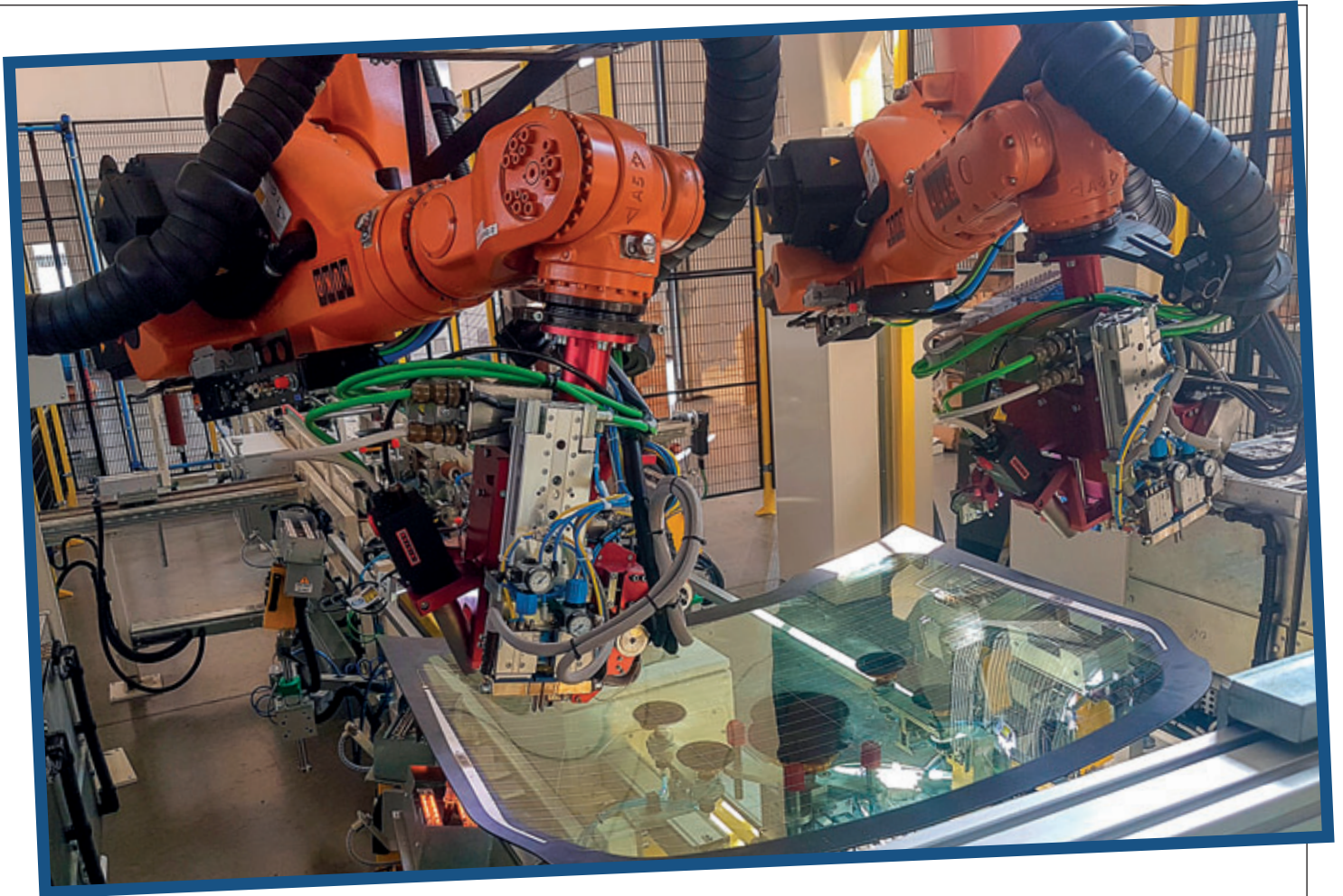
# A soldering paradigm reset as **EASY** **AUTOMATION** makes waves

A prominent player in automotive glass solutions since 2000, EASY AUTOMATION is set to debut its groundbreaking SDEA-AI soldering system at Glasstec 2024. This AI-driven innovation revolutionizes quality control, performing 100,000 real-time checks per second, thereby ensuring flawless soldering without traditional tests. A system that improves efficiency, reduces costs, and elevates production reliability.



Founded at the turn of the millennium, Easy Automation has prized itself ever since in its synergies of individuals with decades of experience in the automotive glass automation sector. Here the person who particularly represents the soul of the company more than any other is its founder, Augusto Vincenzi - one who has untiringly set the direction towards innovative solutions by which customers can improve and optimize their production processes. Providing solutions that are as standard

and turnkey as possible while keeping the attention trained upon customer customization, has allowed the company to grow steadily. For Easy Automation, the most important events are always linked to new developments. It's no surprise that, instead of paintings, the company's walls are proudly adorned with notifications of its patents, which currently span the globe. The company head office is situated in Pomezia, a production area in central Italy near Rome. Its core business is that of producing



machines for the automotive glass sector - in particular all-round solutions for glass soldering for the application of components on all types of glass and filaments on PVB with drums as well as table and cutting machines for PVB. Turnover is 90 percent from the automotive glass sector. As Glasstec 2024 approaches, the entire Easy Automation team is especially excited as it anticipates two live demonstrations: its multifunctional table and the SDEA-AI. The table incorporates cutting capabilities and the application of various filament types. Alongside the table, the SDEA-AI showcase will feature the company's

new Artificial Intelligence-enhanced soldering feature, which is a very interesting development that the founder will be pleased to describe in greater detail.

### **A TRACK-RECORD OF EXCELLENCE**

Easy Automation has long been recognized for its highly-efficient soldering systems, particularly in fully-automated production lines. In its continuous pursuit of excellence, Easy Automation has developed its SDEA-AI with a special focus on enhancing manual soldering processes. This proprietary Artificial Intelligence model pushes the boundaries of soldering anal-

ysis - performing an impressive 100,000 checks per second. The SDEA-AI is based on an original algorithm and is seamlessly integrated into the company's SDEA-C soldering station - revolutionizing both process and quality control. The system's capability to analyze and classify 100 percent of soldering in real-time is truly remarkable. It can instantly identify sub-standard soldering, enabling their immediate removal from production without resorting to destructive random pulling tests. This advancement represents a paradigm shift from conventional quality control procedures, which are costly, time-consuming, generate unnecessary waste and do

not assure that untested welds meet quality standards. By incorporating SDEA-AI, the company's soldering stations evolve into self-monitoring units that consistently deliver superior quality. Here the benefits include cost savings, improved efficiency, reliability and safety in production. The system provides standardized, objective evaluations - minimizing human error and ensuring comprehensive weld traceability.

### **GLASSTEC 2024**

Already the team is excited to premiere the SDEA-AI at GLASSTEC 2024, even though the system is already in production with some of its clients. In in-



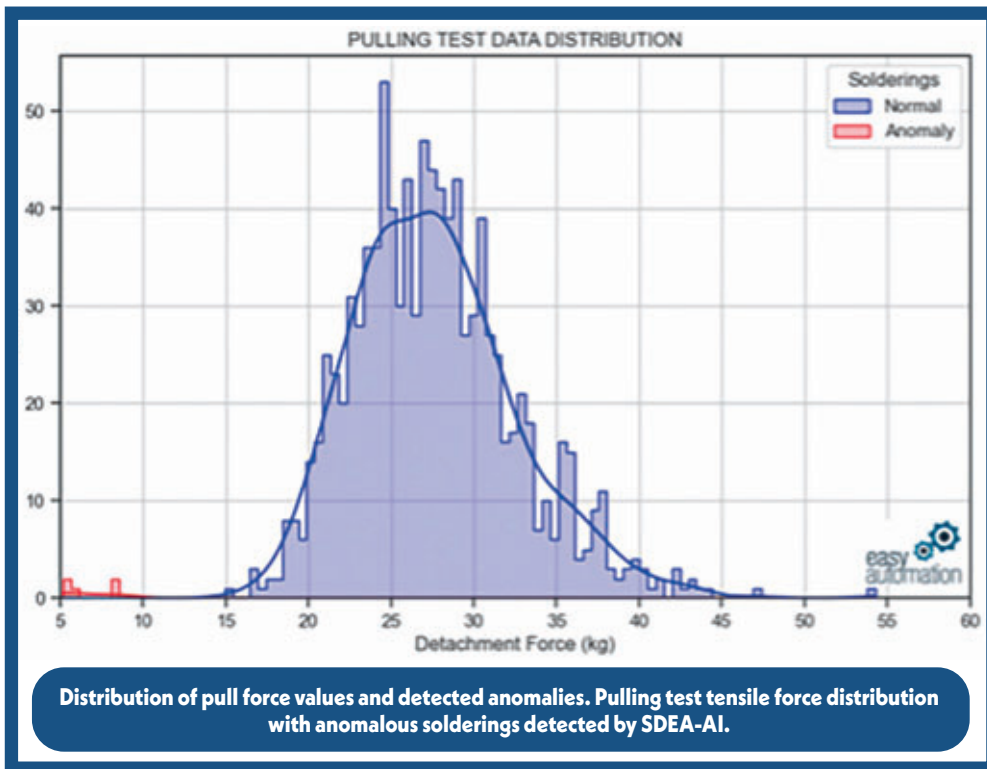
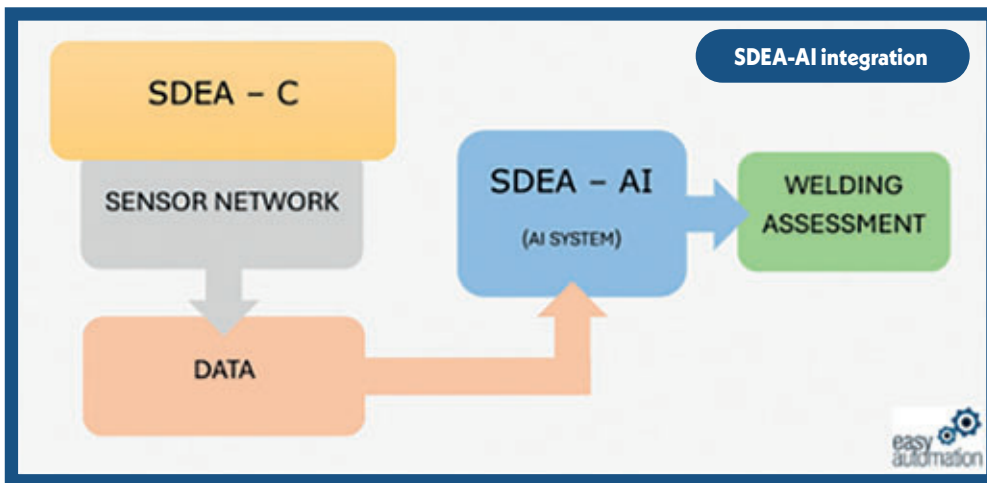
dustries where precision is non-negotiable, even minor soldering defects can lead to severe consequences. Recognizing this critical need, the company developed a system that not only matches but also surpasses human capabilities in de-

fect detection. To illustrate SDEA-AI's contribution, it can be helpful to envision it as an indefatigable, ultra-precise quality control expert. It vigilantly monitors every microsecond of the soldering process, making real-time assessments and

immediately flagging any potential issues. The system's innovative approach to quality control employs a sophisticated, multi-layered sequence:

1. **Data Collection:** Integrated sensors capture comprehensive data throughout the soldering process.
2. **Feature Extraction:** The system identifies key characteristics indicative of weld quality.
3. **Pattern Recognition:** Advanced algorithms compare these characteristics against specific complex patterns.
4. **Decision Making:** Based on this thorough analysis, the system predicts the pull force value, determining whether each weld meets the preset quality standards.

SDEA-AI significantly reduces costs and greatly improves product reliability for clients. It enables smarter, more efficient production, yielding safer and more dependable products. Easy Automation continues to refine this technology, leading the AI-driven manufacturing revolution that's setting new industry standards.




Via Sassuolo  
00071 Pomezia RM  
ITALY  
Tel.: +39-06-52364774  
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DISCOVER OUR  
SOLUTIONS





# An industry conversation between **FLABEG, MARPOSS** and **OLYMPIAS** - PART 2 - **SMART GLASS** **FORUM 2024**

**MARPOSS**  
**SPA**  
A legacy of  
innovation and growth

Founded in 1952 by Mario Possati, Marposs has its roots in the machine tool controls business. Over the past 70 years, the company has developed a myriad of solutions for in-process and post-process controls, expanding its presence to 34 countries to be close to its customers. Notably, over 90 percent of Marposs's turnover is generated outside of Italy, with one-third of its employees based at the headquarters in Bologna. This global reach is complemented by 30 strategic acquisitions over the last two decades - enabling Marposs to diversify and meet various customer needs.

#### **Embracing the automotive industry's evolution**

Marposs has been at the forefront of the automo-



Moderating on May 8 at the Automotive Smart Glass Forum at E-Tech Europe 2024 in Bologna, Glass Technology International was happy to hear key insights from Drs Matthias Schiller, CTO at FLABEC Germany, Luca Bruni, Automotive Glass, Group Industry Manager at MARPOSS and Agamemnon Varonos, CEO of OLYMPIAS as the trio discussed how their latest smart windshield innovations are impacting the automotive industry. In this second of our series of three parts dedicated to the event, we cover the presentation of Marposs's Dr Bruni.



quality. Marposs excels in quality control - helping to reduce scrap and costs and thereby aligning with every manufacturer's goal of cost reduction.

**Transformations in automotive glass**

The role of automotive glass has drastically evolved since the early days of the automobile. Initially, cars featured minimal, simple glass components, with the primary focus on engine innovation. Today, glass is integral to car design and functionality, significantly influencing a model's success. Modern automotive glass is not only more prevalent but also thinner and stronger, contributing to overall vehicle weight reduction and enhanced safety. In-

the automotive industry's transition from internal combustion engines (ICE) to electric engines, while also driving the digitalization of the quality process. In particular, it has been providing innovative solutions for the automotive glass industry for more than 20 years. The company's focus on quality control during production is pivotal, as

evidenced by the Overall Equipment Effectiveness

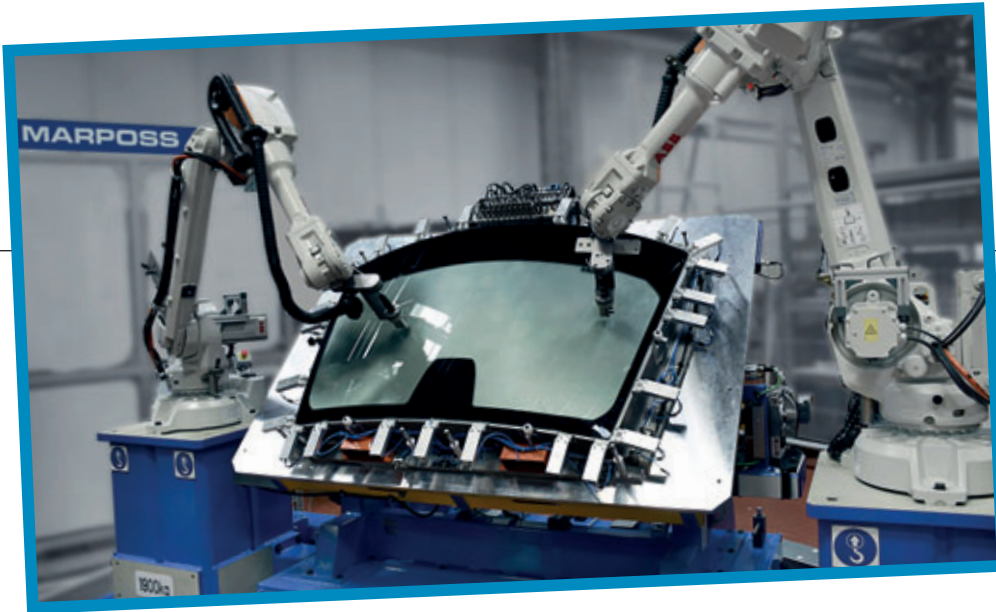
(OEE) index which categorises production into availability, performance and



### WHY SHOULD INVEST IN QUALITY CONTROL?

OEE (Overall Equipment Effectiveness) is a standard for measuring manufacturing productivity. It identifies the percentage of manufacturing time that is truly productive.

Availability (no stop time) + Performance (as fast as possible) + Quality (production of good parts only) = COST REDUCTION



novations include integrated antennas, acoustic control, adjustable transparency, anti-fog and water-repellent coatings, and head-up displays (HUDs) providing critical information directly on the windshield.

#### Characteristics of modern automotive glass

The increasing quantity of automotive glass necessitates maintaining lightweight properties to control power consumption, battery life and CO2 emissions. Modern laminated glass, sometimes less than 3.5mm thick, achieves a weight reduction of 20 kg



while maintaining high impact resistance for safety. These enhancements improve user experience and vehicle performance - meeting both aerodynamic and aesthetic requirements.

#### Meeting customer expectations

Marposs addresses specific customer demands for accuracy, speed and flexibility. The company's sensors and systems deliver high precision, essential for the rigorous standards of the automotive industry. Marposs ensures swift cycle times, performing over 200 measurements on glass surfaces within a few seconds, adaptable to various production lines. Additionally, its systems are designed for flexibility and are capable of measuring different types of glass with minimal adjust-

ments, catering to diverse customer needs.

#### Advanced glass control solutions

Marposs employs three primary approaches to control automotive glass:

- **Contact Sensors**  
The traditional method uses pneumatically activated contact sensors to measure forms, shapes, and edges;
- **Non-Contact Sensors**  
These include optical sensors (chromatic confocal technology), which allow for thickness measurement without physically touching the glass, thus avoiding any potential damage during measurement;
- **MAESTRO System**  
This advanced, non-contact solution uses robots for measuring various glass types. De-

veloped in collaboration with other companies of Marposs's Group, MAESTRO integrates several sensors inside the measuring head, enabling continuous measurement of glass characteristics. The system can handle complex measurements like dimensions, curvature and thickness (air gap) and is managed by sophisticated software that optimises measurement trajectories.

#### Partnerships and custom solutions

As a technological partner, Marposs collaborates with end users, automotive glass producers, integrators and companies that manufacture measuring benches. Its extensive network of distributors and local offices enables Marposs to offer tailored solutions worldwide - from individual components to comprehensive systems, depending on customer requirements. Through its commitment to innovation and quality, Marposs continues to lead in providing cutting-edge solutions for the automotive glass industry.



**MARPOSS**

Via Saliceto, 13  
40010 Bentivoglio BO, Italy  
Tel.: +39-051-899111  
Fax: +39-051-899525

[www.marposs.com](http://www.marposs.com)



# FICKERT+WINTERLING

core values shown in

# GLASS FUTURES

partnership

Coherent with everything that typifies its commitment to environmental responsibility and sustainable glass manufacturing, FICKERT + WINTERLING's groundbreaking KWM 8s Line reduces energy consumption and CO2 emissions as the company partners with Glass Futures to focus on eco-friendly innovation - all while advancing precise, flexible production.

**Michael Kraus**  
Head of Engineering & Development

**Simon Llewellyn**, (Mechanical Project Engineer, Glass Futures), **Caroline Hobday** (Account Manager, Glass Futures), **Thomas Lichtblau** (Service Engineer, Fickert + Winterling), **Michael Graßold** (Head of Assembly Department, Fickert + Winterling) and **Andy Pink** (Senior CAPEX Project Manager, Glass Futures).



Glass Futures' unique 165,000 square foot Global Centre of Excellence in St Helens, UK where an industrial scale 30 tonnes per day pilot furnace is currently being installed.



## **D** RIVING **INNOVATION: FICKERT + WINTERLING'S SIGNATURE GERMAN PRECISION**

The glass industry finds itself at a critical juncture, facing the pressing challenge of climate change and the urgent need for sustainable manufacturing practices. Glass, a ubiquitous material with far-reaching applications, must evolve to minimize its environmental

impact without compromising quality or efficiency. In this transformative era, the Glass Futures Global Centre of Excellence in St Helens, UK, emerges as a beacon of innovation, spearheading the development of groundbreaking technologies for low-carbon glass production. At the forefront of this endeavor stands Fickert + Winterling, a German company renowned for its unwavering commitment to excellence in engineering and technology. For generations, Fickert + Winterling has been the epitome of 'Made in Germany' quality

- consistently pushing sustainable glass manufacturing boundaries of innovation within the glass industry. With the delivery of its groundbreaking Continuously Rolled Glass (KWM) line to Glass Futures, Fickert + Winterling once again reaffirms its position as a pioneer in sustainable glass manufacturing.

## **A LEGACY OF GERMAN ENGINEERING EXCELLENCE**

Established in 1940, family-owned company Fickert + Winterling boasts a rich her-

itage that's deeply-rooted in German engineering excellence. Nestled in Marktrewitz, Bavaria, the company has grown from its humble beginnings into a global leader in glass processing machinery. Today, Fickert + Winterling employs a team of approximately 100 highly skilled engineers, technicians and craftspeople - all dedicated to upholding the company's unwavering commitment to quality and innovation.

## **BEYOND MACHINE BUILDING: A HOLISTIC APPROACH**



## TO GLASS MANUFACTURING

Fickert + Winterling expertise extends far beyond the realm of machine design and manufacturing. The company operates a state-of-the-art laser cutting facility and a specialized welding workshop, enabling them to provide a comprehensive one-stop shop for all your glass manufacturing needs. This holistic approach ensures seamless integration and optimal performance of their machinery within your production environment.

## INNOVATION AND EFFICIENCY: DELIVERING UP TO 40 LINES PER YEAR

Fickert + Winterling dedication to efficiency is as

remarkable as its commitment to quality. The company possesses the impressive capacity to deliver up to 40 glass manufacturing lines per year. This high production output is a testament to their streamlined manufacturing processes and their ability to meet the demands of the ever-evolving glass industry.

## HALLMARK OF GERMAN EXCELLENCE: UNWAVERING COMMITMENT TO QUALITY

An uncompromising focus upon 'Made in Germany' excellence is a cornerstone of Fickert + Winterling's philosophy. From the sourcing of high-grade materials to rigorous testing and quality control procedures, the company

ensures that every machine and component surpasses the highest standards. Such dedication has earned Fickert + Winterling a global reputation for reliability and durability, making its products the preferred choice for glass manufacturers worldwide.

## THE KWM 8S LINE: A TESTAMENT TO SUSTAINABLE INNOVATION

The KWM 8s Line stands as a prime example of Fickert + Winterling's dedication to sustainable innovation. The machine's continuous rolling process significantly reduces energy consumption compared to traditional drawing methods, contributing to a lower CO2 footprint in glass production. This focus on sustainability aligns

perfectly with Glass Futures' mission to develop eco-friendly glass manufacturing technologies.

## UNVEILING THE POWERHOUSE: A CLOSER LOOK AT THE KWM 8S LINE

At the heart of the KWM 8s Line lies German engineering prowess, meticulously crafted to deliver exceptional performance and precision. Unlike the conventional drawing process, where molten glass is pulled from a heated shaft and then cooled and shaped, the KWM 8s Line enables uninterrupted flat glass production. Molten glass is passed between two precise rollers, creating a wide ribbon of glass that can then be rolled to



The KWM realizes outputs up to 300 tpd / 3,7m gross ribbon width.

the desired thickness and further processed. The KWM 8s Line boasts an impressive capacity, effortlessly handling up to 300 tons of glass per day. This remarkable output is complemented by its versatility, seamlessly producing flat glass for a wide spectrum of applications, from solar modules to countless other architectural and industrial uses.

### **PRECISION AT ITS FINEST: UNCOMPROMISING QUALITY WITH HIGH-TECH CONTROL**

Fickert + Winterling commitment to quality extends beyond the impressive output of the KWM 8s Line. High-precision rollers and cutting-edge control technology work in harmony to ensure consistently high glass quality, even at such impressive production rates. This unwavering focus on precision is a hallmark of Fickert + Winterling's engineering philosophy - ensuring that every piece of glass produced meets the highest standards.

### **FLEXIBILITY: EMPOWERING RESEARCH AND DEVELOPMENT**

The KWM 8s Line's flexibility extends beyond its impressive production capabilities and diverse

range of applications. This innovative machine serves as a powerful tool for research and development within the glass industry. Here's how:

- **Variable Process Parameters:** The KWM 8s Line allows for precise control over various process parameters, including roller temperature, line speed, and cooling rates. This enables researchers to experiment with different glass compositions and production techniques, accelerating the development of new and improved glass formulations with enhanced properties.
- **Scalability for Pilot Production:** The KWM 8s Line's manageable size makes it ideal for pilot production runs. Researchers can test new glass formulations and processes on a smaller scale before committing to full-scale manufacturing, reducing risks and costs associated with large-scale production line adjustments.
- **Rapid Prototyping:** The ability to produce glass with varying thicknesses and characteristics on the KWM 8s Line facilitates rapid prototyping for researchers developing novel glass applications. This allows for quicker iteration and refinement of glass products, accelerating the innovation cycle.

### **A SYMBIOTIC PARTNERSHIP: FICKERT + WINTERLING AND GLASS FUTURES**

The collaboration between Fickert + Winterling and Glass Futures represents a powerful force for positive change in the glass industry. By combining Fickert + Winterling's cutting-edge KWM 8s Line with Glass Futures' world-class research expertise, the partnership unlocks exciting possibilities for the future of glass manufacturing.

- **Sustainable Glass Innovation:** The partnership focuses on developing and implementing sustainable glass production practices. The KWM 8s Line's energy efficiency and Glass Futures' commitment to eco-friendly technologies pave the way for a greener future for glass.
- **Knowledge Sharing and Collaboration:** The collaboration fosters an environment of knowledge sharing and collaboration between industry leaders and researchers. This exchange of expertise accelerates innovation and the development of next-generation glass manufacturing technologies.
- **Building a Sustainable Future Together:** By

working together, Fickert + Winterling and Glass Futures are pushing the boundaries of what's possible in glass manufacturing. Their dedication to sustainability ensures that glass remains a viable and eco-friendly material for generations to come.

### **CONCLUSION**

Fickert + Winterling stands as a beacon of German engineering excellence. Its KWM 8s Line is a testament to the company's unwavering commitment to innovation and sustainability. The partnership between Fickert + Winterling and Glass Futures signifies a new era for the glass industry - one focused on both environmental responsibility and groundbreaking technological advancements.



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# Optical glass premiered by SCHOTT is 100 percent hydrogen-produced

In a titanic leap towards climate-friendly specialty glass production, SCHOTT recently made glass exclusively from a hydrogen-heated furnace, even though a lack of green hydrogen infrastructure would currently delay its use at industrial scale.

**A**fter successful lab testing of glass production with 100 percent hydrogen last spring, Schott has now completed a much-anticipated, industrial-scale application - signalling yet another milestone by the technology group as it continues to forge ahead towards climate-neutral production.

## INDUSTRY DÉBUT

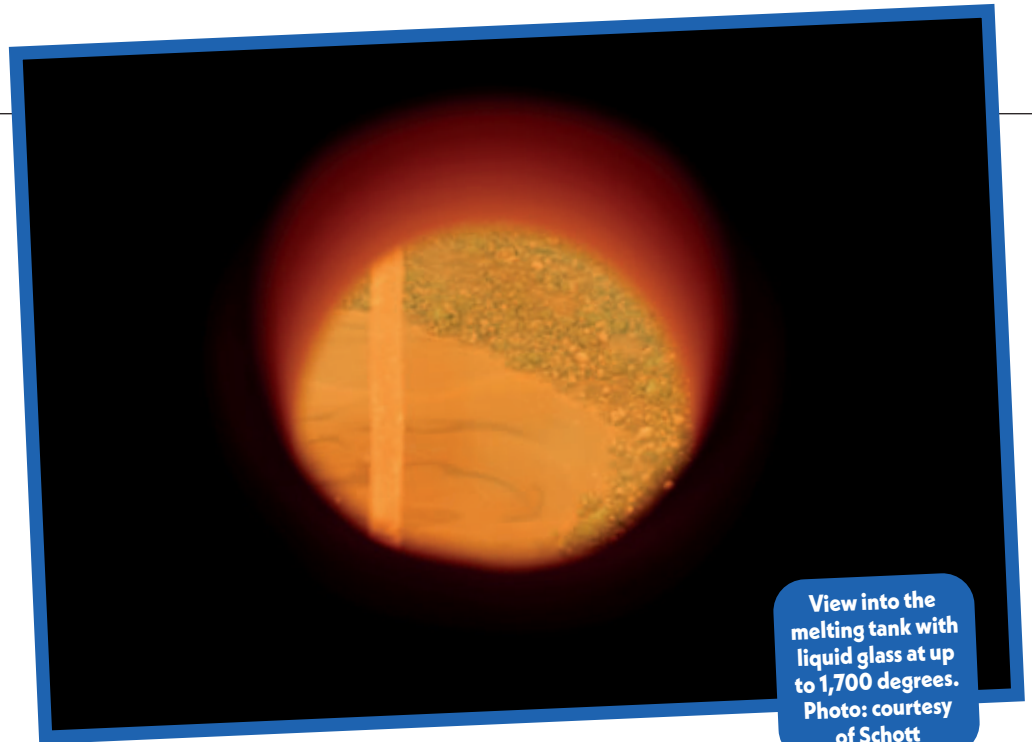
For three days, the Mainz-based specialty glass expert melted optical glass in a furnace using the new technology for the first time - exclusively heated by hydrogen, completely free of natural gas. So far, Schott has been conducting its tests with grey hydrogen given that green hydrogen,

Successful testing on a large industrial scale: Schott has produced an optical glass with 100 percent hydrogen for the first time. Photo: courtesy of Schott





produced from renewable energies, remains unavailable still in sufficient quantities. The large-scale test got top marks and the quality of the glass is now being analysed. Said Schott project manager Dr Lenka Deneke: “The test with 100 percent hydrogen is pioneering work for the specialty glass industry. If it further shows that the glass quality is right and its properties remain unchanged then hydrogen would indeed be a suit-



View into the melting tank with liquid glass at up to 1,700 degrees. Photo: courtesy of Schott



Inspection of a glass bar: The large-scale test received excellent marks, and the quality of the glass is now being analysed. Photo: courtesy of Schott



able technology option.” The test manager emphasised that the experience gained from last year’s tank tests with an initial 35 percent hydrogen-by-volume helped tremendously with this success - also asserting that there remain many unanswered questions that require further research. These would include questions like: ‘How does hydrogen use impact the complex melting processes and the quality of different products therein? What long-

term effects does heating with hydrogen have on the plant itself? What infrastructure would need to be adapted for hydrogen to be optimally used as a substitute for natural gas in operations? To answer these questions, Schott chose an optical glass for its first test product. To offer some background, the technology group manufactures over 100 optical glass types from high-quality raw materials for various applications. These include consumer goods and

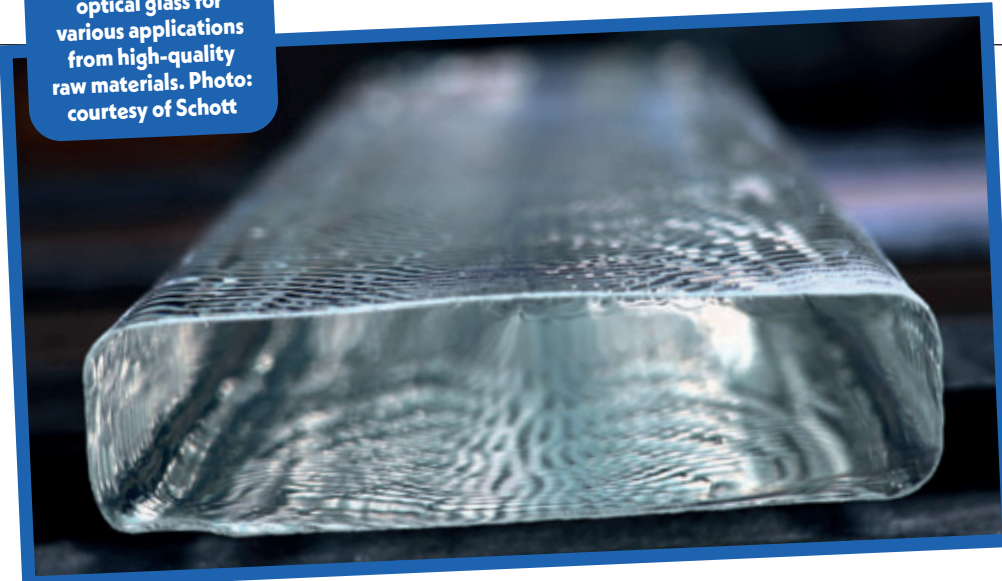
measurement technology as well as optical systems in research and development. The challenge here is that the glass must have the highest homogeneity and transmission properties. This also applies to the molten glass, which undergoes strict quality testing.

