

# Glass-Technology International

THE LEADING MAGAZINE FOR THE INTERNATIONAL FLAT GLASS INDUSTRY

July/August • Year 33 • No. 4/2022

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INTERNATIONAL TRADE FAIR FOR GLASS  
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20-23 September 2022  
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**HEGLA BOOSTS**  
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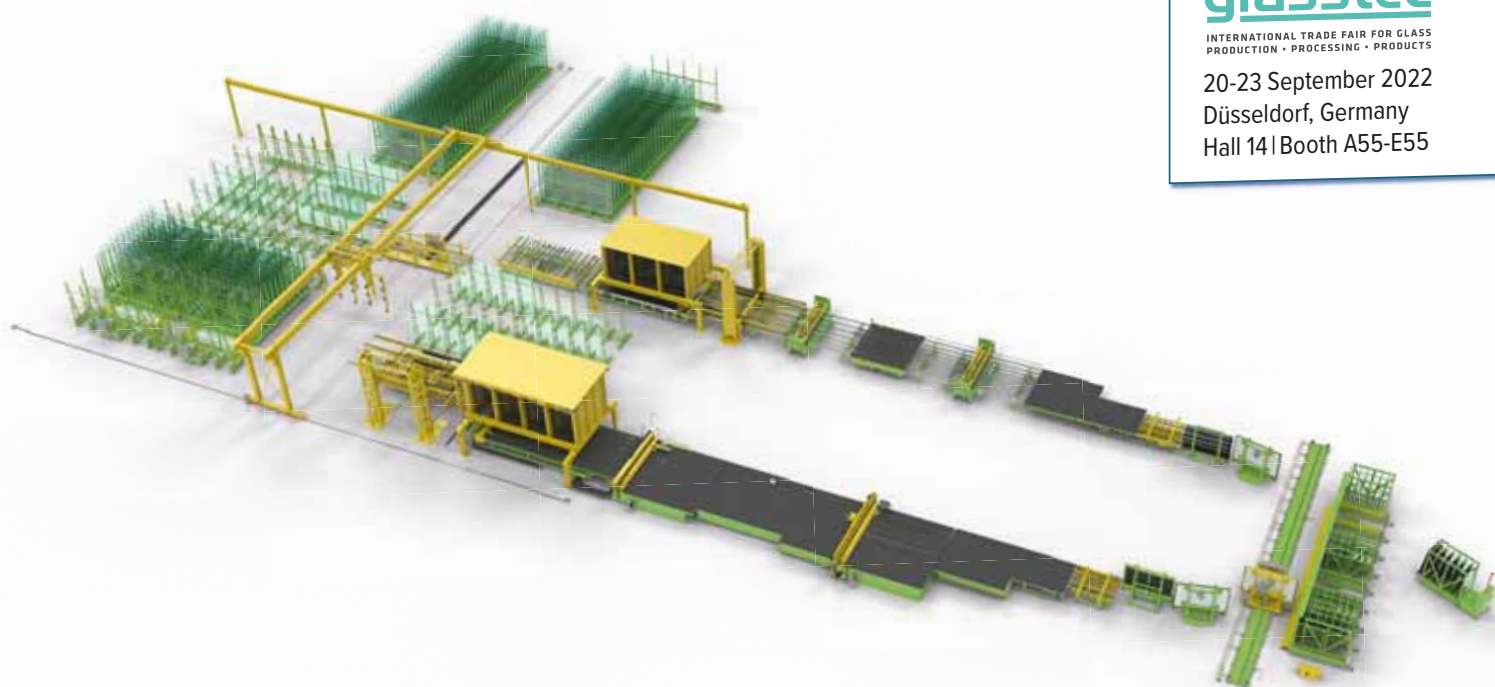
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New standards for the production of insulating glass units with thermoplastic spacers

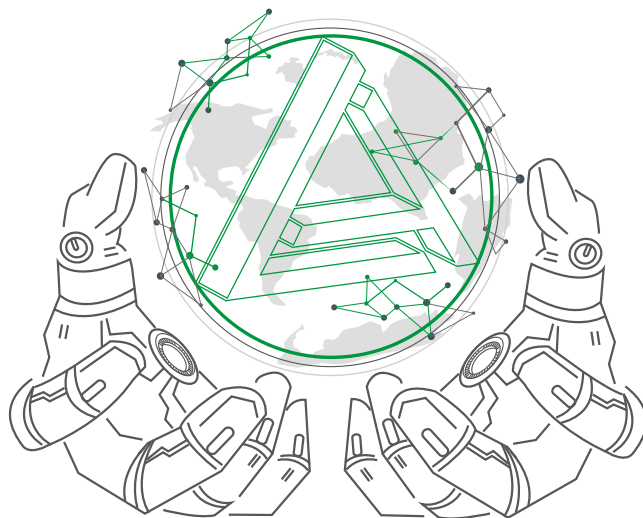
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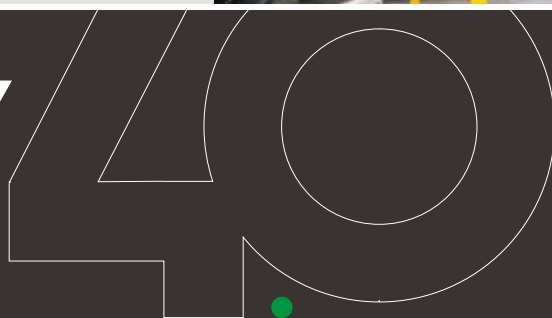
## ROBOTS

NEW INTEGRATED,  
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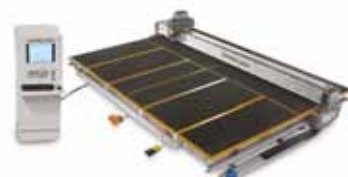
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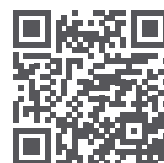
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**SOLUTIONS FOR SURFACE PROCESSING**

### The SURFACES GROUP, with ADI, RBM and Vincent, at Glasstec 2022

**VINCENT'S BACK IN THE RING**

The best business tool of Surfaces will be in the spotlight to promote, once again, the value of Italian mechanics for glass processing. It is in fact an especially meaningful participation. Vincent will also be there alongside the rest of the group after regaining its autonomy in Italy.

**INNOVATIONS WITHIN THE GROUP**

In recent years, the group, which is now part of the Surfaces Group, has been able to develop a wide range of products and services that are highly innovative and that are in line with the latest trends in the glass processing industry.

**THE SURFACES GROUP**

The Surfaces Group is a leading international company in the glass processing industry, with a strong presence in Europe, Asia and North America. The group is composed of several companies, including Vincent, ADI, RBM and Vincent, which are all dedicated to providing high-quality solutions for glass processing.

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**GLASS-CUTTING**

### INTERMAC takes the spotlight with its synergy-optimising solutions

**COVERING AN ENTIRE RANGE OF QUALITY AND PRODUCTION**

Intermac is a leading international company in the glass processing industry, with a strong presence in Europe, Asia and North America. The company is dedicated to providing high-quality solutions for glass processing, covering an entire range of quality and production.

**54**

**FLEXIBLE SPACERS**

### EDGE TECH to showcase its Super Spacer™ TriSeal™ for glass wave façades

**With ever greater façade transparency that's free of visible support structures being among the hottest industry trends today, EDGE TECH now proposes to enable its innovation for modern glass architecture in the run up to September 2022.**

EDGE TECH is a leading international company in the glass processing industry, with a strong presence in Europe, Asia and North America. The company is dedicated to providing high-quality solutions for glass processing, including its Super Spacer™ TriSeal™ for glass wave façades.

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**GLASS LAMINATION**

### Customers involve IOCCO in feasibility studies for whole car glass sets

**IOCCO offers its first-in-class system in the world able to process windshields, sideglazings and rear glazings in a single line, with the same equipment and operator. The system allows for flexible production and makes changes without any interruption of the process.**

IOCCO is a leading international company in the glass processing industry, with a strong presence in Europe, Asia and North America. The company is dedicated to providing high-quality solutions for glass processing, including its first-in-class system for whole car glass sets.

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**SANDBLASTERS AND GLASS-MARKING**

### FRATELLI PEZZA makes sandblasting easier than ever

**FRATELLI PEZZA S.p.A. will be launching important sandblasting and glass marking machines at Glasstec 2022, together with a new line of new machines.**

FRATELLI PEZZA is a leading international company in the glass processing industry, with a strong presence in Europe, Asia and North America. The company is dedicated to providing high-quality solutions for glass processing, including its sandblasting and glass marking machines.

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**INNOVATION**

In the glass industry, the need for high-quality water is a constant challenge. IDROTECNICA, a company with over 40 years of experience, has developed a range of demineralization systems that are designed to meet the specific requirements of the glass industry. These systems are capable of producing high-purity water that is essential for the production of high-quality glass products.

**TECHNOLOGY**

IDROTECNICA's demineralization systems are based on a combination of reverse osmosis and ion exchange technologies. This allows the company to produce water that is free from all impurities, including minerals and organic matter. The result is a high-purity water that is ideal for use in the glass industry.

**COMPANY HISTORY**

IDROTECNICA was founded in 1976 and has since become a leading manufacturer of demineralization systems in Italy and abroad. The company's success is due to its commitment to innovation and its focus on providing high-quality products and services to its customers.

**CONTACT**

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20139 Milano, Italy  
Tel: +39 02 574911  
Fax: +39 02 574912  
Email: info@idrotecnica.it  
Website: www.idrotecnica.it

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#### HELIOS QUARTZ: a growth trajectory spanning eight decades

**COMPANY HISTORY**

HELIOS QUARTZ was founded in 1940 as a family-run business. Over the years, the company has grown into a leading manufacturer of quartz glass products. The company's success is due to its commitment to innovation and its focus on providing high-quality products and services to its customers.

**TECHNOLOGY**

HELIOS QUARTZ's products are made from high-purity quartz glass. This material is known for its exceptional strength and resistance to heat and corrosion. As a result, HELIOS QUARTZ's products are ideal for use in a wide range of applications, including in the automotive, aerospace, and industrial sectors.

**CONTACT**

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Helmholtzstr. 1  
10557 Berlin, Germany  
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Fax: +49 30 63923-20  
Email: info@helios-quartz.de  
Website: www.helios-quartz.de

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#### VDMA examines laser's added value to the glass industry

**LASER TECHNOLOGY**

VDMA, the German Association of Mechanical Engineers, has conducted a study to examine the added value of laser technology to the glass industry. The study found that laser technology offers a range of benefits, including improved precision, reduced waste, and faster production times.

**CONTACT**

VDMA e.V.  
Friedrichstr. 106  
10117 Berlin, Germany  
Tel: +49 30 2663-1  
Fax: +49 30 2663-20  
Email: info@vdmade.org  
Website: www.vdmade.org

### SUSTAINABILITY

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#### ONECHARGE wows the glass industry with lithium battery benefits

**SUSTAINABILITY**

ONECHARGE, a leading manufacturer of lithium-ion batteries, has introduced a new range of batteries that offer a range of benefits to the glass industry. These batteries are designed to be long-lasting, reliable, and easy to use.

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Tel: +49 30 63923-0  
Fax: +49 30 63923-20  
Email: info@onecharge.de  
Website: www.onecharge.de

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#### GLASSTEC eyes the future - spotlight on the industry's macro-trends

**2022 EVENTS**

GLASSTEC 2022 is the leading trade fair for the glass industry. The event will take place in Düsseldorf, Germany, from 28 to 30 September 2022. The event will feature a wide range of exhibits, including new products, services, and technologies. It will also provide an opportunity for industry professionals to network and discuss the future of the glass industry.

**CONTACT**

GLASSTEC 2022  
Düsseldorf, Germany  
28-30 September 2022  
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issue	exhibition/conference	date	venue	deadlines
2022 1	<b>GPD FINLAND</b>	postponed to 2023	<b>TAMPERE</b> Finland	Editorial files: 14-01-2022 Deadline Adv files: 24-01-2022
	<b>GLASSPRO INDIA</b>	postponed to 2023	<b>MUMBAI</b> India	
	<b>FENSTERBAU FRONTALE</b>	postponed to 12-15 July	<b>NUREMBERG</b> Germany	
2022	 			Editorial files: 14-02-2022 Deadline Adv files: 28-02-2022
2022 2	<b>CHINA GLASS</b>	postponed	<b>SHANGHAI</b> China	Editorial files: 11-03-2022 Deadline Adv files: 18-03-2022
2022 3	<b>MIR STEKLA</b>	6-9 June	<b>MOSCOW</b> Russia	Editorial files: 29-04-2022
	<b>GLASS SOUTH AMERICA</b>	29 June/ 2 July	<b>SÃO PAULO</b> Brazil	Deadline Adv files: 06-05-2022
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2022 5	<b>GLASSBUILD AMERICA</b>	18-20 October	<b>LAS VEGAS (NV)</b> USA	Editorial files: 12-09-2022
	<b>GLASSTECH ASIA</b>	26-28 October	<b>SINGAPORE</b> Singapore	Deadline Adv files: 26-09-2022
2022 6	<b>EURASIA GLASS</b>	12-16 November	<b>ISTANBUL</b> Turkey	Editorial files: 14-10-2022 Deadline Adv files: 21-10-2022
	<b>VETECO</b>	15-18 November	<b>MADRID</b> Spain	
	<b>GLASSTECH MEXICO</b>	30 November/ 2 December	<b>MEXICO CITY</b> Mexico	
	<b>ZAK GLASS TECHNOLOGY</b>	1-3 December	<b>NEW DELHI</b> India	



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SAINT-GOBAIN GLASS

## World's first low-carbon glass leads the way

**S**aint-Gobain Glass has achieved a landmark technical innovation, enabling it to offer a new glass with one of the lowest embodied carbon solutions on the façade market. This great industry innovation was accomplished through a production combining high recycled glass content (around 70 percent cullet) and renewable energy, thanks to a substantial R&D effort and the excellence of the company's industrial teams.

As façades represent up to 20 percent of a building's carbon footprint, this innovation will significantly reduce the carbon footprint of construction and accelerate the development of the circular economy.

**SAINT-GOBAIN GLASS'** innovation echoes the first zero carbon production completed in May 2022 at its Aniche factory in France, which allowed the company to significantly refine its manufacturing processes and expertise.

Saint-Gobain Glass is now integrating low carbon products in its portfolio of solutions for façades - starting with the COOL-LITE® XTREME solar control range, without any compromise in technical or aesthetic performance.

The new products will use a glass with an estimated carbon footprint of only 7 kg CO<sub>2</sub> eq/m<sup>2</sup> (for a 4 millimetre substrate). This new low carbon glass will be combined with the existing COOL-LITE® XTREME coating technology, which already drastically reduces carbon emissions generated by energy consumption needed when using the building - all thanks to its high performance in terms of daylight intake, solar control and thermal insulation. As a result, the new range will offer the lowest carbon footprint on the market with a reduction of around 40 percent as compared to the company's European baseline products.

Detailed environmental data will be documented through third party-verified environmental product declarations – EPDs (or FDES in France) – which are currently under development and scheduled for availability in early 2023.

As an initial demonstration of the market's enthusiasm, three major real estate partners, Bouygues Immobilier, Icade Santé and Nexity, have already committed to using low carbon COOL-LITE® XTREME glass in their projects:

- Bouygues Immobilier will implement it on its office building operation Kalifornia (Hauts-de-Seine, France)
- Icade Santé will install it on the Elsan Group Polyclinique du Parc in Caen (Calvados, France)
- Nexity will use it on the Carré Invalides rehabilitation (Paris, France).

This pioneering initiative is a first step towards an expanded, low-carbon offer across the different markets of Saint-Gobain Glass. It is fully in line with the Saint-Gobain Group's Grow & Impact strategy, in particular the roadmap towards carbon neutrality by 2050.

[WWW.SAINT-GOBAIN.COM](http://WWW.SAINT-GOBAIN.COM)

UNELKO

## Invisible shield coatings protect and maintain glass

**A** 100 percent employee owned company founded in 1934 with representatives located throughout the US and Canada, Salem Fabrication Technologies Group offers glazing and material handling solutions - including Invisible

Shield PRO 15 protective glass coating, by which the company strives now to offer unmatched glass protection. Glazing supply offerings also include Abrasives, Cleaners, Cork/Felt Tabs, Corner Protectors, Hand Cutters, Sealants and more. **UNELKO** has been a leader in advanced surface care technology for over 40 years and has continued to pioneer surface protection.

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KEW TECHNOLOGY and NSG GROUP

## Government funding secured by BEIS

**K**EW TECHNOLOGY, a UK-based sustainable energy solutions company, is pleased to announce it has been successful in its MADE for Glass funding application under the UK Government's Department for Business, Energy & Industrial Strategy's NetZero Innovation Portfolio Industrial Fuel Switching (IFS) programme.