### CONQUESTS STEP-BY-STEP

If the glass meets the high product requirements it gets sent to the customer. “We would then have con-

firmation that the use of 100 percent hydrogen instead of fossil fuels delivers the same quality under industrial conditions,” says Deneke. A permanent changeover would thereafter require further long-term tests and continuous supply via a hydrogen pipeline. Only then would the Group have taken another important step towards its strategic goal of climate-neutral glass production by 2030. In this context, climate-neutral means no Scope 1 or 2 emissions according to the

Schott manufactures over 100 types of optical glass for various applications from high-quality raw materials. Photo: courtesy of Schott



Greenhouse Gas Protocol. Schott is currently pursuing this goal with activities in four fields of action: Technology change (such as the switch to green hydrogen), expansion of energy efficiency, conversion to 100 percent green electricity and, as a final step, the compensation of remaining emissions through involvement in climate protection projects. The company has already achieved the switch to 100 percent green electricity, with energy efficiency being continuously and systematically increased. This

technology shift is primarily about replacing natural gas for operation of the furnaces. Either through electrification with green electricity or in future through the use of green hydrogen. To this end, Schott had already carried out the first large-scale tests with local partners towards the end of 2022 with 35 percent hydrogen added to natural gas. Thereafter laboratory tests with 100 percent hydrogen use followed in spring 2023 - paving the way for large-scale industrial use.

### INFRASTRUCTURE CHALLENGES: GREEN HYDROGEN IN SHORT SUPPLY

For the large-scale tank test with 100 percent hydrogen heating, the hydrogen tank at Schott in Mainz was filled three times - only with grey, not green, climate-neutral hydrogen. This is because hydrogen produced using renewable energies remains in short supply still. "We deliberately decided to use it so we wouldn't lose time testing its technical feasibility. This suffices for our tests, but we urgently need green energy for climate protection," says Dr Frank Heinrich, Chairman of the Board of Management at Schott and person-in-charge of the Group's sustainability strategy. The current appeal to politicians runs: "Companies from energy-intensive industries need to set the course for the fastest possible development of a functioning infrastructure for green electricity and green hydrogen in Germany. Then our commitment

will pay off - both for the climate and for industry competitiveness."

### EU AND FEDERAL FUNDING

In addition to its own investments, Schott receives financial support from various institutions for its developmental work in the field of hydrogen. The tests were supported by the Federal Ministry of Education and Research BMBF and the DLR project management organisation in the MiGWa project as well as 'Financed by the European Union-Next-GenerationEU'. Together with the Rhineland-Palatinate Ministry for Climate Protection, Environment, Energy and Mobility, the project 'H2 Industry - Use of Hydrogen in Industrial Combustion Processes' was funded by the European Union from the European Regional Development Fund. Finally, the Kopernikus project 'Power-to-X' was funded by the Federal Ministry of Education and Research BMBF.



Schott receives financial support from various institutions for its development work in the field of hydrogen. Photo: Photo: courtesy of Schott

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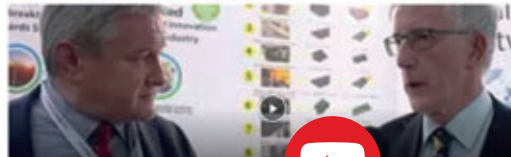


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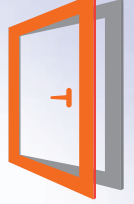
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Hegla  
Lisec Group  
Neptun  
North Glass Technology  
Schiavo  
Schiatti Angelo  
Teknik Elmas  
Tesir Makine

**COMPLETE SHAPE CUTTING LINES**

Bando Kiko  
Bavelloni  
Bottero  
CMS  
Glaston Group  
Hegla  
Lisec Group  
North Glass Technology  
Schiavo  
Teknik Elmas  
Tesir Makine  
Tuomas

**AUTOMATIC CUTTING MACHINES FOR AUTOMOTIVE GLASS**

Bando Kiko  
Bottero  
CMS  
Glaston Group  
IOCCO Group  
Lisec Group  
Schiavo

**LOADING AND TILTING MACHINES**

Bando Kiko  
Bavelloni  
Bottero  
CMS  
ECOL  
Forel  
Glass Company  
Glaston Group  
GPM Automation  
Hegla  
IOCCO Group  
Lisec Group  
Neptun  
Schiavo  
Tuomas

**CUTTING TABLES**

Bando Kiko  
Bavelloni  
Bottero  
CMS  
Fenzi  
Forel  
Glaston Group  
Hegla

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## **IOCCO Group**

**Lisec Group**  
**Schiavo**  
**Tekno Kilns/Pujol**  
**Triulzi**  
**Tuomas**

## **CUTTING OPTIMIZERS**

**Bando Kiko**  
**Bavelloni**  
**Bottero**  
**CMS**  
**Deltamax Automazione**  
**Forel**  
**Glaston Group**  
**Hegla**  
**IOCCO Group**  
**Lisec Group**  
**Optima**  
**Schiavo**  
**Tuomas**

## **CUTTING PATH OPTIMIZERS**

**Bando Kiko**  
**Bottero**  
**CMS**  
**Glaston Group**  
**IOCCO Group**  
**Lisec Group**  
**Optima**  
**Schiavo**

## **CAD SYSTEMS**

**Bavelloni**  
**CMS**  
**Lisec Group**  
**Prodim**  
**Schiavo**

## **ARMOURED AND LAMINATED GLASS CUTTING MACHINES**

**Bando Kiko**  
**Bavelloni**  
**Bottero**  
**CMS**  
**Glaston Group**  
**Hegla**  
**Lisec Group**  
**Schiavo**  
**Tuomas**

## **ROUND OR SHAPE CUTTING MACHINES**

**Bando Kiko**  
**Bavelloni**  
**Bottero**  
**CMS**  
**Fenzi**  
**Glaston Group**  
**Hegla**  
**Lisec Group**  
**Schiavo**  
**Tuomas**

## **CUTTING ACCESSORIES**

**ADI - Surface Group**  
**Ayrox**  
**Bando Kiko**  
**Bottero**  
**Fenzi**  
**IOCCO Group**  
**Schiavo**  
**Softeco**  
**Talamoni**  
**Teknik Elmas**  
**Tesir Makine**  
**Tuomas**

## **SAW MACHINES**

**Schiavo**

## **AUTOMATIC SAWS FOR CUTTING LAMINATED AND BULLET-PROOF GLASS**

**CMS**  
**Schiavo**

## **BREAKING SYSTEMS**

**Bando Kiko**  
**Bavelloni**  
**Bottero**  
**CMS**  
**Glaston Group**  
**Hegla**  
**IOCCO Group**  
**Lisec Group**  
**Schiavo**  
**Teknik Elmas**  
**Tesir Makine**  
**Tuomas**

## **CUTTING MACHINES WITH BREAKING AND EDGE DELETING DEVICES**

**Bando Kiko**  
**Bottero**  
**CMS**  
**Glaston Group**  
**Hegla**  
**IOCCO Group**  
**Lisec Group**  
**Schiavo**  
**Teknik Elmas**  
**Tesir Makine**  
**Tuomas**

## **GLASS CUTTING FLUIDS**

**Schiavo**  
**Tuomas**

## **ACCESSORIES**

**Schiavo**  
**Schiatti Angelo**  
**Talamoni**  
**Teknik Elmas**

## **Tesir Makine** **Tuomas**

## **Edging and bevelling**

## **COMPLETE EDGING LINES**

**Adelio Lattuada**  
**B Solution**  
**Bando Kiko**  
**Bavelloni**  
**Bottero**  
**CMS**  
**Forel**  
**IOCCO Group**  
**Lovati**  
**Neptun**  
**Schiavo**  
**Schiatti Angelo**  
**Schraml**  
**SKG - Skill Glass**

## **CROSSBELT ARRISERS**

**Best Makina**

## **COMPLETE BEVELLING LINES**

**Adelio Lattuada**  
**Bando Kiko**  
**Bottero**  
**CMS**  
**IOCCO Group**  
**Lovati**  
**Schiavo**  
**Teknik Elmas**  
**Tesir Makine**

## **COMPLETE AUTOMOTIVE GLASS EDGING AND BEVELLING LINES**

**Adelio Lattuada**  
**Bando Kiko**  
**Bavelloni**  
**Bottero**  
**Glaston Group**  
**IOCCO Group**  
**Schraml**  
**SKG - Skill Glass**  
**Teknik Elmas**  
**Tesir Makine**

## **DOUBLE-EDGE GRINDING MACHINES**

**B Solution**  
**Bando Kiko**  
**Bavelloni**  
**Bottero**  
**CMS**  
**IOCCO Group**  
**Schiatti Angelo**  
**Teknik Elmas**  
**Tesir Makine**

## **VERTICAL-EDGE GRINDING MACHINES**

**Adelio Lattuada**  
**B Solution**  
**Bando Kiko**  
**Bavelloni**  
**Bottero**  
**Forel**  
**Glass Company**  
**Glaston Group**  
**Neptun**  
**Schiavo**  
**Schiatti Angelo**  
**SGM - Special Glass Machinery**  
**North Glass Technology**  
**Schraml**  
**SKG - Skill Glass**  
**Tesir Makine**

## **GRINDING SPINDLES**

**Schiavo**  
**Teknik Elmas**  
**Tesir Makine**

## **BEVELLING MACHINES FOR ROUND AND SHAPED GLASS**

**Adelio Lattuada**  
**Bando Kiko**  
**Bavelloni**  
**CMS**  
**Lovati**  
**Schiavo**  
**Teknik Elmas**  
**Tesir Makine**

## **STRAIGHT-EDGE BEVELLING MACHINES**

**Adelio Lattuada**  
**Bando Kiko**  
**Bavelloni**  
**Bovone**  
**CMS**  
**Glass Company**  
**Schiavo**  
**Schiatti Angelo**  
**Teknik Elmas**  
**Tesir Makine**

## **BEVEL POLISHING MACHINES**

**Adelio Lattuada**  
**Bando Kiko**  
**Bavelloni**  
**Bovone**  
**CMS**  
**Lovati**  
**Teknik Elmas**  
**Tesir Makine**

## **STRAIGHT-EDGE ENGRAVING MACHINES**

**Bavelloni**  
**Bottero**  
**CMS**

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**Schraml**  
**SKG - Skill Glass**  
**Teknik Elmas**

## SHAPED GLASS ENGRAVING MACHINES

Bavelloni  
**Bottero**  
**CMS**  
Lovati  
**Teknik Elmas**  
**Tesir Makine**

## CORNER GRINDING MACHINES

**Adelio Lattuada**  
**B Solution**  
Bavelloni  
**CMS**  
Lovati  
SGM - Special Glass Machinery  
**Schraml**  
**SKG - Skill Glass**  
**Teknik Elmas**  
**Tesir Makine**

## SHAPED GLASS GRINDING MACHINES

**Adelio Lattuada**  
**Bando Kiko**  
Bavelloni  
**Bottero**  
**CMS**  
**Forel**  
**Glass Company**  
Lovati  
**Teknik Elmas**  
**Tesir Makine**

## BELT GRINDING MACHINES

**Adelio Lattuada**  
**Best Makina**  
Fenzi  
**IOCCO Group**

## LATHES - VERTICAL AND HORIZONTAL

**CMS**  
Fenzi  
**Teknik Elmas**  
**Tesir Makine**

## EMBOSSING MACHINES

**CMS**  
Fenzi

## PORTABLE MACHINES

Fenzi  
**Helios Quartz**

## DIAMOND TOOLS

**Adelio Lattuada**  
ADI - Surface Group  
**Bando Kiko**

**Bovone**  
**Bottero**  
Diamut - Biesse  
Fenzi  
**Glaston Group**  
Marrose Abrasives  
**Mole Moreschi**  
**Neptun**  
**Schiavo**  
**Talamoni**  
**Teknik Elmas**  
**Vetrolux**

## DIAMOND BELTS

**Mole Moreschi**

## SEAMING LINES

**Best Makina**

## POLISHING WHEELS

**Adelio Lattuada**  
ADI - Surface Group  
**Bando Kiko**  
**Bovone**  
Diamut - Biesse  
Dogo  
Fenzi  
**Glaston Group**  
**Italmole**  
Marrose Abrasives  
**Mole Moreschi**  
RBM Italia - Surface Group  
**Schiavo**  
**Teknik Elmas**

## POLISHING AGENTS AND OXIDES

ADI - Surface Group  
**Bovone**  
Fenzi  
**Schiavo**  
**Teknik Elmas**

## POLISHING BELTS

Fenzi  
**Schiavo**

## COOLANTS

**Adelio Lattuada**  
**Bovone**  
Fenzi  
**Schiavo**

## GLASS GRINDING AND BEVELLING COOLANTS

**Schiavo**  
**Teknik Elmas**

## SEPARATORS FOR GLASS-SOLIDS

**Dieffe Macchine**  
**Filtraglass**  
**Immes**  
**Schiavo**  
**Vitrosep**

## ACCESSORIES

ADI - Surface Group  
**CMS**  
Fenzi  
**Helios Quartz**  
**IOCCO Group**  
**Mole Moreschi**  
**Schiavo**  
**Schiatti Angelo**  
**Teknik Elmas**

## Washing

### HORIZONTAL WASHING MACHINES

**Bando Kiko**  
Bavelloni  
**Best Makina**  
**Bovone**  
**ECOL**  
**Emar**  
**Forel**  
**Glass Company**  
**Glaston Group**  
**GPM Automation**  
**IOCCO Group**  
**Lisec Group**  
**Neptun**  
**Schiavo**  
SGM - Special Glass Machinery  
**Triulzi**

### VERTICAL WASHING MACHINES

**Adelio Lattuada**  
Bavelloni  
**Best Makina**  
**Emar**  
**ECOL**  
**Forel**  
**Glass Company**  
**Glaston Group**  
**GPM Automation**  
**IOCCO Group**  
**Lisec Group**  
**Neptun**  
**Schiavo**  
SGM - Special Glass Machinery  
**North Glass Technology**  
**Stefiglass**  
**Teknik Elmas**  
**Tesir Makine**  
**Triulzi**

### WASHING MACHINES FOR AUTOMOTIVE GLASS

**Bando Kiko**  
**ECOL**  
**Glaston Group**

**IOCCO Group**  
**Tesir Makine**  
**Triulzi**

## WASHING PURIFICATION SYSTEMS

**Best Makina**  
**Dieffe Macchine**  
**Emar**  
**Forel**  
**Glass Company**  
**Glaston Group**  
**Immes**  
**IOCCO Group**  
**Schiavo**

## LIQUID WASHING CONCENTRATES

**Schiavo**

## ACCESSORIES

**Helios Quartz**  
**Emar**  
**Idrotecnica**  
**Neptun**  
**Schiavo**

## Mirror production

## COMPLETE PLANTS & CONVEYORS FOR MIRROR PRODUCTION

**Bovone**  
**IOCCO Group**  
**Triulzi**

## PAINTING EQUIPMENT

Fenzi  
**IOCCO Group**  
**Triulzi**

## DRYING OVENS

**Bovone**  
**CMS**

## AUTOMOTIVE MIRROR BENDING FURNACES

**Bovone**  
**Marposs**  
Tecnosens

## MANUAL SILVER-SPRAYING EQUIPMENT

Fenzi  
**Glass Company**

## PAINTS AND CHEMICAL PRODUCTS

Fenzi

## ACCESSORIES

Fenzi  
**Helios Quartz**

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## Insulating glass

### COMPLETE INSULATING GLASS LINES

Bavelloni  
**Best Makina**  
**Emar**  
**Forel**  
**Glass Company**  
**Glaston Group**  
**Marval**  
**Neptun**  
**Schiavo**  
SGM - Special Glass Machinery  
Thermoseal Group  
**Triulzi**

### AUTOMATIC SEALING LINES

Bavelloni  
**Best Makina**  
**Easy Automation**  
**Emar**  
**Forel**  
**Glaston Group**  
**Lisec Group**  
**Marval**  
**Teknik Elmas**  
**Tesir Makine**

### AUTOMATIC SPACER BENDING MACHINES

Bavelloni  
**Best Makina**  
**Emar**  
Fenzi  
**Forel**  
**Glaston Group**  
**IOCCO Group**  
**Lisec Group**  
**Marval**  
**Schiavo**  
Thermoseal Group

### DESICCANT SALT FILLING MACHINES

Bavelloni  
**Best Makina**  
**Emar**  
Fenzi  
**Forel**  
**Glaston Group**  
**Lisec Group**

**Marval**  
**Neptun**  
**Schiavo**  
Thermoseal Group  
**Triulzi**

### SPACER CUTTING SAWS

Bavelloni  
**Best Makina**  
**Emar**  
Fenzi  
**Forel**  
**Lisec Group**  
**Marval**  
**Neptun**  
**Schiavo**  
**Tesir Makine**  
Thermoseal Group

### BUTYL EXTRUDERS

Bavelloni  
**Best Makina**  
**Emar**  
**Forel**  
**Glaston Group**  
**Lisec Group**  
**Marval**  
**Neptun**  
**Schiavo**  
Thermoseal Group  
**Triulzi**

### HOT-MELT EXTRUDERS

Bavelloni  
**Best Makina**  
**Easy Automation**  
**Emar**  
Fenzi  
**Forel**  
**Lisec Group**  
**Marval**  
**Neptun**  
**Schiavo**  
Thermoseal Group  
**Triulzi**

### POLYURETHANE EXTRUDERS

Bavelloni  
**Best Makina**  
**Easy Automation**  
**Emar**  
Fenzi  
**Forel**  
**Glaston Group**  
**Lisec Group**

**Marval**  
**Schiavo**

### POLYURETHANE ENCAPSULATION

**Emar**  
**Glaston Group**  
**Lisec Group**  
**Marval**  
**Schiavo**

### SILICONE EXTRUDERS

**Best Makina**  
**Emar**  
Fenzi  
**Forel**  
**Glaston Group**  
**Lisec Group**  
**Marval**  
**Schiavo**  
**Triulzi**

### POLYSULPHIDE SEALANT EXTRUDERS

**Best Makina**  
**Emar**  
Fenzi  
**Forel**  
**Glaston Group**  
**Lisec Group**  
**Marval**  
**Schiavo**  
**Triulzi**

### GAS FILLING EQUIPMENT

**Emar**  
Fenzi  
**Forel**  
Glaston Group  
**Lisec Group**  
**Marval**  
**Neptun**  
**Schiavo**  
Sparklike  
Thermoseal Group

### DESICCANT SALTS

**Emar**  
Fenzi  
**Neptun**  
**Schiavo**  
Thermoseal Group

### SPACERS/PROFILES

**Edgetech Europe**  
Fenzi  
**Schiavo**  
Thermoseal Group

### GEORGIAN BARS

**Hegla**  
Thermoseal Group

### BUTYL

Fenzi

Thermoseal Group

### POLYSULPHIDE SEALANTS

Fenzi

### HOT MELT

Fenzi  
Thermoseal Group

### OTHER SEALANTS

Fenzi

### PANTOGRAPHS

**Fratelli Pezza**

### ACCESSORIES

**Deltamax Automazione**  
**Forel**  
**Helios Quartz**  
**Schiavo**  
Sparklike  
**Tesir Makine**  
**Triulzi**

## Tempering

### TEMPERING

### FURNACES (ARCHITECTURAL GLASS)

**Glass Company**  
Glasstech Inc.  
**Glaston Group**  
**Hornos Industriales Pujol**  
Jinglass  
**Keraglass**  
**Landglass Technology**  
**Lisec Group**  
**Mappi International**  
**Marposs**  
**North Glass Technology**  
**Schiavo**  
Tecnosens  
**TK**  
**Tekno Kilns/Pujol**  
**Texpack**

### TEMPERING FURNACES (AUTOMOTIVE GLASS)

**Glass Company**  
Glasstech Inc.  
**Glaston Group**  
Jinglass  
**Keraglass**  
**Landglass Technology**  
**Mappi International**  
**Marposs**  
**Mazzaroppi Engineering**  
**North Glass Technology**  
**Satinal**  
Taifin  
Tecnosens  
**Texpack**



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## CHEMICAL TEMPERING EQUIPMENT

Glass Company  
R.C.N. Solutions  
TK

## ROBOT FOR CLEANING SILICA ROLLERS

Eurotech Way

## ACCESSORIES

Deltamax Automazione  
Fenzi  
Glass Company  
Glaston Group  
Helios Quartz  
Hornos Industriales Pujol  
Keraglass  
Landglass Technology  
Mappi International  
Mazzaroppi Engineering  
R.C.N. Solutions  
Satinal  
Taifin  
Tekno Kilns/Pujol  
Torgauer Maschinenbau

## Bending

### BENDING FURNACES (ARCHITECTURAL GLASS)

Hornos Industriales Pujol  
Jinglass  
Keraglass  
Mappi International  
Marposs  
Mazzaroppi Engineering  
R.C.N. Solutions  
Tecnosens  
Tekno Kilns/Pujol  
TK  
Texpack

### BENDING FURNACES (AUTOMOTIVE GLASS)

Glass Company  
Glasstech Inc.  
Glaston Group  
Jinglass  
Keraglass  
Mappi International  
Marposs  
Mazzaroppi Engineering  
R.C.N. Solutions  
TK  
Taifin  
Tecnosens  
Texpack

## ACCESSORIES

Ayrox

Deltamax Automazione  
Glass Company  
Glasstech Inc.  
Glaston Group  
Hornos Industriales Pujol  
Keraglass  
Mappi International  
Satinal  
Softeco  
Tekno Kilns/Pujol  
TK

## Laminated glass production

### COMPLETE PLANTS

Best Makina  
Bovone  
Bottero  
Forel  
Glass Company  
Glaston Group  
GPM Automation  
Hornos Industriales Pujol  
IOCCO Group  
Italmatic  
Lisec Group  
Mazzaroppi Engineering  
R.C.N. Solutions  
Texpack  
TK  
Triulzi

### LAMINATED WINDSCREEN BENDING FURNACES

ECOL  
Glass Company  
Glasstech Inc.  
Glaston Group  
Keraglass  
Mappi International  
Marposs  
Taifin  
Texpack

### AUTOCLAVES

Glass Company  
Glaston Group  
GPM Automation  
Hornos Industriales Pujol  
Italmatic  
Lisec Group  
Triulzi

### CLIMATIC CABINS

Forel  
Glaston Group  
GPM Automation  
IOCCO Group  
Lisec Group  
Triulzi

## INFRARED OVENS

ECOL  
Forel  
Glass Company  
Glaston Group  
GPM Automation  
Hornos Industriales Pujol  
IOCCO Group  
Lisec Group  
TK  
Triulzi

## MANGLES

GPM Automation

## PRESSES/BENDING MACHINES

Forel  
IOCCO Group  
Lisec Group  
Triulzi

## RESIN LAMINATING MATERIALS AND EQUIPMENT

IOCCO Group  
Satinal  
Teknik Elmas  
Torgauer Maschinenbau

## EVA (ETHYLENE VINYL ACETATE)

Satinal  
PVB  
Everlam  
Kuraray - Trosifol  
Marposs  
Tecnosens

## PVB - SHAPING AND CUTTING EQUIPMENT

Ayrox  
ECOL  
Forel  
Glaston Group  
GPM Automation  
IOCCO Group  
Lisec Group  
Softeco

## PVB - WIRING TECHNOLOGY FOR HEATABLE

LAMINATES  
Ayrox  
Easy Automation  
ECOL  
Softeco

## EVA (ETHYLENE VINYL ACETATE)

Tecnosens

## ACCESSORIES

Ayrox  
Bottero

Deltamax Automazione  
Eurotech Way  
Glaston Group  
Helios Quartz  
Hornos Industriales Pujol  
IOCCO Group  
Lisec Group  
Satinal  
Softeco  
Taifin  
Triulzi

## Drilling

### AUTOMATIC DRILLING LINES

B Solution  
Bando Kiko  
Bavelloni  
Glaston Group  
IOCCO Group  
Neptun  
Schiatti Angelo  
Schraml  
SKG - Skill Glass  
Teknik Elmas  
Tesir Makine  
Vismara

### MULTI-SPINDLE DRILLING MACHINES

B Solution  
Bando Kiko  
Bavelloni  
CMS  
Glass Company  
Glaston Group  
IOCCO Group  
Neptun  
Schiavo  
Schiatti Angelo  
Schraml  
SKG - Skill Glass  
Teknik Elmas  
Tesir Makine  
Vismara

### DRILLING MACHINES WITH OPPOSITE DRILLING HEADS

B Solution  
Bando Kiko  
Bavelloni  
Bottero  
CMS  
Fenzi  
Glaston Group  
IOCCO Group  
Lovati  
Neptun  
Schiavo  
Schiatti Angelo

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**Schraml**  
**SKG - Skill Glass**  
**Teknik Elmas**  
**Tesir Makine**  
**Vismara**

## COLUMN DRILLING MACHINES

**B Solution**  
**Bottero**  
Fenzi  
**Neptun**  
**Schiavo**  
**Tesir Makine**  
**Vismara**

## PORTABLE DRILLING MACHINES

**CMS**  
Fenzi  
**Schiavo**  
**Teknik Elmas**  
**Tesir Makine**

## DRILLING AND MILLING MACHINES

Bavelloni  
**Bottero**  
**CMS**  
**IOCCO Group**  
Lovati  
**Neptun**  
**Schiavo**  
**Teknik Elmas**  
**Tesir Makine**  
**Vismara**

## DIAMOND DRILLS

ADI - Surface Group  
**Bovone**  
Diamut - Biesse  
Fenzi  
**Glaston Group**  
**Mole Moreschi**  
**Neptun**  
**Schiavo**  
**Teknik Elmas**  
**Tesir Makine**  
**Vetrolux**

## ACCESSORIES

**CMS**  
Fenzi  
**Neptun**  
**Schiavo**  
**Teknik Elmas**

## Other equipment and plants

## TURNKEY PLANTS / ENGINEERING - FOR BUILDING GLASS

**Bando Kiko**

**Bottero**  
**Cugher Glass**  
**Glaston Group**  
Horn  
**IOCCO Group**  
**Keraglass**  
**Lisec Group**  
**Marposs**  
**Torgauer Maschinenbau**

## TURNKEY PLANTS / ENGINEERING - FOR AUTOMOTIVE GLASS

**Bando Kiko**  
**Bottero**  
**Cugher Glass**  
**Easy Automation**  
Horn  
**Glaston Group**  
**IOCCO Group**  
**Marposs**

## KEY PLANTS / ENGINEERING - FOR DISPLAY GLASS

**Bando Kiko**  
**Cugher Glass**  
**Marposs**  
**Torgauer Maschinenbau**

## EDGES ROLLER COATING MACHINE

Eurotech Way

## WORK CENTRES - CNC CONTROLLED

**Bando Kiko**  
Bavelloni  
**Bottero**  
**Glass Company**  
Glasstech Inc.  
**Glaston Group**  
**Hegla**  
**Neptun**  
**Schraml**  
**SKG - Skill Glass**

## FLOAT PLANTS / LINES (EQUIPMENT & ACCESSORIES)

**Bovone**  
Horn  
**IOCCO Group**

## CULLET HANDLING SYSTEMS

**ECOL**

## COMPLETE BATCH PLANTS

Zippe

## VACUUM COATING EQUIPMENT AND PLANTS

**Giardina Group Glass Division**  
**Glass Company**  
**North Glass Technology**

## ENAMELLING EQUIPMENT AND PLANTS

**Giardina Group Glass Division**  
**Glass Company**  
**Rollmac division**  
of GeMaTa

## DRYERS AND ENAMELING FURNACES

**Giardina Group Glass Division**

## SPRAYING TECHNOLOGY

**Giardina Group Glass Division**

## HOT- AND COLD-END COATING SYSTEMS AND MATERIALS (CVD, ROLLERS, CURTAIN COATERS)

**Giardina Group Glass Division**

## SANDBLASTING SYSTEMS, EQUIPMENT AND PLANTS - OPTIMIZERS

Fenzi  
**Fratelli Pezza**  
**Glass Company**  
**Schiavo**  
**Schraml**  
**SKG - Skill Glass**

## DIGITAL INKJET PRINTERS

**Glass Company**  
System Ceramics  
TecnoFerrari

## SCREEN PRINTING EQUIPMENT AND PLANTS

**Ayrox**  
COMSS  
**Cugher Glass**  
**Deltamax Automazione**  
**ECOL**  
Eurotech Way  
**Glass Company**  
**Keraglass**  
**North Glass Technology**  
**Rollmac division**  
of GeMaTa  
**Softeco**  
TecnoFerrari

## SCREEN PRINTING FRAMES

COMSS

## SCREEN PRINTING DRYING SYSTEMS

COMSS  
**Cugher Glass**  
**Glass Company**  
**Rollmac division**  
of GeMaTa

## EDGES ROLLER COATING MACHINE

**Giardina Group Glass Division**

## ACIDING GLASS EQUIPMENT AND PLANTS

**Lisec Group**  
**Rollmac division**  
of GeMaTa

## LASER DECORATING MACHINES

**Glass Company**

## Artistic glass production

## CERMAMIC INKS

**Glass Company**

## CHAMBER ELECTRIC KILNS

**Glass Company**  
**Keraglass**  
**Tekno Kilns/Pujol**

## ACCESSORIES

**Deltamax Automazione**  
**Helios Quartz**  
**TK**

## Miscellaneous

## AUTOMATION

**Easy Automation**  
Horn  
**IOCCO Group**  
**Marposs**  
Tecnosens  
**Torgauer Maschinenbau**  
Zippe

## AUTOMOTIVE GLASS APPROVAL SERVICES

**Ayrox**  
**Marposs**  
**Softeco**  
Tecnosens  
**Teknik Elmas**

## AUTOMOTIVE GLASS QUALITY CONTROL

**Ayrox**  
**Bando Kiko**  
**Cugher Glass**  
**Deltamax Automazione**  
**Glaston Group**



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## **IOCCO Group**

**Marposs**

**Softeco**

Tecnosens

## **CE MARKING - QUALITY CONTROL EQUIPMENT FOR GLASS IN BUILDING**

**Ayrox**

**Softeco**

## **COLOURS & ENAMELS - OTHER APPLICATIONS**

**Ayrox**

## **DEIONIZING AND WATER SOFTENING EQUIPMENT**

Fenzi

**Forel**

**Glass Company**

**Idrotecnica**

**Lisec Group**

**Triulzi**

## **DEIONIZING AND WATER SOFTENING EQUIPMENT**

**Immes**

## **DIAMOND ROUTER EQUIPMENT - PORTABLE**

**Teknik Elmas**

**Tesir Makine**

## **FLAT GLASS QUALITY CONTROL DEVICES**

**Ayrox**

**Deltamax Automazione**

**Forel**

**IOCCO Group**

**Marposs**

**Softeco**

Tecnosens

## **FURNACES**

**Glass Company**

Horn

**Texpack**

## **FURNACES / HYDROGEN GENERATORS (WATER ELECTROLYSERS)**

Nel Hydrogen

## **GLASS COATING AND TINTING**

**Glass Company**  
**Rollmac division**  
**of GeMaTa**

## **GLASS TREATMENT FILMS**

**Glass Company**

## **HEATING EQUIPMENT - STANDARD (GAS FIRING, BURNERS, AIR GAS MIXERS, SAFETY DEVICES, ELECTRICAL RESISTORS)**

Horn

**Keraglass**

**Texpack**

## **INSPECTION INSTRUMENTS & INTENSIMETERS**

**Marposs**

Tecnosens

## **INFRARED TUBES**

**Helios Quartz**

**Deltamax Automazione**

## **KILNS**

**Glass Company**

**Keraglass**

**Lisec Group**

**Tekno Kilns/Pujol**

**TK**

Fenzi

## **METAL ACCESSORIES**

**Teknik Elmas**

**Tesir Makine**

## **METALLIC SECTIONS**

Fenzi

**Tesir Makine**

## **NUMERICAL CONTROL SYSTEM (CNC) FOR ALL GLASS PROCESSING MACHINES**

**Glass Company**

**IOCCO Group**

Prodim

## **OPTICAL DISTORTION ANALYSERS FOR AUTOMOTIVE GLASS**

**IOCCO Group**

**Keraglass**

Tecnosens

## **OPTICAL INFRARED THERMOMETERS**

Optris

## **POWDER OR LIQUID APPLICATION SYSTEMS FOR PROTECTING FLOAT GLASS**

**Cugher Glass**

**Glass Company**

## **PUMPING AND APPLICATION SYSTEMS (AUTOMOTIVE GLASS)**

**IOCCO Group**

## **PURIFIERS FOR REFLUENT WATER**

**Dieffe Macchine**

**Immes**

## **PUTTIES AND SEALANTS**

Fenzi

## **QUARTZ EQUIPMENT**

**Helios Quartz**

## **SHAPE CHECKING DEVICES**

**Easy Automation**

**IOCCO Group**

## **SHOWER ENCLOSURES**

**Vismara**

## **SIC HEATERS**

**Helios Quartz**

## **SOFTWARE SYSTEMS FOR PRODUCTION CONTROL**

**A+W Software**

**CMS**

**Cugher Glass**

**Deltamax Automazione**

**Edgetech Europe**

**Forel**

**Lisec Group**

Optima

Prodim

## **SOLDERING EQUIPMENT FOR ELECTRICAL CONNECTORS FOR WINDSCREENS AND BACKLITES**

**Ayrox**

**Easy Automation**

**Softeco**

## **SORTING SYSTEMS**

**Glaston Group**

**GPM Automation**

**Lisec Group**

## **SURFACE STRESS MEASUREMENT INSTRUMENT**

**Ayrox**

**Glass Company**

Tecnosens

## **WINDSCREEN STRESS MEASUREMENT INSTRUMENT**

Tecnosens

## **WINDSCREEN AND BACKLITES**

**Marposs**

Tecnosens

## **TESTING FOR SOLDERINGS**

**Ayrox**

**Easy Automation**

**Softeco**

## **TESTING DEVICES OF BACKLITES ELECTRICAL HEATING**

**Ayrox**

**Easy Automation**

**Softeco**

## **THERMAL IMAGING SYSTEMS**

**Glass Company**

**Easy Automation**

Optris

## **TIN FLOAT BATH FURNACES**

Horn

**IOCCO Group**

## **TIN FLOAT BATH SIDE DETECTION DEVICES**

Tecnosens

## **TRADE ASSOCIATIONS**

**Teknik Elmas**

**Tesir Makine**

## **UV LAMPS**

**Helios Quartz**

## **UV PORTABLE MACHINES**

**Helios Quartz**

## **WATER REPELLENT SPRAY COATING MACHINES**

**Best Makina**

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# Preview

**glasstec**

The following pages offer readers a useful guide to advertisers of this issue that are exhibiting at Glasstec 2024

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Hall 14 - Stand C29

**Glass-Technology  
International**  
THE LEADING MAGAZINE FOR THE INTERNATIONAL FLAT GLASS INDUSTRY

hall 14 / stand E59

### People to contact at our stand

<b>DENNIS TIEGS</b>	<b>COO A+W CLARITY</b>
<b>SEBASTIAN DICK</b>	<b>MANAGER INNOVATIONS A+W CLARITY</b>
<b>LEA ROMBERG</b>	<b>MARKETING MANAGER</b>

## A+W Software

for Glass, Windows & Doors

### Press Release A+W Software GmbH

Exciting Developments: A+W Software presents innovative software solutions at glasstec 2024

A+W is once again leveraging glasstec to share exclusive insights into our newest software solutions.



We're excited to unveil the design prototype of **A+W Smart Companion Dispatch**, a module for digital shipping optimization that will complement our existing A+W Smart Companion product portfolio. You'll have the opportunity to test our design prototype, which was developed in collaboration with our Special Interest Group customers. Join us for hands-on demonstrations that highlight the real benefits of our soft-

ware - all guided by our expert team.

The A+W Smart Companion app portfolio is receiving a **new look!** A new user interface and features will upgrade your work experience and, ultimately, make work more effective.

We will also introduce you to the integration of the BISS.ID interface.

"The leading trade show in our industry, Glasstec is the perfect place for us to present new and continued developments of our software solutions to industry professionals and our customers," says Dennis Tiegs (COO A+W Clarity).

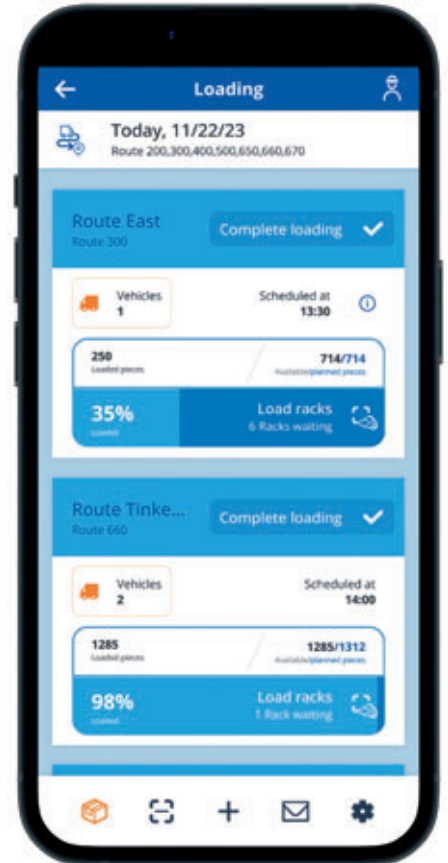
**A+W Smart Factory** is a newly-developed, scalable manufacturing system that acts as a comprehensive production system. It automatically controls the process flows for maximally-optimised glass flow while also **connecting humans, machines, software and products**. We will present the current state of development of the A+W Smart Factory and show you what the new **A+W Glass Lab** is all about.

Is the process of digitising templates time-consuming and cumbersome? With **A+W iShape** powered by Viprotron, digitising templates becomes effortless. Our product experts will show you how quickly that can be done by using reference objects and an app.

**A+W iQuote** helps advance your online e-commerce shop. While viewing their status, even from their mobile

devices, your customers can capture and manage offers and orders 24/7. This not only provides you with an additional sales channel but also competitive advantages.

As the leading trade show for the flat glass industry, glasstec is an important event for A+W that showcases innovations while engaging in direct exchange with industry professionals. Come test our products and engage in conversation with our team. We look forward to seeing you!



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E-mail: info@a-w.com

www.a-w.com

hall 16 / stand A42

### People to contact at our stand

**ADELIO LATTUADA** OWNER  
**NICOLA LATTUADA** SALES DEPARTMENT  
 OUR TECHNICAL AND COMMERCIAL STAFF



Lattuada offers solutions for glass, stone and automation.

All Lattuada edgers can be equipped with:

- **A-WR System** (fully automatic wheel adjustment management). At the beginning of the shift/day, the operator push the TEACH-IN button: the machine stops the inlet conveyor, lowers all spindles and sets the diamond/resin wheels spindles at the pre-set height with a 0,01 mm tolerance. No test glass needed. The system also calculates the inlet conveyor belt wear for a greater accuracy.

- **i-AL package** (fully automatic management of all processing parameters): the operator only sets the thickness and all other parameters are automatically set by the system and are fully customizable, depending on the production and quality required.

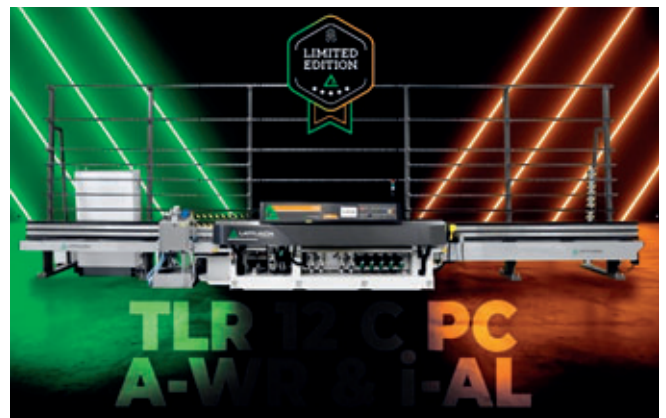
**This year at Glasstec, Lattuada will present also a very special bevelling machine: the first beveller in the world with A-WR system for a fully automatic management of the diamond wheels adjustment.**

Lattuada, with its partner Knittel Glass, offers robotic solutions for every need and application.

At Glasstec, a **LIMITED EDITION** fully automatic grinding machine, model TLR 12 C PC, in front of a Kuka robot moving on seventh axis and an open-top washing machine, model OT 2000/300/4S will be displayed.

This line can reach a productivity of up to 130 m/h considering, for example, a speed of 3 m/min and glass panes with dimensions: 1600x600x8 mm and 1000x2000x8 mm.

A new feature is a device to control the correct position of the edge of the glass. The customer can load the glasses on the rack even without using a reference/zero point, just roughly in the middle of the rack. So, when turning it 90° the bottom edge can be a little bit higher or lower compared to the standard zero line. This is the task of this new device: to check,



before loading the glass, the real position of the edge to have a safe and smooth loading.

A very interesting option is an advanced, state-of-the-art vacuum technology, which saves around 85% of energy compared to standard systems.

Compared to other lines, the robot that moves the glass is not fixed to the floor but runs at very high speed on a dedicated track. The special design of the track allows the robot to reach a maximum speed of 2.35 m/s.

The line can only be operated by one operator who only has to load a rack and start the line; all the glass will be automatically processed on all four sides and unloaded onto another rack or sent into a washing machine. The line can also communicate with the operator via a pager.

This solution combines the full automation usually offered by a closed cell with 2 edgers and 2 robots, but with a smaller footprint and reduced budget. It can almost match the same productivity, but with the advantage that no operator must handle the glass manually.

### Product Range

- **ELECTRONIC OR PC CONTROLLED STRAIGHT-LINE EDGING MACHINES FOR FLAT EDGES OR WITH VARIABLE ANGLE**
- **ELECTRONIC OR PC CONTROLLED STRAIGHT- LINE BEVELLING MACHINES**
- **DOUBLE-EDGERS (SINGLE MACHINES AND COMPLETE LINES)**
- **ROBOTIC SOLUTIONS**
- **VERTICAL EDGE POLISHERS (petrA)**
- **VERTICAL WASHING MACHINES**
- **AUTOMATIC CORNER-GRINDING MACHINES**
- **HORIZONTAL DRILLING MACHINES**

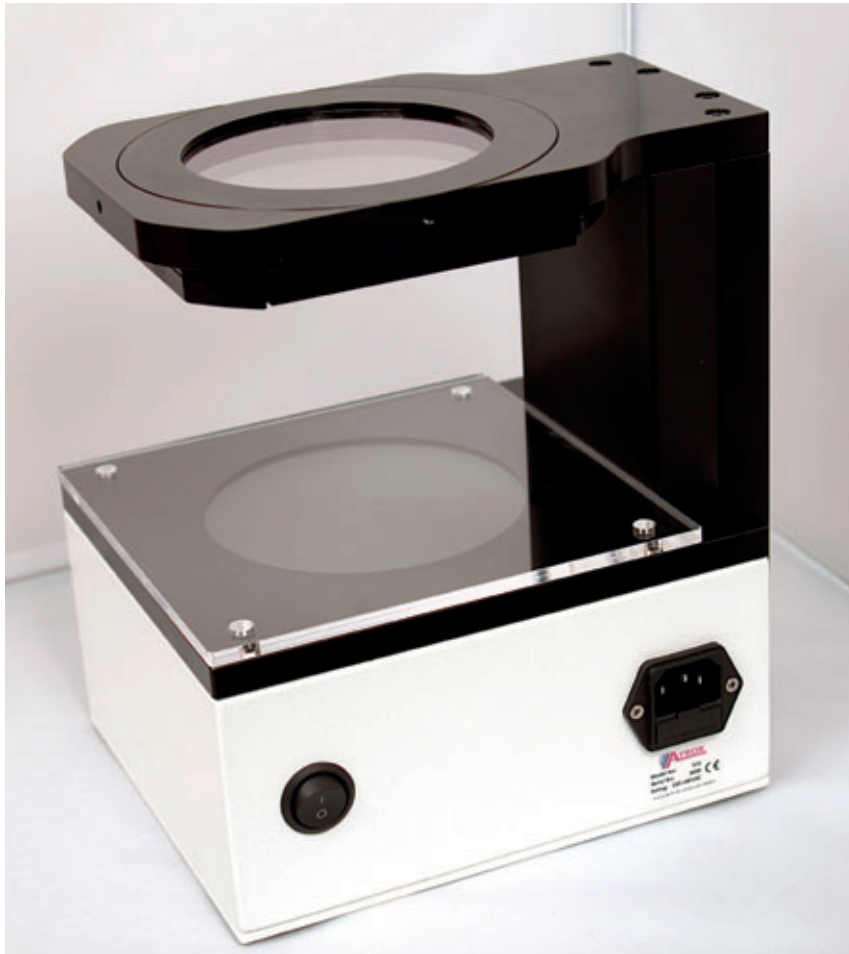
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**ADELIO LATTUADA**  
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 Tel.: +39-0331-832713 - E-mail: [info@adeliolattuada.com](mailto:info@adeliolattuada.com)



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 Tel.: +1-567-2494486 - E-mail: [info@lattuada-na.com](mailto:info@lattuada-na.com)

**hall 12 / stand C39****People to contact at our stand****TIMO SUOMI  
MIKKO SUOMI  
ANDRE SILNOV****SALLA SUOMI  
REIMA MÄKINEN****Sharples compact polariscope S-700**

**AYROX** has over 30 years experience in the glass industry. We provide quality control instruments complying with the international norms for architectural and automotive glass.

We offer ISO 17025 accredited calibration and testing, repair and maintenance service in our own laboratory for a wide range of optical quality control instruments. Additionally, to improving quality and optimising production, Ayrox commercialises production accessories for laminated and tempered glass such as silicone and silicone free vacuum rings and aramid fibre tapes.

**Automatic collimator for ECE R43 secondary image separation****Product Range**

- **ISO 17025 ACCREDITED CALIBRATION AND TESTING**
- **REPAIR AND MAINTENANCE OF POLARIMETERS**
- **QUALITY CONTROL EQUIPMENT FOR GLASS**
- **WIRED PVB AND PLASTIC FOR HEATABLE APPLICATIONS**



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**E-mail: deals@ayrox.com**

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hall 15 / stand C49

People to contact at our stand

**GIANLUCA BONFANTI**  
**ALESSANDRA BONFANTI**

**MANAGING DIRECTOR**  
**SALES DIRECTOR**

**B Solution**  
ON THE PLUS SIDE ●●○

## SpeedArris

HIGH-PRODUCTIVITY  
ARRISING-GRINDING

FOR INSULATED AND TEMPERED GLASS  
ARRISING-GRINDING OF GLASS  
THICKNESS 4-21 MM.



## SpeedEdge

HIGH-QUALITY  
GRINDING

FOR TOP BIG SIZE 3200x9000 MM.  
GLASS THICKNESS 4-21 MM.



Produced in Italy in collaboration with high-tech partners

Processing of arrising and grinding of rectangular and shaped glasses with two spindles that work simultaneously

Transport system with suction cups for high performance glasses

High-productivity guaranteed for double glazing lines

Oscillating spindle ensures the regular execution of threads

Possibility of stand-alone installation or integrated with existing lines

Rough or polished machining, flat or round edges, arrising and milling

The compact system integrate in a load and unload solution reducing bulky space

Suction cup system with locking mechanism of the entire sheet of glass

Maximum level of precision of machining

Best efficiency of tools

New sheet loading during the cycle



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hall 15 / stand G49

People to contact at our stand

**S. BANDO**

**K. NAKADA**

**O. TAKAHARA**



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Feel the customer with Bando's heart

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**ADVANCED EDGE QUALITY**



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**SATELLITE NON-TEMPLATE BREAKOUT**



**AUTOMATIC GRINDING VACUUM CUP CHANGE**



**IoT**

FACTORY AUTOMATION FOR AUTOMOTIVE, FPD, SOLAR PANEL,  
ULTRA THIN GLASS AND SPECIALTY GLASS



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### Product Range

- CNC CUTTING, BREAKOUT, GRINDING AND DRILLING MACHINES FOR AUTOMOTIVE AND FPD GLASS
- CNC LOW-E DELETION LINES FOR AUTOMOTIVE GLASS
- CNC SHAPE BEVELLING MACHINES AND DOUBLE EDGING LINES FOR ARCHITECTURAL MIRRORS AND GLASSES • WASHING MACHINES



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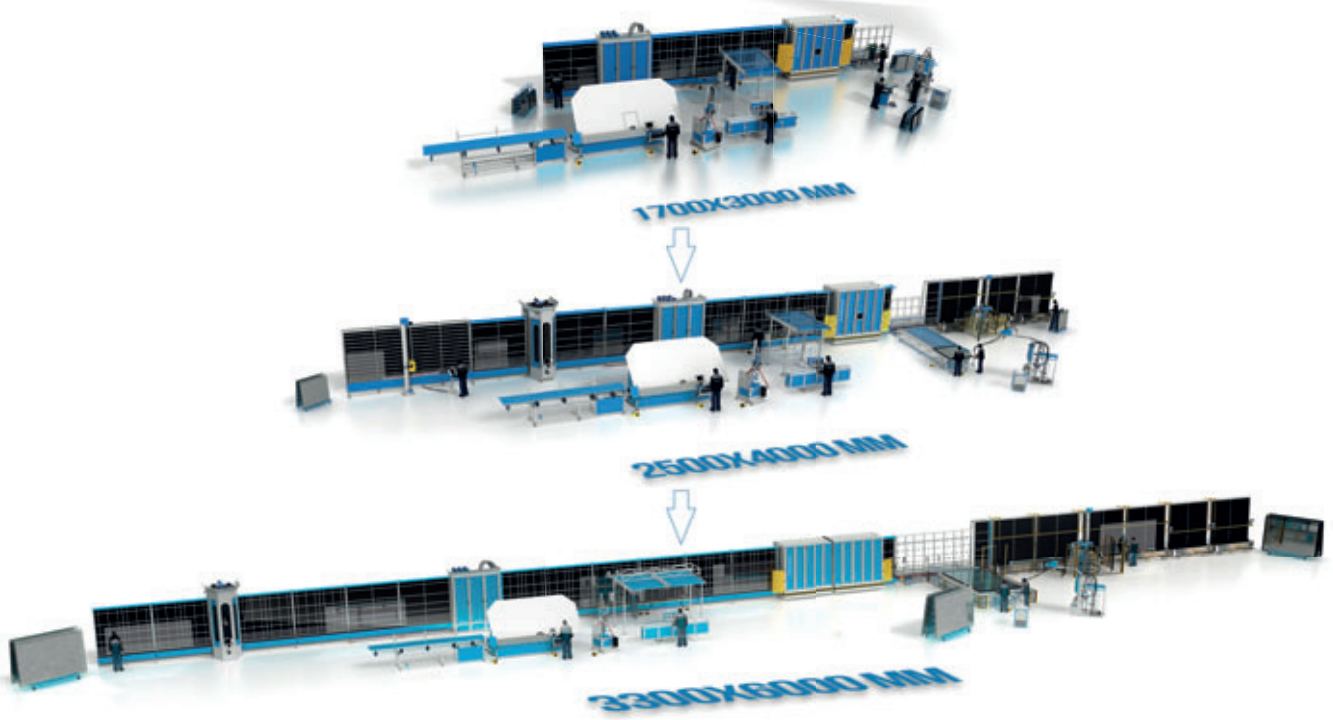


hall 17 / stand A84

# bestmakina

People to contact at our stand

**OGUZHAN KUKUL** PLANT MANAGER \ MECHANICAL ENG. \ MSC.  
E-MAIL: OGUZHAN@BESTMAKINA.COM



**BEST MAKINA**, has been solution partner for insulated glass production and glass processing companies in 95 countries since 1999. BEST MAKINA has a great advantage by having in-house production, great stock of spare parts and making his own engineering. Mechanical and software R&D engineering teams are providing flexible and customised solutions for every single project. BEST MAKINA sales team can also advise and share experiences with investors for upgrading to new technologies or start-up phases.

Simplified but durable mechanic systems and animated HMI units makes all machines in the production range more user-friendly. BEST MAKINA provides 2 years of warranty independent of working hours!

BEST MAKINA has the best price/performance ratio and best recovery time of investment in machinery market!

### Product Range

- GAS FILLING OR NON-GAS FILLING INSULATED AND STEPPED GLASS PRODUCTION LINES (1700X3000MM TO 3300X6000MM)
- VERTICAL & HORIZONTAL WASHING LINES (1700X3000MM TO 3300X∞)
- AUTOMATIC TWO COMPONENT EXTRUDERS FOR SECONDARY SEALING (1700X3000MM TO 3300X6000MM)
- GLASS LAMINATION LINE (2600 MM / 3300 MM)
- VERTICAL ARRISING LINES (1700X3000MM TO 3300X6000MM)
- COATING (LOW-E) DELETION MACHINES (1700X3000MM TO 3300X6000MM)
- MANUAL TWO COMPONENT EXTRUDERS FOR SECONDARY SEALING
- PIB EXTRUDERS
- AUTOMATIC SPACER BAR PROCESSING MACHINES
- MANUALLY OPERATED SPACER BAR PROCESSING MACHINES
- AUTOMATIC TRANSFER SOLUTIONS FOR I4.0 APPLICATIONS



hall 14 / stand F23-F24

## People to contact at our stand

**ALBERTO MASOERO** SALES DIRECTOR Flat Glass

### Bottero Group continues to grow and presents itself at Glasstec 2024 with important innovations

During the exhibition, it will be possible to participate in dedicated demonstration sessions in the nearby German branch of the Cuneo multinational (Bottero GmbH) located in Grevenbroich.

The Bottero Group is the only company worldwide capable of providing cutting-edge technologies in almost all fields of glass production and processing. The company specializes in designing and manufacturing machinery for flat glass, glass containers, and offering EPC services for the establishment of turnkey gigafactories for solar panel production. The Bottero Group will be presenting at Glasstec 2024, located in Pavilion 14, Stand F23\F24 from October 22 to 25 in Dusseldorf, Germany, with significant updates.

Recently, Bottero, through its subsidiary E2Pack srl, acquired the activities of a branch of the Ems Group of Montecchio Emilia, a company that specializes in producing end-of-line and packaging systems for the food, beverage, glass, and cans industries. E2Pack, along with the well-established packaging brands Zecchetti and Emmeti, is set to showcase its expertise in creating handling, palletizing, and storage systems at the Bottero stand in Dusseldorf. The acquisition expands Bottero's offerings to include pack-

aging solutions for hollow glass production lines and other market segments such as food, beverage, and pharmaceutical industries.

Bottero will be showcasing **QFORM** at Glasstec 2024, an advanced platform designed to enhance production processes in the hollow glass sector. QFORM offers increased flexibility and efficiency during forming, along with cost-effective operation due to reduced energy consumption.

The display will feature a QFORM single section equipped with a 95mm quadruple drop, capable of working in TG 5" and DG 6-1/4"

as center distance.

When it comes to flat glass, the multinational company based in Cuneo will showcase the latest technologies for marking and tracking flat glass products. These technologies include the use of CO2 lasers, QR codes, bar codes, and intelligent labels.

Bottero is widely known as a key player in the photovoltaic technology supply chain. As a result, **3Sun** chose Bottero as a technological partner in developing their **GigaFactory in Catania**. This factory is dedicated to producing photovoltaic modules with hetero-junction technology (HJT) and has an annual capacity of 3GW.



Bottero will have a dedicated **360 square meter** exhibition space at Glasstec 2024 where customers can discuss with product experts about the technologies available to meet their current and future production needs. There will also be opportunities to participate in dedicated demonstration sessions at Bottero GmbH in Grevenbroich, Germany, where technical workshops and process demonstrations in the flat glass sector will be held throughout the entire period of the fair.



Via Genova 82 - 12100 Cuneo (CN)

Tel: +39-0171-310611

E-mail: [bottero@bottero.com](mailto:bottero@bottero.com)[www.bottero.com](http://www.bottero.com)

At Glasstec 2024, **Bovone** celebrates the extraordinary milestone of its 70th anniversary. A history that has seen the Italian company grow and establish itself as a leader in the glass processing industry, maintaining a perfect balance between tradition and technological innovation.

Participation at Glasstec 2024 will be the perfect opportunity for Bovone to showcase the results of this long history, with a special focus on the latest technological solutions and the innovative robotic system that will push the boundaries of productivity in the industry.

Overall, Bovone's production is focused on three main areas: edging, bevelling and washing machines, complete silvering and laminating plants, and BRS robotic systems for edging and polishing.

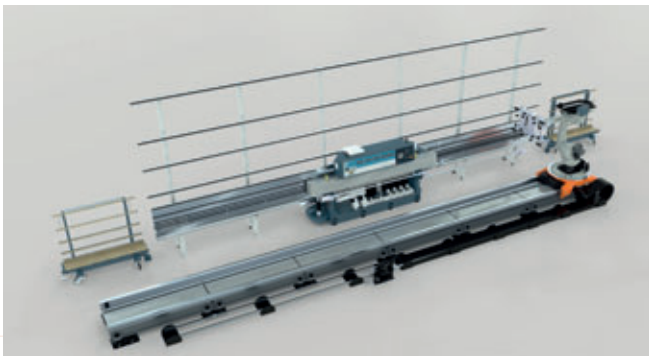
### **The new BRS robotic system: all the freedom, productivity and versatility of the seventh axis**

The focus of Bovone's exhibition at Glasstec will be the presentation of the new integrated 7-axis robotic system. This system represents a significant evolution in the field of flat glass edging and polishing. Thanks to its anthropomorphic robotic arm, the system can operate on 7 axes, offering greater operating range, space optimisation and unprecedented flexibility.

The robotic arm, which moves with six degrees of freedom, allows complex and precise movements in three dimensions. The addition of the seventh axis allows the robot to cover an even larger working area, thereby increasing its efficiency and productivity. The system is configured with a straight edger and two storage units for glass panels, with the option of integrating a vertical washing machine on the outfeed of the edger.