KEW and its key partners, **NSG GROUP's** Pilkington United Kingdom Limited and NGF Europe Limited, are developing an Industrial Co-location solution providing on-site fuel switching. For this, KEW's innovative, modular-advanced gasification units would be used to provide syngas (a fuel gas mixture consisting primarily of hydrogen, carbon monoxide, and very often some carbon dioxide) as a pressurized natural gas substitute to reduce the consumption of carbon-intensive natural gas and subsequent emissions at the two NSG Group glass manufacturing sites at St Helens.

The MADE for Glass project represents an important step for NSG Group in its aims to decarbonise its production processes and achieve a 21 percent reduction in site emissions by 2030 and, as such, is identified as part of their Transformation journey.

Neil Syder, managing director at Pilkington UK, said, "We are excited to explore the potential for syngas as a lower-carbon alternative fuel to natural gas in support of our decarbonisation objectives. This project will enable us to better understand the technical and commercial benefits that KEW's technology can deliver."

The wider deployment of KEW's Industrial Co-location solution across the UK's energy-intensive industry, which this funding will unlock, will greatly assist in enabling the UK to achieve its 78 percent CO2 reduction target by 2035. Successful deployment made possible by the NZIP IFS program funding will also ensure the UK efficiently converts the greatest possible energy available in its existing waste and biomass resources to achieve the greatest possible GHG reductions of those hard-to-decarbonise, energy-intensive industries.

Kamal Kalsi, CEO of KEW Technology Limited, said: "KEW's participation in BEIS' Industrial Fuel Switching program provides a great opportunity to develop and demonstrate the decarbonisation benefits which the commercial deployment of KEW's advanced gasification technology can deliver to the UK's energy intensive industries. We look forward to working with NSG Group on this program."

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

GUARDIAN GLASS

## Operations in Russia sold

**M**indful of the approximately 600 employees working at **GUARDIAN GLASS** plants in Russia, the company worked with its local management team in April to find an exit strategy that could maintain its commitment to the safety of its employees without resulting in the Russian government taking the plants over and benefiting financially from them. As of today, Guardian has responsibly and safely accomplished this - having sold its business in Russia to Vladimir

Alexandrovich Voronin, President of FSK Group, a private enterprise within the construction industry. This outcome was facilitated and supported by plant employees and complies with all applicable sanctions, laws and regulations.

Guardian Glass continues to condemn Russia's actions and aggression in Ukraine and remains united in support of all who have been harmed by the current conflict.

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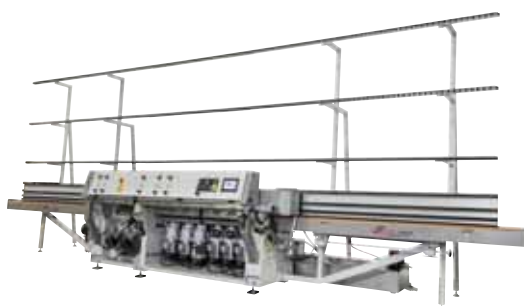


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GIMAV

## Dino Zandonella Necca elected new President

The leadership team of GIMAV -Association of Italian manufacturers and suppliers of machinery, equipment and special products for glass processing- with terms lasting until 2026, was recently chosen at the association's general meeting. The meeting was held on Wednesday 29 June at the Association's Milan office, where engineer Dino Zandonella Necca was elected President over the four-year period from 2022 to 2026. Completing the Governing Bodies, the directors in office over the two-year period from 2022 to 2024 were also elected.

Upon handing over his responsibilities, its previous president Michele Gusti said: "All my best wishes go to my friend and colleague, who will be an excellent guide for the Association just as he was for the VITRUM trade fair. I'm certain GIMAV will be animated by the same drive and enthusiasm that have always characterized it as a dynamic and innovative Association. Zandonella Necca has great international experience, so I'm confident he'll achieve the results we anticipate. In any case, we shall always be there to support him - even through difficult times. I also take the occasion to thank Director Fabrizio Cattaneo who, together with the companies making up the association and still participating in its life, has accepted to undertake with me the challenge of its changes - which is hardly banal."

Dino Zandonella Necca is CEO and President of ADI Srl, as well as current member of the Board of Surfaces Group and former President of VITRUM since 2015 after having been in office until 2018.



In his first speech as President of the Association, Zandonella Necca stressed the importance of strengthening the sector's industrial dynamics: "I'm grateful to the members who bestow upon me this honour of leading GIMAV. I will try to meet the task of continuing the work of modernization that we've undertaken jointly - thanks to the safe and enlightened guidance of my friend Michele Gusti. I believe the Association remains a key player in promoting and defending the interests of both our sector and the entire Italian glass supply chain - being unique globally in terms of directly drawing upon origins that have created and developed its unique history, tradition and culture. The same history and culture are now preserved in the excellence of our Italian museums - reinterpreted and defined by the contemporary artistic sensitivities of today's glass masters, updated and kept so by both the industrial and design supply chains of glass and also projected into the future by the most advanced glass-processing technologies, of which all of us are numbered among the main protagonists. And it's precisely to this 'uniqueness' and 'originality' that we must all aim to enhance Italian glass at international level - which is also what we intend to do at 'The Italian Glass Weeks,' an event that will take place on September 10, just after the summer."

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

TECGLASS

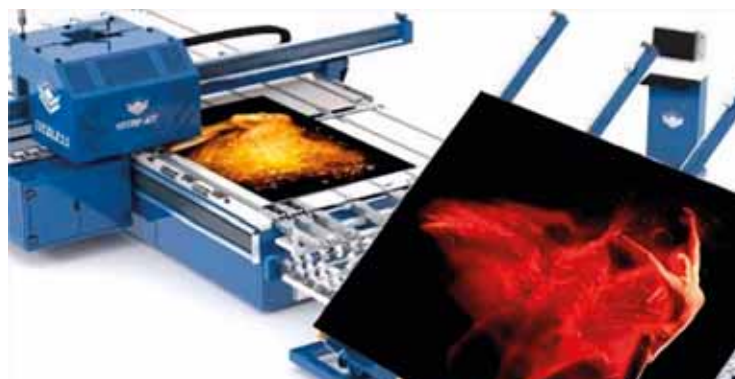
## Vitro Jet FS - exclusive patented Side Kinetix technology

A large number of creative colour combinations have become a demanding trend for architectural glass applications - from classic silk screen patterns to hyper-realistic high-resolution artworks for exclusive and ingenious projects.

TECGLASS' digital printer Vitro-Jet FS is a benchmark of the company's technological research - serving as the best example of versatility and flexibility for this market sector.

Vitro-Jet FS delivers high-demand industrial processes, reliable speeds and fully-automated productivity. Besides, the distinctive way it moves on the long-side of the glass have made it a unique and iconic printer.

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VIVIX

## Construction of second Brazil plant announced

**V**IVIX Vidros Planos has announced the construction of a second production plant, with an investment of BRZ 1.3 billion. The new plant will be built in the municipality of Goiana, Pernambuco (PE), Brazil next to the current plant and is expected to be fully-operational in the second half of 2025. Its furnace will have a production capacity of 1.000-tonnes-per-day - making it the largest in operation in Brazil. In this way, the company will expand its capacity to 1.900-tonnes-per-day and will become the second-largest float manufacturer in the domestic market.

The plant will use the 'mine to line' method, the same as that of the current factory: the raw materials will come from its own mines - Vivix's raw material processing plant in the municipality of Pedras de Fogo, in Paraíba.

Around 4.000 jobs are estimated to be created during the works. Together, the two plants are expected to generate around 600 direct jobs and 2.400 indirect jobs.

"We believe in a prosperous future and that the flat glass market will be expanding in the coming years," said Henrique Lisboa, president of the plant. "In fact, the year 2022 is being less heated than we all expected, but we need to focus on the medium and long term, aiming to balance supply and demand. Investment in the new plant was projected for 18 years and we believe that by the end of 2025 a new oven will be needed in our country. We understand that there will always be ups and downs in the segment, but we are ready to face these movements - providing the necessary support for the production chain."

[WWW.VIVIX.COM.BR](http://WWW.VIVIX.COM.BR)

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ŞİŞECAM

## New glass manufacturing plant to be built in Turkey

Şişecam aims to consolidate its leadership position in the rapidly-growing Turkish energy glass market, to seize export opportunities and to further strengthen its competitive position.

With an investment of approximately TRY 3.4 billion (around EUR 185 million) including working capital, **ŞİŞECAM** has decided to establish a second frosted glass furnace and processing line on the same land as that of the new flat glass line currently under construction in Mersin, Turkey.

In this way, the company aims to be one of the most important renewable energy investment suppliers in the world, in line with its sustainability goals, while seizing opportunities in the rapidly-growing solar energy market both within Turkey and in the world.

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TVITEC and CRICURSA

## A complete flat and curved glass offer



**T**vitec, the largest glass manufacturer in Spain and one of the largest in Europe, is launching with Cricursa in a joint ambition to provide the most complete and comprehensive offer of high-performance flat and curved construction glass solutions on the market. Here **TVITEC** and **CRICURSA** are joining forces both commercially and industrially, with Tvitec bringing its strong financial standing and technological capacity to maximize Cricursa's curved glass manufacturing know-how and experience -almost a century's worth- for some of the planet's most iconic projects.

This alliance will unite two of the largest, high-performance flat and curved glass manufacturing capacities in existence. The new venture

will work not only on a national level but with an even greater international focus than the companies already had before Tvitec acquired Cricursa.

Two of the most emblematic architectural glass manufacturing companies in the world will now work in collaboration to create new synergies and elevate the levels of quality, precision, innovation, prices and service that have already made Tvitec a sector leader within all markets.

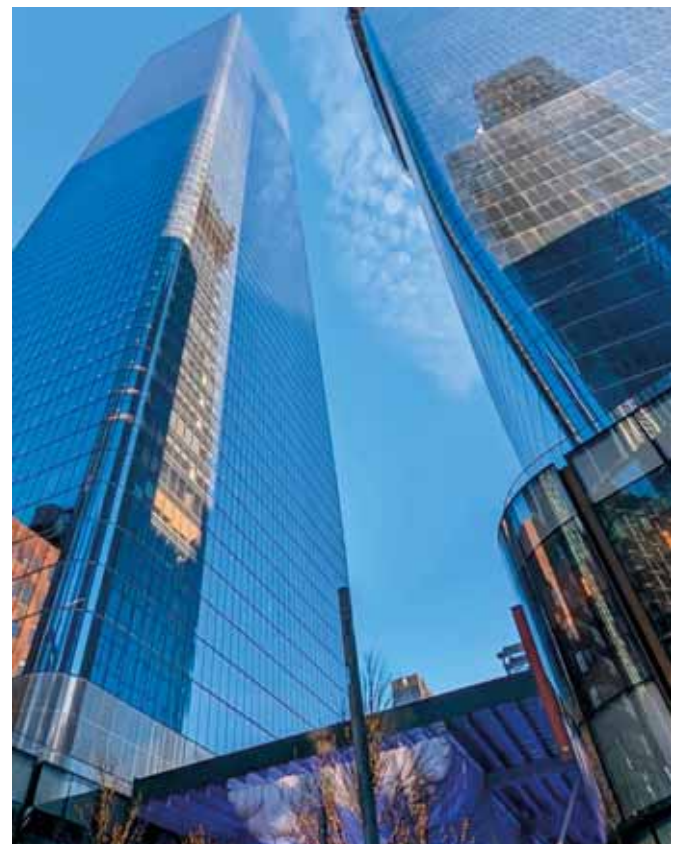
Tvitec is looking firmly to the future with this unique new model for marketing large-format, high-performance curved glass - enabling the production of solutions as beautiful as they are innovative and designed to contribute to more sustainable construction, energy saving and environmental preservation.

### One & Two Manhattan West project in New York

Tvitec and Cricursa's flat and curved glass have already featured together on landmark projects such as One Manhattan West in New York and Brookfield Place Calgary. Individually, Tvitec has just supplied all eco-efficient glass for the new Google campus in Bay View (BIG-Heatherwick Studio), while Cricursa recently curved the spectacular façade of La Samaritaine (SANAA) in Paris.

The collaboration is great news not only for the sector's regular clients, construction companies and façade and architectural envelope specialists, but also for architecture studio professionals, engineers and consultants who seek a unique and comprehensive partner for all their projects.

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





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New partition of heaters is 50% more finer than that of 3G A(Advanced)-series furnace, for more accurate heating control and better finished glass quality.

Convection air circulation is optimized for more even blowing and lighter anisotropy, is more power saving thanks to enhanced convection effect .

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- Combined with the fabricated wall components made of light steel.
- The traditional wall becomes simplified and refined.



LiSEC and MADRUGADA GROUP

## Success through quality

For almost 20 years, the **MADRUGADA GROUP** has been producing PVC and PVC/aluminium windows at its Palota



site in the western Romanian district of Bihor. The company employs more than 400 people in a two-shift pattern at its vast 40.000 square metre production site, which has the option to expand further. In 2020, turnover amounted to EUR 44 million. A large warehouse for different types of PVC profile, an automatic film-coating system for surface finishing of PVC profiles and a range of state-of-the-art automatic cutting and welding systems all ensure that the company can daily produce up to 1200 PVC and PVC/aluminium windows.

On a visit by one of **LiSEC's** managing directors, CFO Oliver

Pichler, production manager for insulating glass production, Beniamin Buta agreed to talk about why the Madrugada Group opted to establish its own insulating glass line in 2019. The head of production also offered insight into the company's future development and explained how solutions from a single source, LiSEC, are helping to deliver not just top quality but also other benefits to aid the company's success.

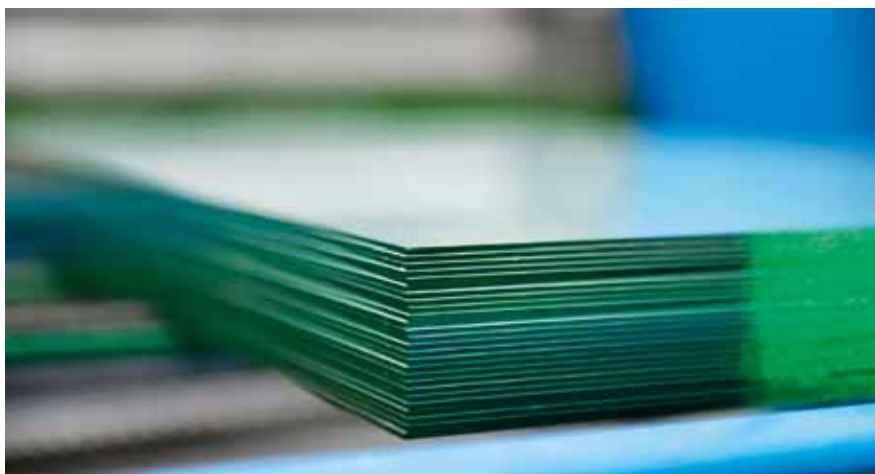
Mr Buta said: "The key determining factor when it comes to LiSEC was the ability to procure machinery and software from a single source. With highly-automated production, information systems and system interfaces are the key to success. Whether it's order entry or production planning, everything needs to interact with the systems and it must be possible to query the status of individual products in real time. Paired with state-of-the-art technology and the high system availability of LiSEC products, this was undoubtedly the right decision. Our aim is to continue working with LiSEC to optimize the insulating glass line one step at a time. To do this, we will continue to analyze the data together, to identify potential for improvement in our organization and to optimize processes. We will then expand production to include an additional shift - thereby further expanding our production capacity. Additionally, we will start planning and implementing a prestressing system and begin expanding the cutting system and sorting buffer. We also plan to simultaneously invest in another insulating glass line for thermoplastic spacers. We are in the fortunate position that demand for our high-quality products is growing, which is why we intend taking advantage of this opportunity in the future."

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

AGC GLASS EUROPE

## New low-carbon glass range announced

To contribute to a sustainable world, **AGC GLASS EUROPE** is committed to developing products that promote sustainable development, and to reducing the environmental impact of its production processes. Now the group is taking its sustainable approach one step further as it announces a new glass range with a significantly reduced carbon footprint, to be launched by the end of 2022. Details will be provided at a press conference at Glasstec 2022 in Düsseldorf, Germany, in September. As part of its roadmap to carbon neutrality, AGC is focusing on switching to new key technologies, sustainable raw materials, alternative energies and increased glass recycling



to avoid process-related, as well as indirect, emissions. Following advanced testing and successful production trials, the company will be producing a new, low-carbon glass range with the possibility of delivering the first orders by the end of 2022.

#### **AGC's roadmap to carbon neutrality**

AGC has already announced its commitment to carbon neutrality by 2050 and has an interim target to reduce direct and indirect CO2 emissions by 30 percent by 2030 (emissions scope 1, 2 and 3 as compared to 2019). The roadmap for achieving this goal, as well as reducing indirect CO2 emissions, includes a raft of actions for the coming years, based upon an integrated approach – from research and development, sourcing and production, moving through the entire supply chain and transportation, and closing the loop according to the cradle-to-cradle approach.

“Achieving carbon neutrality requires a holistic transformation of our glass production,” said Davide Cappellino, President of AGC Architectural Glass Europe & Americas Company. “This ranges from sourcing and using sustainable raw materials and increasing cullet content to the way the glass is melted using new technologies, alternative energies and a growing share of renewable electricity - all without overlooking the design and use of our products to optimize the climate benefits they bring during their lifetime.”

#### **First low-carbon glass range**

The implementation of combined measures at several recently-upgraded furnaces has made it possible to reduce the carbon footprint of part of the group's production. “I am very proud to announce that, with our continued progress in decarbonisation, AGC will launch its first low-carbon glass product range by the end of 2022,” said Cappellino. “This represents a key milestone in our roadmap to carbon neutrality.”

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



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LISEC

## A fully-automated line for Glass Madrid Berlanas

**L**ISEC's latest system -its VSA fully-automated insulating glass line used for applying flexible spacer bands to glass sheets- has only recently gone into operation. Glass Madrid-Berlanas is not only particularly proud of this investment because of the machine's functionalities, it's also one of a kind throughout Spain, which once again underscores the USP and quality of Glass Madrid Berlanas products.

There are a total of 70 employees headed by managing directors Antonio Fernández, Antonio Gómez and Natanael Fernández, who manufacture a wide range of products within the 11.000 square metre production halls of Glass Madrid-Berlanas - all for use in building and architectural projects, namely



windows, exterior railings, façades, exterior and structural glazing, but also sheets of glass for skylights or outdoor furniture. These are just some of the products manufactured with a wide range of machinery.

All in all, there are four glass cutting lines, two intelligent glass storage systems, two insulating glass lines for double and triple insulated glass, four glass bending furnaces and many more machines that enable glass components to be drilled, milled and have their edges processed quickly and with high quality. A pioneering, fully-automated system for applying flexible spacer bands to glass sheets, the VSA from LiSEC, is now another component to support production and better serve Glass Madrid-Berlanas' clients.

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PRODIM

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Said persone at Vetreria Calasso about their experience with **PRODIM's** Proliner Glass package: "Work in our company is performed daily by qualified colleagues who make use of the top technology on the market: the Proliner, which guarantees maximum final-product precision and quality."

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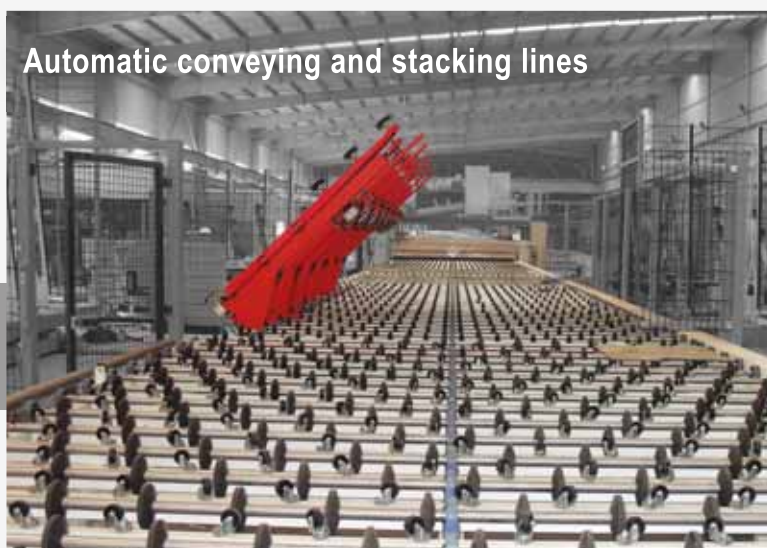
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ALUK and AGC GLASS EUROPE

## Partnership forged - all to develop 'Clara by AluK'

**A**LUK, a global player in the design, development and distribution of aluminium (sliding) window and door systems, and AGC, a leading global producer of flat glass and represented by AGC GLASS EUROPE, have signed a cooperation agreement to develop 'Clara by AluK', a world-pioneering aluminium window with an all-glass sash. 'Clara by AluK' consists of a frameless sash, which is made of 100



percent glass, and a minimalist aluminium frame that lies in the same plane. The razor-thin, unique design is the perfect complement for modern architecture, has excellent energy and acoustic performance, lets in more natural light, offers unlimited design possibilities and provides increased security.

### Wafer-thin design with exceptional insulation

The elegant, continuous glass surface of a Clara window blurs the boundaries between inside and outside. Functional components such as fittings and seals are concealed by elegant enameled glass. In addition, Clara windows are extremely energy-efficient, since they comply with the passive house standard (with a  $U_w$  value of  $1.17 \text{ W/m}^2\text{K}$ ).

### Exclusive partnership

As part of this agreement, AluK will receive exclusivity in Belgium, Luxembourg and the Netherlands for the development and design of aluminium window frames for the 'Clara' window. 'Clara by AluK' will be added to AluK's current portfolio of high quality windows and will be marketed through a network of partners. For AluK, the Clara window sash affords the opportunity to update its product range with a unique product that responds to customer demands for modern comfort. "Our collaboration with AluK means a new step forward for Clara," said Pierre Schneider, Clara Project Manager. "By working together with AluK, we are offering our customers an additional opportunity to personalize their Clara windows. In addition to the design freedom offered by the Clara windows, architects now also have the opportunity to choose the material of the frame: aluminium, wood or both."

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

POLFLAM

## Customers now choose from a broader product selection

**P**OLFLAM develops and classifies system solutions, in cooperation with system suppliers, in 21 fire test laboratories across Europe and the Middle East - while developing new products, fire testing is conducted in POLFLAM laboratories.

POLFLAM has successfully completed a series of fire tests on timber partitions for classifications EW 30, EW 60, EI 30, EI 60, EI 90 and EI 120. These are intended for use in rigid and lightweight supporting constructions. The fire tests were carried out in various fire test laboratories in Poland and Germany and the final test of the series (a partition with POLFLAM® EI 120) took place in early June.

Fire-resistant glazing in timber frames is very popular, especially in Western and Northern European countries. The fire tests with slim timber profiles provide the possibility to use laminated or solid timber with densities of more than  $560 \text{ kg/m}^3$  and without →



← any additional steel clips.

POLFLAM customers can now choose from a broader product selection. During the certification process, monolithic and insulating glass configurations were tested, allowing for the use of single, double and triple insulating glass units, with the use of laminated glass (up to P5A), toughened glass or float glass, as well as with coatings or without. The insulating glass combinations can employ different types of spacer bar materials and take into account fire resistance on both sides. Other important system options include glazing beads on one or both sides, irregular frame shapes, fixing with pins or screws, and pre-fabricated frames with on-site assembly.

POLFLAM fire-resistant glass is well-known for its impressively large glass dimensions. These bigger sizes are also available for the newly-developed timber partition system: the maximum glass size for EI 120 classification is 1.500 by 3.500 millimetres (portrait format) or 3.000 by 1.500 millimetres (landscape format).

For other fire-resistance classifications, the dimensions are 1.800 by 4.200 millimetres or 3.600 by 1.800 millimetres respectively. For butt-jointed glass products in timber partitions, the maximum size of POLFLAM® EI 120 is 2.200 by 3.850 millimetres, and for other classes, 2.400 by 4200 millimetres.

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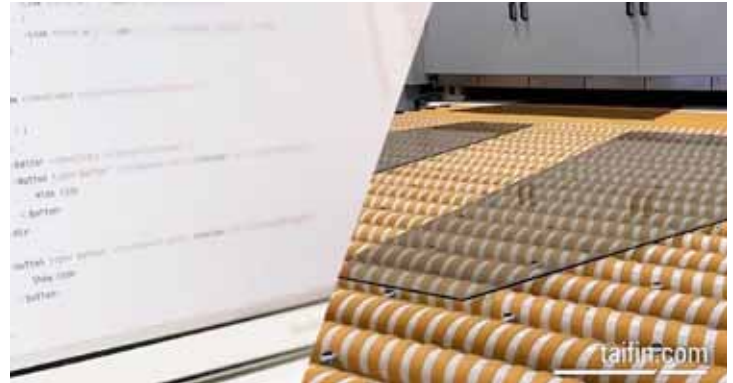
HEGLA TAIFIN and HEGLA HANIC

## Joint batch optimisation

To optimally leverage the production resources of a tempering furnace, the bed load must strictly comply with production and quality requirements. Here HEGLA Group offers an integrated concept for reducing costs while increasing efficiency at the highest level of quality - with **HEGLA TAIFIN** producing machines and systems for high quality tempering and bending of glass and **HEGLA HANIC** supplying all the software solutions needed.

The group's products offer software-supported batch optimisation, automated batch creation and a furnace with a user-friendly control system and self-teaching recipe optimisation.

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



ADVANCED GLASS TECHNOLOGIES and FENZI GROUP

## New technology hub

Fenzi **AGT ADVANCED GLASS TECHNOLOGIES** is considered a quintessential partner in the world of glass, thanks to the elevated quality of its vast range of technologies. With headquarters at its Maastricht plant in the Netherlands near the borders with Belgium and Germany, **FENZI AGT Advanced Glass Technologies** is a true centre of expertise in materials science - operating in tandem with its production facilities in the United States, Mexico, Shanghai and Thailand, together with many other service centres on every continent.

A first-class production plant and advanced industrial research laboratory, it engineers high-performance materials for the glass, ceramics and electronics industries. This multi-purpose facility is equipped with the most cutting-edge tools, including client sup-

port in developing custom products for special projects.

AGT has a wealth of experience in precious metals. It currently designs, develops and produces a vast range of high-tech products for the automotive glass, electronic components, tableware, advanced ceramics and traditional and technical glass markets.

Products such as special glass enamels for the automotive industry, conductive silver pastes, inks made with precious metals, ceramic enamels for decoration of architectural glass, home appliances and hollow glass, all enjoy an outstanding international reputation and set AGT apart as a primary resource for glass manufacturers and processors that aim to produce end-products with the finest qualitative and performance levels - a culture of quality and a quest for excellence that have always been part of Fenzi Group's history.

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



NGA

## New locations for GlassBuild America in 2024 and 2025

**T**he National Glass Association (NGA) has announced new locations for GlassBuild America: The Glass, Window & Door Expo in 2024 and 2025.

In 2024, GlassBuild will be held Monday, September 30 through Wednesday, October 2 in Dallas, Texas, at the Kay Bailey Hutchison Convention Center.

In 2025, GlassBuild will be held Tuesday, November 4 through Thursday, November 6 in Orlando, Florida, at the Orange County Convention Center.

GlassBuild was originally slated for Las Vegas in 2024; however, the Las Vegas Convention Center will be under partial renovation in 2024 and not optimal for GlassBuild that year. Dallas is able to accommodate GlassBuild's size and scope and has excellent facilities along with plentiful hotel options. The Dallas-Fort Worth airport is easily accessible for U.S. and international travelers. Overall, Dallas will be more cost effective for the Association, for exhibitors and for attendees.

GlassBuild was scheduled to head to Atlanta in 2025 but several factors led NGA to look at Orlando, including frequent requests from attendees and exhibitors, a modern convention centre that can hold GlassBuild comfortably, and experience hosting other large construction-industry trade shows like GlassBuild. We are pleased to have secured a beautiful space in the Orange County Convention Center and hotels within walking distance. Orlando's airport welcomes flights from across the U.S. and abroad and Orlando is very accessible from the Port of Miami for international shipments.

"NGA is very excited to share this announcement that GlassBuild America is moving to new cities in 2024 and 2025," said NGA Events Director Molly Grenn in a memo to GlassBuild exhibitors. "We hope to return to Las Vegas in 2026 and Atlanta in 2027."

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



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# FORVET and SIEMENS: partners in a highly productive form of “stop and go” solutions

Forvet has increasingly integrated all its processing steps into consistent, end-to-end complete systems and lines at the cold end in order to reduce throughput time and boost output. One of the newest elements in support of an optimized material flow is Sortiflex, and to operate this system, Forvet is once again opting for a finely tuned and highly flexible motion control system from its long-time partner, Siemens.

Forvet is known in the industry for its high performance flat-glass processing systems, since November 2021 totally part of the Biesse Group. The Italian special machinery manufacturer has a solution for all processing steps, from drilling and milling, grinding and cutting, engraving and mitering, to washing and drying. Forvet has invested a lot of engineering skill in its efforts to integrate the individual steps more and more fully into complete but flexible glass working centers and lines, with significant added value for purchasers of the systems. The result has been drastically reduced throughput time and increased output and revenue.

In 2020, a new element was added that end customers have been deploying in practical applications since 2021 with the great-

est satisfaction: Sortiflex. Sortiflex is an extremely compact, flexible, and energy-saving system for (temporarily) storing and buffering glass in slotted racks and also for sorting and custom-conveying glass to the tempering furnace. In this case, “custom” means that because the coating process takes less time than the step before it, the glass is first collected via Sortiflex, optimized according to size, and conveyed for tempering.

“We developed Sortiflex so that flat-glass producers can control their material



Sortiflex is an extremely compact and flexible system that (temporarily) stores and buffers glass in slotted racks and can sort and convey the glass to the furnace, while also saving energy.



flow even more flexibly in order to improve it,” said Sebastiano Bisotto, Automation Manager at Forvet. “By flexible, we mean that it’s just used in different process steps in glass working and intralogistics, it can also be integrated in overall systems, independent of manufacturer, and configured for a wide range of glass sizes.”

To guarantee flexibility in the process, Forvet patented a key feature of Sortiflex, its buffer function. The unique advantage of this function is that the glass can either come from different sources, be channeled in Sortiflex and, if necessary, be placed in a standby position in the rack – or the glass can come from a single source and be flexibly conveyed to the next process step, includ-



For Sortiflex, long-time Siemens customer Forvet opted for a finely tuned and highly flexible motion control system consisting of a controller, drives, and motors.



ing to multiple lines. The added value is that the sequences are fully automated and the cycle periods are extremely short. Thanks to the faster throughput, manufacturers can be more efficient and more effective.

“Another aspect that our customers value is Sortiflex’s compactness. In this case, too, our engineers invented and patented a special design,” Bisotto explained.

Specifically, the two storage levels double the number of available positions while maintaining the same footprint, which maximizes storage volume without using up





The patented double-deck storage racks double the number of available positions while maintaining the same footprint, which maximizes the storage volume without using up more valuable space in the production hall.

more valuable space in the production hall. In addition to flexibility, speed, and compactness, customers are impressed by the high level of precision that the system achieves, despite the complex requirements.

### MOTION CONTROL SYSTEM CONSISTING OF A CONTROLLER, CONVERTERS, AND MOTORS

That's where Siemens comes in. The company is known for supplying optimized solutions that include all the electrical equipment needed for flat-glass production. Whereas raw material preparation and the furnace process are primarily handled by process automation, drive technology and precise motion control play an extremely important role in the moulding process and later steps. In particular,

the cutting, conveying, distributing, and stacking process steps place high demands on drive technology. For Sortiflex, long-time Siemens customer Forvet opted for a finely tuned and highly flexible motion control system consisting of a controller, drives, and motors. The controller is an extremely compact motion control platform and PLC 1512SP F-1 PN for Profisafe. What was important to Forvet was Safety Integrated via bus and the open, platform independent OPC UA communication standard. The CPU coordinates interactions between the Simotics S-1FK7 servomotors via Sinamics S120 converters. The motors are distinguished by their high over-

load capacity, ruggedness, and compactness. Connection via rotatable connectors and preassembled cables ensures a fast, flexible, and safe link to the converter. As Sortiflex's drive, Sinamics performs both motion and positioning tasks.

The system is connected to a very powerful and robust Simatic IPC477E embedded Panel PC with

a 19-inch TFT Touch on which software patented by Forvet provides services specifically for Sortiflex. What stands out about the PC platform isn't just that it's maintenance-free and flexibly configurable, but also that it's suitable for sophisticated tasks in PC-based automation thanks to

its extremely high industrial compatibility.

"Siemens gave us very good advice on choosing the motion control system and provided expert and personalized support for implementing the turning robots," says Bisotto, adding: "That's why we'll be sure to rely on Siemens' expertise for Forvet's future innovations."



In addition to its flexibility, speed, and compactness, customers are impressed by the high level of precision that the system achieves, despite the complex requirements.



SIEMENS - FORVET

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# HEGLA boosts customer support with maintenance-enabling app

With maintenance being so essential in manufacturing plants today, HEGLA New Technology's Shop-Floor Assistant app comes with a special functionality that will facilitate both maintenance organisation and performance.