The benefits:

- Increased productivity through automated integration
- Millimetre precision in glass processing
- Reduced operating costs through optimisation of resources
- Production flexibility, with the possibility of adapting the layout to meet specific requirements
- Adaptability to production variations, making the system extremely versatile to deal with different types of glass and production configurations



### **Synergies with Bovone Diamond Tools**

Together with Bovone, sister company Bovone Diamond Tools (BDT),



which is celebrating its 20th anniversary, will also be present at Glasstec. This synergy between the two companies is crucial for improving the performance of Bovone machines. BDT specialises in the production of diamond wheels for flat glass processing, including highly customised tools for bevellers, edgers and CNC machines.

The collaboration between Bovone and BDT has enabled continuous development and optimisation of the grinding wheels used in Bovone machines. Through joint research, new wheel configurations have been developed that improve production versatility, reduce consumable costs and maintain high quality standards. BDT grinding wheels are known for their long life and ability to provide an excellent finish, elements that make Bovone machines even more efficient and reliable.

### **The progressive rebranding presented this year is an ambassador for the company's ongoing commitment to innovation**

Bovone's participation in Glasstec 2024 is not only an opportunity to celebrate the past, but also to open a window to the future. On the occasion of its 70th anniversary, Bovone presented an evolutionary rebranding that renews the company's visual identity. The new logo reflects the continuous evolution of the company, which combines tradition and cutting-edge technology. In fact, the company continues to invest in research and development, anticipating market challenges and offering cutting-edge technological solutions that help companies improve their competitiveness. The new 7-axis robotic system is a perfect ambassador of this with its important contributions in terms of productivity, quality and operational flexibility.

Bovone invites all Glasstec attendees to visit stand D43 in hall 16, where they will be able to see the robotic system in action and discover how integrated solutions from Bovone and BDT can improve the efficiency and quality of production processes in the glass industry.



hall 16 / stand C63

## People to contact at our stand

**DORIAN CAMPAGNOLA**  
**LUCA BARBIERI**  
**ALESSANDRO COLELLA**

**DIVISION MANAGER**  
**BUSINESS UNIT MANAGER**  
**PRODUCT MANAGER**



**CMS Glass Technology** is an industry leader in the field of flat and bent glass processing, with technologically advanced solutions such as horizontal and vertical CNC machining centers, cutting tables, seaming machines and waterjet cutting systems. CMS Glass Technology solutions are mainly applied in the architecture, interior decoration, aerospace, automotive and marine industry.

CMS is constantly working to simplify customers lives and to help customers becoming more efficient. With these goals in mind, CMS is both expanding the product portfolio and renovating the software interface of its machines.

This year at Glasstec, CMS will showcase the latest machines launched on the market. These are two CNCs named taktika and electa, the horizontal dry seaming machine proxima and agil lam: the automatic cutting table for laminated glass.

Cms taktika is the new entry-level vertical working center from CMS, ranking as the most flexible in its category. It's perfect for machining glasses from 320 x (h) 220mm up to 3.100mm x (h) 2.000mm. It's designed to process both rectangular and shaped workpieces with at least one straight edge and can perform seaming, grinding, polishing, milling, drilling and countersinking. Cms taktika is equipped with one front- and one rear-magazine capable of accomodating 23 tool-holders in total. Its compact design allows for installation even under lower ceilings and it can connect with a washing machine to clean the glass.

Cms electa is the new compact 3/4-axis horizontal CNC with the smallest footprint and largest work area in its category. Electa is designed to perform seaming, grinding, peripheral- and cup-wheel-polishing, milling, drilling and countersinking, disc cutting, engraving, writing, and 5° bevelling operations. The machine's Metal Synthetic Technology (MST) worktable, replacing the conventional aluminum one, dampens vibrations and enhances the finish and quality of the glass piece.

Agil Lam is an automatic cutting table for laminated glass. It has a super-simple user interface with an embedded optimizer to facilitate the operator's life and make it easy to use. The ergonomoy of the table is remarkable and this is also aimed at improving the user experience. Agil lam can cut lami glass up to 8+8mm as a standard and be equipped with a low-removal unit.

Cms proxima is the new semi-automatic horizontal dry seaming machine. It operates in seconds, with simultaneous residue extraction via a dedicated filtration system. Ideally paired with tilting float glass cutting tables or laminated glass cutting tables, it can be



installed in less than a day and can seam sides up to 2600 mm long in one pass. Proxima's design allows it to seam glass in multiple passes without any length limitation.

CMS takika, eleca and agil lam feature the new CMS ACTIVE software interface, designed to simplify human-machine interaction and make the process super-efficient.

Moreover, CMS machines come with a 1-year free subscription to CMS Connect, the innovative industrial-IoT platform.

Thanks to its tradition and experience, today CMS Glass Technology is a reliable partner in the glass fabrication sector and provides anything from standard machines to tailor-made, fully automated systems to meet customer needs.

## Product Range

- **VERTICAL MACHINING CENTRES**
- **HORIZONTAL MACHINING CENTRES**
- **CUTTING TABLES AND CUTTING LINES**
- **LOADING SYSTEMS**
- **WATERJET CUTTING SYSTEMS**
- **SEAMING MACHINES**



Via A. Locatelli 123 - 24019 Zogno (Bg) - Italy  
Tel.: +39-0345-64111  
E-mail: info@cms.it

www.cms.it

hall 16 / stand A38

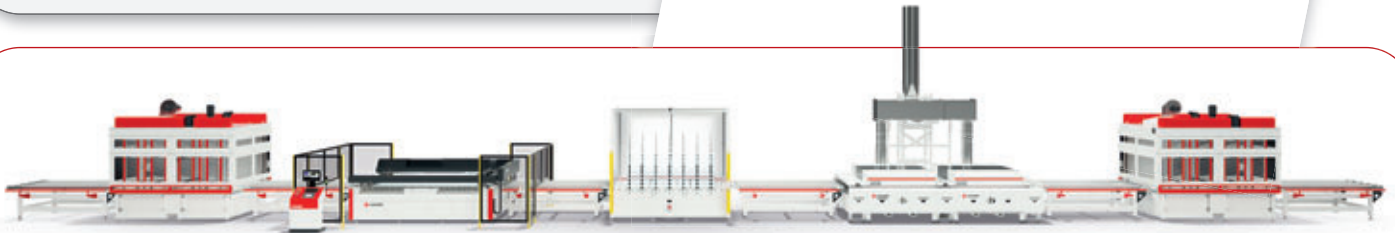
### People to contact at our stand

<b>BARBARA MAZZA</b>	<b>GENERAL MANAGER</b>
<b>MARINO BONETTI</b>	<b>CHIEF SALES OFFICER</b>
<b>PAOLO BARDOTTI</b>	<b>CHIEF ENGINEERING OFFICER</b>
<b>ANDREA ZORZITTO</b>	<b>PROJECT MANAGER OFFICER</b>
<b>SILVIA VIVA</b>	<b>SALES ACCOUNT</b>
<b>DEA CIZMJA</b>	<b>MARKETING ACCOUNT</b>



# CUGHER

Plants and machinery customer oriented



Cugher Glass proudly presents its latest innovation, the **Compact 4C Printing Machine** with the **Printing Quality Vision System**, specifically designed to detect printing defects on glass dedicated to the Home Appliance sector.

Engineered for glass manufacturers requiring reliability and high performance, the Compact 4C stands out for its ability to process glass of varying sizes, from a minimum of 150x50 mm to a maximum of 1300x700 mm, ensuring high and consistent productivity.

This machine is designed to have the following features:

- **Versatility and High Performance:** Seamlessly processes a wide range of glass dimensions, providing to diverse production needs.
- **Advanced Features and Printing Precision:** Achieves detail and sharpness in every glass printing.
- **Efficiency and Quality in One Machine:** Maximizes output without compromising on quality.
- **PQVS (Print Quality Vision System) Integration:** Guarantees results by ensuring continuous quality control throughout the process.
- **Competitive Advantage:** Delivers superior performance.
- **Suitable for Various Sectors:** Adaptable across multiple industries, from architecture to automotive, home appliances and beyond.

### Product Range

- **SILK SCREEN PRINTING MACHINES**
- **IR & UV DRYERS**
- **HANDLING**
- **COMPLETE AUTOMATIC LINES**
- **ORDER MANAGER INDUSTRY 4.0**
- **VISION SYSTEMS & QUALITY CONTROL**

# THE CUGHER METHOD

Identification of specifications



Exchange of knowledge



Development of layout



Examination and changes



Final solution



Via G. Di Vittorio 70 - 20026 Novate M.se (MI) - Italy  
 Tel: +39-02-66207762  
 E-mail: info@cugher.com

[www.cugher.com](http://www.cugher.com)

hall 16 / stand C42

### People to contact at our stand

**GIANLUCA DIENER - SALES MANAGER**

GIANLUCA.DIENER@DELTAMAX.EU

**CHIARA CORRIDORI - TECHNICAL DEPARTMENT**

CHIARA.CORRIDORI@DELTAMAX.EU

**ELENA PETROVA - SALES&MARKETING**

SALES@DELTAMAX.EU

**JIRI BEJO - SALES**

JIRI.BEJO@DELTAMAX.EU



Since its founding in 1989, **Deltamax Automazione** s.r.l. has gained extensive experience in developing artificial vision solutions for quality control in the industrial sector.

By 2010, we had been devoting ourselves to flat glass quality control by developing cutting-edge solutions for all processing lines through continuous investment in R&D.

OPT is one of the latest Deltamax innovations, patented in EU and USA and already

successfully in operation with some of our customers.

Installed before the cutting table, OPT anticipates the identification of unrecoverable defects on unwashed sheets to increase the benefits of waste reduction on the line.

Deltamax Automazione s.r.l. has achieved this very ambitious goal with the design of OPT, the innovative scanner destined to revolutionize flat glass processing.



### Product

- **OPT** is an advanced scanner for quality control of unwashed sheets, designed to detect non-recoverable defects before they impact your production line. This cutting-edge, patented technology not only identifies structural flaws but also re-optimizes the cutting process, enhancing efficiency throughout your entire production cycle. With OPT, you gain not just a boost in productivity but also significant environmental benefits, making your processes more sustainable and forward-thinking. Discover how OPT can transform your production and set a new standard in quality control
- **Q+** is a revolutionary innovation in quality control systems for insulating glass lines. It sets a new benchmark in the industry with its superior ability to detect low-contrast defects, such as halos, that other systems miss. This state-of-the-art technology ensures unparalleled precision, minimizing defects and maximizing product quality. With Q Plus, you're not just improving your inspection process—you're leading it. Discover how Q Plus can elevate your quality standards and give you a competitive edge in the market.
- **GlassInspector:** often referred to as a "scanner," is the Deltamax Automazione solution designed for detecting defects on insulating glass (IG) lines. Its modular design allows it to easily adapt to any production line, and it is quick to install without the need for extensive maintenance—just regular cleaning. The user-friendly Graphical User Interface (GUI) is intuitive and

straightforward, making it accessible for any operator to use effectively for quality control without altering the production process.

- **IGU:** The IGU scanner enables the inspection of finished insulating glass units (IGUs), regardless of whether they are made up of two, three, or four glass sheets. This advanced technology ensures consistent precision in detecting defects across the transparent sections of all panes within the IG unit, providing a thorough and reliable final inspection.
- **FROG** offers reliable and high-performance glass fragmentation analysis with customizable controls. It allows users to set parameters based on safety standards or specific needs. The system supports two analysis methods: a single image or multiple images of different areas. It provides real-time results on the graphical interface, showing the number of fragments, compliance with rules, the area of the largest fragment, and fragment size distribution.
- **Profiler** is Deltamax's solution for template recognition and glass measurement. Unlike other Deltamax solutions for double glazing lines, Profiler includes a special espalier tailored to ensure precise measurements. The size of this espalier varies according to the maximum size of the glass to be inspected, providing the necessary accuracy for different glass dimensions.



Via Kufstein, 5  
38121 Trento (TN) - Italy  
Tel.: +39-0461-042301 - E-mail: info@deltamax.eu

www.deltamax.eu

hall 16 / stand D63

### People to contact at our stand

**ENRICO BONANNI**  
**GIANLUCA DAMELICO**  
**STEFANO BONATO**

**SALES MANAGER**  
**TECHNICAL MANAGER**  
**SALES ADVISOR**



**DIEFFE MACCHINE** designs and develops targeted solutions for water treatment and for the micro-filtration of water for the glass industry.

Thanks to years of experience in solid/liquid separation since 2002, DIEFFE MACCHINE is highly specialized in the development, manufacture and turn-key installation of plants using the most updated and reliable technologies.

The technical staff at DIEFFE MACCHINE carries out exhaustive feasibility analyses, in order to offer clients an accurate technical and economical assessment of the viability of the project and to build plants tailored to clients' specific needs.

DIEFFE MACCHINE provides technical assistance across all phases of machine construction, from order commissioning to plant operation and on-site personnel training.

DIEFFE MACCHINE offers a reliable,

easy to operate, wide range of solid/liquid separation equipment:

- Manual centrifuges
- Automatic centrifuges
- Fine filtration
- Micro-filtration
- Reverse osmosis
- Complete plants



Many glass makers are still cleaning out their coolant tanks by hand, or using ineffective underground settling tanks.

These traditional methods simply don't solve the problems, and continue to result in lost machine time (and profits) during cleanouts, increased labour, disposal and coolant costs, and the typical problems caused by dirty coolant (slower operating speeds, decreased cutting/bevelling quality, decreased life of diamond wheels, conveyor bearings and other components, and increased maintenance costs.

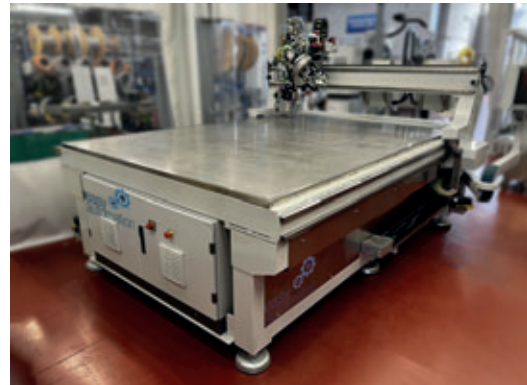
- Decreased production costs
- Greater life for diamond wheels, conveyor bearings and other components
- Extended coolant life
- Reduced settling tank clean-out
- Reduced maintenance costs
- Reduced disposal costs
- Reduced labour costs
- Increased productivity ND quality
- Less machine/line downtime
- Cleaner coolant increases running speeds
- Less scratches caused by dirty coolant, so less scrap



hall 15 / stand B42

People to contact at our stand

**AUGUSTO VINCENZI** GENERAL MANAGER



### Easy Automation manufactures

machines for automotive glass producers. We supply complete solutions, from design and construction to start up and training, for complete production lines. Easy Automation also has particular skills in the development of robotic cells, vision inspection, fast glass handling.

### Wiring Drum Machine EWA

PVB wiring application, the new standard for PVB wire embedding, apply with three paths, parallel, trapezoidal and backlight type, application up to **300 m/min**. Can be integrated with automatic Bus Bar application tape application and precut PVB.

### Wiring Table Machine EWA - H

PVB wiring application – a flexible solution, which can be applied for heating wires and antenna circuits. Both tools can be installed on the same machine.

**Electrical Control Machine of backlight defrosting circuits by Thermovision system (ECM-Th).** The ECM-Th controls the backlights printed circuit by an infrared camera.

**Antenna Control Machine** of backlight and sidelights (ACM to detect open circuit and closed-circuit antennas).

### Soldering Device Easy

**Automation (SDEA)** The SDEA soldering

system is based on direct electrical heating with 100% double energy control. It has been developed for use in high volume production, guaranteeing reliability and low operational costs.

### SDEA-AI

Soldering device with artificial Intelligence, this is a step forward to the soldering quality control, especially for manual soldering systems.

### EWA-Cut

High speed Plotter for PVB cut and Cut\_out , with the possibility to include wiring in the same station

### Windshield control machine ECM-W

To check heating quality of heated windshield, it works for wired and coated windshield.

### Windshield Assembly Lines.

The development of robotic application of components such as dam rubber and Elkamet, enable EA to supply full automated assembly lines of windshields from cleaner and primer, to the application of brackets and rain sensors with PU dosing, pins, spacers, and gaskets, with a cycle time of up to 28 seconds.

### PVB Trimming (TREA)

TREA is the PVB trimming solution developed by Easy Automation in response to the most demanding customers.

### Bus-Bar wiring application

(ABBA) The first automatic system to apply the first and second bus bar on wired PVB sheets. The system can apply strips of different dimensions directly on the PVB

## Product Range

- **TURNKEY PLANTS/ ENGINEERING FOR AUTOMOTIVE GLASS**
- **AUTOMOTIVE GLASS QUALITY CONTROL**
- **WIRING DRUM**
- **WIRING TABLE**
- **SOLDERING EQUIPMENT FOR ELECTRICAL CONNECTORS FOR WINDSCREENS AND BACKLIGHTS**
- **TESTING FOR SOLDERING**
- **TESTING DEVICES OF BACKLIGHTS ELECTRICAL HEATING**
- **TRIMMING OF WINDSCREENS**
- **PRIMER AND CLEANER APPLICATION**
- **COMPONENT APPLICATION**



Via Sassuolo - Unità 16 - 00071 Pomezia (RM) - Italy

Tel.: +39-06-52364774

E-mail: [info@easyautomation.it](mailto:info@easyautomation.it)

[www.easyautomation.it](http://www.easyautomation.it)



hall 15 / stand G70

### People to contact

**ALBERTO.GONZALEZ@GRUPOECOL.COM** - BUSINESS DEVELOPMENT MANAGER  
**COMERCIAL@GRUPOECOL.COM** - ADMINISTRATIVE DEPARTMENT



ECOL Ingenieria industrial S.A. is specialized in the automation of the glass processing industry. Working as a consulting partner and turnkey supplier, ECOL develops and integrates customized machinery solutions to upgrade new or revamped lines with the latest technology in the market. Our specific know-how can increase your competitiveness by:

- **Boosting your production speed**
- **Improving your product quality**
- **Lowering your labour cost** - less and safer workforce
- **Saving energy consumption**

With a proven track-record in the design, manufacture and installation of customized machines, ECOL is the reliable choice to support your engineering team in improving your projects. Our deep technical expertise ensures a cost-effective solution. Our long experience in international project management guarantees a successful on-site integration. Our professional reputation comes from extended customer support, with customers attesting to our reactivity and service commitment worldwide.

ECOL manages all the stages of its projects 100% internally.

From the mechanical and electrical design to the manufacture in our dedicated workshops (i.e. machining, weld-

ing, painting, automation, etc.), ECOL is equipped with ad-hoc capacities for the business. With no subcontractors, the project schedule and product quality are closely controlled. Moreover, the know-how and lesson learnings remain in-house - leading to a continuous improvement of our innovative solutions.

For this Glasstec 2024, ECOL brings a real horizontal washing machine to showcase. You are invited to drop by at our stand in order to feel firsthand the top-quality materials, discover its heavy-duty performances and check its long-lasting design. Join our staff and request our free advice on about the feasibility of your project. Follow us on social media and save our contact!



### Product Range

- **FLOAT FURNACE PERIPHERALS**
- **JUMBO AUTOLOADERS**
- **CONVEYORS AND TRANSFERS**
- **ACCUMULATION BUFFERS (STOCKERS)**
- **WASHING MACHINE FOR FLAT GLASS**
- **WASHING MACHINE FOR BENT GLASS**
- **DE-AIRING FURNACE VACUUM BAGS**
- **ROBOTIC CELLS**
- **SMART WAREHOUSE STORAGE**
- **CRUSHER AND CULLET LINES**
- **CUTTING LINES**
- **SERIGRAPHY LINES (LOGO PRINTING)**
- **PACKING LINES**
- **AUTOMOTIVE AVO (ADDED VALUE OPERATIONS)**



Pol. Ind. Guarnizo P17, 39611 Guarnizo / Cantabria (SPAIN)

Tel.: +34-942566 196

E-mail: [comercial@grupoecol.com](mailto:comercial@grupoecol.com) - [www.linkedin.com/in/ecolglassmachinery/](http://www.linkedin.com/in/ecolglassmachinery/)

[www.grupoecol.com](http://www.grupoecol.com)

hall 17 / stand D76

**Edgetech**  
A Quanex Building Products Company

### Edgetech at glasstec 2024: With the T, insulating glass is fit for the future

The megatopic of climate change hovers over this year's glasstec focus topics of decarbonisation, the circular economy and digital technologies.

"In all developments, we must continue to think from the customer's perspective. Products such as insulating glass must be optimized with the buildings of the future in mind," says Joachim Stoss, Vice President International Sales at Edgetech Europe/Quanex Inc, which is the manufacturer of the flexible insulating glass spacer system Super Spacer®. "And this future will be hot in the truest sense of the word due to the increasing number of hot days and tropical nights. In the coming decades, we will be thinking more and more about how to keep our rooms cool in an energy-saving way. Insulating glass windows installed today will have to fulfill the requirements for energy efficiency, sustainability, durability and comfort of a building in 20 years or more. The thermally separated edge seal is a small but irreplaceable detail. At glasstec, we will be highlighting why our Super Spacer warm edge spacer makes the difference in solving these challenges," continues Joachim Stoss.

### The T-shape of the Super Spacer® ensures the integrity of the edge seal

Thanks to its unique shape and 100% resilience, the spacer system made of T-shaped silicone foam can withstand the pumping movements of insulating glazing countless times. The spacer structure holds many advantages for architects, specifiers and IG manufacturers: substantial reduction in tension levels on the butyl cord and secondary seal, the butyl cord is not pressed into the visible area of the glass unit, the spacer can be applied automatically and manually and is suitable for both flat and free-form glazing.

### Super Spacer® ensures low thermal conductivity

Psi values make it possible to compare the different spacers in terms of their thermal performance. According to a rule of thumb, a difference of 0.04 W/mK in the Psi value means an improvement of 0.1 W/mK in the Uw value. The PSI values of the Super Spacer® spacers are at best 0.029 W/mK. This means that the warm edge efficiently prevents the formation of thermal bridges at the edge of the insulating glass through which valuable energy is lost. "Our most popular products also have the passive house certificate. Manufacturers, architects and project managers are opting for a mature, future-proof product. All Super Spacer products contribute significantly to low U-values and therefore lower heating and cooling costs as well as an improved indoor

environment. With automated production and the warm edge as standard, insulating glass manufacturers and glass processors are positioning themselves for the future," continues Joachim Stoss.

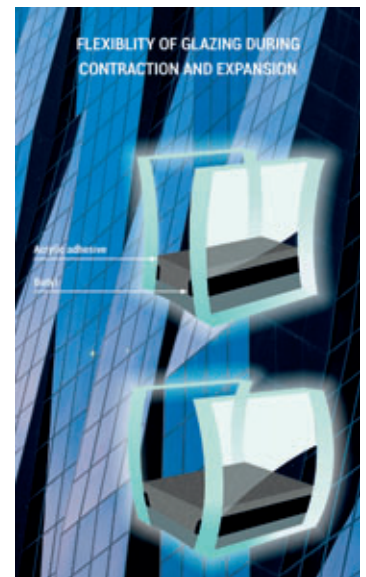
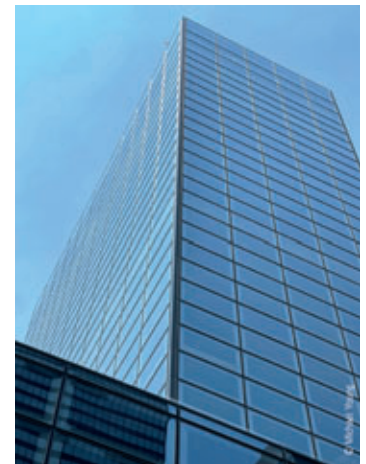
### Exact parallelism also ensured with XXL glazing

Up to an edge length of 3.5 metres, a deviation of the spacer from the straight glass edge of 4 millimetres is permitted; for larger edge lengths, the maximum deviation is 6 millimetres. Setting the spacer in an insulating glass line therefore requires precision work, not only for normative but also for visual reasons. "With the increasing size of the insulating glass units, rigid spacer frames are increasingly difficult to handle due to their lack of tensile strength and tendency to bend," says Stoss. In contrast, the flexible Super Spacer® spacer bar is applied from the roll on partially or fully automated lines with robotic support and outstanding precision and ensures immediate stability even with oversized glazing thanks to its good adhesive strength.

### Super Spacer® is also flexible with the spacer colour

For structural glazing facades in particular, architects and specifiers attach great importance to an edge seal that is as invisible as possible and whose colour blends seamlessly with the glass facade. Super Spacer® products are available in black and grey as standard. As the demand for coloured accents in window and facade design is also increasing, the flexible spacer can also be produced in a variety of other colours, including white, light grey, and even such strong colours as ruby or green.

**Visit Edgetech Europe at glasstec 2024 at stand D76 in hall 17**





**EVALAM COLOR**, a solution designed to meet the needs of architects and decorators, standing out for its durability, uniformity and wide range of colours recently extended to four new attractive references.

#### I-On by Pujol.

Another **Pujol Group** brand, it will be present to show its PDLC laminated solutions. These are suitable for a wide range of architectural and decorative uses. They allow full integration into home automation systems and remote-control using controls, smartphones, tablets, timers, sensors. Here there is compliance with all regulations required by the ECC law of laminated glass for the construction of glazing outdoors and indoors.



**EVALAM** belongs to Pujol, a consolidated group specialized in the advice of products for safety glass, through a solid proposal of products and services that respond to all the needs that the professional market may have in this field. During Glastec24 **EVALAM** will demonstrate how, thanks to its products and services, it has become a global point of reference for the manufacture of EVA as well as other interlayers for architectural and decorative use, highlighting:

**AB-AR**, a structural post-breakage interlayer designed for applications that requires extra safety in public spaces or with high linear load. **AB-AR** provides passive, post-breakage safety when using tempered glass, is the most mechanically resistant interlayer on the market ahead of the structural ionomers that have become popular in recent years with T<sub>g</sub> as low as 36°C and above that temperature they completely lose their declared properties and characteristics.

**VISUAL**, an interlayer with excellent and incomparable transparency and adhesion which, combined with its high acoustic insu-

lation performance and its unique crosslink index, make it the ideal solution for experienced laminators looking for a high added value product and the perfect lamination solution where optical and durability are essential requirements.



#### FILTRAGLASS ARRIVES WITH A BANG AT GLASSTEC 2024

With a system that's got the brand's highest flow rate - all at a large stand of its own where sustainability will rank among the company's key themes.

Glasstec is a key trade fair in the glass sector and Filtraglass knows it well. Here's why the company has made an unprecedented commitment to this important event, which will take place from 22 to 25 October in Düsseldorf (Germany). Sustainability is a world necessity and somewhat unfinished business within the industrial sector.

Filtraglass has been developing water treatment systems specifically for glass processing for almost two decades with the aim of making this activity cleaner, more efficient and more productive. Vilamalla is committed to the environment, knowing that the growth of the glass industry is fully compatible with sustainability and care of the planet. Such is the message it conveys wherever it goes - Glasstec 2024 not least. At this year's show, Filtraglass will have a stand of almost 120 m<sup>2</sup>, the largest it has ever had at a trade show on its own, i.e. without sharing space with another brand. Also, a large part of the team will be travelling to Düsseldorf to attend to all who wish to learn more about both the operation and advantages of water filtration systems for the glass industry. You can visit the stand in Hall 15 / E12. But there's more! At Glasstec 2024, Filtraglass will present one of its systems with the greatest flow rate, namely the Xtrem Flow XF-820 model, which is designed to filter large quantities of water. This is a system that will undoubtedly be of interest to many companies for its operation, that will attract the attention of many visitors. The XtremFlow line has been designed with companies that have machinery with high water flow rates in mind. The XtremFlow models can filter many litres of water per minute and can also be adjusted to the flow rate required by each customer. Its operation is also somewhat different from other Filtraglass systems and may be summarised as follows: The water is filtered through a filter press system which separates the glass particles suspended in the water. In this way the liquid is moved through the filter plates at a high rate and several litres of water are treated in just a few minutes. Filtraglass is very knowledgeable about the glass industry and knows that breaks in the production line are costly. For this reason, it has designed - and has perfected water treatment systems that provide significant savings in consumption while avoiding machine maintenance breaks and reducing environmental impact among many other advantages. As a trade show Glasstec brings together the largest number of professionals and companies in the glass sector from all over the world. For this reason, there is no better place



to show everything that Filtraglass systems, already trusted by companies all over the world, can offer while demonstrating that clean and productive industrial activity is possible. With Glasstec 2024, the Vilamalla-based company is making a clear commitment to promoting sustainability and water recycling in the glass industry.



hall 16 / stand D13-D17

People to contact at our stand

**CARLO ZUCCARELLO** SALES AREA MANAGER

# FOREL

### FOREL INNOVATION ON SHOW: LIVE AT GLASSTEC 2024

At nearly fifty years in business, Forel's excitement and commitment to **Glasstec** remains steadfast for the world's most prominent international trade fair for glass. As an established global machine manufacturer for the flat glass industry, Forel recognises worldwide trends and requirements by demonstrating **automation through innovation**.

**Glasstec 2024** scheduled in Dusseldorf, 22-25 October 2024: with a focus on trends such as decarbonisation, digitalisation,



and sustainability, Forel confirms its participation, exhibiting machinery and product solutions associated with today's manufacturing challenges. Forel proud to represent **"Italian Excellence"** with an important display of its knowhow.

Showcasing the very latest machine innovations with live demonstrations, Forel will also introduce enhancements in vertical edge processing, production with Thermoplastic and a fully integrated logistics system.

Taking centre stage at Glasstec will be an **important patent innovation** that allows for the accurate placement, dimension control and management of Thermoplastic spacer beyond twenty millimetres width. The development path that led to the latest enhancement began in 2020 after the Forel R&D team succeeded in improving critical aspects associated with the process.

Their analysis of the extruded material led to innovations like the production control buffer, positioned inline between the thermoplastic applicator and press, to consolidate the materials characteristics with best coupling performance without compromising production performance. This methodology delivers safer and faster pressing, even when the profile height is 5.3 mm and the width plus 20mm.