Here, prevention is especially valued for anticipating the occasional production stoppage, just as regular checks can ensure that

safety regulations are satisfied. Indeed employees must be mindful now of the many tasks to be performed - from servicing

machines and air conditioning systems to inspecting measuring equipment. And while the list may look short and easy in a cursory memo or upon an

Excel spreadsheet, such jobs may nonetheless accompany difficulties that staff must still resolve. Occasionally the necessary maintenance records will



The maintenance functionality provides an overview of the upcoming maintenance and tickets in all areas at a glance. On the right side, tickets are systematically arranged in detail by asset, and can be viewed for all machines, production resources and technical systems.

be missing or they might end up being pushed back - which results in a tighter turnaround and more pressure on employees, who may also feel that repetitive routine checks represent a burden and come as unnecessary or even a waste of time.

### SHOP-FLOOR ASSISTANT APP

“The productivity of any production department depends upon the efficiency of its machines and available production time,” said HEGLA New Technology Managing Director Markus Schoisswohl when describing the development of HEGLA New Technology’s Shop-Floor Assistant app. “Here’s why creating a well-organised maintenance system that would enable teams to prevent downtime and maintain performance has been among our chief goals.”

### MAINTENANCE REQUIREMENTS TRANSFORMED BY TECHNOLOGICAL PROGRESS

In glass processing companies, technological progress has boosted performance significantly - also leading to changes in maintenance requirements. On any given day, there are sensors to be checked, containers to be emptied and production resources to be refilled. Not only. Annual maintenance is required for production resources like racks and

chain hoists, while designated wear parts need to be replaced at specific intervals. “The more machines a company has, the harder it is to keep track of things – especially if the team in question is not only responsible for production but for all the technology as well,” said Schoisswohl. “There’s a lot of different tasks to carry out, so everything must be organised and you need a clear idea of who’s in charge of what.”

app will start sending individual employees, the whole team, or supervisor alerts for upcoming deadlines and work as required. Furthermore, documentation, maintenance instructions, spare parts lists and all other papers, data and sketches can be stored in the app cloud so users can all stay abreast of the current status - no matter where they find themselves. Said Schoisswohl: “Experience has shown us that searching for

when someone orders or reserves them via the app. The app also features a ticket function. This allows users to set the various tasks to any time while assigning them to an in-house technician for completion – be it spontaneously on the shop floor or later in the office. Photos can also be added to the tick to provide more clarity and document the work. The structuring app system offers advantages

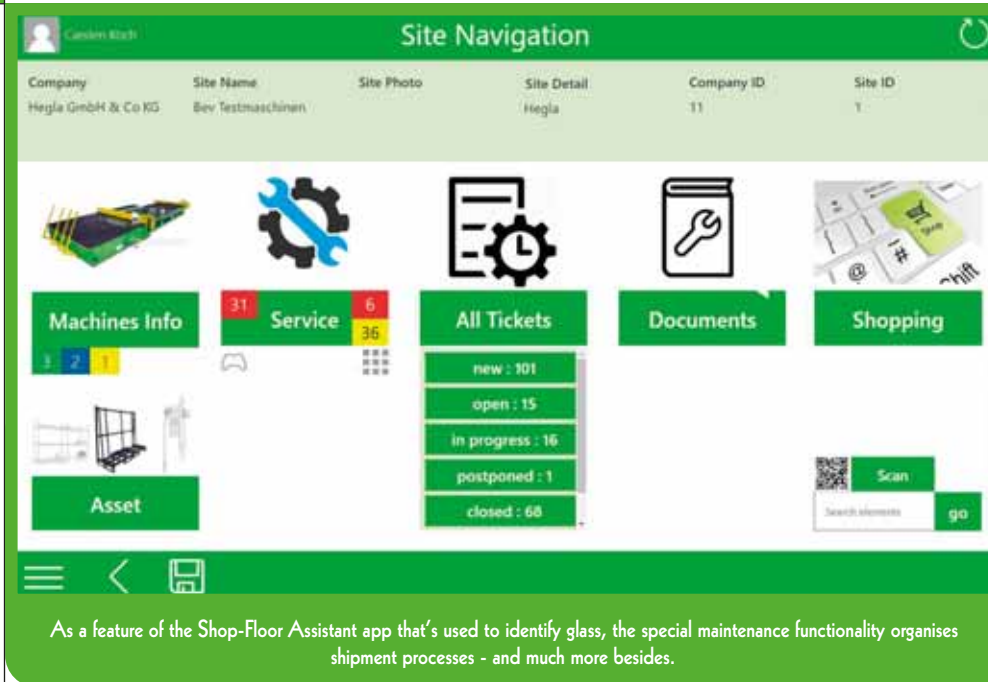
The app stores all required maintenance for the company’s machines and technical systems – from cutting tables to air conditioning systems. A deadline and task overview can be accessed from anywhere and associated documents can be viewed directly in the app.

### ALL TECHNICAL SYSTEMS IN ONE APP

The app’s maintenance area keeps a centralised record of all the company’s technical systems and machines, along with the respective maintenance intervals. As soon as it’s activated, the

the required manufacturer’s instructions and spare parts lists regularly leads to unplanned interruptions and frustration on the part of staff.” It’s also possible to store a list of the required wear parts for each maintenance activity to ensure they are supplied on time

for almost every production or administration employee. Users can forward requests for maintenance or support straight away without knowing exactly who they need to speak to, which is an elegant way of ensuring that no one forgets what needs to be done.



## ORGANISED COMPLETION PROCESS WITH PROOF OF WORK

In the app, team leads can see which maintenance tasks and tickets have been completed and which are still being processed. This makes it possible to track the activity sequence, with records being used as potential proof of work to show to manufacturers. The records also

come with another feature to make investment planning easier: frequent repairs will indicate vulnerabilities and weaknesses in individual machines. An increasing number of tickets in the log for a particular system will provide valuable input for the company's investment strategy.

"Another of the main advantages the app offers is the

ability to store exact records and documentation of mandatory safety inspections at a central location that's always accessible," added Schoisswohl. "It not only provides alerts on upcoming inspections but also enables employees to present proof at any time."

All this explains why many Hegla customers have already placed their trust in

the Shop-Floor Assistant, which is also in use by employees at HEGLA Production Engineering. For Managing Director Andreas Fried of Plattling-based company AGC Interpane, the centralised provision of tickets, deadlines, and maintenance information are all major advantages in a cross-manufacturer environment. Said Fried: "Our entire team can now access documentation for all our technical systems, and they always have a comprehensive overview of which tasks are coming up next. It clearly shows what needs to be done, what priority each task has, and what has already been completed."

As part of the Shop-Floor Assistant app from HEGLA New Technology, the maintenance functionality can be extended with customer-specific functions like a digital rack search, scanning for glass identification or functionality for organising warehouse and logistics departments. The app aims to network the various departments and integrate different manufacturer solutions into a single, independent system.

Barcode	Last Maintenance done	Comment	Maintenance	ID
A_0145	23.04.2021 08:53	alles gut	23.04.2022 08:53	1716
A528	28.04.2021 14:21	alles >OK	28.04.2022 14:21	1739
aw234	18.05.2021 11:42		18.05.2022 11:42	1816
A042	19.05.2021 11:05		19.05.2022 11:05	1834
A104	25.05.2021 15:59		25.05.2022 15:59	1851
L312	11.06.2021 09:58		11.06.2022 09:58	1897

All maintenance deadlines are stored in the app, so users can track whether or not maintenance work has been performed. Depending on the configuration, users can see which employee has carried out which task, how much time was taken and which tasks were completed.

Hegla GmbH & Co. Kg



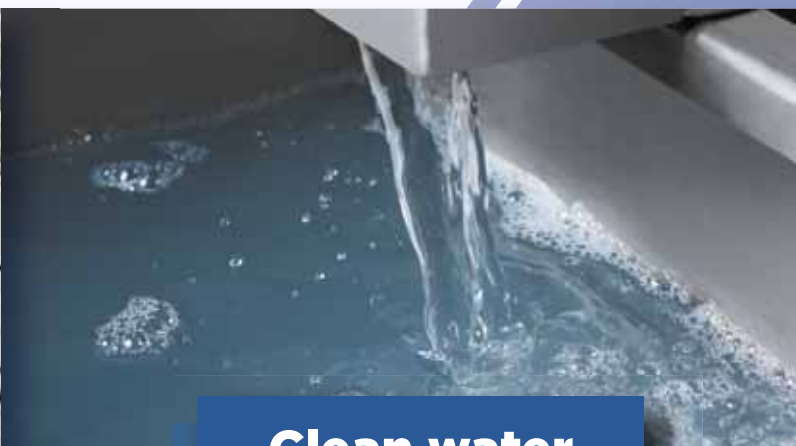
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# The SURFACES GROUP, with ADI, RBM and Vincent, at Glasstec 2022

The Glass Business Unit of Surfaces will be in Düsseldorf to promote, once again, the value of Italian mechanics for glass processing. It is in fact an especially meaningful participation: Vincent will also be there alongside ADI and RBM Italia after regaining its autonomy in Italy.

## VINCENT IS BACK IN ITALY

Vincent spent thirty years as part of the Tyrolit group, which helped it become a household name in the world. In 2021, Vincent left the Austrian parent company and chose to join the Surfaces group, specialized in application solutions for surface processing. As the respected company returned to its Italian origins it also resumed back to its original name, Vincent.

The Surfaces group has developed a unique multi-sector expertise in ceramics and glass, stone and composite materials. At the same time, Vincent has been developing diamond tools for 38 years and its headquarters in Thiene is the home of an important technological research and product development centre.

In the year the United Nations declared as the National Year of Glass, the Glass Business Unit of Surfaces Group takes the opportunity to introduce three goals that have been a constant reference for the





sector: increasing production capacity, promoting high speed in industrial processes, whilst also containing the final TCO.

### INNOVATIONS WITHIN THE GROUP

In recent years, the three companies of the Surfaces Group, ADI, RBM Italia and Vincent, have made it

possible to develop new applications for high-speed processes with innovative and hybrid bonds that guarantee excellent results, durability over time, whilst eliminating the collateral risks of processing splinters. In fact, new bonds have been designed, which combine winning performance tools with durability.

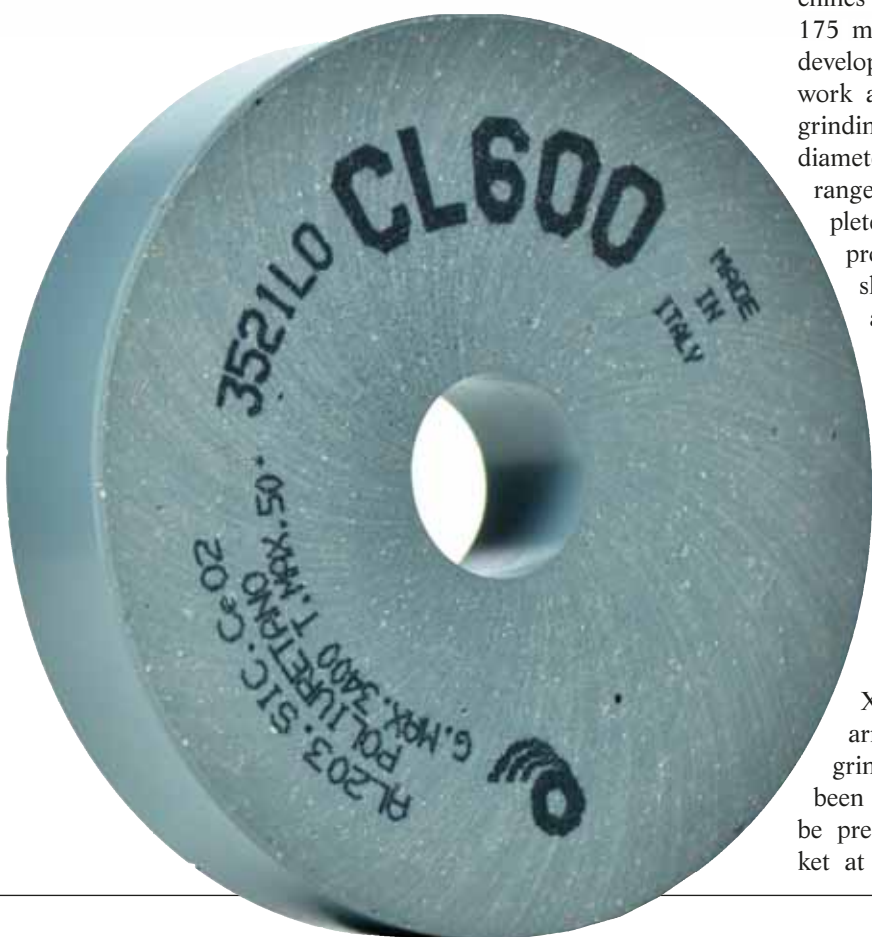
A concrete example is the new range of STARFLEX grinding wheels by Vincent. It is a calibrated set of metal bond and resin cup grinding wheels that, combined with specific geometry and innovative formulations, allows high removal and high feed speeds. Initially designed for application on double edge grinding machines (with a diameter of 175 mm), they have been developed and tested to work also on straight-line grinding machines (with a diameter of 150 mm). The range comes with a complete universal kit that processes both ultra-slim sheets and thick and laminated glass.

**RBM Italia**, which has always been a point of reference for all edge polishing operations, will also present its hybrid solutions. Alongside the already famous semi-rigid cerium grinding wheels X510 and RP320 for arris, the new CL600 grinding wheel has been developed and will be presented to the market at Glasstec. Used for

the final polishing phase on CNC systems, it allows achieving excellent levels of gloss, working at very high speeds, without producing splinters or scratches, thanks to a new semi-rigid polyurethane bonds.

Similarly, **ADI UHS**<sup>®</sup> range dedicated to both vertical and horizontal CNCs, a must-have for automotive production, has gained a significant market share in the solar panel and architectural sectors. Tools that allow a simple and fast set-up, remarkable durability at high speeds, without chipping.

In Düsseldorf, ADI will also launch a new product, which is the result of the company's continuously growing expertise.



### SURFACES GROUP



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# FOREL at Glasstec: automation, innovation and bestsellers

As a proud, interrupted supporter of Glasstec Dusseldorf since the 1980s, Forel SpA has remained consistently committed to exhibiting its very latest innovation and automation for the flat glass industry - a forty-year participation that's crowned in 2022 with even greater floorspace in celebration of the International Year of Glass.

With a fresh new stand design and layout for this milestone event for the glass industry, Forel has chosen once again to confirm its participation at Glasstec this year after the forced hiatus of 2020. Given the special significance of the upcoming edition in Dusseldorf from 20-23 September, which coincides with the International Year of Glass, the company has sought to enhance its visitor experience by becoming one of the event's 'must-see displays'. Here it will showcase innovative solutions, next level automation as well as best sellers in insulating glass assembly, integrated logistics and vertical processing.

### INSULATING GLASS LINE WITH INTEGRATED LOGISTICS

The latest addition to the Forel range of automation will be in operation at Glasstec '22: a fully-automatic IGU line complete with thermoplastic spacer. Developed in accordance with Industry 4.0 principles, this line can be managed from a single workstation - delivering high productivity, precision and quality as well as a highly-reduced manpower equivalent. The line is automatically-loaded from the Art. SS Sorting System,

Forel's stock handling and storage system for glass sheet management during production that's capable of automating output from production control software and programming. Exhibited for the first time at Glasstec, the Sorting System has clear advantages, which include illuminated bottlenecks, sequence errors and indecision - all with clear gains in output, process control, safety and quality.

### THE ART. TA THERMOPLASTIC APPLICATOR

At the heart of this 'high tech', double-glazing line is

the new Art. TA Thermoplastic Applicator, which is designed and developed for both ease of use and continuous productivity - extruding and applying the thermoplastic product with precision and accuracy. The software already contains the most used production programs commonly-associated with the various requirements related to this kind of IGU. The interface is very user-friendly, simple to understand and intuitive to operational demands. The applicator's automation is key to high productivity, with options to automatically change profile thickness,

corner radius and viscosity via simple modifications to work parameters - all directly from the PC. The thermoplastic spacer is continuously processed through the system via a tandem pump unit which consists of two precision accumulators that feed the application head. This configuration proves particularly beneficial when it comes to product replenishment - allowing non-stop changeover of the drums and any associated loss in production. Due to the characteristics of the thermoplastic spacer, the temperature of the product is monitored and controlled







automatically throughout the extrusion process.