The need to expand the extruded width of thermoplastic spacer was client led and a new patent allows for 20mm plus spacer that ensures the optimal geometric position without deformation. Another aspect improved is the unloading phase generated by the improved technol-



ogy, optimising the use of manpower is necessary to increase unloading without using additional personnel or compromising safety.

Automation, speed, and safety are three key words in glass produc-



tion, and addressing all these points is the integrated Sorting and Stocking System for completed units, an innovative automatic logistics system. Especially useful in the manufacture of Thermoplastic IGU's, this warehouse module revolutionises the postproduction management of finished panels. Located directly after the sealing process, patented supports are placed underneath the finished panel, removing any misalignment or deformation of the glass during sealant curing.

Forel's entire range for vertical edge processing machines complements the overall glass factory. The bestseller Art. EM edging machine receives a new feature that increases performance efficiency: The automatic tool cone changer is an upgrade that optimises the platforms level of automation. Adding an 8-position cone magazine carrying a varying number of tools, increases efficiency and productivity combined with reduced tool handling.

Demonstrated at the show will be the new Art. EG Arrissing Machine capable of managing arrissing and flat edge grinding to meet demand from the construction industry to flat edge grind laminated glass. Features have been added to guarantee support, stability and positioning the glass sheet, critical for quality in this process.

Further enhancements in box spacer profile involving the Art. PB profile bender, equipped with the revolutionary "Smart Arm" a stability device to avoid micro fractures in the corners. This ancillary module will be demonstrated with an intuitive software update to simplify the user interface at set-up.

As usual, visiting Forel at Glasstec will be an all-round immersive experience, detailing the latest innovations in thermoplastic spacer and vertical edge processing automation. The stand configuration will give visitors first-hand experience of glass factories for the future, with live demonstrations daily and plenty of Forel's legendary hospitality.

For those who attend the show, there will be no shortage in opportunities to visit Forel on stand D13/D17 in Hall 16 and experience the knowledge, advice, and solutions from industry experts and the entire Forel team.

Forel in 2024 is not just another machinery manufacturer, but a working philosophy based on its commitment, investment, and innovation, by creating factories for the future with and for its customers.



Via per Monastier 4 - 31056 Vallio di Roncade (TV) - Italy  
Tel.: +39-0422-840507  
E-mail: info@forelspa.com

[www.forelspa.com](http://www.forelspa.com)

hall 16 / stand A12

### People to contact at our stand

<b>MICHELA PEZZA</b>	PRESIDENT
<b>FABIO GABRIELI</b>	TECHNICAL DIRECTOR
<b>PAOLO DE BORZATTI</b>	SALES MANAGER



The Italian company FRATELLI PEZZA S.r.l., leader in the production of sandblasting and marking systems for flat glass, will display at Glasstec the **Mistral EV+ series**, full optional sandblasters that comply with the standards of Industry 4.0: interconnection, digitalization of the production process and constant monitoring of performance, key factors for any modern glasswork. The cabins enable to manage the **working programs**, copy, rename, delete or backup them. There are counters for monitoring the processes, a report of any alarms and preventive maintenance information. A **graphic simulator** displays the programmed sandblasting areas. Moreover, a web application called **MistralApp** will allow the customer to program the machine remotely via PC or tablet. All automatic cabins are equipped with a unique **anti-static system** called **MirrorProtection**; this system enables mirror manufacturers to no longer have to worry about the phenomenon of static electricity sparks, with a significant reduction of scrap. Fratelli Pezza

will bring at Glasstec the model **Mistral 180EV+** along with the company's complete range of marking devices, that provide a clear, sharp and permanent mark on the glass surface. The automatic line **EASYMARKER+**, now equipped with a 4.0 software, includes two models: **EasymarkerEV+** and **EasymarkerUP+**, suitable to be combined with vertical and horizontal machines respectively. The equipment can be connected to other glass processing machinery receiving an impulse that activates the marking operation in a totally automatic way. **Marker 101T** and **301T** are instead manual and portable units which, just as like the Easymarkers, enable to carry out a logo up to 30 mm in diameter. FRATELLI PEZZA's product range is completed by a line of **nanotechnological coatings** for the protection of **sandblasted glass** (Mix30pro) and **float, extra-clear and acid etched glass** (Ghostglaze); it will also be available a new formula dedicated to transparent glass which is suitable for **automatic application** (Sprayglaze).



### Product Range

- **SANDBLASTING MACHINE FOR GLASS AND MIRROR**
- **MARKING EQUIPMENTS FOR GLASS AND MIRROR**
- **COATINGS FOR SANDBLASTED, FLOAT AND ACID ETCHED GLASS**



Via Ing. V. Balduzzi, 29 24023 Clusone, Bergamo (Italy)  
Tel. +39-0346-27841  
E-shop: [shop.fratellipezza.com](http://shop.fratellipezza.com)

[www.fratellipezza.com](http://www.fratellipezza.com)

hall 16 / stand B13

### People to contact at our stand

**CLAUDIO BERNABUCCI** MANAGING DIRECTOR

# GLASSCOMPANY

Glass Company is known for its innovation and continuous research; it has specialized over the years in High-Tech systems and machines such as lasers, double glazing lines for various purposes included FULL VISION, glass tempering, lamination, fire-resistant glass production systems, coatings and surface treatments, testing and measuring instruments and much more.

#### Laser Technology

Glass Company's proposal in laser machines is divided into:

**LaserMek:** standard laser machine, which works only on the surface of the glass. With a single laser head, multiple processes can be performed such as sandblasting, ablation that leaves the glass completely transparent while allowing for the creation of intricate designs even on large formats, both with the sandblasted effect and the transparent effect, obtaining it from mirrors and coated glass, etc.

**LaserMek Drill:** is the advanced version of the LaserMek that allows the two previous processes with the addition of the drilling function, it allows holes of any geometric shape to be made on monolithic glass within an area of 150x150 mm and a maximum thickness of 25 mm. LaserMek Drill will be visible at the Glass Company stand at the fair.

**LaserMek Cut:** allows for straight and shaped glass cutting using filament technol-

ogy and it can also cut large glass sheets. The machine is able to cut soda lime glass in thickness from 0.5mm to 15mm and some types of borosilicate glass in thickness from 0.5mm to 9mm, also it can easily cut chemically tempered glass. LaserMek Cut offers many advantages such as extremely high precision, clean and smooth edges and last but not least power consumption reducing up 70% compared to the standard cutting systems.

#### Tempering Technology

Vulcan is the new generation of intelligent glass tempering furnaces for tempering flat and curved glass that uses the **iTemper** control system - an innovative software that manages the furnace and allows for tempering of the glass to be performed in a completely automated mode. To overcome the problem of glass breakages during the tempering phase, Glass Company has created a system (patent pending) called "**Glass Break Alert**" which allows for the detection of glass breakages in the tempering and cooling sections - quickly identifying the area where the glass is breaking and thereupon solving the problem without wasting time - especially when tempering cycles are very short.

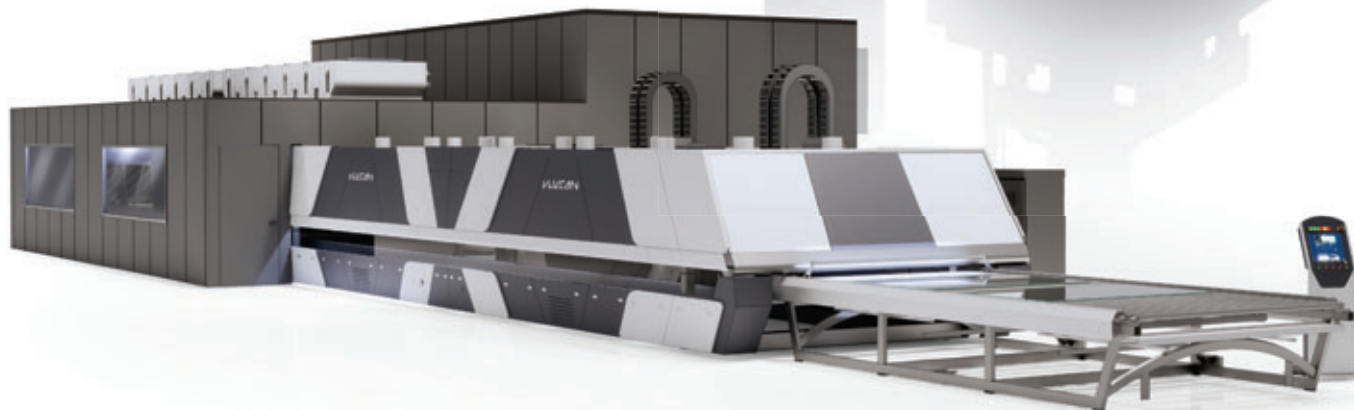
#### FireMek for fire resistance

For the production of fire-resistant glass in class E, EW, EI, Glass Company has researched and created a sophisticated and technological process, namely **FireMek**.

In its Pesaro plant, Glass Company not only builds the machine but also creates a "turn-key" system which also includes the chemistry to produce the ultra-transparent silica-based intumescent dispersion that's needed to produce this glass type.

#### FULL VISION double glazing

The new trend in the industrial refrigeration sector that's also gaining ground in both construction and furniture is the production of insulating glass with transparent spacers. Here we offer a complete system that produces glass spacers as well as the machinery to automatically produce double glazing with these spacers. The final result is a glass that's free of the black perimeter edge while being totally FULL VISION transparent.



[www.glasscompany.com](http://www.glasscompany.com)



Via Brigata Garibaldi, 33/35 - 61122 Pesaro (PU) - Italy  
Tel.: +39-0721-283519 - E-mail: [info@glasscompany.com](mailto:info@glasscompany.com)

hall 11 / stand K90

People to contact at our stand

**STEFANO TIBÉ**

SALES MANAGER

FINISHING SOLUTIONS 1972  
**giardinagroup**  
glass division

**Giardina Group Glass Division** works in the field of glass coating and printing, covering almost all areas, such as architectural, automotive and home appliances, using the very latest techniques and environmental friendly finishing solutions available, including cost effective UV and Selected Microwaves (MOS®) dryers for water based products. The highest standards in finishing and screen-printing are part of the ongoing targets that Giardina Group Glass Division, supported by many years of experience, successfully employs with many customers throughout the world.

Numerous jumbo size finishing lines have already been realized with great success.



### Product Range

- ENAMELLING EQUIPMENT AND PLANTS
- HOT AND COLD COATING SYSTEMS AND MATERIALS (ROLLERS, CURTAIN COATERS, DRYERS)
- POWDER OR LIQUID APPLICATION SYSTEMS FOR PROTECTING FLOAT GLASS

[www.giardinagroup.com](http://www.giardinagroup.com)



Via Vico Necchi 63 - 22060 Figino Serenza (CO) - Italy

Tel.: +39-031-7830801

E-mail: [info@giardinagroup.com](mailto:info@giardinagroup.com)



hall 15 / stand A48/A49

### People to contact at our stand

AT GLASSTEC, OUR EXPERTS WILL BE AVAILABLE TO PROVIDE YOU WITH RECOMMENDATIONS AND SOLUTIONS FOR ANY OF YOUR GLASS PROCESSING CHALLENGES. COME ASK US MORE!

**glaston**  
seeing it through

### GLASTON @GLASSTEC 2024 - FAST-TRACK YOUR PERFORMANCE FOR GREATER PROFITABILITY

At glasstec 2024, we at **Glaston** will be presenting the many ways we offer to speed up your success without compromising quality. We can tailor plans to your specific targets to help you quickly reach your highest processing goals.

#### Interested in reaching 30% higher profitability?

Our equipment efficiency cuts costs for both higher productivity and better bottom-line results. Experience effortless production line operation with flawless accuracy and consistent quality with our advanced automation solutions. Extend your machinery life and see higher uptime with comprehensive services.

#### In Glass Tempering:

Our **latest-generation RC and FC Series** tempering line technologies can be tailored to your specific needs. Our pioneering automation solutions accelerate operation across all production stages, thereby boosting both performance and profitability.

#### In Glass Lamination:

The new **Glaston ProL SPEED** laminating line edition increases production output by up to 40%.

#### In Insulating Glass Manufacturing:

The new **Glaston TPS<sup>®</sup> PRO** revolutionizes efficiency and productivity, reaching up to 15% more yield. Glaston's unique thin **triple IG unit production** enables easy integration with existing window frames - ideal for building renovations. **Glaston MUNTIN'MASTER for TPS<sup>®</sup>** lines automates the correct setting of muntins in TPS<sup>®</sup> IG units. **Glaston ACTIVE'SEALER** automates double glazing production with proven dosing technology.



#### In Mobility and Display glass processing:

**Glaston CHAMP EVO** for mobility glass preprocessing automates the cutting, breaking and grinding phases for increased performance and speed. The **new Glaston HYPERFEX** grinding wheels demonstrate significantly improved performance in all aspects of glass preprocessing. The new **Glaston MATRIX EVO** automatic windshield bending furnace facilitates faster high- performance production. The line's new windshield press bends deep sags while wrapping corners with precision. Its active convection technology speeds up heating even for coated, printed or otherwise complex glass types.



#### In Processing Automation:

An **automated glass loader and unloader** jointly place glass onto the line most efficiently, based on batch patterns and production needs. Regardless of the type of glass processing, the systems boost production, enhance quality, increase safety and reduce energy consumption.

For tempering and laminating lines, **automatic batch optimization** enables processors to generate the most efficient batch patterns based on the specific type and processing requirements. This results in increased capacity and reduced energy consumption.

#### In Upgrades:

Glaston has introduced **new upgrade options** for glass heat treatment, insulating glass manufacturing as well as mobility and display glass processing.

**Glaston's CNC96 upgrade kit** for automotive and architectural glass cutting equipment boosts the CNC96 control system while replacing any end-of-life components.

**Glaston heating chamber replacements** with RC or FC technology for older tempering lines improve heating and cooling, end-product quality, energy efficiency and productivity.

**Glaston ProL-zone upgrade** quickly and

cost-efficiently modifies your existing laminating line to speed up the process. You enter only one parameter, and the line takes care of the rest. Its full convection technology eliminates heat loss and saves energy.

#### In Services:

**Glaston Care** offers comprehensive service agreements that guarantee the highest possible equipment reliability. Our lifecycle support minimizes downtime, reduces total cost of ownership and extends the life of your machines.

Let's talk! Visit our stand at glasstec 2024 in **Hall 15, Stand A48-A49**

### Product Range

- **FLAT TEMPERING FURNACES**
- **BENDING AND TEMPERING SYSTEMS**
- **FLAT LAMINATING LINES**
- **WINDSHIELD BENDING FURNACES**
- **INSULATING GLASS MANUFACTURING LINES**
- **PROCESSING LINES FOR AUTOMOTIVE AND DISPLAY GLASS MANUFACTURING**
- **HANDLING EQUIPMENT**
- **GLOBAL SERVICING & SPARE PARTS**
- **UPGRADING, REFURBISHMENT, REMOVALS AND RETROFITTING OF EXISTING EQUIPMENT**



Glaston Group  
Lönrotinkatu 11 - FI-00120 Helsinki  
Tel. +358 - 10 - 500 500 - E-mail: info@glaston.net

www.glaston.net



# CHINA GLASS 2025

## The 34<sup>th</sup> China International Glass Industrial Technical Exhibition

China International Exhibition Center(Shunyi Hall)  
May 26<sup>th</sup>-29<sup>th</sup>, 2025 · Beijing

**Host:** The Chinese Ceramic Society  
**Organizer:** Beijing Zhonggui Exhibition Co., Ltd.  
**Supporter:** China Building Materials Federation  
China Architectural & Industrial Glass Association  
China National Association For Glass Industry

**Tel:** +86-10-57811261, 57811409  
**Fax:** +86-10-57811262  
**E-mail:** [ceramsoc@chinaglass-expo.com](mailto:ceramsoc@chinaglass-expo.com)  
**http://www.chinaglass-expo.com**



WeChat ID: CHINAGLASSEXPO

hall 11 / stand K50

### People to contact at our stand

**ALESSANDRO GRANDO**

OWNER

**LORIS GRANDO**

OWNER



ITALIAN EXCELLENCE

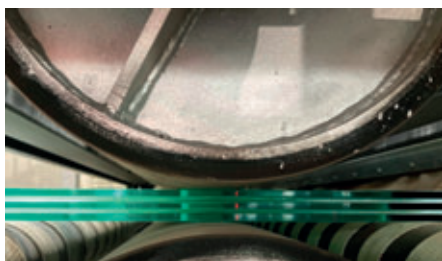
**GPM automation** is committed to providing innovative solutions in the glass automation and laminated glass production.

GPM automation operates in two main business areas:

1 glass processing machineries: turnkey laminated glass plant; PVB trimming lines after autoclave; horizontal and vertical washers;

2 automation: sorting and stocking systems

for glass, window, stone and ceramic tiles; robotic solutions for loading/unloading of third parties lines as insulating glass line, double edger, painting line, vertical CNC line, tempering furnace.



Laminated glass lines with electric press with servo drives, forced air convection ovens, fully automatic PVB application, cutting and trimming



Horizontal washer and tilt table



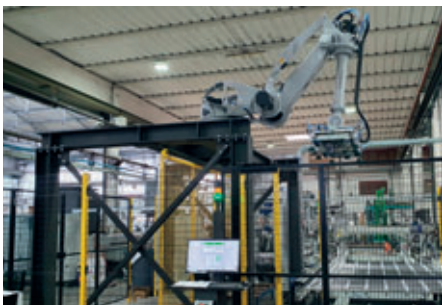
Harp racks and shuttle for IG line loading



Robot and conveyors for IG line unloading



Robot for ig loading



Robot and conveyors for double edger loading/unloading

### Product Range

- LAMINATED GLASS LINE, INCLUDING CLIMATIC ROOM AND AUTOCLAVE
- HORIZONTAL AND VERTICAL WASHERS
- ROBOTIC LINE FOR LOADING/UNLOADING: DOUBLE EDGERS, IG LINE, CNC, TEMPERING FURNACE AND OTHER PROCESSING LINES
- SORTING SYSTEM FOR GLASS AND IG UNITS
- HARP RACKS AND SHUTTLE FOR AUTOMATIC GLASS LOADING/UNLOADING INTO HARP
- ROBOTIC LINE FOR THE TRIMMING OF PVB AND IONOPLAST INTERLAYER ON LAMINATED GLASS AFTER AUTOCLAVE CYCLE



Via Tommaso Salsa, 9 - 31030 Carbonera (TV) - Italy  
Tel. +39-0422-606015  
E-mail: info@gpmautomation.com

[www.gpmautomation.com](http://www.gpmautomation.com)



The **HEGLA Group** focuses on solutions that maximize the potential of existing productions to improve efficiency, conserve resources, and create added value. Among its innovations is a technology that upgrades standard glass into bird protection glass, enhancing its functionality.

### Sorting insulated glass: a continuous sequence

"With our new system for sorting insulated glass, we have established a continuous method for handling over IG units from the production line to shipping in the required order," explains Managing Director Bernhard Hötger. Manufacturers have always needed to work from large formats to small during production to ensure that everything could be stacked properly on their racks – until now, that is. The interim storage of insulated glass units dissolve this strict dependency. Once a batch is ready, the handover can be initiated in the correct order. Decoupling production and shipping allows for further process optimizations.

### Dividing insulated glass for a more sustainable use of resources

The IG2Pieces system emphasizes sustainable glass handling. It identifies the structure of an insulated glass unit and separates them into their components. This opens up possibilities for more efficient use of resources. Single-type disposal yields

higher prices than mixed containers, while undamaged panes can be reused in smaller formats or other applications. In some cases, these panes can even be used to repair freshly produced units. This automated separation increases efficiency in a process that was once highly reliant on workers' skills and speed.

### Added value: sustainable bird protection

HEGLA boraident's BIRDFriend mobile offers a portable solution for adding bird protection patterns to windows and facades, even after installation. The laser printing process transfers ceramic particles from a transfer strip onto the surface. This creates a uniform geometry of dots that is barely visible to the human eye. However, birds will register it as an obstacle that they simply cannot overlook. To ensure maximum protection, the print is applied to the outside of the glass (Position 1). The pattern works in three ways: the distance between the spots indicates an area that cannot be flown through. It also breaks up reflections of nature, while the change in the way the light is reflected acts as an additional signal.

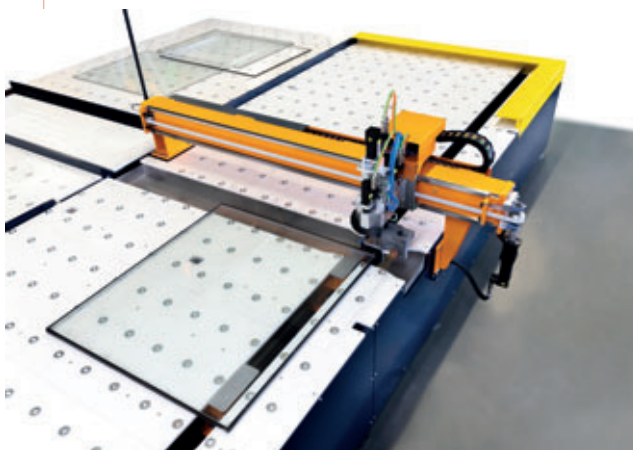
### New ERP system: greater data transparency, more add-ons

Several clients are already using the new HEGLA-HANIC ERP system, which will be showcased at Glasstec. The system represents a major advance, combining the strengths of the existing software with Microsoft Dynamics 365 Business Central. Users will experience familiar interfaces, while the software is compatible with all devices and can scale across different operations and locations. Additionally, Dynamics AppSource offers various add-ons, including full integration with Excel, Outlook, and other Office 365 tools.



### Product Range

- **FLOAT GLASS CUTTING TECHNOLOGY**
- **GLASS STORAGE AND PREPARATION SYSTEMS**
- **LASER MARKING AND LASER FINISHING OF GLASS**
- **INDIVIDUAL SOFTWARE SOLUTIONS FOR GLASS**
- **COMBINED FLOAT AND LAMINATED GLASS CUTTING MACHINES**
- **CONVEYOR SYSTEMS**
- **LAMINATED GLASS SEPARATION TECHNOLOGY**
- **DYNAMIC STORAGE SYSTEM FOR RESIDUAL SHEETS**
- **AUTOMATIC BREAKING SYSTEMS**
- **SORTJET - AUTOMATIC SORTING SYSTEMS AFTER BREAKOUT**
- **SOLUTIONS FOR INTERNAL AND EXTERNAL GLASS LOGISTICS**



hall 16 / stand A10

### People to contact at our stand

**LUIGI GASTALDO** CEO  
**LORENA DE LUCA** PROJECT MANAGER

## helios quartz®



**Helios Quartz** is now an international player and a reknown supplier for Quartz Glass processing and the manufacturing of Infrared Emitters and Ultraviolet Lamps. Helios Quartz also produces Specialized Equipment for Industrial, Scientific and Medical applications.

**TÜV certified**, Helios Quartz is a very flexible and dynamic group which is deeply oriented towards internationalization and which is living a strong and stable growing phase with great momentum: in the last 10 years, Helios Quartz has opened commercial branches in USA (Helios Quartz America), in

China (Shenyang Helios Tech) and Hong Kong (Helios Quartz Asia).

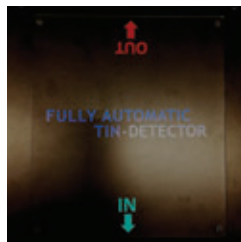
Thanks to its experience in different fields

and to its **cutting-edge testing laboratory** located in the historical Helios Italquartz S.r.l. plant in Cambiago (Italy), **Helios Quartz can advise customers and provide them with the best solution for every specific application.**

The key of all HELIOS QUARTZ companies is to be a partner for their customers, not only a regular supplier.

Helios Quartz product range for the glass industry includes:

- **QUARTZ INFRARED HEATERS** in short-, medium-, and fast medium wavelength, in single- and twin tube, with or without gold reflector for:
  - Laminating lines (plastic film coupling)
  - Screen printing lines
  - Bending furnaces
  - Fusion furnaces
  - Laminated glass cutting tables
- **INFRARED MODULES:** complete infrared solutions, designed and customized according to customers' needs and



ready to be integrated in existing machines and production lines;

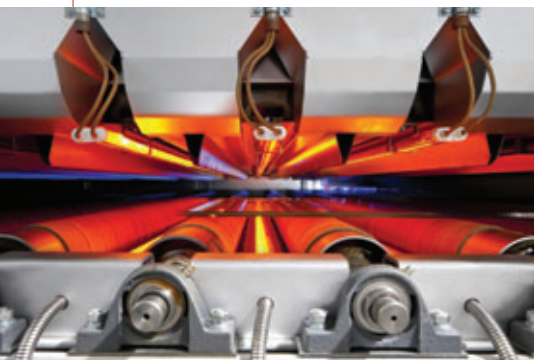
### • UV POLYMERIZATION EQUIPMENT:

UV high and medium pressure lamps for drying screen printing of reactive inks, paints, coatings and adhesives for the decorating and furnishing sector;

### • TIN DETECTOR EQUIPMENT:

UV black light devices which are able to detect the tin coated side of the float glass even under high brightness conditions. This kind of detection is crucial before processes like laminating, mirroring, printing and decorating. Helios Quartz offers two type of device:

- **MANWOOD 25-N:** manual equipment.
- **AUTOMATIC TIND SIDE DETECTOR:** compact automatic version of this device. It can be fixed directly on the glass transportation line, before the production process, in order to check each and every piece of glass. A user-friendly PLC helps the operator in calibrating and managing the different recipes.



### Product Range

- |   |                                      |
|---|--------------------------------------|
| • <b>INFRARED HEATERS</b>                 | • <b>UV POLYMERIZATION EQUIPMENT</b> |
| • <b>INFRARED MODULES AND SYSTEMS</b>     | • <b>UV BLACK LIGHT EQUIPMENT</b>    |
| • <b>FULLY AUTOMATIC TIN DETECTOR</b>     | • <b>PHOTOCHEMISTRY</b>              |
| • <b>MEDIUM AND LOW PRESSURE UV LAMPS</b> | • <b>QUARTZ GLASSWARE</b>            |



**HELIOS ITALQUARTZ Srl:**

Viale delle Industrie 103/A - 20040 Cambiago (MI) - Italy

Tel.: +39-02-95349318 a.r. - E-mail: italy@heliosquartz.com

**HELIOS QUARTZ GROUP SA:** Via Roncaglia 20

6883 NOVAZZANO Switzerland - Tel. +41-919233555/6 - E-mail: swiss@heliosquartz.com

[www.heliosquartz.com](http://www.heliosquartz.com)

hall 11 / stand F28

People to contact at our stand

OUR STAFF WILL BE AT YOUR SERVICE THROUGHOUT THE SHOW.



**Hornos Pujol**, a fourth-generation company with more than 110 years of history, belongs to the Pujol Group - a consolidated group specialized in the advice of products for safety glass through a solid proposal of products and services that responds to all the needs that the professional market may have in this field. Hornos Industriales Pujol bases its offer of furnaces for the glass sector on three segments, namely integral systems for laminating, Heat Soak Test furnaces and solutions for glass tempering through their latest development: the TEMPER FLEX solution.

**TEMPER FLEX.** The first glass tempering oven on the market with high productivity and high installed power, it's able to adapt to production with low energy consumption and low installed power if the customer requires it. It is a unique and innovative glass tempering solution designed to provide real answers to the needs of professionals based upon 5 main axes:

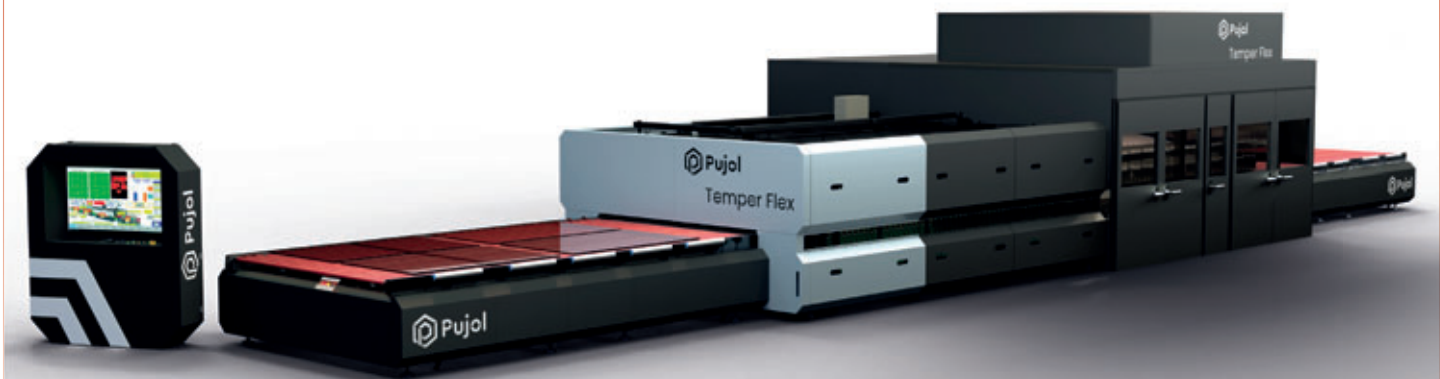
1. Return on investment.
2. Savings and profitability per square metre of glass produced.
3. Quality of the finished product.

4. Production flexibility,
5. Maintenance costs.

Visitors will meet other such well-renowned and firmly established ranges as **Pujol 100 PVB+**, which offers a disruptive and consistent technology that has already delivered more than 50 units around the world since its launch in 2011. Pujol 100 is a system that has three lamination phases in independent chambers - giving great flexibility to the professional. It has been designed to extract moisture from the interlayer, so energy efficiency costs are reduced drastically by up to 70 percent as compared to traditional autoclave systems. **Pujol 100 PVB+** maintains fixed costs, regardless of production - offering an economic and efficient solution for laminated glass makers. It is the perfect solution for glass processors with monthly productions between 5,000 and 15,000 sq m. A further important advantage is the reduction of the raw material costs - all thanks to the elimination of layers in tempered glass, selection of an inappropriate material and technology for glass lamination can more than quadruple costs depending on monthly production.