## FOR EVERY KIND OF SPACER

The line proceeds with a series of innovative features to accommodate specific characteristics of the panels. Among these, Forel has paid particular attention to the Art. AP coupling press - developing a dedicated option that allows the module to process both traditional rigid spacer bar and thermoplastic glass production. The final step of the lines process is usually entrusted to the Art. SR 'High Tech' sealing robot - already widely-appreciated for its production of insulating glass units with either rigid or flexible profiles. Here the process is completed with the new Art. GU automatic unloading system. Upon being sealed, the finished panels are managed by a special vertical suction cup table that gently

deposits the units onto waiting trolleys at the front of the production line. This system ensures precise placement of the successive unit so it rests on the previous panel without any risk of damage. Once the first side of the trolley has been fully-loaded it can rotate on itself, thereby facilitating continuation of the unloading process. The Art. GU model set to be exhibited at Glasstec features a unique system that allows for safe storage of both rigid profile panels and those produced with a thermoplastic spacer. Forel will also be exhibiting machinery options for the preparation of a traditional rigid spacer, namely the Profile Bender Art. PB, Desiccant Loader Art. DF and Manual Butyl Applicator Art. MB. The profile bender has been enriched with a series of innovations by which to bend a plastic "warm edge" spacer - so offering a perfect 90° corner thanks to

its patented Smart Arm technology.

## THE VERTICAL EDGE PROCESSING RANGE

At Glasstec 2022, for the very first time, the entire range for vertical edge processing will be displayed and demonstrated at the same event. The vertical edge processing line that will be in operation -widely regarded as world-class and conspicuously excellent within the industry- consists of the Art. EM Edging Machine, the Art. DM Drilling Milling Machine and the Art. VW washing machine. The combination of machinery modules can perform multiple processing tasks, including arrissing, grinding, polishing, milling and drilling - all completed by final washing to both the monolithic and laminated glass sheets. Three in-line machines with independent solutions capable of operating simultaneously on different glass

sheets are simply managed from onboard software, increasing productivity and quality. The Art. EM and Art. DM modules have a proven, worldwide reputation for stability and accuracy - both essential in delivering the required result. The 'sister line', known for its high output, is the Forel arrissing line, which consists of the Art. EG Arrissing Machine and the Art. VW washing machine. It's specifically designed for glass processors who need to remove the sharp edges and micro fractures of glass with minimal setup and maximized output. The Art. EG shares the entire patent package of the range, with its two operating heads that guarantee remarkable speed of execution. Thanks to its configuration, the arrissing machine can process two separate sheets either simultaneously or as one large sheet in a single pass - both at high-speed precision. All Forel vertical edge processing machines use standard diamond encrusted grinding tools that guarantee both high quality edge work and extended life cycle.

FOREL SpA

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## Our experience, your projects

Mole Moreschi has a know-how and direct experience in the production of diamond wheels and tools for glass processing, that are the result of 101 years of production. They have been the first in the production and development of the resin wheels, today Mole Moreschi has a complete range of standard and special tools for the glass industry, with a very high quality.

The sales and distribution network is winning not only for the quality and timing of the service, but also on the technical knowledge of his distributors that can assist and suggest the tools.

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# INTERMAC takes the spotlight with its synergy-optimising solutions

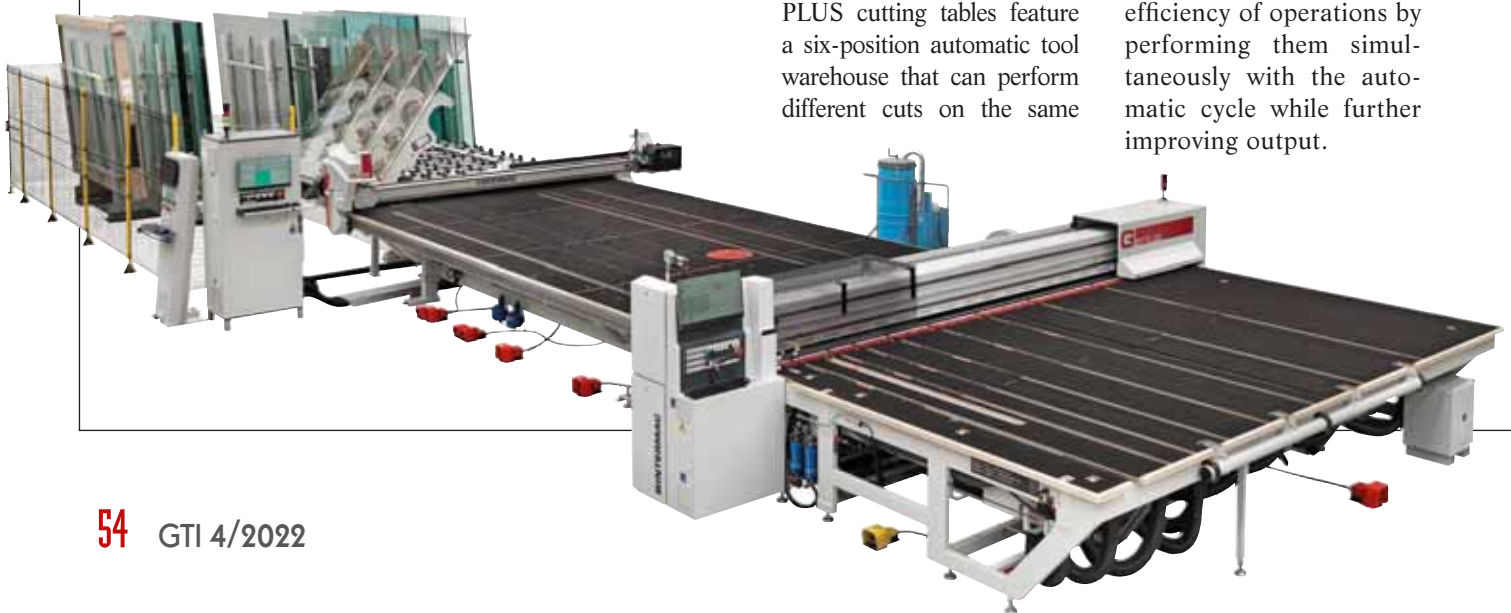
Having always had a strong focus on the development of fresh solutions that can capably reflect market trends, INTERMAC's many innovations over the last decade still create efficiency as they continue to promote automation in machining operations for cutting both laminated and monolithic glass.

Intermac's pioneering spirit has given rise to the Genius Comby series - all integrated high-productivity lines that result from an intelligent combination of a cutting table for monolithic glass (Genius CT-PLUS) and another for laminated glass (Genius LM-A). Indeed, Comby Plus solutions are synonymous with innovation, guaranteeing high productivity in small spaces (courtesy of the Intermac-patented, vertical buffer) on the float glass table, float glass static breaking function and the option of breaking bars that are integrated with the belts. Here, in order to guarantee the highest processing quality and the best possible results, Genius CT-PLUS cutting tables feature a six-position automatic tool warehouse that can perform different cuts on the same

sheet - using the most suitable tool each time.

## INTELLIGENT COMBINATIONS

Comby solutions guarantee a 20 percent reduction in the production area required for machining operations without compromising the productivity of the line, as well as an increase of up to 60 percent in productivity for laminated glass as compared to any normal combined solution. With the Comby innovation, the operator becomes an integral part of the machining sequence. This means s/he can interact with the machine, increasing the efficiency of operations by performing them simultaneously with the automatic cycle while further improving output.





## GENIUS LM - AN EXCELLENT COMBINATION OF QUALITY AND PRECISION

Genius LM is Intermac's range of cutting benches for laminated glass. It consists of several models and sizes - all designed to meet the needs of companies with a host of different requirements. Genius LM guarantees optimum ease of use, taking an intuitive approach to machining operations on glass of all thicknesses. Not only. Genius LM-A enables the laminated glass-cutting process via automation, facilitating the handling of both the sheet and crosspiece whilst significantly increasing pro-

ductivity with innovative and patented solutions - from glass loading to unloading.

The LM range is characterised by:

- Simple, intuitive technology;
- Ease of use, thanks to the machine ergonomics;
- Compact working dimensions;

• Excellent cutting precision. The LM-A range also offers:

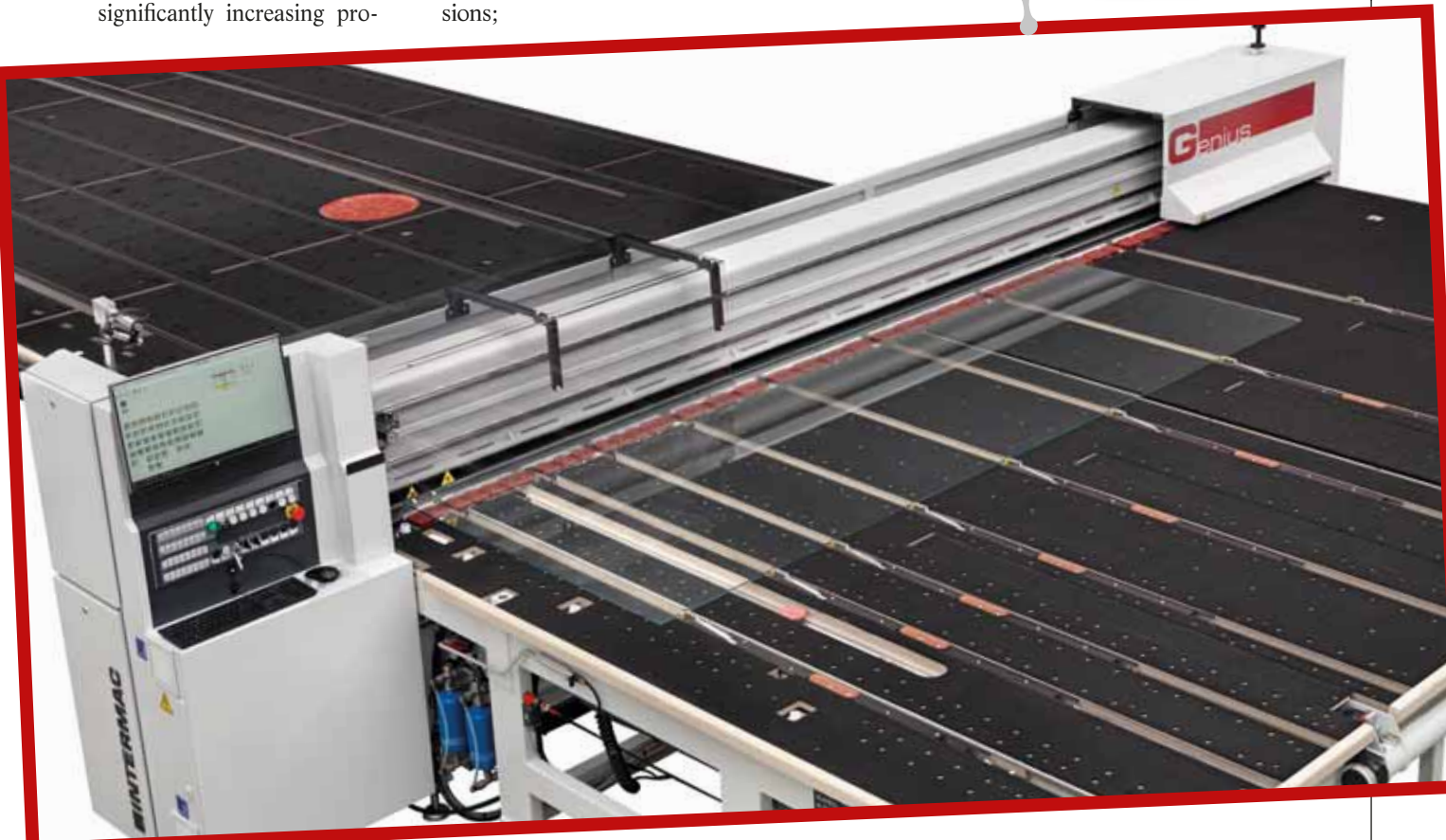
- Automation of processes and glass handling within limited spaces;
- Reduced cycle times;
- Assisted-control diagonal cutting;
- Shaped cuts of laminate



Intermac

**INTERMAC**

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# INDUSTRIAL (R)EVOLUTION



## LASER GUIDED INLOADER TRANSPORTERS PTN 330 LGV



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### THE SMART CHOICE FOR PRODUCTIVITY

Because using Italcarelli® increases productivity by reducing glass handling times



### THE SMART CHOICE FOR OUR ADAPTABILITY

Because Italcarelli® machines are tailor-made for every customer and adapted to meet individual needs



# ITALCARRELLI's latest systems for LGV inloaders

In consistently striving to stay abreast of the changing needs of its customers, Italcarelli has increasingly been studying the performance of handling solutions and automation as the company develops avant-garde, autonomously guided vehicles (AGV) - together with related services.

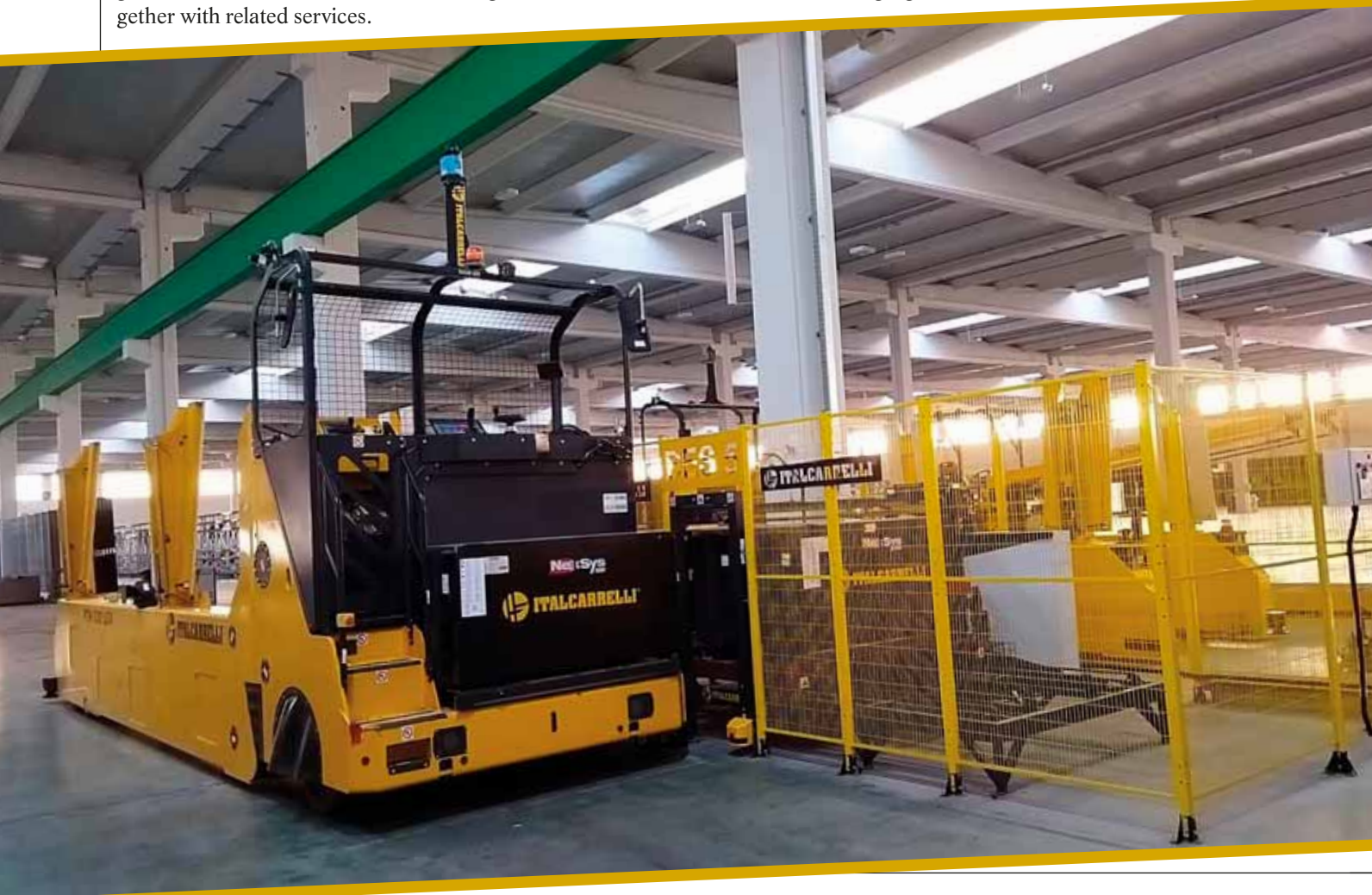
Now, after designing and rendering operational its LGV (Laser Guided Vehicles) transporters all over the world, the company is constantly revolutionising float glass factory logistics with its latest systems - all developed by Italcarelli engineers - for its

LGV PTN inloader series, which functions with no operators aboard: namely the BES, RDS & RIS respectively.

## **BATTERY EXCHANGE STATION (BES)**

The BES system allows automatic recharging and

replacement of the battery aboard the LGV inloader. Here the discharged battery can be replaced automatically and the low battery LGV will automatically move to the BES to swap the battery with a charged one





At Italcarelli the glass division and R&D department continue to focus on product innovation as flat glass manufacturing plants transition ever more towards connected systems that are both intelligent and autonomous - with high-performance handling machinery that must yield flexible, efficient logistics results.

Thus, with Italcarelli's high safety and quality standards, coupled with its continuous development in robotics, software and services, the company aims to provide its next generation self-propelled transporters - ever striving to pioneer more technologically advanced features.

- an operation that takes about 4 min. Thanks to BES, Italcarelli has increased the operation of its LGV machines considerably, with prolonged battery recharging stops no longer necessary. The BES station is also available for standard on-board operator vehicles.

### RACK DETECTING SYSTEM (RDS)

The RDS is an innovative localization system that allows for rack type identification as well as load configuration. It can be installed upon both AGVs and manually-guided machines to help operators during handling operations. Various electronic sensors are placed on the inloader to provide all the data: encoder, photocells and ultrasonic sensors. By this technology, the system can detect when the rack is present, if it's an "A" or "L" frame, whether it's empty or loaded and, if so, whether it's loaded



with jumbo or LES glass. Not only. The transporter slows down automatically whilst loading, thereby stopping to avoid hitting the rack at loading.

### RACK IDENTIFICATION SYSTEM (RIS)

The vehicle can also be equipped with RIS,

which allows for either barcode scanning or for reading of an RFID tag that bears rack information - then automatically transmitting this data to the Warehouse Management Software, or ERP. In this way, it's possible to know the exact location of both glass and racks at any given time.

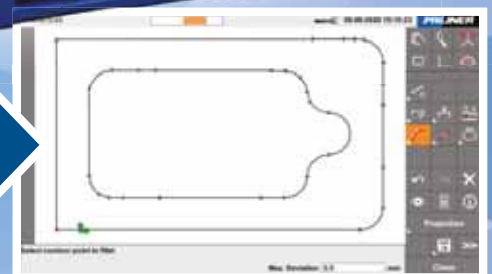
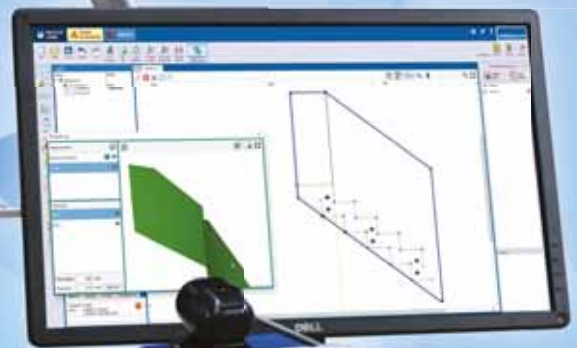
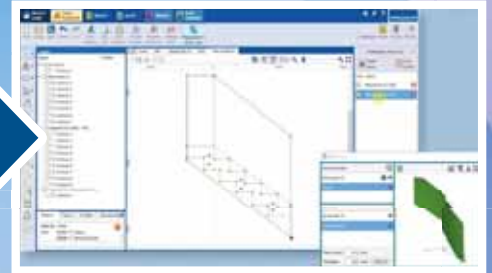
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# ROLLMAC launches its new JUMBOGLASS 3400 at Glasstec

**J**UMBOGLASS 3400 is a roller-coater equipped with a tubular, welded steel framework for unmatched torsional resistance - affording the possibility of larger glass sheet processing via expansion of the working width. The machine was developed by technicians following detailed analysis and tests on the working life-cy-

As specialist in glass machinery, ROLLMAC prepares to exhibit its reverse roller technology at Glasstec - 'all rolled up' in its machine for the continuous enameling and printing of jumbo size float glass sheets







cle of smaller models within the Rollmac range.

For large sheets typically used as structural glass and for outdoor construction (such as, for example, skyscraper wall cladding), the new solution by Rollmac, a division of GEMATA Spa, works with an engraved roller in reverse mode and has a maximum working width of 3300 mm and a sheet thickness from 2 to 19 mm. Coating quantity can be set from 50 g/m<sup>2</sup> to 350 g/m<sup>2</sup> (i.e. from 30 up to 220 microns) in a single step.

### SOME ROLLER-COATER SPECS

As with all Rollmac machines, the roller-coater has a special anti-dripping device guaranteeing uniform, precise surface coverage - thus avoiding the accumulation of paint at the leading and trailing edges of sheets. Another attractive feature is the possibility of aligned

positioning with the GLASSLINE 3400 perimeter edge-bander, as well as space optimization that allows customers to have two machines operating simultaneously.

Furthermore, the machine offers the following innovative options:

- a tilting, ergonomic feeding belt that's positioned at the front of the machine, allowing for easy replacement of the rubber sleeve;
- an automatic washing system of the engraved sleeve to facilitate cleaning operations at the end of processing and colour change;
- a rollers storage system located at the upper part of the machine, independent of its main body, which solves logistical problems of depositing unused sleeves as well as those related to greater operator safety given that it fa-

cilitates sleeve insertion in the working position.

### TECHNICAL CHARACTERISTICS OF THE NEW JUMBOGLASS 3400

- a main conveyor belt of special rubber that's highly resistant to oils and solvents. The conveyor belt can be quickly and easily replaced from the front side of the machine (feeding side);
- a roller holder with one position and a quick-change system for the engraved roller;
- centesimal variation of the working thickness via digital indicator, LH/RH side ei-

ther independent or in tandem. This setting is achieved by vertical positioning of the engraved roller by two jacks with a synchronization shaft that's driven by a gear motor;

- automatic positioning of the engraved roller (edge anti-dripping device) in order to avoid excess delivery of paint at the glass sheet entry edge.

ROLLMAC

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# DIAMUT unleashes Hyper-Speed tools with unprecedented performance

**D**iamut is a brand leader in the production and sale of tools for working glass, stone and ceramic materials, used on the majority of the machines on the market. Thanks to over 30 years of experience in the sector, in-depth specialised technical awareness and to consolidated knowledge of production processes Diamut was able to develop Hyper-Speed: a new range of high speed tools, ideal for vertical and horizontal grinding machines, developed to help customers boost the productivity of their production cycles.

## INNOVATIVE NEW GRINDING WHEEL

The set of Hyper-Speed grinding wheels consists of an innovative segmented grinder with filler, the newly designed continuous band grinder and the polishing grinder. Manufacturing this set requires production processes that differ from the standard processes used for the creation of traditional grinding wheels. The key novelty is the addition of a resin as a filler in the segmented grinder, which fills the gaps between the segments and

guarantees a very high level finish, reducing the size of the shards compared to those left by a traditional open segment grinder.

In addition, the roughing grinder in the Hyper-Speed set, designed with a special profile that removes 80 percent of the material, en-

sures that the second pass with the next grinder operates on glass that has been pre-shaped and therefore has less material to remove, which saves time, boosting efficiency and sparing the profile of the subsequent grinder.





Diamut's new Hyper-Speed tools were developed to help customers boost the productivity of their production cycles. They feature faster and more glass processing while also boasting more efficient cooling, lower environmental impact, and reduced waste disposal costs derived from material processing.

## HIGH PERFORMANCE BINDER

Another strength of Hyper-Speed grinder is the new high-performance binder, derived from the Automotive sector. The binder was obtained through new sintering technology that allows for increases in temperature and pressure to be controlled constantly during the cycle. This process enables the production of binders with an elevated fluid phase that contain metals to help reduce the temperature on the piece during grinding.

Furthermore, the continuous band grinding wheel for finishing is equipped with a high number of open cuts, optimising the flow of the refrigerant fluid and of the material being removed. All of these factors produce a noticeable increase in performance: for example, on 10 millimetre thick glass, trapezoidal shape, there's a close to 60 percent increase compared to grinding with traditional tools. In terms of metres per minute, the change is from 4 metres per minute with the traditional line, to 6 metres per minute with the Hyper-Speed Line. Meanwhile, for 6 millimetre thick glass, with a trapezoidal profile and double pass, the increase is even greater, with performance improving by 100 percent. One final example is provided

by the single pass grinding of a 4 mm neck profile. In this case the change is from 10 metres fed per minute with traditional tools to 20 metres fed per minute with Hyper-Speed tools, a 100 percent increase.

In all cases, the elevated feed speed does not put additional strain on the machine and in no way harms the lifespan of the components. In fact, tests conducted during the development phase monitored compliance with all machining, and therefore exertion, parameters.

The new Hyper-Speed line makes optimal use of geometry and technology to achieve feed speeds that would be unthinkable with traditional grinders, borrowing from the peculiarities of tools used in the Automotive sector.

Hyper-Speed is the answer to the market's unmet need for ever-higher speed and performance levels, while maintaining high quality standards.

Diamut's commitment to research and innovation has led to the definition of a new cobalt-free binder used on all products. This latest generation binder has been made using metal powders with a low environmental impact and are not harmful to the health of operators. The use of cobalt-free powders provides a benefit to the op-



erator during the entire production process of the tool, including the disposal of its processing waste. It also represents an important advantage for customers by granting a savings on waste disposal costs deriving from material processing.

The most advanced technology for the tool manufacturing process and the great know-how of the Diamut staff are the keys to its success in achieving top quality standards in the sector, and the secret

strength of an organisation that knows how to hear the needs of individual customers and respond by designing not just tools, but complete solutions.

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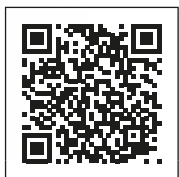


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# Glasstec 2022 has **RCN SOLUTIONS** already reared for action

This year, as the 26th edition of Glasstec opens its doors under the motto 'Let's go live', RCN SOLUTIONS comes all set to exhibit its technological novelties of the last two years at Hall 16 Stand C04 as global industry players converge on this international trade show of the glass world.

**N**ow, after having twice been delayed owing to the pandemic, 2022 sees Glasstec assuming its role once again of approximating different glass production realities within. This edition will have RCN Solutions leaving its traditional stand location to join that of Gimav - where all the excellence of Made in Italy will be located. Here, over an area that spans 174

sq m, the company will display its new Multiplied laminating line which, thanks to its versatile construction, allows for machine manufacturing that goes beyond oversizing while having IT services controlling both production and machine operativity.

## **A TRIO OF MACHINE LINES**

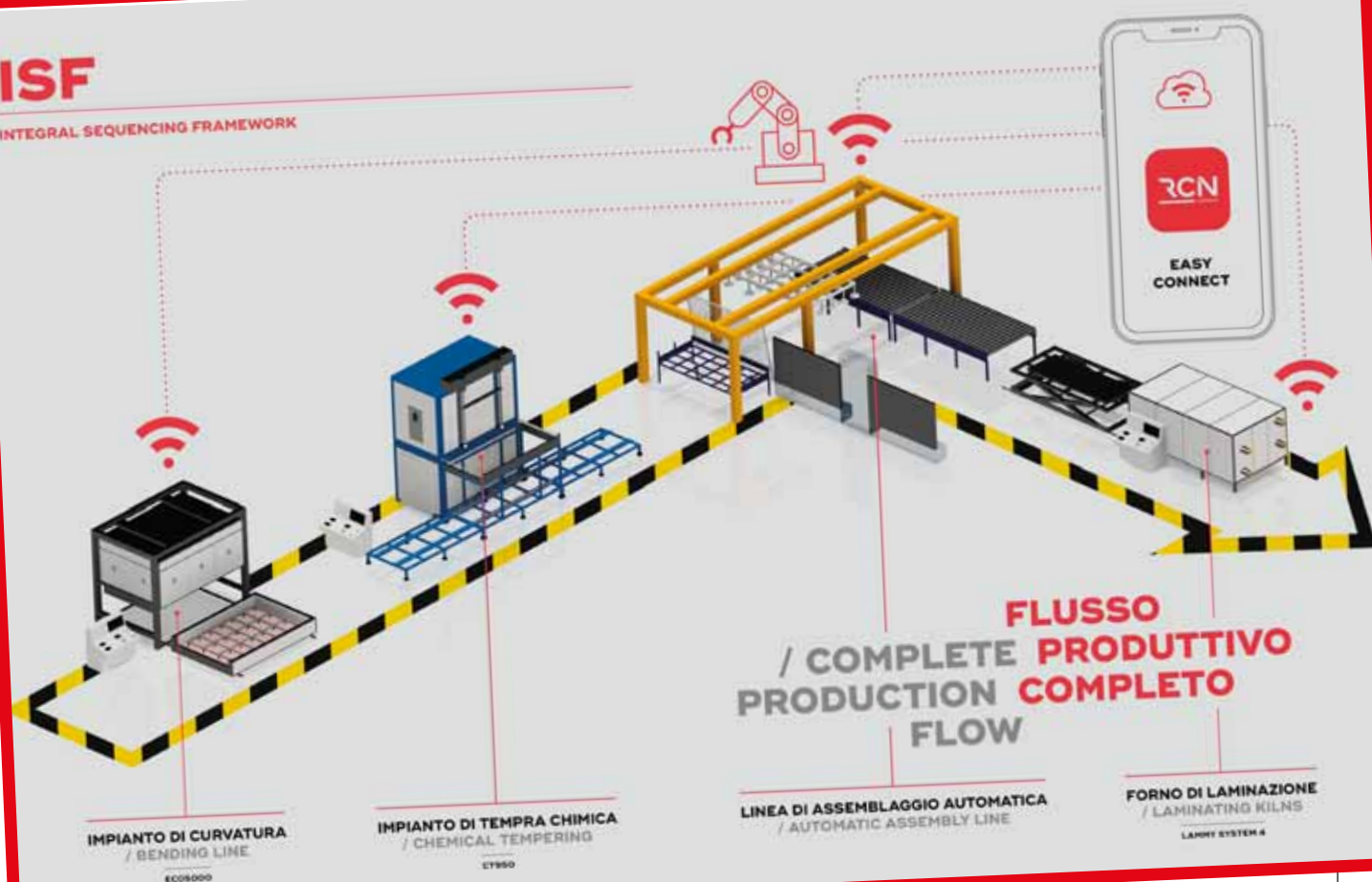
The three machines lines, namely bending, lami-





**ISF**

INTEGRAL SEQUENCING FRAMEWORK



tion and chemical tempering, come as a great opportunity for glaziers of either small or big companies to complete their machinery while diversifying and offering added value to their customers in production terms. Named ISF (Integrated Sequence Framework), this RCN proposal is a turnkey layout for safety glass production.

Today RCN safety glass has become synonymous with one key product, namely REVA BF - the company's laminating interlayer that's more than doubled sales worldwide over the past two years thanks to its elevated quality and ability to respond to the most demanding lamination requirements. Other properties include that of high

adhesion capacity on glass of 12kg/cm<sup>2</sup> as well as a superb light transmission rate of >91. Most of all, the use of new raw materials of excellent quality - all supplied by international manufacturers such as DuPont, and without resin recycling - serve as the basic ingredients for this quality result. Here several sizes and thicknesses are available, whether for small or high volumes, with new certifications from the Rosenheim Institute being available too.

### RD CLEAN CONCEPT

Visitors can also check out options for upgrading and automating RCN machines - jumbo sizes included. Here the RD CLEAN CONCEPT, a true novelty

launched in spring 2021, is a system that will clean edges following lamination - all designed, tested and manufactured by RCN and with its patent pending. Exclusive to RCN, the system is already getting much attention and meeting with great approval. It ensures there's no need to remove EVA excess from glass edges after lamination - resulting in savings in both time and labour. Not only. Since the edges require no tools or sharp instruments in cleaning, there's no injury risk - which means greater operator safety. Besides, the laminated glass is already pronto for delivery and can be immediately installed at the close of the cycle. Already since its launch, RD CLEAN CONCEPT is in demand, with

90 units so far installed both in Italy and abroad - and with as many satisfied customers. Here's why visitors to the RCN stand will be able to see upfront how RD CLEAN CONCEPT performs as well as talking to the inventor of the innovation.

### CHEMICAL TEMPERING

Chemical tempering will bring some novelties of its own respecting different types of glass and, in particular, various thicknesses and applications.

Proud to serve companies of international acclaim like AGC and Schott, RCN SOLUTIONS stands out for its reliability as well as its attention to the problems of clients as they scout for solutions that can satisfy what they're

after in terms of capability and investment. Thanks to RCN's commitment, chemical tempering isn't merely a job that's limited to certain products alone. Instead the strength afforded by this process, hand-in-hand with lamination, makes it an end-quality product that well exceeds other options and responds to various sectors from optics and aviation to naval and -why not- even some cup types.

### CORE COMPANY VALUES

Each RCN product is known for its quality, durability and performance. Indeed this attention to quality in choosing raw materials and components hails from a circumspect selection that has the Made in Italy standard ever paramount. All this has contributed to raising the company to prominence

on the international market such that it offers a customer service that seeks to be always more efficient and organized.

For clients, the company aims to remain daily focused upon customiza-

tion and project feasibility. Here, together with its products, RCN brings its coveted core values to the table: listening to clients, being a determined and cohesively synergistic team while remaining motivated, attentive and always ready for a welcoming smile.