During Glasstec 2024 Pujol will show the LAM-PRO oven, a high performance furnace designed for the lamination of flat and curved glass (depending on the model) and designed for companies with high professionalism and high productivity requirements. It offers the following advantages:

1. Flexibility; Isolated and independent working chambers.
2. Productivity; Automatic, rapid cooling system.
3. Software control system: Includes programmer and HMI - all highly-customizable functions.
4. Uniformity; Double layer distributed radiation system.
5. Ergonomics: Employees reduce fatigue and discomfort during their working day.
6. Bending: Depending on the model, a bending chamber with an internal height of 500 m is available.
7. Environmentally-friendly; thanks to consistent and reliable fast cycles and improved software control.
8. Adapted to Industry 4.0, thanks to the Pujol e-Connect System.



hall 15 / stand D24

### People to contact at our stand

**FEDERICO MARCENARO**

**SALES TECHNICIAN**



**Idrotecnica** would hardly think to miss the Dusseldorf exhibition in this year of its 40th anniversary, which was celebrated with a mega event at its head offices on September 7th.

Idrotecnica water demineralizers are widespread in glass companies all over the world, supplying pure water to washing machines whilst guaranteeing the highest quality standards. Here's why Idrotecnica is now considered a point of reference in the production of demineralized water for secondary glass processing.

At Glasstec 2024 Idrotecnica will be bringing its presentation, both physically and virtually, of the numerous models of water demineralizers - all developed in a marked, intelligent modularity that's conceived to satisfy the particular requirement of every individual client.

Specifically, the following will be on display:

The new IDRO RO range, which is highly efficient and currently available - starting from the 500 l/h production model. This allows for:

- targeted and therefore reduced energy absorption
- efficiency up to 85 percent, allowing for lower water consumption. Not intended as a replacement to the existing ranges, this new range affords Idrotecnica the possibility to respond to more unmet needs with a greater number of models.

This depends upon:

- Secondary glass processing type (Automotive, LOW-E, laminated, coater, tempering, etc.)
- Operating regime of the glass processing machine
- Feed water characteristics

Indeed Idrotecnica will be proposing the best and most reliable solution by customizing its configuration. Here the innovations of recent years show up as especially interesting.

The IDRO RO-2P range, too, will be available - a unit that can produce very low conductivity water, compliant with the most stringent water purity parameters.

The Idrotecnica stand will have the new industry 4.0 solutions that are kitted out for both remote monitoring and the control of demineralization systems.

The combination of high-level sensors and industry 4.0 PLCs allows for systems with an advanced diagnostic system that helps organize maintenance in advance while preventing anomalies.

These new models, technical updates and innovations all follow the philosophy that distinguishes Idrotecnica equipment and services. Besides reliability and robustness, simplicity and intuitiveness are dual priorities. Here Idrotecnica equipment remains as it is recognized throughout the world: plug-and-play while being very easy-to-use.



hall 16 / stand B10

### People to contact

**MARTINA LANDO**

MARTINA.LANDO@IMMMES.COM

# IMMMES

The Spirit of Innovation



### IMMMES: REVOLUTIONISING WATER PURIFICATION

In today's modern industrial landscape, sustainability and energy conservation are key priorities. **IMMMES**, a leader in water purification, is presenting the revolutionary **DTP system at GLASSTEC 2024**. This innovative system not only represents a significant advancement in the purification industry but also addresses the environmental challenges and needs of the glass market by combining **high efficiency, energy savings, and sustainability**.

The **DTP system** is designed to tackle the complexities of water purification with a modular solution that can be tailored to the customer's requirements. Using total recirculation technology, DTP ensures clean water, which is essential for sophisticated equipment such as CNC spindles. This system not only optimises water resource usage but also significantly reduces energy and maintenance costs.

**The modular design of the DTP** enables payback of the average investment in about three years, making it a strategic choice for glassworks of all sizes—a real game changer!

#### Benefits of the DTP System:

- **Continuous production process:** Ensures uninterrupted workflow and boosts productivity.
- **90% reduction in additional water:** The closed-loop system eliminates the need for extra water.
- **High product quality:** Reduces waste and improves glass quality.

- **Energy efficiency:** Utilises a single high-efficiency lift pump, reducing energy consumption.

- **Maintenance cost reduction:** The automatic system minimises tool wear and requires no operator intervention for tank cleaning.

**IMMMES** also offers advanced solutions for demineralisation, reverse osmosis, and purification of colour contamination. Experience our technology firsthand at **Pavilion 16, B10**, during **GLASSTEC 2024**. For more details, visit our website: <http://www.immmes.com>



Via Dell'Industria, 5 - 30010 Campagna Lupia (VE) - Italy  
Tel.: +39 0415140453 - info@immmes.com

[www.immmes.com](http://www.immmes.com)



hall 14 / stand A42

### People to contact at our stand

**MASSIMILIANO IOCCO**  
**ANGELO DI GIACOMO**  
**GABRIELE TINARI**

**GENERAL MANAGER**  
**SALES DEPARTMENT**  
**MARKETING DEPARTMENT**

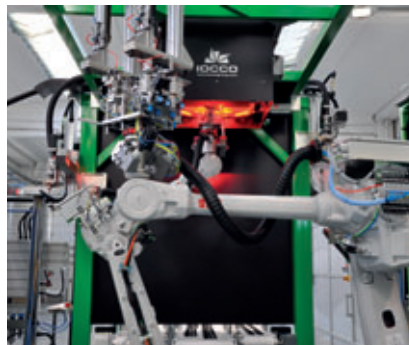


**IOCCO** is specialized in the engineering and construction of equipment and complete lines for glass industry.

The company supports its customers right from feasibility study in order to define the best solution so as to guarantee customers' goals.

The lamination process for Windshields, Sidelights glass and Sunroofs produced with ULTRA-THIN glass and multilayers, as PVB-PDLC-SPD-XIR developed by IOCCO is the quality assurance for customers through the production data tracking of each glass, has moreover the unique characteristic to process different asymmetric shapes of glass avoiding stops for change-overs.

Automotive glass processing is continuously



evolving especially for value added operations.

IOCCO supplies custom solutions to satisfy such new complex automation processes.

The Automatic Storage System

for float plants is another revolutionary system supplied by IOCCO. This system enables to manage glass sheets from the float output to the end caps area and then to the warehouse ready for shipment automatically, safely and in a cost-effective way. IOCCO's designers always think about easy maintenance and in this respect all commercial components are made by top class manufacturer worldwide.

### Product Range

- **TURNKEY SOLUTIONS FOR TEMPERED AND LAMINATED AUTOMOTIVE GLASS, AUTOMATIC ASSEMBLY LINE FOR SIDELITES AND WINDSHIELDS**
- **AVANT-GARDE AUTOMATION AND SOLUTIONS FOR VALUE ADDED OPERATIONS ON AUTOMOTIVE GLASS INDUSTRY**
- **END CAPS ASSEMBLY MACHINES AND FULLY AUTOMATIC STORAGE SYSTEMS FOR FLOAT PLANT**
- **STANDARD AND CUSTOM STANDALONE MACHINES FOR ARCHITECTURAL AND HOME APPLIANCE GLASS**
- **COLD END EQUIPMENT**
- **ANCILLARY EQUIPMENT FOR TIN BATH FURNACES**
- **AUTOMATIC PROCESSING LINES FOR PHOTOVOLTAIC MODULES**



hall 15 / stand F44

People to contact at our stand

**DAVIDE SCHIAVON** SALES MANAGER



PLATFORM TRANSPORTERS



INLOADER TRANSPORTERS



LAMINATED GLASS HANDLING

## ITALCARRELLI - TOP HANDLING SOLUTIONS

Smart working, synergies of value.

Italcarrelli designs and manufactures special machines, technology and accessories for the handling and storage of glass. After many years of hard work, the company has put into practice its idea of smart work. Smart with clients to create personalized machines responding to the precise needs and demands of clients. Smart with suppliers to have the constant availability of top class material and components. Smart solutions both with regards to technology and energy savings. Last but not least, smart for safety each and every day. The company

is one of the very few that is able to provide both machines and automatic driving systems and, thanks to the perfect synergy between design department and software development, Italcarrelli's machines have the highest levels of performance and ease of use, with low energy consumption levels.



CONTAINER  
LOAD/UNLOAD

### Product Range

- PLATFORM TRANSPORTERS
- INLOADER TRANSPORTERS
- SIDE-LOADERS
- TAILOR-MADE SOLUTIONS
- CONTAINER LOADING/  
UNLOADING
- LAMINATED GLASS HANDLING



SIDE-LOADERS



TAILOR-MADE SOLUTIONS



hall 15 / stand F36

### People to contact at our stand

**ROBERTO FREDIANI**  
**ADRIANO FREDIANI**  
**MASSIMO GHITTURI**

**MANAGING DIRECTOR**  
**CEO**  
**MEMBER OF BOARD OF DIRECTORS**

**italmatic®**  
 AUTOCLAVES OVENS & PRESSES

### NEW AUTOCLAVES FOR CURVED GLASS AND WINDSHIELD

ITALMATIC, leader in the research, design and construction of autoclaves for various applications, has developed a new generation of advanced and innovative machines for the treatment of curved glass and wind-screens.

These autoclaves, the result of research, development and experience acquired over the years, have been designed with the aid of the most sophisticated structural and thermodynamic calculation programs, such as the new dynamic flow simulator C.F.D. (Computational Fluid Dynamics).

In the design, particular attention was paid to energy saving - adopting innovative materials for thermal insulation, high efficiency motors controlled by inverters, heating systems (electric, diathermic oil or steam) with

infinitesimal control, as well as new control systems capable of managing power and flow distribution, thus allowing significant reductions in operating costs.

The machine can also be made with two doors, one on each side, to allow the automatic and/or manual introduction and unloading of the glass holder carriages, thereby speeding up the loading and unloading operations, especially for continuous production of both 24/24h and 7/7g.

For a better internal chamber uniformity, according to the different loads and positioning of the glass under treatment, the motor fan units have been positioned in the upper part in direct

contact with the heating and cooling exchangers.


This innovation has made it possible to work for defined areas within the chamber, managing each area according to the load and with the best uniformity.

Orientation and modulation of the ventilation, with variation of the fluid transfer speed on the products, ensures that glass quality conforms to even the most restrictive market requirements.

The control system, called **ICS** (*Italmatic Control System*), allows you to program, supervise and have complete traceability of production batches - both automatically and manually, in order to allow for analysis of all process cycles.

The control system meets every industry 4.0 requirement and can also be interfaced with the company MES.

ITALMATIC has developed and patented an Energy Recovery System **IRS®** (*Italmatic Repower System*) that allows the thermal energy removed from the autoclave during cooling to be stored, with the possibility of reusing it in subsequent work cycles.

- Integrated and dedicated Management and Supervision software with real-time measurement of energy savings
- Compliant with **REPowerEU** and **Industry 5.0 investments** 
- Closed circuit cooling system, without water replenishment and or chemical additives

Possibility to further make the system more efficient with the production of domestic hot water



Via Tazio Nuvolari 38 - 55061 Fraz. Carraia  
 Capannori (LU) (Italy) - Tel.: +39 0583 981166  
 E-mail: roberto.frediani@italmatic.eu

[www.italmatic.eu](http://www.italmatic.eu)

hall 15 / stand F48

## People to contact at our stand

COMPANY STAFF



**Italmole** is an Italian manufacturer of polishing wheels for all types of machines and has more than 45 years of activity and experience in the glass industry.

The company is able to offer a complete range of polishing wheels with binder, grit, standard and custom machining for different uses in glass processing.

Since 1978, Italmole has continued to renew its products to ensure the best polishing quality for all customers.

In recent years, through careful research, two new product lines have been created: the peripheral polishing wheel called ASTRA, which is quieter and super polishing, suitable for vertical CNC machines such as VERTMAX, CMS and SKILLGLASS, as well as horizontal machines such as MASTER, CMS and BOTTERO-BIMATECH.

Another new entry is in the cup wheel group, the **ALFA** line. Produced in all grits, with all fixing for all machines, it is available with rigid plastic plate and J40. On request with sectors for laminated glass.

Both types are having great success and excellent results. This is one more confirmation for Italmole, which, over the years, has been able to combine experience and innovation to give pre- and post-sales service and technical support to all its customers.

Visitors to Glasstec 2024 will have the opportunity to learn about the ASTRA and ALFA line and other famous and no less important products from October 22 to 25, in Dusseldorf.



Via Carducci, 10/12/14  
20072 Fizzonasco di Pieve Emanuele (MI) - Italy  
Tel.: +39-02-90426141 - E-mail: info@italmolesrl.com

[www.italmolesrl.com](http://www.italmolesrl.com)

hall 16 / stand B42

### People to contact at our stand

**STEFANO SPEZZANI**

**MAICOL SPEZZANI**

**PAOLO RIGHI**

**ADRIANO BRAGA**

**SIMONE CECI**

**ANDREA BUGADA**

**FRANCO CAPECCHI**

**ALEXANDER KOCHEN**

**PATRIZIA DURIIVIG**

**ORietta Gualtieri, Alessia Ferrari**

**GIULIA FERRARI**

**GIANLUIGI RUFFALDI**

**MARCO ASTOLFI, LUCA CARANI,**

**ANDREA SPINETTI, LORENZO FERRI**

**FOUNDER, VICE PRESIDENT**

**SALES DIRECTOR**

**TECHNICAL & SERVICE MANAGER**

**SALES MANAGER**

**AREA MANAGER**

**AREA MANAGER**

**AREA MANAGER**

**AREA MANAGER**

**SALES SUPPORT**

**MARKETING DEPARTMENT**

**SERVICE DEPARTMENT**

**SPARE PARTS**

**TECHNICAL SUPPORT**



## keraglass

a **voilà** company

### Countdown to Glasstec has KERAGLASS team already fired up

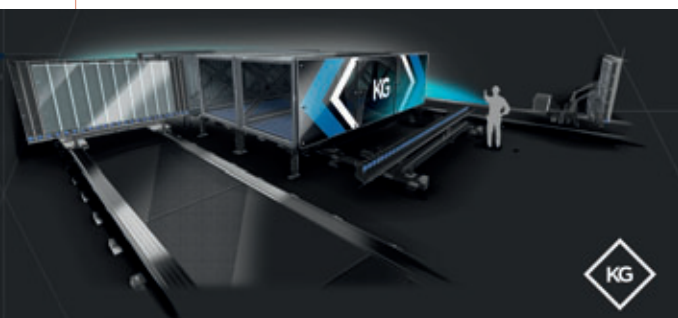
Keraglass has officially announced its participation at Glasstec 2024, which is scheduled to take place in Düsseldorf from October 22 to 25. The company will be prominently positioned in Hall 16, Stand 16 B42, where its organisers plan to showcase an extensive range of cutting-edge glass processing products and solutions within a 700 square metre exhibit space. Here the display will highlight the latest technological advancements in automation, glass tempering, lamination and decoration. A key highlight of Keraglass's presentation will be the introduction of its groundbreaking 'Sorting' system. This innovative system automates the glass handling and storage process, seamlessly integrating various cutting lines with downstream production processes. Additionally, the system features optimization software that automates the feeding of the tempering furnace. The 'Sorting' system promises to significantly enhance operational efficiency and ensure even higher quality in the final products. In addition to its 'Sorting' system, Keraglass will also be showcasing its flagship system at the exhibition. This includes the 'Vision 900' furnace, known for its excellence in tempering - delivering unmatched quality and efficiency. The furnace is equipped with



a 500°C preheating convection chamber system. This enhancement boosts plant productivity by 30 percent while further reducing energy consumption. At the heart of this machine lies the 'Supervision Intelligent' system, which provides live-sight control, enabling operators to monitor each stage of the process in real time. Trade show attendees will also have the opportunity to see the 'Vivida' digital inkjet plotter in action. This state-of-the-art machine is designed for high-definition glass printing and is tailored to exceed the demanding standards of high-end architecture and design. This year the stand will also feature the 'Decoglass' automatic screen printing machine, which is specialised in handling large-sized glass and the 'Rainbow' roller coating machine, known for its ability to precisely control coating thicknesses. Keraglass extends a warm invitation to industry professionals to visit its stand at Glasstec 2024. Don't miss out!

### Product Range

- **OSCILLATING AND CONTINUOUS FURNACES FOR THE TEMPERING OF ARCHITECTURAL GLASS, HOUSEHOLD APPLIANCE GLASS, SHOWER DOORS AND FURNITURE GLASS**
- **BENDING AND TEMPERING FURNACES**
- **HEAT SOAK TEST FURNACES**
- **SILK-SCREEN PRINTING MACHINES**
- **ROLLER-COATING MACHINES**
- **DRYERS • STACKERS**
- **LAMINATING LINES WITH PVB**
- **MULTI-LEVEL LAMINATING KILN WITH EVA**
- **DIGITAL PRINTING MACHINE**
- **ROLLER CLEANING MACHINE**
- **GLASS STORAGE SYSTEM**



Via Sassogattone 13/A - 42031 Baiso (RE) - Italy

Tel.: +39-0522-993027

E-mail: [info@keraglass.com](mailto:info@keraglass.com)

[www.keraglass.com](http://www.keraglass.com)

hall 12 / stand D59

People to contact at our stand

OUR STAFF WILL BE AT YOUR SERVICE THROUGHOUT THE SHOW.

# LandGlass



**LandGlass Technology Co., Ltd.** is a high tech company specialized in the development and manufacturing of glass tempering furnaces (for architecture, household appliance, automotive and solar power industries) and tempered vacuum insulated glass products. In the field of high-end intelligent equipment manufacturing, LandGlass is able to offer integrated solutions for glass tempering machinery, smart factory upgrade, assisting users to realize elaborate and efficient intelligent manufacturing and management.

### Huge R&D investment

Since its establishment, LandGlass has considered innovation as the driving force for the development of the company, which has led to its achievements in R&D

and technical progress today. At present, LandGlass has established a company technology centre equipped with 20,000 square meters of factory floor space for new glass tempering product development and experiments - the largest facility in the industry - in addition, the world-class vacuum insulated glass laboratory established by LandGlass is equipped with more than 100 sets of various R&D equipment and testing instruments worth more than USD 6 million.

### Worldwide after-sales support

LandGlass has established a service network with worldwide coverage through technical service centres located in Europe, America, Southeast Asia, India, and Russia, allowing more timely and

thoughtful services to its customers around the world. In the meantime, these existing international service network and service centres will have an important role in the future, providing comprehensive and timely after-sales service to LandGlass' customers.

LandGlass' customer service team is responsible for the installation of LandGlass equipment and providing after-sales service. All our service personnel have received formal, systematic training in mechanical and electrical fields. We are available to help customers solve problems anywhere, anytime.

We now invite you to experience the improved safety and quality of life that our latest innovation brings to the market.

We will be at Glasstec at HALL 12 Stand D59.



### Product Range

- **CYCLONE™ SERIES GLASS TEMPERING FURNACES**
- **ULTRAJET™ SERIES GLASS TEMPERING FURNACES**
- **JETCONVECTION™ SERIES GLASS TEMPERING FURNACES**
- **TIGER™ SMART FACTORY**
- **LANDVAC® TEMPERED VACUUM INSULATED GLASS**



Add: Guangjian Building, No. 12, Wangcheng Road, Luoyang, 471000 - China - Tel.: +86-379-80890369  
Fax: +86-379-65298878 - E-mail: marketing@landglass.com

[www.landglass.net](http://www.landglass.net)

hall 17 / stand A64

People to contact at our stand

**PLEASE ASK AT THE LISEC RECEPTION FOR THE SALES REPRESENTATIVES DEDICATED TO YOUR COUNTRY**

# LiSEC

## Welcome to 360° glass processing!

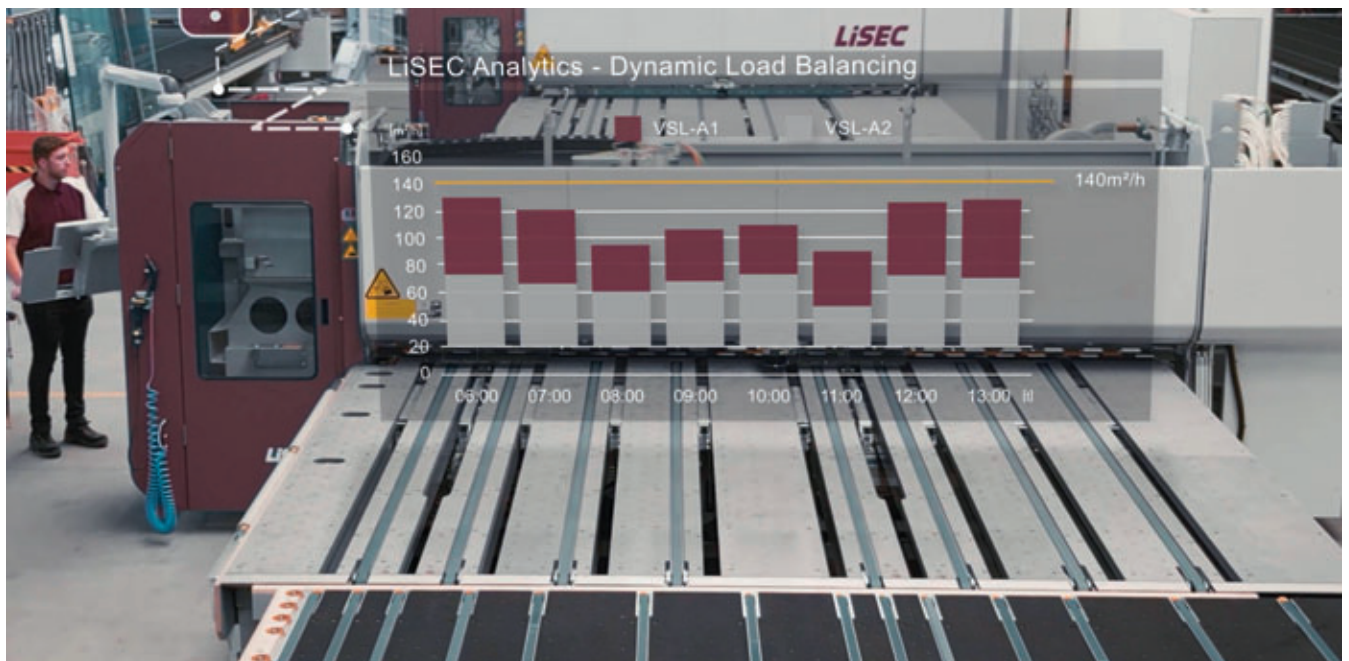
From October 22 to 25, our experts and innovators will be presenting the latest trends and technologies from LiSEC.

Visit us at the LiSEC showroom in hall 17, booth A 64, and shape the future of the glass industry together with us! We look forward to exchanging ideas with you. Why 360° glass processing?

360° represents the all-round view that LiSEC pursues via its technologically-integrated solutions in the machine and software sector and, as your all-in-one partner, for the planning and realization of fully-automated flat glass processing plants. We offer our customers worldwide technological innovations and patented solutions that you can rely on in every respect.

Join us in the LiSTEN LiSEC LIVE auditorium for an exciting line-up of talks, workshops and machine demos.

Our experts will be sharing their knowledge and insights on a variety of topics.



hall 16 / stand B39

### People to contact at our stand

**NANCY MAMMARO**  
**ERMANNO PETITTI**  
**DANILLO MAGI**  
**ANTENORE TOSELLI**  
**GIULIO DALLA COSTA**

**MANAGING DIRECTOR**  
**SALES MANAGER**  
**SALES MANAGER**  
**TECHNICAL MANAGER**  
**SOFTWARE & ELECTRICAL MNG.**



Fox, ATS 4.0 and the brand new MTH all share the same features and innovations.

All new **Mappi** furnaces are 'Powered by Siemens' approved and, as such, are ready to be integrated with a potentially infinite number of software applications. They can also communicate in real time with other equipment and with the Company's Management, Logistics, Maintenance and Planning departments. Thanks to a series of innovations, Mappi furnaces can implement Supertemper functionality, a great innovation in fire-resistant glass tempering, and directly produce flame certified E30 resistant glass - all in a faster, easier, and more economical way than has ever been done in this particular industry.

#### MHS | MULTIZONE HEATING SYSTEM

MHS automatically manages the temperature of the furnace by means of a network of electronically controlled sensors that maintain constant temperatures, focusing the heat only in the areas where the glass is present.

#### IHS | INTELLIGENT HEATING SYSTEM

The internal temperature of the furnace is controlled with an accuracy of +/- 1°C, preventing the overheating of the ceramic rollers and avoiding downtime for the adaptation of the furnace temperature.

#### ESS | ENERGY SAVING SYSTEM

Heating and forced ventilation stages are coordinated and managed by a computer system, thereby optimizing consumption and significantly reducing the installed power required by the entire system.

#### SYNCRO | TRANSMISSION TECHNOLOGY

The ceramic rollers are precisely driven within 1/1000 mm by brushless motors eliminating friction transmission between iron and rubber



components (avoids consequent slack time gaps/ gear lash and the relative risks of marks on the glass) whilst guaranteeing precise roller position and speed. This effectively eliminates the need of SO<sub>2</sub>. Automatic speed management of the ceramic roller oscillation avoids distortions and damage to the glass surface. All ceramic rollers can be easily replaced.

#### ITS | INTEGRATED TOUCH SYSTEM

The system monitors the parameters of the tempering process and immediately prints the compliance report for CE and ANSI glass standards at the same time, automatically storing the information for each production cycle.

#### AC | ADVANCED COOLING

AC is a particular feature of the blowing system that allows even more specific control during tempering and substantially decreases the iridescence of the glass.

#### ATI | ACTIVE THERMAL INSULATION

ATI dramatically reduces the thermal dispersion and is the product of our continuous research into the best performing materials for thermal insulation, in association with the

most prestigious research centres in Europe, as well as with Knauf and Morgan.

#### GHBS | XTREME PROFILE CONVECTION

GHBS can process all latest generation coated glass, including low-E with 0.01 Emissivity.

#### HEATING CHAMBER EXTRACTION

Mappi is the only tempering equipment manufacturer that has this feature for easier maintenance and higher finished product quality.

### Product Range

- **HORIZONTAL TEMPERING FURNACES:**  
**FOX FROM 1050X2300 TO 1500X3200**  
**ATS 4.0 FROM 1500X3800 TO 2500X5000**  
**MTH FROM: 2500X600 TO 3300X6000**
- **BENDING AND TEMPERING FURNACES FOR ARCHITECTURAL AND AUTOMOTIVE FLAT GLASS**
- **LAMINATING PLANTS**
- **HEAT SOAK TEST PLANTS**



Via Fieramonti 1 - 04012 Cisterna di Latina (LT) - Italy

Tel.: +39-06-96873284 - E-mail: info@mappi.it

MAPPI AMERICA, INC. - 3888 Mannix Drive # 314 - Naples, FL 34114 - USA

Tel: +1-336-8787460 - Mobile: +1-336-2579651 - E-mail: sales@mappi-na.com

www.mappi.it • www.mappi.us



hall 11 / stand K90

People to contact at our stand

**STEFANO MAURI**

GENERAL MANAGER



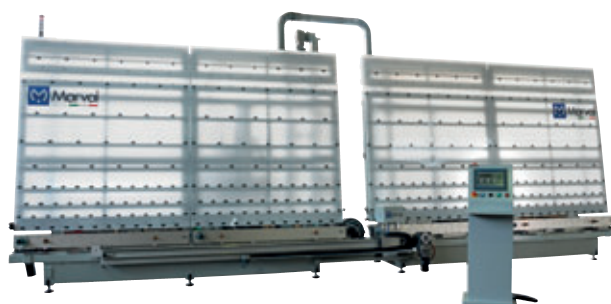
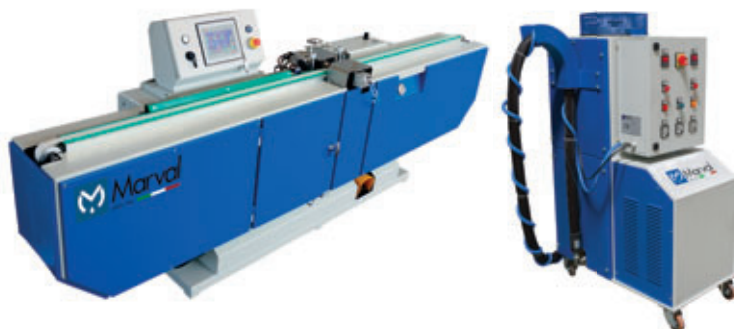
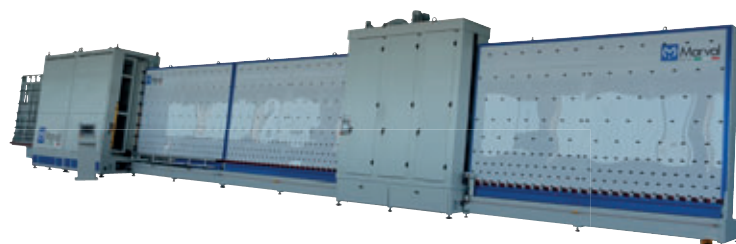
Marval was founded in 1985 in Mariano Comense (Como) in the heart of the Brianza industrial area.

Over the years it has become a worldwide point of reference in the Insulating Glass sector.

Marval was born as a mechanical workshop and was brought to success thanks to the determination and experience of its staff in designing simple and reliable machines with excellent technology.

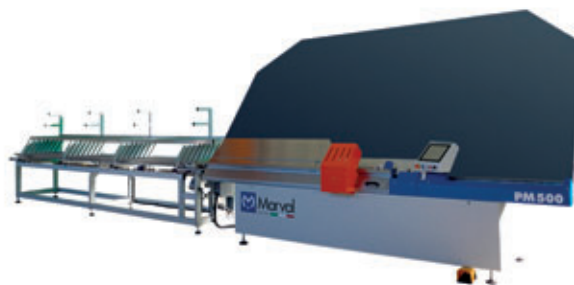
Today, Marval uses all the advanced technologies in the production of Insulating Glass, producing machines and equipments that are appreciated and exported all over the world.

Everything about Marval is planned, manufactured and tested in our new headquarters in Villa Guardia, Como.