Under the RCN motto "what's essential is better", construction of the company's philosophy has opted for uncomplicated structures and a heart that beats with regularity and precision. Its machines are simple whilst seeking to advance a functional technology that can yield a final, daily result that strives for perfection. To this end, RCN machines are equipped with every control system and man-machine interaction to respond to Industry 4.0

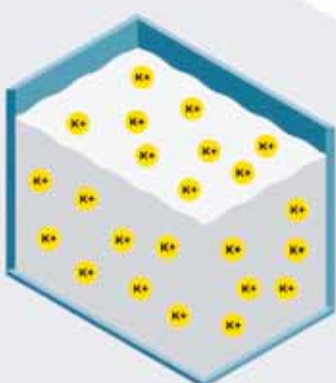
Here, specifically, the maximization of produc-

tion processes allows for savings in costs, time and human resources to benefit special, competitive products. One more driving motivation that has the RCN team all set to hit Glasstec 2022 to share golden moments with its stand visitors as industry lovers prepare to rediscover the world of glass together.


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#### ADVANTAGES OF GLASS CHEMICALLY TEMPERED

- + No surface distortion
- + Workable after the tempering process
- + High mechanical resistance
- + High durability

#### SPECIFICATIONS OF THE CHEMICAL TEMPERING PROCESS

- Based on ionic exchange +
- between sodium and potassium
- Tempering any size and shape +
- Resistance to scratches +
- High resistance +
- to thermal shock

## CHEMICAL TEMPERING

# THE TECHNICAL ALTERNATIVE TO GLASS HARDENING

CONTACT US FOR FURTHER INFORMATION

[rcnsolutions.it](http://rcnsolutions.it)

# EDGE TECH to showcase its Super Spacer<sup>®</sup> TriSeal<sup>™</sup> for glass wave façades





With ever greater façade transparency that's free of visible support structures being among the hottest industry trends today, EDGETECH now prepares to exhibit its innovations for modern glass architecture in the run up to Glasstec 2022.

**H**eld annually since 2010 to specifically discuss the latest developments concerning façades, Glasstec 2021's conference on engineered transparency had Edgetech Europe GmbH technical manager Christoph Rubel among its key speakers. Rubel's input last year on the contribution of the flexible spacer Super Spacer® to the realization of façades is no less relevant now, since large, curved insulating glass elements can as easily be applied today to Gothenburg's Våghuset and the Nordstrom Flagship store in New York.

## FAÇADE RECALLS MARITIME HERITAGE

Gothenburg and Hamburg have a lot in common: important seaports, idyllic canals, and sensational, sustainable urban development projects in the former free port areas. Anyone who's after renting a space at the fully-glazed, BREEAM-certified Våghuset office and commercial building in Gothenburg's new Mas-

thuggskajen district is invited to sign a voluntary commitment to apply responsible labour, energy and material policies." The elemental façade impressively demonstrates how glass can be used as a creative design tool while achieving its energy goals," enthuses Joachim Stoss, Vice President International Sales IG at Quanex. Towards the city centre, the building with its rounded edges has elegant, reflective glazing made of cylindrically curved elements, reminiscent of waves with two-tone stripes and the lively alternation between concave and convex; a tribute to the river Göta älv, on which Gothenburg's importance as a port city is based and which flows into the Kattegatt here.

## THE WAVE HOUSE: A TRULY EUROPEAN PROJECT

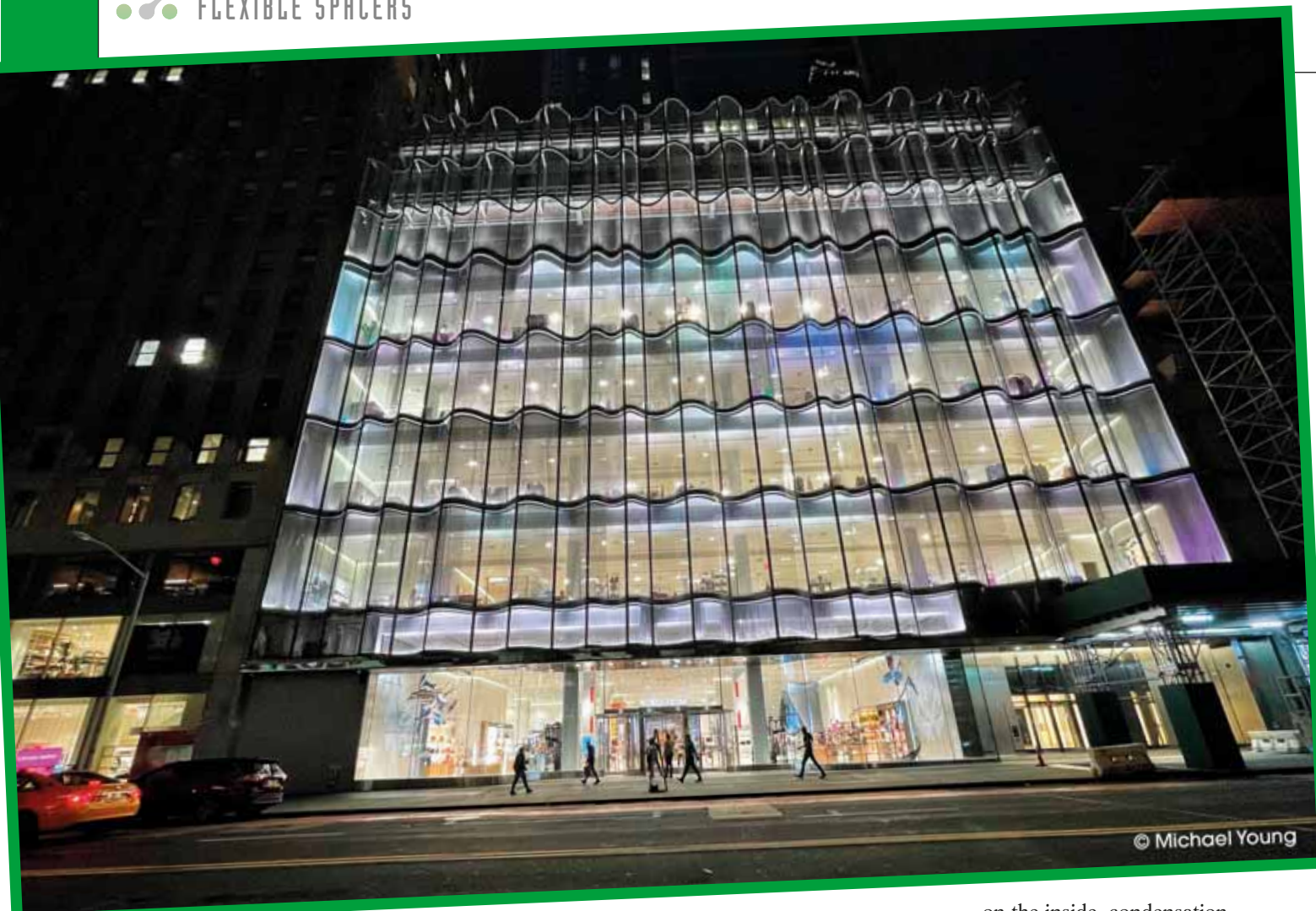
According to façade specialist Staticus, who is by its own account one of the largest full-service façade contractors in Northern Europe, "Våghuset is a shining example of European collaboration". Indeed, the



design was penned by the largest Scandinavian architectural firm White Arkitekter from Gothenburg, the façade was realized by Staticus in Lithuania, the curved profiles were manufactured in Denmark and the glazing in Germany and Poland. Swedish company NCC AB was responsible for project development and construction.

"The fact that spacers from Heinsberg are also used in the curved insulating glass elements is mainly due to manufacturing reasons," explains Rubel, "Only flexible spacers such as Super Spacer can precisely follow the curvature of the cylin-

drically shaped glass. Since curved insulating glass is virtually always handmade, it must also be possible to apply the spacer manually." Flintermann Glasveredelungs GmbH from Lower Saxony had delivered around 300 curved insulating glasses to Lithuania for installation. They are composed of 2 x 5 mm laminated float glass with SunGuard® SNX 60 solar control coating, TriSeal™ Super Spacer® Flex 20 mm and 10 mm float glass. As a standard double glazing, the highly selective Guardian glass lets in 60 percent of the natural daylight, but only 29 percent of the solar



heat. Therefore, additional solar shading can be dispensed with in Våghuset. “The special feature of this project was the smooth change from concave to convex. A large part of the units had a step all around. The inner pane was always smaller so that it could be recessed into the unitized façade,” explains Robin Dorn, curved glass sales manager at Flintermann.

### SUSTAINABILITY: A DRIVING FORCE IN FAÇADE DESIGN

“Staticus is not only the Scandinavian market leader for large-scale façade

projects, but also a driving force for smart and energy efficient façade solutions,” project manager Saulius Visockas explains. “Våghuset fits right in with this philosophy. We are grateful that especially Northern European customers like NCC fully support our sustainable approach.”

The combination of WICT-EC EL evo for the element system and 50SG for the stick system enable the appearance of a homogeneous, glass-flush structural glazing façade. Perimeter lighting is integrated into the façade profiles on all 13 storey levels to make the building’s form visible

even in the evening and during the winter months. In front of the thermal insulation, single spandrel glasses with opaque Black-pearl coating are installed up to 1 563 mm high and up to 2,688 mm wide. The transparent window strips consist of insulating glass units up to 4,307 mm high and up to 2,441 mm wide. A  $U_{cw}$  value of  $\leq 0.5 \text{ W/m}^2$  was specified for the planar triple façade elements and a  $U_{cw}$  value of  $\leq 0.65 \text{ W/m}^2$  for the curved double elements. At the same time, even under Nordic conditions of  $-15^\circ\text{C}$  and  $3.4 \text{ m/s}$  wind load on the outside and  $+20^\circ\text{C}/30$  percent RH

on the inside, condensation must not form on panes under any circumstances.

### CURVED INSULATING GLASS WITHOUT VERTICAL SUPPORTS

The connection has often been drawn between Gothic cathedrals, which are structurally conducive to illumination -with their impressive light effects and transparency- and modern glass architecture. Using glazing, even as a structural element, to maximize daylight penetration is now a given. But the question of how to take this transparency to the extreme with ever-larger panes and



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without visible mullion-and-transom structures continues to preoccupy architects, façade engineers and the glass industry. Larger pane sizes naturally mean thicker glass and lower light transmittance. Curved shapes, which provide increased stiffness even with thinner glass due to the shell support effect, are often the solution. "Cylindrically curved insulating glass today is taking on more and more load-

bearing functions to avoid mullions or vertical support beams in the façade structure," says Rubel. The space between the panes must be kept as small as possible in order to meet the high thermal insulation requirements and at the same time achieve a narrow, vertical glass edge seal. In addition, while curved insulating glass units are more rigid, they are also more sensitive to climatic loads such as wind and solar radiation.

### NORDSTROM FLAGSHIP STORE

In the façade of the Nordstrom Flagship store, which is located in the podium of New York's Central Park Tower, a total of 254 glass elements up to 6 m high form the individual storey levels without any visible vertical connection. The architectural firm James Carpenter Design Associates was responsible for the design of the 45 m wide and 38 m high façade at the corner of Broadway and 57th Street.

"Making glass of this scale is an art. One of the few glass benders in the world who has mastered it is Cricursa," explains Rubel. In Nordstrom's case, 4-ply laminated glass with tight radii and a ceramic frit surface was produced using a gravity bending process. "Because the edge bond is elastic due to the flexible spacer, the spacer also does not absorb countable climate loads. This has the advantage that it also does not load the edge bond with

stresses." To also play it safe when it comes to seismic risk, façade consultant Surface Design Group incorporated a lateral slip joint into the curved profiles to give the glass elements play when subjected to large loads.

The flexible Super Spacer<sup>®</sup> spacers can also be applied by robot in automatic lines. Joachim Stoss concludes: "Large-format and expensive insulating glass elements have to be manufactured with high quality and precision, often with three or even more panes, in order to meet the requirements for thermal insulation, safety or acoustics. The larger and heavier the insulating glass, the more difficult it is to handle during production. Super Spacer holds the edge seal in place virtually immediately after application and guarantees maximum precision and parallelism of the panes in both automated and manual processing."



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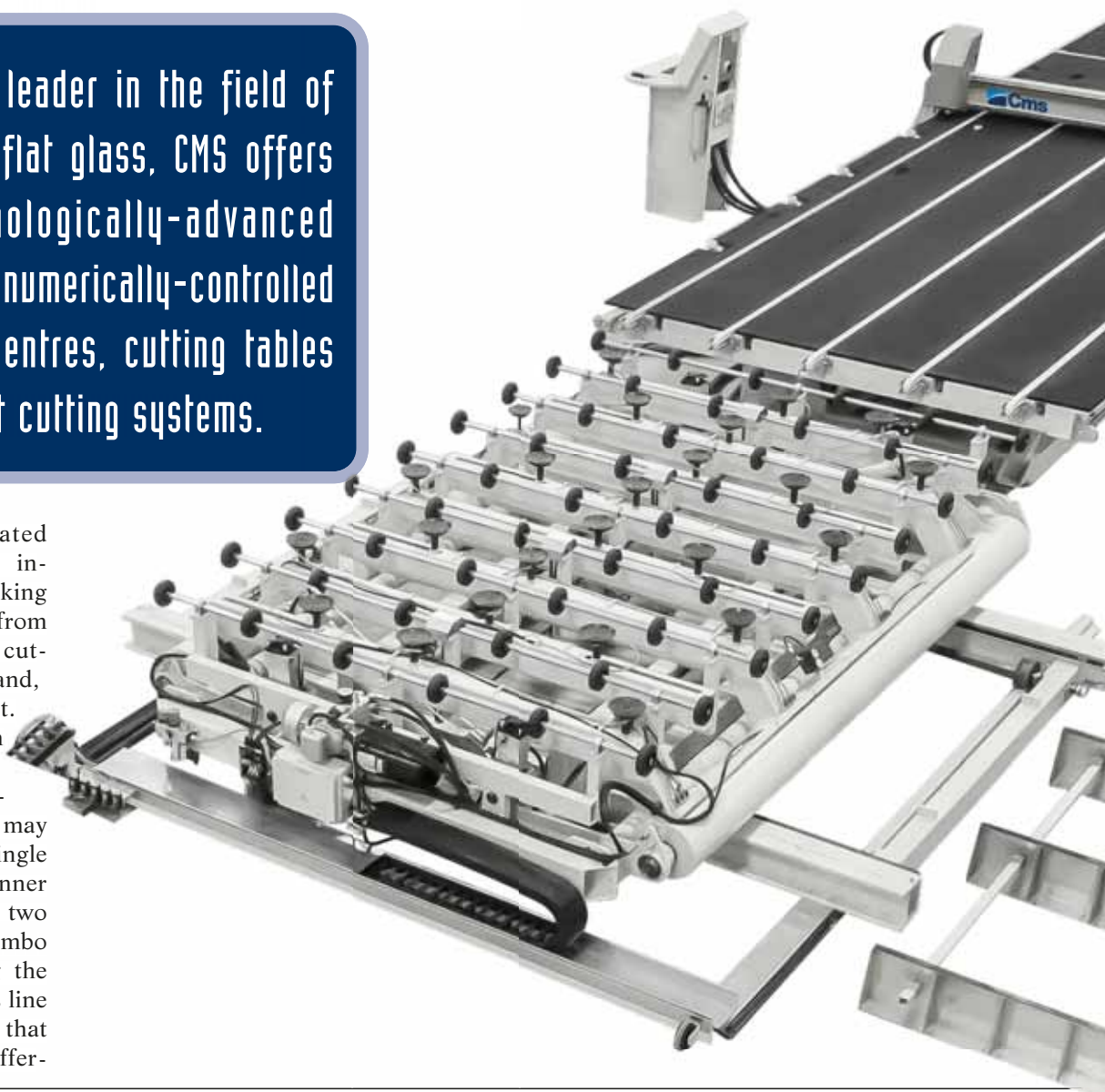


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An industry leader in the field of curved and flat glass, CMS offers such technologically-advanced solutions as numerically-controlled machining centres, cutting tables and waterjet cutting systems.