## Product Range

- VERTICAL AND HORIZONTAL WASHING MACHINES
- AUTOMATIC GAS PRESS
- AUTOMATIC SEALING MACHINES
- COMPLETE SEMIAUTOMATIC AND AUTOMATIC LINE FOR INSULATING GLASS
- AUTOMATIC BENDING PROFILE MACHINE
- AUTOMATIC DESSICANT FILLING MACHINE
- BUTYL EXTRUDERS



hall 15 / stand E44

### People to contact at our stand

<b>ANTONIO MAZZAROPPI</b>	GENERAL MANAGER
<b>ORSOLA ABBATE</b>	ADMINISTRATION MANAGER
<b>MARIAELENA PICCOLO</b>	SALES DEPARTMENT
<b>FABIO ZUCAL</b>	SALES MANAGER
<b>FEDERICO MAZZAROPPI</b>	MARKETING MANAGER
<b>CHIARA MAZZAROPPI</b>	MARKETING SPECIALIST
<b>BELLINI GLAUCO</b>	SERVICE DEPARTMENT



**MAZZAROPPI**  
HIGH PERFORMANCE. ALWAYS



### EXCEPTIONAL: A PERFECTLY OPERATING GLASS TEMPERING FURNACE AT GLASSTEC 2024!

Come to the Mazzaroppi stand and discover the extraordinary **TP Compact**, the **super-compact** and **super-efficient furnace** that has revolutionised the work of companies of all sizes all over the world.

#### WHAT CAN YOU SEE AT THE SHOW?

- **How quickly TP Compact** heats up thanks to the exclusive **M Start&Stop** JIT ignition technology: 0° to 680° in 1h. We will turn it off every evening and turn it back on in the morning to show you how TP Compact reduces inefficient consumption to zero.
- **How easy it is to use**, thanks to a user-friendly interface that does not require specialised operators.

- **How little it consumes**, because Mazzaroppi's glass tempering technologies are the most energy-efficient on the market. Behind **Mazzaroppi Engineering** is a **family** that has written the **history of glass tempering solutions**. Our experience gives rise to furnaces made with the **best certified European materials**, with an **average life of more than 30 years** and a **very high residual value** even 10 years after purchase.



**-70%**   
ENERGY SAVING APPROACH



Via Cagliari 49 - 04011 Aprilia (LT) - Italy  
Tel.: +39-06-92854602 r.a. - Fax: +39 06 92730082

[www.mazzaroppi.com](http://www.mazzaroppi.com)

hall 16 / stand C17

**People to contact at our stand**

<b>MARCO MORESCHI</b>	<b>OWNER</b>
<b>BARBARA DODA</b>	<b>SALES MANAGER</b>
<b>MICHELI CESARETTI</b>	<b>SALES MANAGER</b>



**MORESCHI** is, and has been, one of the leading companies in the production of diamond wheels for glass processing machines for 103 years. The company can offer a complete range of diamond and polishing wheels for all types of glass processing, with different bond and grit to be used for float glass and laminated glass. The wheels are made for high production and long life, the best partners for processing of all types of glass.

Our wheels have greater process stability than the wheels on the market, improving efficiency and reducing cost of glass processing. Moreschi can offer sets of wheels for all types of grinding and polishing: polished edge, ground edge, industrial edge and polishing with cerium oxide. Depending on the quality of the edges, the wheels can be combined with or without polishing.

The routers are available in different types with diameters, and each type is available with different bonds for the best quality.

Moreschi give its customers the possibility to have the best technology and the best tools.

At **Glasstec**, **Moreschi** will be in **Hall 16 Stand C17** with the following products on show:

- New bond for high speed CNC vertical machines
- New bond for double edger peripheral
- New ring construction available from diameter from 100 to 200
- New Patented refrigeration system
- New wheels for laminated glass
- New countersinks without vibrations and free cutting



hall 16 / stand D63

### People to contact at our stand

**MATTEO ROLLA**

**STEFANO BAVELLONI**

**FABIO PALELLA**

**SALES DIRECTOR**

**TECHNICAL DIRECTOR**

**SALES OFFICE**



#### QUICK-T10:

##### 10th anniversary in Glastec

At the Glastec 2024 fair, **Neptun** will launch the new vertical CN QUICK-T10 series 3.

Not a simple restyling but a new machine, which maintains all the strengths of the previous ones, enhancing them and adding new features and materials that ensure higher performance and faster ROI.

The new QUICK incorporates the features that have made it so successful, such as the flexibility of glass working direction, the absolute precision of axis positioning and their consistency over time thanks to the exclusive system of linear encoders, the milling with the glass still and suction cup always positioned close to work area. The patented **DCS system** optimizes drilling performance based on the quality of the tool, and allows to maximize results even for inexperienced operators.

The new series stands out for a more robust modular structure and other solutions such as:

- Rotary magazines mounted on spindles with 10+10 positions for tool changes in less than 8 seconds
- New more powerful liquid-cooled spindle with ISO 40 cones for uncompromising performance
- Wider working area and lower workable minimums than the previous series.
- Larger use of stainless steel and anodized aluminum to eliminate any risk of rust over time.
- Powerful industrial NC unit OMRON with 15" touch screen for quick programming directly on the machine and many other useful features.
- Electrical cabinet inserted in the machine body to reduce floor space.

The **T10 series** is available with workable heights of 170, 220 and 280 cm.

In display as well the **Quickmill 100-22**, a single-head milling/drilling CNC, ideal for less intense production and auto-

mation needs.

Compact construction in stainless steel, main feature remains the milling of still glass.

Although built for industrial use and with performances close to superior models, the Quickmill 100-22 meets tighter budgets.

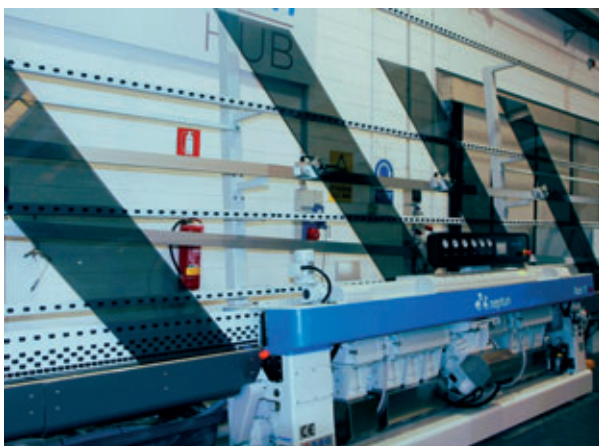
The classic edger **Rock11 AWA** couldn't be missed.

ROCK is one of the most performing, reliable and automated straight-line edger on the market.

The heavy structure in cast iron, the spindle/motor indirect transmission system with spindle inserted in a sturdy cast iron box, the patented kevlar conveyor ensure perfect polishing quality, low maintenance and very long life.

The exclusive **AWA** system for the automatic management of all wheels makes work easier for operators and ensure best quality and lower wheels consumption.

ROCK is equipped **RC-4**, the patented trolley system for processing parallelograms shapes.



hall 12 / stand B51

## People to contact at our stand

**NORTHGLASS SINCERELY WELCOMES YOU TO OUR STAND.  
FOR MORE INFORMATION KINDLY VISIT OUR WEBSITE  
FOR BUSINESS CONTACTS.**



NorthGlass was established by Mr. Gao Xueming, Chairman of the board, in Luoyang National High & New Technology Development Zone on 18th May, 1995. In 2011, NorthGlass created a precedent in the glass deep processing machine industry, going public on the Shenzhen Stock Exchange (stock code: 002613). Today, NorthGlass has developed into a high-tech industry group, integrating R&D, manufacturing, sales and service with continuous innovation capability. It has four bases: in Luoyang, Shanghai, Tianjin and Beijing respectively. NorthGlass has also expanded its product series with tri turbo fans, a glass processing automation system, a glass storage system, a glass cutting machine, etc., now totaling more than 300 product models. At the same time, the NorthGlass SiNest industry has invested in North Glass Co., Ltd. which was successfully incubated, taking the lead in the layout of new wall materials for prefabricated green buildings.



### GLASS TEMPERING FURNACE

NorthGlass flat/bent glass tempering furnace has stably ranked at the forefront of the world-wide industry over the last 19 years - ever since 2002 when furnace sales exceeded 100 sets. Cumulatively, more than 6000 NorthGlass glass tempering furnaces are currently running around the world.

T-Series: Standard equipped with 'Super Symmetric Heating Technology' and 'Intelligent Heating Control Technology based on its glass exit-chamber temperature', T-series tempering

This furnace can produce ultra-high quality tempered glass - all while ensuring large-scale, efficient and stable production.



A-Series: Standard equipped with Advanced Gapless Forced Convection System', 'Intelligent Heating Control Module', 'Advanced Symmetric Heating Technology' and 'Super Flat & Spotless Technology', A-series tempering furnaces can stably and efficiently toughen most glass varieties with any slight deformation or light anisotropy.



B-Series: Standard equipped with new 'NorthGlass Heating Temperature Control System' and 'Standard Gapless Forced Convection System', 'Standard Symmetric Heating Technology', the B-series tempering furnace can significantly improve glass quality & production efficiency - all while reducing energy consumption.



### GLASS AUTOMATION SYSTEM

The NorthGlass automation system can supply to the customer a turn-key project. Included in the glass processing machine is not only glass storage, laser printer, cutting table, automatic batching system, tempering furnace, sorting system and conveyors but also NorthGlass ERP and MES software system supply for customers according to the designed solution. We can also customize different glass automation solutions for customers according to their factory size, order type, expected productivity and so on.



### COATING MACHINE

Equipped with vacuum sputtering cathode, NorthGlass coating line can be widely applied

throughout the glass, consumer electronics and PV industries, among others, from designing to manufacturing.



### PROCESSED GLASS

NorthGlass is also one of the biggest glass manufacturers of high-quality oversized architectural glass. Dimensions reach up to 3300mm×24000mm mm×18000mm, mm×4000mm, which are the largest in the world. Currently various types of glass are produced and sold, including jumbo-size insulated glass, curved tempered glass, laminated glass, super flat & spotless glass, screen printing glass, digital printing glass, jumbo-size curved tempered glass, structural glass, Low-E coated glass, etc.

A number of deep-processing glass technologies independently developed by NorthGlass have been applied in many landmark construction projects, such as China National Grand Theatre, Bird Nest, Lusail Towers, New Performing Arts Venue, UAE Abu Dhabi Airport, Expo Dubai Mobility Pavilion, Yale University Tsai Center, US Oracle Headquarters, etc.



## Product Range

- **GLASS TEMPERING FURNACE**
- **GLASS AUTOMATION SYSTEM**
- **GLASS STORAGE SYSTEM**
- **GLASS CUTTING MACHINE**
- **COATING MACHINE**
- **PROCESSED GLASS**
- **GENERAL FAN**



No. 20, Binhe Road, Hi-tech development zone, Luoyang, Henan, P. R. China  
Tel.: +86 21-57858658  
E-mail: [contact@northglass.com](mailto:contact@northglass.com)

[www.northglass.global](http://www.northglass.global)

hall 12 / stand F40

### People to contact at our stand

<b>ELENA CALVI</b>	CEO & OWNER
<b>DAVIDE RICCHI</b>	OWNER AND R&D MANAGER
<b>EZIO CALVI</b>	PRODUCTION MANAGER
<b>SIMONE VECCHI</b>	SALES & TECHNICAL MANAGER
<b>GIANFRANCO RIVAROLI</b>	CHEMICAL TEMPERING CONSULTANT
<b>ROBERTA COMETTI</b>	INTERNATIONAL DEPARTMENT & PUBLIC RELATIONS MANAGER
<b>THOMAS POLLARI</b>	PROJECT MANAGER

**RCN**<sup>TM</sup>  
solutions

**RD**<sup>TM</sup>  
clean concept

**REVA**<sup>BF</sup>  
INTERLAYER FILM

**R.C.N. SOLUTIONS** confirms its presence at Glasstec exhibition with important news.

Since the issue of RD CLEAN CONCEPT in 2021, the patented system for clean edges in lamination, RCN SOLUTIONS has planned to develop machines running with one operator only, in order to soften production operations, to maximize spaces and improve machine interaction with the rest of the production as part of the program for transition to Society 5.0, digital technology at the service of humanity. And customer-centricity is the starting point involving the entire company in understanding customers' needs to find solutions.

RCN's production includes glass laminating machines, in jumbo size and over, equipped with lifting platform, RD CLEAN CONCEPT, additional shelves and other optional that can be checked out at Glasstec. On top, REVA BF, the laminating interlayer owing superb transparency and adhesion. Based on

RCN's chemical formula, REVA BF has proved to be a successful product and, in combination with a professional service, allows high quality output.

Production also includes bending kilns which the latest is the Rotary Bending System, a self-excluding twin-axled machine, four positions: loading/unloading, heating, bending and cooling, size according requirements, and chemical tempering plants in standard and customized layout too. Chemical tempering plays an important role in all those projects where safety is required, especially because glass is more and more demanded in several and new applications. It is a sustainable choice in many fields, and safety is an absolute condition where the end products involve protection of persons, such as flooring or balustrades.

All our machines can also be combined into one complete production layout named ISF – integrated Sequencing Framework - for a full safety glass

manufacturing.

But what does make RCN SOLUTIONS different from other market choices?

In the last three years, the company is going thru a campaign based on zero defects, zero waste, zero downtime and zero dispersion, a challenging project carried out to help customers to prevent imperfections, especially in lamination, the last job after cutting, edge-shaping, tempering and others, which will force the customer to start all the production steps anew.

The RCN's complete laminating system including RD CLEAN CONCEPT, REVA BF interlayer, loading platform, conveyor and other facilities it is the answer to have production process under control and issue quality laminated glass.

In conclusion, customer-centricity will play an important focus at our booth where visitors may rely on a professional team that will be available to share the experience of customization.



**hall 16 / stand B18****People to contact at our stand****MAURO PELLIZZARI****MICHELE FASSINA****GIOVANNI POSENATO****RICCARDO BOOZ**

SALES DIRECTOR

AREA MANAGER

AREA MANAGER

LABORATORY

**Rollmac®**

a division of

**Gemata®**

**Rollmac**, the commercial division of Gemata Spa, world leader in the design and production of roller finishing and coating machines, is a reliable and experienced partner for the supply of finishing machinery, from single machines to complete production lines. With extensive experience in the global market, Rollmac offers end users comprehensive know-how, providing service and support through to project completion.

**JUMBOGLASS** is the latest reverse roller technology for continuous enamelling and design printing on jumbo-sized float glass sheets. Built with a welded steel tubular framework that provides exceptional torsional resistance, this roller coater enables the processing of larger glass sheets, expanding the working width.

**COLORGLASS** is a single-roller machine

designed for enamelling and design printing on glass sheets by means of an engraved cylinder. Highly versatile and easy to operate, it is the essential tool for in-house laboratories and production lines. **COLORGLASS** is suitable for small sizes, such as tiles and decorations, to large sizes, such as interior walls, doors and facades.

**MULTIGLASS** is a roller coater for enamelling, coating, and design printing on flat glass sheets by means of an engraved roller. This flexible technology allows the use of special paints and products to impart special properties to the glass, all without requiring significant modifications or setting changes. Particular attention has been paid to ensuring uniformity and homogeneity of the coating, eliminating over-painting, unpainted areas, drops or excess paint on the entrance/exit edges.

**GLASSLINE** is an edge-coating system designed for the complete automation of the Automatic Sheet Rotation (ASR) process, particularly beneficial for handling large or heavy glass sheets that cannot be manually processed.

Rollmac-Gemata is certified with ISO 9001, ISO 14000, and the Italian "Safe Work" standards.

**Product Range**

- **ENAMELLING AND GLASS COATING MACHINES**
- **DRYING SYSTEMS**
- **EDGE COATERS**
- **CONVEYING SYSTEMS**



Via Postale Vecchia 77 - 36070 Trissino (VI) - Italy

Tel.: +39-0445-492711

E-mail: rollmac@rollmac.it

[www.rollmac.it](http://www.rollmac.it)



## TK:

TK is an Italian Company specialise in the design and construction of ovens for glass lamination, tempering, chemical tempering and Heat Soak Test.

TK machines are intended for small, medium and large companies that need to start up production or increase their production capacity and improve the quality performance of the finished product.

Working in close collaboration with customers, TK relies on the best Italian technology and European components to meet quality standards and requirements. Each project is structured according to the customer's needs. To provide the most appropriate and customised solutions, TK applies its own time-tested methodology which mainly includes alignment with customer requirements and tailor-made solutions. Thanks to deep expertise and international partnerships built up over the years, TK is present in more than 60 countries worldwide and provides delivery, installations, staff training, on-site and remote after-sales support.

### CONTACT US

TK Srl  
+39 031 3574873  
ask@tkitaly.com  
www.tkitaly.com

STRATO® by Satinal spa  
+39 031 870573  
info@satinal.it  
www.satinal.it

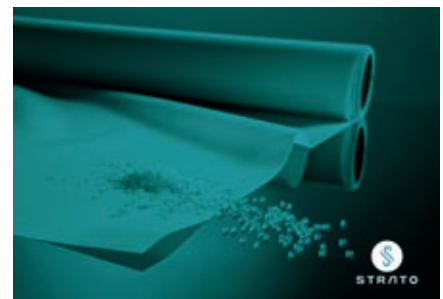


## STRATO®:

STRATO® is an innovative and versatile 100% made in Italy range of interlayers for safety glass lamination. It has been designed mixing mechanical and strength properties with aesthetical features as a source of inspiration for new architectural solutions. STRATO® product range is certified according to European (UNI EN ISO) and American (ANSI-SGCC-ASTM) standards.

STRATO® CarbonLight™ is the latest, highly innovative product range of interlayers manufactured through an entirely sustainable raw material supply chain and eco-friendly production process with which STRATO® achieved ISCC+ certification (International Sustainability & Carbon Certification).

STRATO® CarbonLight™ expresses the renewed focus on aspects such as the reduction of greenhouse gas emissions, the protection of natural biospheres and an increase in social sustainability, throughout its production process. The commitment is to guarantee to customers traceability along the entire value chain: the result is a new, green and sustainable product with a limited impact on the environment.



# SATINAL



[www.satinal.it](http://www.satinal.it)



Via del Lavoro, 1 - 22036 Erba (CO) - Italy  
Tel.: +39 031-870573  
E-mail: [info@satinal.it](mailto:info@satinal.it)





hall 16 / stand A18

## People to contact at our stand

**ALESSANDRO SCHIATTI**

**PRODUCTION MANAGER**

**CINZIA SCHIATTI**

**SALES MANAGER**

**COMMERCIAL AND TECHNICAL STAFF**



### Glasstec 2024: On the Road to Düsseldorf

We are ready to showcase a technology that, made to last, has its own solid foundation in tradition as well as an innovative trait that has characterized it right since birth. More and more automation: smart machines that optimize processes - all while avoiding errors and machine downtimes.

On our stand (16-A18, Hall 16) you will be greeted by 3 technological 'islands' occupied by as many proposals: TFV, the latest model of our well-known vertical milling drill, SME10, the high-performance flat wire edger, and FPS50BS, our top-of-the-range grinding machine.

It's all worth a visit, isn't it?

#### New TFV 1600: increased performance

Even lighter and more performant, the TFV 1600 milling drill will drill sheets of up to 85 mm in diameter and 3 to 19 mm thick.

By means of the automatic tool changer (optional), you can combine drilling and milling in one cycle.

Today, the TFV1600 is even faster and more self-sufficient in machining - all thanks to the new positioning of the tool changer and the added possibility of using 10+10 tools (instead of the 8+8 of the previous version). Processing quality also increases proportionally to the higher spindle rigidity.

**SME10: working with variable angle from 0° to 45° and cerium polishing on the surface and chamfer.**



The SME10 is a straight-line flat edge grinder that has arrises and a variable angle from 0° to 45° that's designed to guarantee superb precision.

The machine can be customized with a number of available options that are viewable in the catalogue. The machine exhibited at our stand will show some such options, including the clutch, the thickness control system and the system for frontal adjustment of the back arris.

#### FPS50BS: Did you ask for the best?

Super equipped, the straight-line grinder mounts Bakelite grinding wheels for an extra bright polish.

The FPS50BS is full of advantages - even if its main asset, if we must name it, is its machining speed of up to 10m/min.

#### Why Meet Us at Glasstec

There are very cheap machines out there on the market, others that are technologically-advanced but complicated to operate and maintain, and still others that are super-specialised but not very

ductile. Here we can declare without fear of being proven wrong that all our machines have learnt from the past while tending towards the future.

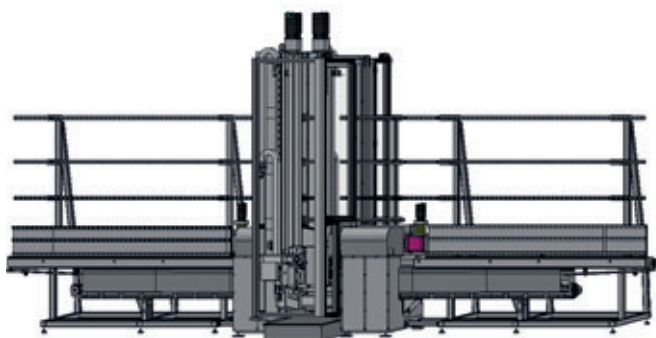
What does that mean?

**The Past:** machines were once designed with solid materials and conceived to last a long time - almost a lifetime. This is still true of our range, in every model. Customers come back to us for a new machine 30 years after their first purchase - often asking us for the same model (updated, of course), because the solution itself has never failed them.

**The Future:** the world of industry is closely linked to automation and cannot ignore such fundamental issues as energy saving and safety. Automation adds simplicity of use to our machines and the possibility to streamline the operator's work while acting on processes that exhibit a significant increase in both speed and precision.

**Modularity:** companies have different workloads throughout the year and can interface with different processes. Schiatti machines always combine the basic model with a possibility for customisation that's based on a wide range of options - covering all stages of a glass processing that's complete.

This also allows us to offer real production lines.



hall 15 / stand F28

### People to contact at our stand

**MICHELE SCHIAVO**  
**ANTONIO LURAGHI**

**GENERAL MANAGER**  
**PRODUCT MANAGER**

**SCHIAVO**  
*italian technology*



#### Products

**Schiavo** machines are well-known for their quality, reliability and advanced technology. As of today, more than 5,000 machines have been installed in over 50 countries. Schiavo machines are produced 100% at its facilities in Robecchetto con Induno, Italy, with 100% Italian and European components.

#### Washing

Schiavo horizontal and vertical washers have been developed to offer high quality and high performing machines for clients needing affordable and quality machinery. The washing machine range goes from simple and reliable washers for small glassworks to comprehensive washing systems for high-production rate facilities. Schiavo washers are made

entirely of stainless steel, with the highest quality and the best technology available.

#### Milling

With the FV-Series, Schiavo makes high-technology CNC milling affordable for all medium and small glassworks looking to become independent and self-reliable. Thanks to Schiavo vertical milling machines, now every glasswork can perform notches for locks, hinges and handles on glass doors, balustrades and furniture, as well as every kind of inner cuts and corner cuts, importing shapes directly from the office computer in .dxf, .dwg and many other formats, modifying the rich built-in shapes library or simply creating their own new shapes.

#### Storage systems and handling

Glass storage systems and glass handling are essential for glassworks to organize production efficiently and optimize available space. In this sector, Schiavo is a leader, with highly reliable solutions for the needs of its customers.

Patented-technology storage systems in manual, semi-automatic and fully-auto-



matic versions, combined with a complete range of manual and motorized vacuum lifters, package unloaders and clamps, makes Schiavo the best choice to better organize production areas in glass facilities and perform on-site installations safely and comfortably.

#### Assistance

Schiavo performs first-person service assistance on its machines and spare parts are available immediately. Customers contacting Schiavo for



assistance receive fast and precise response directly from the engineers and technicians who designed and produced its machines, deciding together the type and timing of the intervention. Direct, simple, fast, effective.

### Product Range

- VERTICAL WASHING MACHINES
- HORIZONTAL WASHING MACHINES • VERTICAL MILLING MACHINES • STORAGE SYSTEMS • AUTOMATIC CUTTING TABLES
- AUTOMATIC LOADERS/UNLOADERS • VACUUM LIFTERS
- MANIPULATORS • DRILLING MACHINES



Via Cave Ticino 10 - 20020  
Robecchetto con Induno (MI) - Italy Tel.: +39-0331-897904  
Fax: +39-0331-890645 - E-mail: info@schiavotech.it

[www.schiavotech.it](http://www.schiavotech.it)

hall 17 / stand A64

People to contact at our stand

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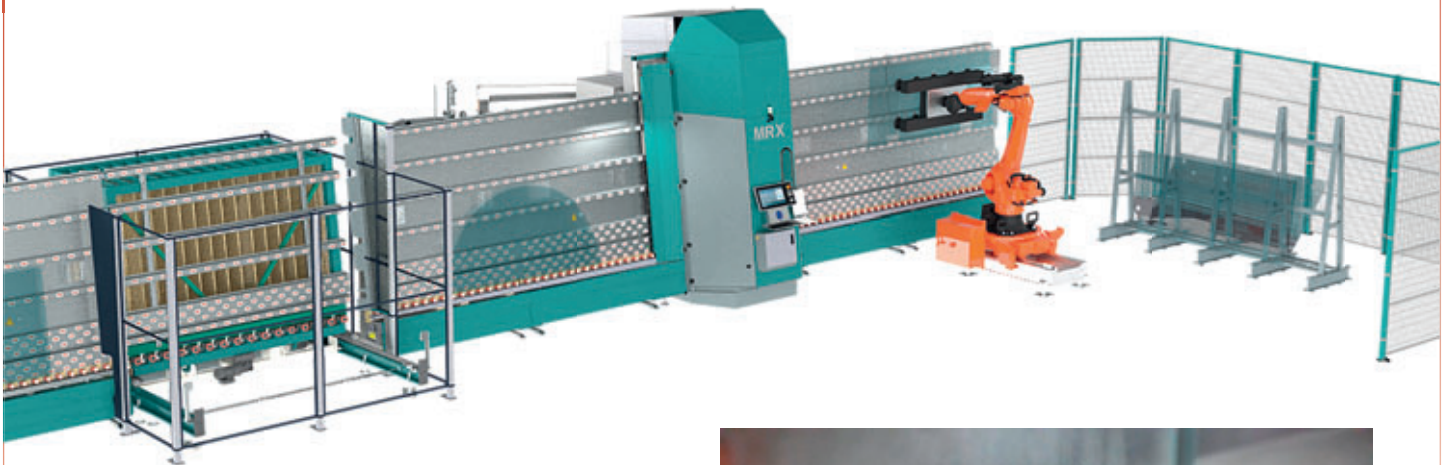


Schraml Glastechnik GmbH is well on its way to regaining renowned, typical advantages and thereby reaching the expected audience.

At glasstec, specialists from Austria will be showcasing the current, fully-equipped combiFIN processing line, which will be in operation directly at the Lisec stand.

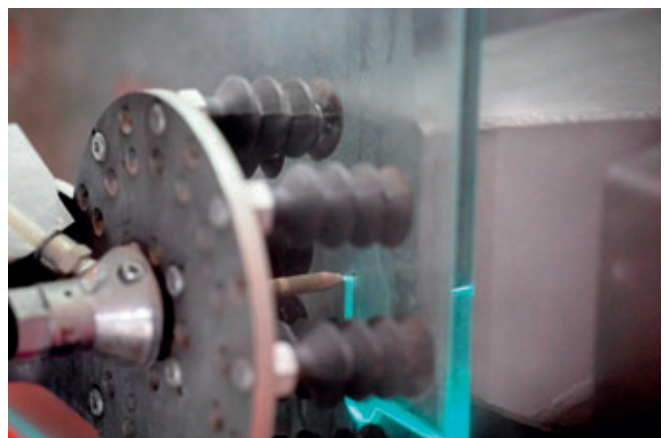
combiFIN.com is a compact, very powerful vertical processing line, with optional water jet processing as well as a SSP sorting buffer now or a robot for loading and unloading. Schraml systems are specialized in economic processing of individual medium-sized formats in batch sizes of 1.

Take the chance to visit. You will be positively amazed.



Waterjet technology is an established technology for fast and extremely flexible glass processing. On Schraml machines, the waterjet head is located directly below the processing head and can therefore be used at any time and at short notice.

The waterjet head is available as an option for the M-RX G7 and the RX G8.



Lumplgraben 49, A - 4463 Grossraming - Austria  
Tel.: +43-7254-8100  
E-mail: horst.schraml@lisec.com

[www.schraml.com](http://www.schraml.com)

21<sup>st</sup> International Trade Fair on Glass Production,  
Processing, Technologies & Products



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People to contact at our stand

OUR STAFF WILL BE AT YOUR SERVICE THROUGHOUT THE SHOW



**SKILL GLASS** is an Italian company specialized in the manufacture and design of high technology numerical control machines for the processing of flat sheet glass, which, combined with special software with dedicated functions and modern and functional design, are simple and quick to use.

processing of workpieces

- Faster grinding and polishing with 2 simultaneous heads
- Automatic tool changer 24 positions
  - Automatic tool preset and dressing
  - Vibration-free and long service life
  - Minimal maintenance
  - Maximum precision and speed



**DRILL 1600FF** is a 5-axis CNC drilling machine designed for producing holes, inserts and countersinks on rectangular flat sheet glass with a thickness of 3-20 mm.

The machine is made up of five axes, X Y V Z W, and two electro-spindles which, as opposite drilling heads, create a double-sided drilling system that drills perfect holes.

This vertical drilling CNC is able to operate with extreme speed and precision thanks to the management of all the processes by numerical control and also thanks to the support of the double tool change.

**E-D 101** is a vertical CNC centre for grinding, milling, drilling and polishing rectangular and shaped flat sheet glass. The machine can process both rectilinear and shaped flat sheet glass and combines all the technology for vertical drilling and milling with the features of a vertical grinding machine. Its main feature is its versatility, which allows for different types of processes at high speeds and optimal precision.

Oppositely placed heads ensure drilling is at maximum speed with top quality and precision, and countersinking can be performed with individual diamond tipped tools or with accessories of the drill bits.

The power and precision of the machine guarantee rapid and simple milling and multiple tools produce milled and grinded inserts in a few seconds.

#### Key benefits

- Automatic reading and



hall 12 / stand C39

People to contact at our stand

**TIMO SUOMI**  
**MIKKO SUOMI****SALLA SUOMI**  
**REIMA MÄKINEN****softeco**

Four point bender for EN1288 mechanical strength testing

Strong with 35 years' experience, **Softeco** specialises in PVB conditioning: flattening, stretching, shaping, as well as cutting and roll handling. In addition to this, we offer consultancy in safety glass production and quality control. We arrange complete testing services with official test reports as well as applications to the granting authority for approvals for ECE R43 and American DOT



PVB shaping and cutting line



### Product Range

- PVB CONDITIONING, HANDLING, STRETCHING AND CUTTING
- QUALITY CONTROL EQUIPMENT FOR GLASS AND PLASTICS
- ECE R 43 AND DOT ANSI Z 26.1 APPROVAL SERVICES
- TESTING SERVICES FOR SAFETY GLASS ACCORDING TO DIFFERENT NORMS

[www.softeco.com](http://www.softeco.com)

Itämerenkatu 5 - 00180 Helsinki - Finland  
Tel.: +358-336-00424 - Fax: +358-336-00434  
E-mail: [Reima.Makinen@softeco.com](mailto:Reima.Makinen@softeco.com)

hall 16 / stand B63

### People to contact at our stand

**GIOVANNI VISINI**  
**ELISABETTA ANELLI VISINI**

**GENERAL MANAGER**  
**ADMINISTRATOR**

**STEFIGLASS®**  
MACCHINE ED IMPIANTI PER LA LAVORAZIONE DEL VETRO  
MANUFACTURER OF WASHING MACHINES AND IG. LINES



### Product Range

- **FULL RANGE OF VERTICAL WASHING MACHINES**
- **HORIZONTAL WASHING MACHINES**
- **COMPLETE IG LINES WITH DIFFERENT ASSEMBLY MODELS, PRESS AND OPTIONAL TILTING TABLE**
- **EXCLUSIVE IG LINE, PATENTED BY STEFIGLASS, COMPACT LINE WITH PANEL PRESS**
- **FULL RANGE OF EQUIPMENT FOR INSULATING GLASS PRODUCTION**

With over 35 years of experience in glass machinery manufacturing, **Stefiglass International** is a leading manufacturer in Europe for a wide range of glass washing machines, complete IG lines and complementary machinery, offering good quality, post-sale assistance and reliable service.

Stefiglass' production, which responds to all the needs and demands concerning washing, ranges from small-sized washing machines of 1300h, right up to Jumbo sized glass of 3300h. Along with a wide range of standard models, Stefiglass also offers the possibility of customizing plants as per specific needs of processing. Customization, which is the realization of custom-built machinery, is the prevalence in the company's production activities.

On show at Glasstec 2024: washing machine model SPRINT and washing machine model NEWS.

Main quality features:

- Durable and strong construction in compliance with EU norms;
- Only EU electrical and mechanical components of top quality brands;
- Easy maintenance and easy replacement of spare parts;
- Excellent value for money;
- Customization of machines and possibility of connection to CNC.

[www.stefiglass-international.com](http://www.stefiglass-international.com)



Via Borghisani 9 A  
26035 Pieve San Giacomo (Cr) - Italy - Tel.: +39-0372-64173  
E-mail: [info@stefiglass-international.com](mailto:info@stefiglass-international.com)

hall 10 / stand E62

### People to contact at our stand

**TOMASINO TALAMONI**  
**ROSELLA MITIDIERI**

**OWNER**  
**EXPORT MANAGER**

**TALAMONI**  
YOUR PARTNER FOR GLASS CUTTING



### Talamoni to unveil Innovations at Glasstec 2024 as it celebrates 30 years of excellence

For the 13th time, Talamoni is set to participate in the renowned Glasstec trade show - a premier moment for the glass industry. Over all four days of the event, the company's owners will be present at the Talamoni booth - marking this special occasion on the company's 30th anniversary celebration.

At Glasstec 2024, Talamoni will showcase several groundbreaking innovations - all designed to meet the evolving demands of the glass sector. These are:

- **The DSG Cutting Wheel Finish:** After extensive development and testing with leading Italian glass manufacturers in 2023 and 2024, Talamoni introduces its new DSG finish. Specifically engineered for cutting laminated, coated, and stratified glass, this finish ensures superior cutting precision and ease of separation for glass sheets. Available across all Talamoni cutting wheel product lines, DSG promises to enhance cutting efficiency.

- **Expanded Cutting Oil Range:** Talamoni's cutting oil range has expanded from four to five products with the introduction of TAL5.1. This eco-friendly, volatile synthetic-based oil is non-oxidizing and leaves no residue on the glass, making it ideal for low-emissivity and coated glass. Notably, TAL5.1 features a safety data sheet free from hazard pictograms, underscoring its safety for both operators and the environment.



- **Upgraded Glass Cutter Production:** Talamoni has revamped its glass cutter production process, optimising the head material to improve cutting wheel glide. At the fair, the company will present four key models: VB CUT and OSCUT which have plastic handles, SICUT which has a metal handle and is suited for cutting glass from 1 to 10 mm and SICUT GP which is designed for cutting thicker glass from 12 to 19 mm.

All four models are equipped with Talamoni's Diamant cutting wheel, available in different finishes based on the tool's intended use.

Celebrating its 30th anniversary, Talamoni will offer a special promotion on its DSG S automatic cutting wheels and manual cutting tools. Don't miss out

on the chance to discover and test our cutting-edge products, which combine exceptional quality with affordability.

Join us at Glasstec 2024 and experience the innovation that has driven Talamoni's success over three decades.



Via Menconi 3, 28877 Ornavasso (VB) - Italy  
Tel.: +39-0323-836198 - E-mail: info@talamoni.com

[www.talamoni.com](http://www.talamoni.com)



hall 12 / stand C76

SAN.TIC.LTD.STI.

### People to contact at our stand

**SERVET TOPALAN**  
**YAŞAR YERLİKHAN**  
**HASAN TOPALAN**  
**YUSUF ALDIRMAZ**

**CHAIRMAN OF THE BOARD**  
**BOARD MEMBER**  
**BOARD MEMBER**  
**EXPORT SALES & MARKETING MANAGER**



### Teknik Elmas: Pioneering Glass Processing Tools

Teknik Elmas is one of Turkey's leading manufacturers of glass processing tools. Since 2004, Teknik Elmas has been offering competitive and innovative solutions to the glass industry. The company's domestic success has extended internationally, establishing a strong presence through reliable distributors and business partners across the globe.

### High-Performance Tools for CNC, Double Edger, and Straight-Line Edging Machines

Teknik Elmas specializes in producing high-performance tools for horizontal and vertical CNC machines, double edger machines and straight-line edging machines. This range has earned the company a solid reputation within the global glass industry.

### Advanced Solutions for the Automotive Industry

In addition to its accomplishments in standard glass processing, Teknik Elmas has expanded its expertise to serve the automotive industry, manufacturing monoblock drill bits for high-tech machinery. These monoblock drill bits are supplied to numerous global brands, further establishing Teknik Elmas as a leader in precision tools.

### Join Teknik Elmas at Glasstec 2024

This year, Teknik Elmas will showcase its tooling equipment alongside Tesir Makine at Glasstec 2024 in Düsseldorf. Visit us at Hall 12, Booth 12C76 to experience our cutting-edge tools firsthand and explore new business opportunities and partnerships. We warmly welcome all visitors to share in this exciting event!

### Product Range

- DRILLING TOOLS
- COUNTERSINKING TOOLS
- MONOBLOCK DRILL BITS
- CUP WHEELS FOR EDGERS AND DOUBLE EDGERS
- PERIPHERAL GRINDING WHEELS
- POLISHING WHEELS
- BEVELING WHEELS



Akçaburgaz Mah. - 3080.Sokak No: 3 Kıraç,  
Esenyurt, İstanbul 34522 - Turkey  
Tel.: +90-212-4855960 - Mob.: +90-542-5003463 - E-mail: export@teknikelmaz.com

[www.teknikelmaz.com](http://www.teknikelmaz.com)

## People to contact at our stand

**SERVET TOPALAN**  
**YAŞAR YERLİKHAN**  
**HASAN TOPALAN**  
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### Tesir Makine: A Leading Name in Glass Processing Solutions

Tesir Makine is one of Turkey's prominent glass processing machinery manufacturers. Since 2014, Tesir Makine has breathed new life into the glass industry with its innovative solutions as it continues to expand both domestically and internationally.

With a **young and dynamic structure** and strong investments in R&D, Tesir Makine is steadily growing through cutting-edge innovations.

This year, **Tesir Makine** will showcase its latest advancements at Glasstec 2024 in Düsseldorf. Among the most anticipated innovations is the **HG-F33 Vertical CNC Machine** - a testament to the company's claim in the global glass processing industry.

### HG-F33 Vertical CNC Machine: A Multifunctional Powerhouse

The **HG-F33 CNC** machine offers seamless functionality by combining **seaming, grinding, polishing, drilling milling, and countersinking/chamfering** operations in one vertical centre.



Its standout feature is the **dual-head spindle system**, enabling **simultaneous fast seaming & grinding**, offering users the dual benefit of a vertical CNC and a fast seaming & grinding machine all in one. This machine is equipped with **10 tool holders** and an **industrial PC-controlled** panel for effortless use with **CAD-CAM designs**.

### Introducing the VT Model Vertical Seaming & Grinding Machine

In addition to the CNC machine, Tesir Makine will present the **VT model Vertical Seaming & Grinding Machine** at the exhibition.

With its **dual-head spindle** system, this machine excels in fast processing of glass between **3mm and 19mm thickness**. Featuring **automatic tool changers** and **CAD-CAM integration**, the machine

is easily controlled via a **Schneider-supported control panel**. Its **vacuum suction cups clamping system** provides unmatched handling of **low-E coated and solar glass**. The machine is available in three sizes, including the **jumbo model**, accommodating **H2500xL4000 mm, H2800xL4000 mm, and H3300xL6000 mm**.

### Showcasing the SV Model Vertical Seaming & Grinding Machine

Also on display will be Tesir Makine's **SV model vertical seaming & grinding machine** - already established in countries like **Spain, the USA, Chile, Bulgaria and India**.



This machine processes glass between **3mm and 12mm thickness** and boasts **automatic glass thickness recognition**, providing excellent support for **IG lines and tempering lines** alike. Visitors can expect to witness the machine's impressive performance at the exhibition.

## Tesir Makine's Full Product Range

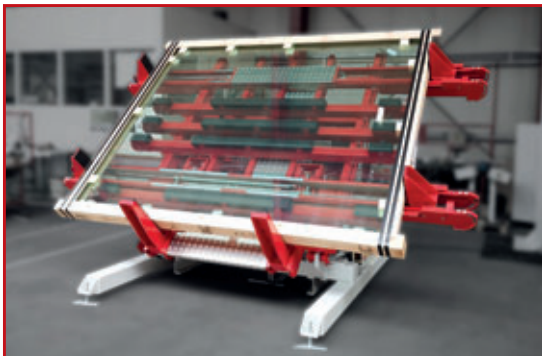
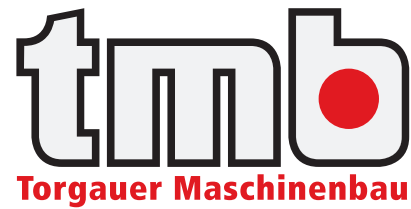
- **VT MODEL CNC VERTICAL SEAMING & GRINDING AND POLISHING MACHINE**
- **HG VERTICAL CNC MACHINING CENTRE**
- **SV VERTICAL SEAMING AND GRINDING MACHINE**
- **HS MODEL VERTICAL DRILLING MACHINE**
- **SK MODEL VERTICAL WASHING MACHINE**
- **BD 400 HORIZONTAL DRILLING MACHINE (FOR SHOWER GLASS)**
- **ST 200 HORIZONTAL SEAMING MACHINE (BELT-TYPE)**
- **RD 100 MANUAL HORIZONTAL DRILLING MACHINE**



hall 15 / stand G03

People to contact at our stand

OUR STAFF WILL BE AT YOUR SERVICE THROUGHOUT THE SHOW.



### Expertise and innovation are our strength

Since its founding in 1991, **Torgauer Maschinenbau GmbH** has established itself as a modern and flexible enterprise with a permanent position on the national and international markets.

Due to the many years of specific experience in the field of special engineering for the glass industry, our company has been able to develop an exceptional expertise in 3 core areas.

- Machines and plants for the flat glass industry
- Machines and plants for the photovoltaic industry
- Handling and Logistics equipment for flat glass and photovoltaics

The focus is on technologies and automation systems for all types of flat glass, from smallest glasses to XXL glasses, from ultra-thin glass to super-thick glass. We offer fully automated, efficient complete solutions for this. But also transport and handling equipment to support your production and test equipment such as Heat-Soak-Test furnaces are in our range.

Our individual and customized solutions according to the customer's wishes guarantee an economic production and optimal production processes at the production facilities of well-known manufacturers of special glass or photovoltaic products.

Due to the personal commitment of our highly qualified employees, innovative concepts, solid constructions and a reliable service, our company has developed into a globally sought-after and successful partner. Most of our products are exported all over the world, with our machines and plants currently up and running in 66 countries.

The application of state-of-the-art IT technology for the development and production of our equipment, such as 3D CAD system, robot simulation, 3D printer and ERP system for operational control, creates optimal conditions for high product quality.

Two modern production halls guarantee the efficient manufacture and assembly of complex machines and plant systems with the highest quality of work.

Since 1994, we have been regularly presenting the continual and dynamic development of our products at the most important fairs of the special glass industry, such as glasstec/Duesseldorf, Vitrum/Milan, China Glass and other exhibitions.

### Product Range

- AUTOMATION FOR THE FLAT GLASS AND PHOTOVOLTAIC INDUSTRIES
- CONVEYING AND LINKING EQUIPMENT • FEEDING AND STACKING EQUIPMENT
- PHOTOVOLTAIC TECHNOLOGY • THIN GLASS TECHNOLOGY
- CONTROL AND TEST EQUIPMENT FOR FLAT GLASS PRODUCTION • HANDLING SYSTEMS
- GLASS TRANSPORT AND STORAGE EQUIPMENT • PACKING EQUIPMENT
- LAMINATED GLASS TECHNOLOGY WITH CASTING RESIN AND FOR FIRE RESISTANT GLASS



Solarstraße 29

04860 Torgau - Germany

Tel: +49-3421-72050 - Fax: +49-3421-720530 - E-mail: [tmb@tmb-torgauer.de](mailto:tmb@tmb-torgauer.de)

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hall 16 / stand B17

People to contact at our stand

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MODEL NEW DESIGN: MAXI-  
MUM PERFORMANCE AND  
MINIMUM FOOTPRINT**

- Made entirely of stainless steel
- Working width 1,000 mm
- Min. glass size 100 x 50 mm

**VERTICAL CLOSED TOP  
- HEAVY STRONG THICKNESS**

- Made entirely of stainless steel
- Working height 2,600 mm - to be integrated in line
- Automatic thickness adjustment
- Low Emissivity glass detection with frequency control
- Complete with high pressure pre-wash section with tank
- Heated water tanks
- Controlled by PLC and touch screen operator panel
- Very silent operation
- scanner control integration (option)

**LOW-E HORIZONTAL WASHER  
- ENERGY EFFICIENCY WASHER  
WATER SAVINGS**

- Made entirely of stainless steel
- Working width 3,300 jumbo size

- Polishing section (option)
- Heated water tanks
- Conductivity water sensor for water control, cascaded water flow
- Auto water tanks cleaning
- Antistatic bar fitted to exit of upper drying section
- Remote control
- Bevel gear transmission
- Very silent operations



**CUSTOMIZED  
SOLUTION**

**Product Range**

- **OPEN AND CLOSED TOP VERTICAL WASHERS**
- **HORIZONTAL WASHERS FROM MINI TO JUMBO SIZE**
- **AUTOMATED SYSTEM FOR CURVED GLASS**
- **WET POWDER APPLICATION SYSTEM FOR AUTOMOTIVE**
- **ULTRASONIC BATH GLASS WASHING EQUIPMENT**
- **FIREPROOF GLASS WASHING EQUIPMENT**
- **LAMINATING GLASS LINES**
- **INSULATING GLASS LINES**
- **CUSTOMIZED SOLUTIONS FOR ANY GLASS PROCESS**



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[www.triulzi.com](http://www.triulzi.com)

### Turomas will return to glasstec 2024

TUROMAS will be present at the new edition of glasstec. The Spanish brand will make the most of this opportunity to present its complete range of machinery for smart glass storage, float or laminated glass cutting and all the novelties in software applications to visitors who come over to stand B24 in hall 15.



Turomas offers a comprehensive and specialized service for fully automated glass installations. The team of highly qualified engineers works closely with customers to design and develop customized solutions that optimize flat glass manufacturing processes.

From smart glass storage and loading to cutting and separation, the Spanish brand's equipment comprises fully automated instal-

lations designed to maximize efficiency and productivity while reducing response times and minimizing errors. Thanks to cutting-edge technology and experience in the sector, TUROMAS offers reliable and efficient automation solutions that enable customers to achieve new levels of precision, quality, and profitability in their glass production.

### AUTOMATION AS DRIVING FORCE

Automation has been the driving force behind many of TUROMAS innovations, such as the TUROMAS loading system and the development of intelligent warehouses that automate the glass storage and loading process, reducing production times and minimizing human errors.

In recent years, automation has also driven the expansion of TUROMAS' machinery range, including automatic scraps manager systems and automatic break out system. While these initially require a significant investment, they result in long-term labour savings, enhanced process control, and increased efficiency.

Visitors to booth B24 Hall15 will have the opportunity to see first-hand the advanced features and functionalities of these new systems. The TUROMAS team of experts will be on hand to answer questions and discuss how these automation technologies can revolutionize glass production processes.

### Product Range

- SMART GLASS STORAGE AND LOADING SYSTEMS
- FLOAT GLASS CUTTING SYSTEMS
- LAMINATED GLASS CUTTING SYSTEMS
- CUSTOMIZED PROJECTS



### Key Innovations to be Showcased

Visitors to the TUROMAS stand will have the opportunity to discover the following:

**New Series of Cutting Machines:** These machines feature state-of-the-art technology that delivers unprecedented accuracy, speed and efficiency, ensuring superior performance in any production environment.

**Automated Storage Systems:** Designed to maximise space utilisation and reduce handling times, these systems represent a significant advance in glass inventory management.

**Intelligent Management Tools:** With a set of digital tools, TUROMAS enables comprehensive, real-time management of production processes, improving traceability and strategic decision-making.

### Interactive Experience and Live Demonstrations

At glasstec 2024, attendees will have the unique opportunity to participate in live demonstrations of TUROMAS machines and systems, where they will be able to see first-hand the performance and capabilities of these technologies in real-life situations.



The TUROMAS team will be available to answer questions and offer personalised advice on how to integrate these innovations into each client's specific operations, ensuring a successful implementation tailored to the needs of each business.

### A Future of Innovation.

TUROMAS' participation at glasstec 2024 underlines its continued commitment to innovation and excellence in glass industry. Visitors to the show are invited to discover how TUROMAS solutions can transform their operations, improving productivity and efficiency in an increasingly competitive environment.



hall 11 / stand H49



### LIKE AN INSURANCE POLICY FOR GLASS!

For over 50 years, Unelko Corporation has been making waves in the surface cleaning and protective coating market. Unelko, which has a motto that runs "We don't make glass, we make glass better," specializes in durable glass coatings, stain removers and specialty cleaning products for glass and other surfaces.

Unelko is a leading manufacturer of water repellents and hydrophobic treatments and has steadfastly pioneered the Invisible Shield "Easy Clean" Coatings to preserve and protect glass and reduce the frequency and cost of cleaning.

Unelko's advanced and highly sought-after INVISIBLE SHIELD® PRO 15 glass coating and protection programme offers a perfect combination of performance, value and reliability - including a 15-year limited warranty for manufacturers and fabricators that produce volumes of glass.



Unelko's commercial glass product brands include Original INVISIBLE SHIELD®, INVISIBLE SHIELD PRO 15, REPEL® Cleaner & Repellent and GLASS SCRUB® Stain Remover, which they market in more than 60+ countries to help manufacturers, processors, distributors and suppliers offer improved appearance, glass preservation and an easier cleaning solution for their glass.

Unelko's Invisible Shield Coatings:



- Protect Glass Against Excessive Wear, Stains, Scratching, Etching, Pitting & More
- Repels Water, Soil, Stains, Chemicals & Hard Water Minerals
- Makes Cleaning Faster, Easier & More Efficient
- Eliminates Harsh Chemicals, Abrasives & Restoration
- Restores & Improves Glass Clarity & Appearance
- UV, Chemical, Abrasion & Acid Rain Resistant

Unelko's Products are proven in both quality and performance, as is attested by many prominent customers worldwide. Major glass producers have continued to comparatively test Invisible Shield PRO 15 against other coatings while remaining nonetheless steadfast in using the product because of its unmatched application, value, performance and durability.



**Unelko offers its automated application machinery!** The **Microburst Vertical Coating Machine** is a compact, high-output, two-sided coating machine that utilizes ultraviolet (UV) and infrared (IR) curing to instantly bond Unelko's top-rated Invisible Shield PRO 15 protective coating to both sides of almost any size glass. The machine continuously applies Invisible Shield PRO 15, which features an adjustable feed rate, robotic fine mist and overlapping coating application with a final rinse station that leaves the glass perfectly clean and ready to ship and/or install.

**Invisible Shield® is Protecting Glass by Major Manufacturers, Fabricators and Through Worldwide Distribution.**

For more information about the Microburst Machinery and Invisible Shield PRO 15 Glass Coating for Commercial Glass, Shower Door, Automotive, Marine & Solar Markets, Contact Unelko at 1-800.528-3149, mail to: [Info@unelko.com](mailto:Info@unelko.com), or visit [unelko.com](http://unelko.com) and [www.glasscareexperts.com](http://www.glasscareexperts.com).



1616 W. Williams Dr. - Phoenix, AZ 85027 - USA  
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[www.glasscareexperts.com](http://www.glasscareexperts.com)

hall 15 / stand C24

### People to contact at our stand

**MAURO PEZZULLA**  
**SONIA LUPI**

**OWNER – TECHNICAL DEPT.**  
**SALES DEPT**



**Vetrolux Tools S.r.l.** is a company that, given its family size, embodies the essence of Made in Italy craftsmanship, with all the characteristics that the term includes.

These dimensions also allow our company to be extremely flexible and dynamic, peculiarity well known and much appreciated by our customers. The attention and care that are placed by our craftsmen in the production of each individual tool is extreme, and is reflected in the quality of the same which is very high.

Within Vetrolux Tools there are figures who have been working in this sector since 1987 and the knowledge made in these years of work, is

extremely useful and valuable to always stay up to date with technological innovation.

Thanks also to these peculiar characteristics, Vetrolux Tools is continuously expanding both in terms of its structure and on a commercial level, acquiring more and more customers worldwide. Going into more detail....

A cutting-edge product, evidence of the continuous study that takes place for the creation of our products, is the drill bit with HS and HSS typology.

The main features are: 1) thinner crown thickness; 2) long life and excellent hole quality; 3) available for all CNC machines; 4) allow high drilling

speeds thus reducing the drilling cycle time; 5) already prepared to house, if necessary, the Vetrolux Tools countersinks.

We would like to thank all our customers here, especially those who have believed in us since our inception and who have allowed Vetrolux Tools to consolidate itself on the world market and who continue to collaborate with us making us increasingly present and visible on the market.

With this summary we hope to have brought you closer to our company reality and we look forward to seeing you for information or even curiosity at our stand: Hall 15 / C24.



hall 16 / stand A40

People to contact at our stand

OUR STAFF

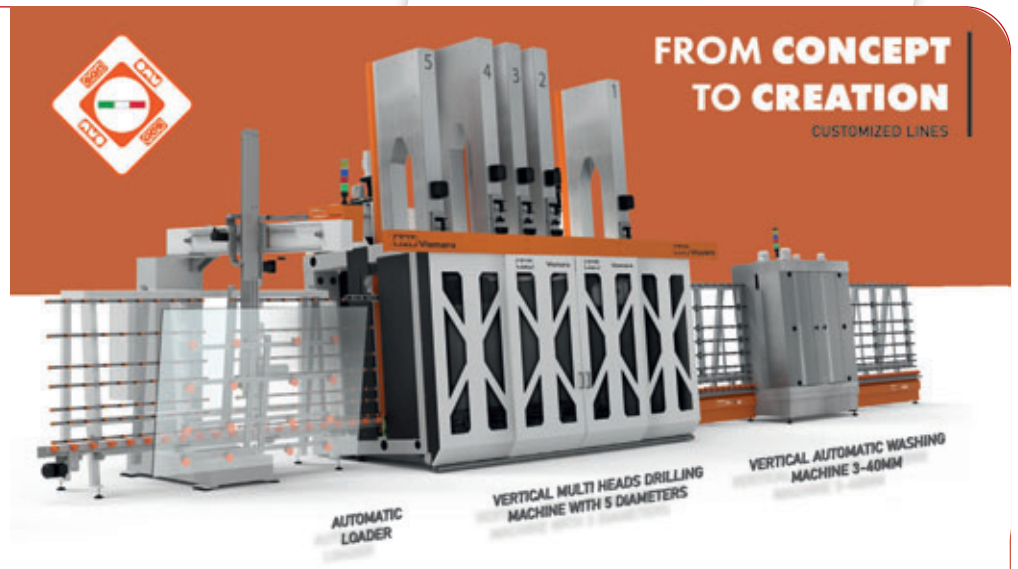


**OMV Vismara**, a long-established company in the flat glass processing machinery industry, is enriching its product range so that customers can have a single point of contact when purchasing production lines.

In addition to vertical drilling and milling machines, it now offers filleting and grinding machines as well as washing machines.

The entry of this "new generation" into the company has made it possible to expand the study of the new product range and has made it easier for customers to choose a single supplier for the processing line, or even to turn to new ones.

Special complete vertical lines for processing doors, shower enclosures, and other glass that require polished edge grinding, but also allow for easy processing of batches of individual pieces, as the market currently requires, as well as for mass production batches.



The various machines can also be integrated later, to allow those who need them to defer the investment over several years, but the project is studied at the beginning to improve the quality of the final product.

The supply of special machines, directed to customers who carry out special processing is always the focus of the studies of the company, which designs the most suitable solutions to specific requests from customers.



[www.omvvismara.com](http://www.omvvismara.com)



Via Alberto da Giussano, 202 - 20846 Macherio (MB) - Italy  
Tel.: +39-039-471735 - E-mail: [omv.sales@omvvismara.com](mailto:omv.sales@omvvismara.com)



hall 15 / stand G23

## People to contact at our stand

**JOSEP SAIS****GENERAL MANAGER****ALEIDA GUINART****SALES DEPARTMENT**

### Water treatment and sustainable development

In a world in constant change and climate emergency, a large part of the measures adopted or demanded are the reduction of water consumption.

Water recycling in the glass industry and quality assurance are key to achieving optimal use and contributing to the conservation of the planet.

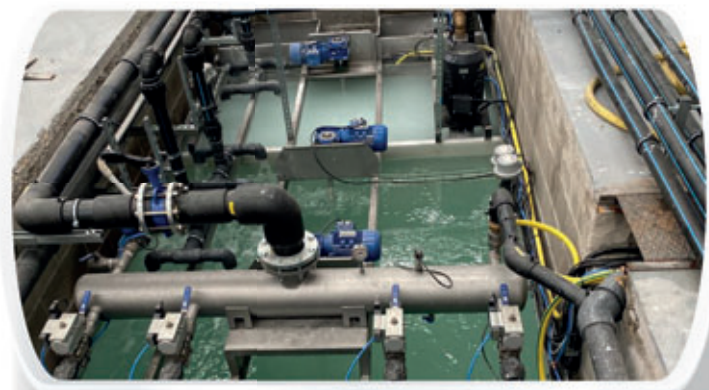
The VITROSEP water treatment and solutions portfolio is one of the most technologically advanced and specialized available in the glass market. In addition to offering a wide range of particle separators based on filtration processes, VITROSEP brings innovations in the field of optimization and control of water treatment parameters.

Digitization technologies such as new computer processors, sensors and the internet of things are indispensable for data collection. They help to ensure good water management and provide information in real time, allowing a broader view of the operation of infrastructures. Consequently, this type of technology makes it possible to proactively control and operate in front an action or technical problem reducing consumption and costs.

Another benefit of data management and analysis of the installations is the minimization of water losses due to leaks and high consumption of additives. VITROSEP helps the customer to make the systems, both in the use of resources and in the impact on the environment, providing a sustainable and quality service to all its customers.

In this regard, VITROSEP's commitment to sustainability will be on full display, with a dedicated area showcasing their eco-friendly water treatment processes, aimed at reducing the environmental impact of glass production.

VITROSEP will be located in Hall 15, Stand G23. There you will find all the new products including the CC11-900 glass particle separator, the most compact of the range in terms of size and performance. VITROSEP's booth will also be a hub of knowledge exchange, where industry professionals can engage with VITROSEP's team of experts and gain invaluable insights into the latest trends of the glass sector.



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# FLATGLASS

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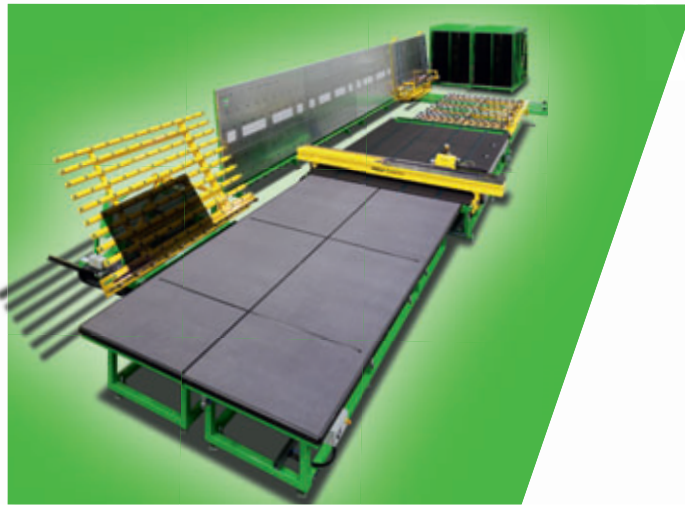
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