A fully-automated cutting line involves picking up glass sheets from the racks, then cutting them to size and, lastly, breaking-out. Depending upon the final sizes of the glass to be unloaded, the line may be overseen by a single operator. CMS' runner line is available in two sizes, namely half Jumbo and Jumbo. Among the main features of this line is its versatility in that it allows glass of differ-







ent sizes to be loaded - from a minimum of one to a maximum of eight racks. The line is configurable to the client's demands and, where more configurations are required, options can be customized. The CMS LD loader picks up the sheets from the racks automatically before conveying them horizontally to the cutting table. The cutting sequence is

optimized by the runner line - performing both straight and shaped cuts. Between one cut and another there is also the "on the go" automatic tool change option, thanks to the CMS special Z-carriage with its 4 cutting heads. Lastly, the runner line transfers the sheets automatically to the TR break-out table where the operator can use break-out bars to separate the cut glass before unloading it. Thus, a single operator can

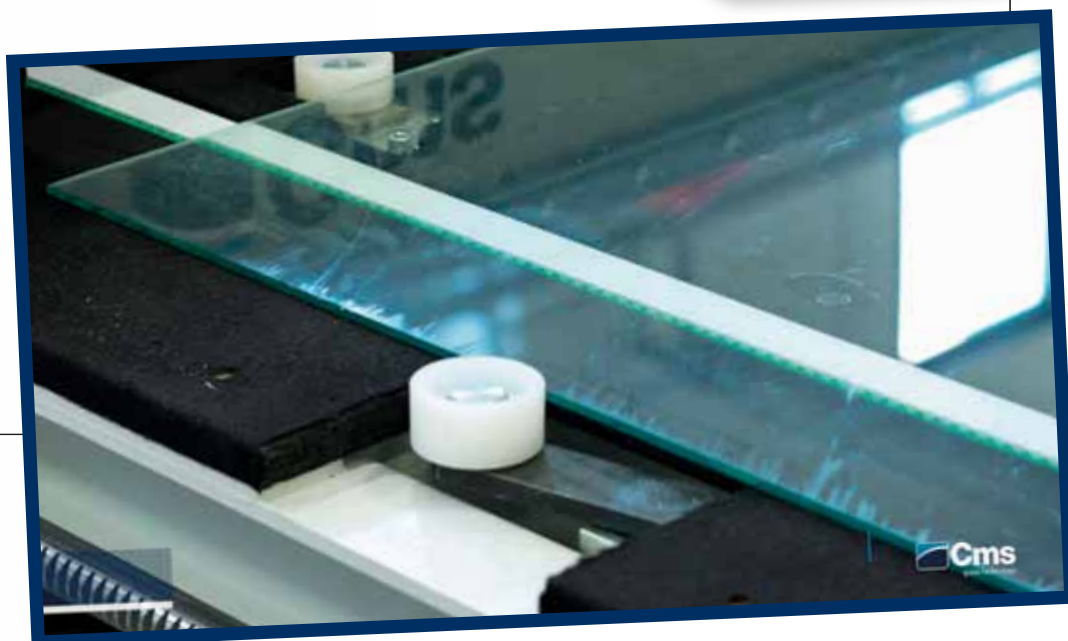
oversee a fully-automated line with as many as 24 potential configurations - depending upon glass size and rack number.

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# SCHOTT joins US for its nationwide festivities around glass

Following recent celebrations in Washington DC for the National Day of Glass, GTI caught up with SCHOTT Vice President of R&D and New Ventures Bill James to get his take on the significance of the event.





Bill James

## GLASS-TECHNOLOGY INTERNATIONAL:

Bill, this was a historic day for the glass community in the US. How was it for you at SCHOTT to be part of the action?

**Bill James:** It was absolutely amazing! I'm passionate about this material. Growing up, I spent too much time looking through it instead of looking at it and trying to understand it. And being in a community of glass lovers who're truly passionate about what this material can do -the material of glass, that is- was really quite extraordinary. The talks ranged from the most minute piece of glass that could go in and change the world to some-

thing large that people can observe from an architectural perspective. All truly great to hear.

**GTI:** One interesting part of SCHOTT's National Day of Glass presentation is that the company was involved with the moon landing in 1969. Can you explain SCHOTT's role in the Apollo 11 mission?

**BJ:** Absolutely! And here's a personal story to start. I am a Purdue University grad - and Purdue's the home of Neil Armstrong. So, as we looked at this and made connections to what SCHOTT's role was in this it really became quite personal. Living at Purdue, I was residing on Neil Armstrong Drive.

So, when Neil Armstrong stepped onto the moon for the first time and uttered his famous line, what you saw back here on earth was all made possible by optics from SCHOTT glass. So those optical materials were what really brought those images from the moon all the way back here to earth. And that's something which SCHOTT has. It manufactures optical materials. They can really be 'out of this world' if you will - no pun intended ... or maybe pun intended!

**GTI:** Is SCHOTT still involved in enabling missions that help explore our universe in space, and improve lives on earth?

**BJ:** Absolutely! Our materials -whether it's optical glass or even our ZERODUR® near zero glass ceramic, which has a zero thermal expansion- are well-advanced for missions in space. They can withstand the harsh environments. They can be designed to burn up upon re-entry - and all the other performance metrics you'll see for spaceborne missions. Whether it's communication or space flight or even oxygen sensing or creation on other extraterrestrial bodies.

**GTI:** Fusion energy has been in the news a lot recently. How does glass play a role here and why is it important for the future?

**BJ:** This is a big one for SCHOTT's Duryea site

where I work. My Research & Development team, as well as the advanced optics team, has built a heritage of laser glass development and production for large laser systems like the National Ignition Facility (NIF) out at Lawrence Livermore National Laboratory. This is the research institute for looking at fusion energy. They focus a number of laser beams on a small pellet to force isotopes of hydrogen together and create a burn that'll release immense amounts of energy. This energy is thought to be sustainable in the future - potentially sourcing the next generation of power plants. And why's this so important? Precisely because this is energy that could be carbon-free and really stop the burn of all the nasty things currently





going into the environment. Here at SCHOTT we're very conscious of our environmental footprint and we have a very big initiative -both corporatewide and globally- to reduce our carbon emissions so as to be zero carbon by 2030.

**GTI:** SCHOTT's facility in Duryea, Pennsylvania leads the way in developing advanced laser glass to meet the challenge of fusion energy. Can you tell us about some of the research being done there?

**BJ:** Certainly. This all started with a colleague of mine: our research fellow Joe Hayden who was the first to really discover and invent platinum-particle-free phosphate laser glass. This is important because when you reach the high tempera-

tures that you need to melt glass, some of that precious metal crucible ends up in the glass. It dissolves. A natural process that happens. Now being able to overcome this was critical because those platinum metal particles that would end up in the glass would absorb some of that light and render that glass useless. So, whether it's National Ignition Facility or laser range finders or a whole host of other laser glasses, Dr Hayden was able to overcome those challenges to really bring this to realisation in the world. Colleagues such as Tedi-Marie Usher-Ditzian are carrying that torch forward and developing new glass hosts -so, think silicates, think aluminates and other types of materials- to really push the boundaries

of what we know from laser glass and enable things like the next fusion energy research - and, ultimately, fusion energy power plants.

**GTI:** SCHOTT made news last year for expanding its diagnostics business through the acquisition of Applied Microarrays Inc. in the US. How does this now position SCHOTT in the diagnostics market?

**BJ:** Diagnostics are very important. We've learnt this from the Covid pandemic - and many other things as the world's population ages and we learn more about science. Here diagnostics and our diagnostics business brings point-of-care solutions and diagnostics to people. So the faster you can learn what some-

body is inflicted with -or infected by- the quicker you can treat them and the better the outcome can be. Our approach to this is very small innard glass pieces that are laser-structured - perhaps to create these lab-on-a-chip or micro-fluidic type devices that can solve these problems or identify these diseases or afflictions or indications much quicker. For us in the US this is a big deal. It's an expansion of our footprint and it brings that diagnostics footprint and that manufacturing footprint here, which is what our customers are asking us for. They really want something close to them in their region in the US. And we expect to expand even further into this market with this footprint here. Besides, we're really excited to have the folks from AMI join the SCHOTT family. They're really smart. They're really creative and we're going to see great things come out of that team.

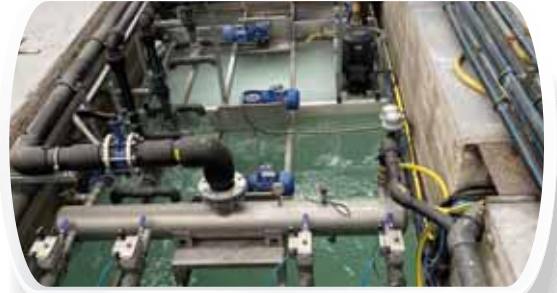


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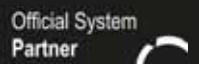
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# Customers involve **IOCCO** in feasibility studies for whole car glass sets

IOCCO offers the first de-airing system in the world able to process windshields, sidelight glass and sunroofs produced with ultra thin glass and multilayers like PVB, PDLC, SPD and XIR. The system allows for flexible productions and model changes without any interruption of the process.

**A**mong IOCCO's contribution in the manufacture of systems for the air extraction during the lamination of windscreens, laminated sidelights and sunroofs is the notable improvement for both concept and fabrication of vacuum bag furnaces. In fact, recently the company's R&D department has designed a new furnace that represents an evolution of models built and installed in the past.

Thanks to this evolution, various configurations of the new vacuum bag furnace allows operators to:

- Process windscreens, laminated sidelights glass and sunroofs as well as products made of ultrathin glass and multilayers including PVB, PDLC, SPD and XIR
- Monitor all the process phasis, vacuum values and temperatures on each produced glass
- React to possible anomalies to guarantee continuous and quality production

- Reduce operating costs
- Manage and monitor production/process data in compliance with Smart Industry.

This new version is derived from two fundamental factors: The first is represented by the guidelines of various government bodies on issues such as energy efficiency, emission reduction and innovation as well as being in line with the Smart Industry philosophy.

The second comes from the growing market trend of car makers for increasing demand of laminated

roofs and sidelights that are ever lighter, safer, more complex in shape and with innovative technologies. This in addition to windscreens increasingly equipped with ADAS systems.

Car makers want flexible productions, which allow model changes without interruptions in the process. Based on these criteria, the IOCCO R&D department strove to develop a single system capable of responding to these fundamental requirements.

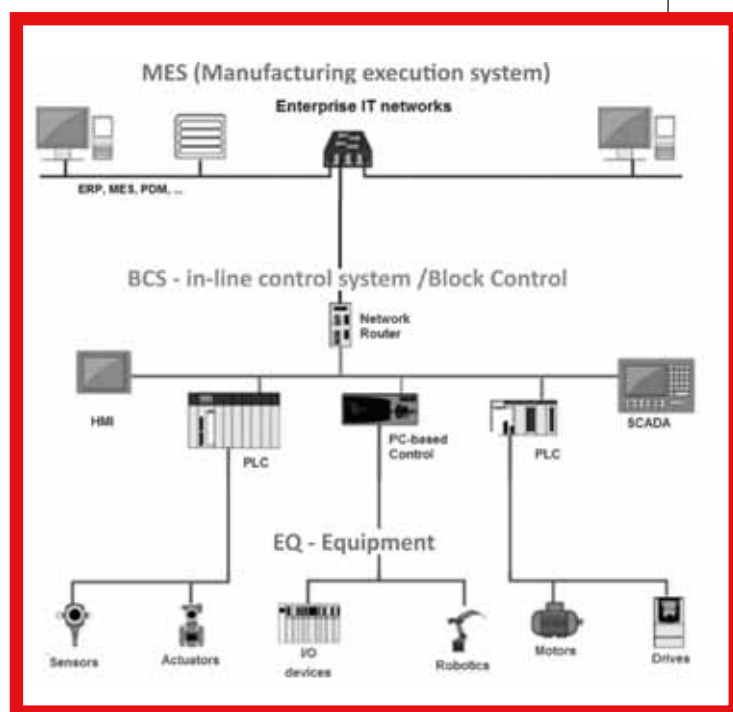






As a result, the automation and control section has been completely redesigned with numerous implementations; now the new system offers easier management (user friendly) in the face of a more complex software that

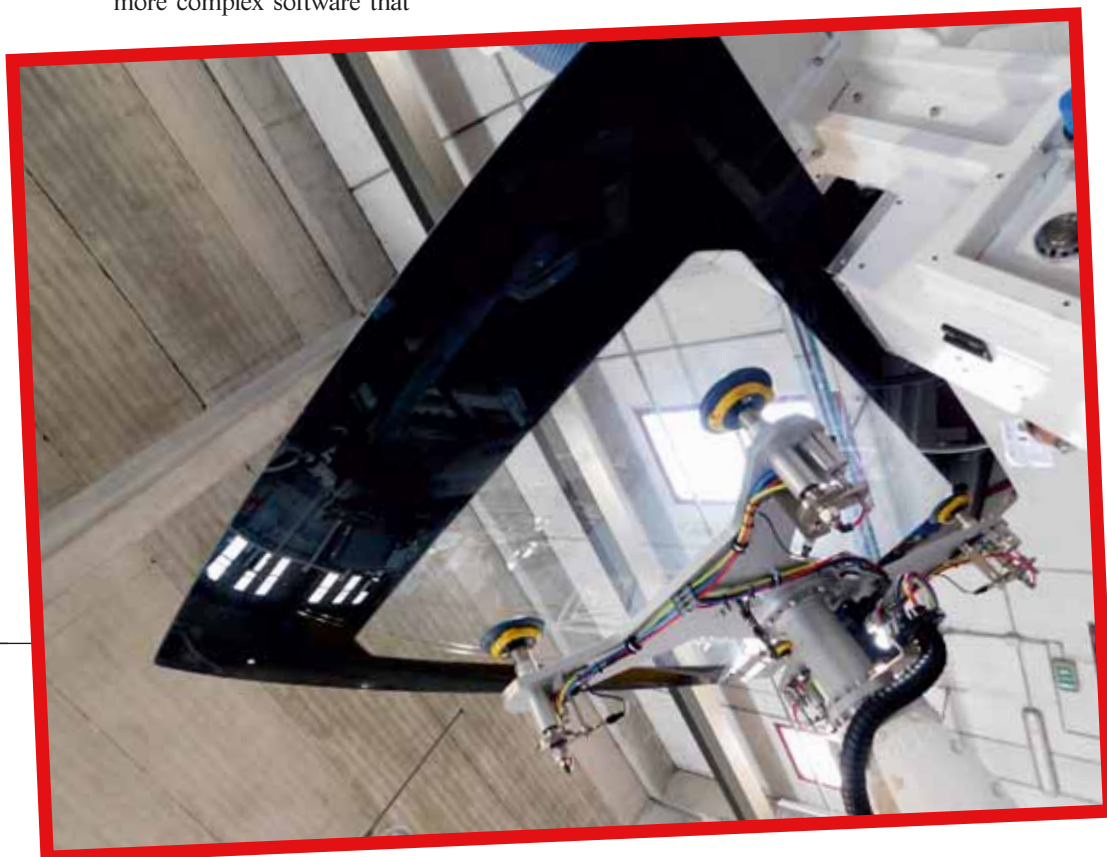
manages the process. In this new version, the system is able to detect any thermodynamic anomalies, and then to stabilize the process according to the new parameters, allowing pro-



duction continuity up to its total recovery.

The application of a new thermoventilation system has allowed the whole system to contain its dimensions in height, so that it can be installed even in buildings where it wasn't possible before. It should be noted that this new system involves significant energy savings, for the first time allowing to manage the real transfer of energy in accordance with data suggested from inter-layer suppliers.

Another important advantage is the possibility to install an additional module





for energy recovery, which, together with the use of dedicated inverters and more performing insulation, along with other technological developments, have made it possible to drastically reduce operating costs to the benefit of the processed products. Team IOCCO has developed the ability to select and process only its own

data with the continuous implementation of a structural software standard that includes all the installed devices. Particular attention is paid to continuous information and training on the new systems offered by the market both in terms of sensors and actuators and PLC, Robot, Vision, human/

machine interface (HMI) and PC-based systems. Moreover, the remote connection enables IOCCO technicians to intervene when needed, wherever the machine is located in the world, guaranteeing immediate assistance. The system to collect production data helps the use and predicts the mainte-

nance assuring a constant production running, with a result of a prompt aftersales service, also by means of augmented reality systems. The 3DEXPERIENCE platform enables IOCCO to make computational testing with physics-based simulation a foundational part of their innovation







process resulting in less real-world testing and prototyping while lowering cost and reducing risk. Modelling and simulation are tightly integrated in a unified experience. Realistic simulation enables new ideas to be evaluated quickly to find the best trade-offs at the earliest design phases while remaining within time and budget constraints.

Virtual commissioning provides a solution for moving a significant portion of commissioning tasks to an earlier phase of the project, away from the critical path. In virtual commissioning, a simula-

tion model of the system is created to replace the real factory. The virtual factory is then connected to the real control system, so that the simulation can be used simultaneously with the procurement and assembly to verify the design and test the control system. This allows for quicker detection of possible errors.

The digital twin is outfitted with various sensors related to vital areas of functionality. These sensors produce data about different aspects of the physical object's performance, such as energy output, temperature, weather conditions and more. This data is then relayed to a processing system and applied to the digital copy.

Once the virtual model is configured with all the necessary data, it can be used to run simulations, study performance issues and generate possible improvements, all with the goal of generating valuable insights. In addition, and thanks to these methods, all operating parameters in terms of flow rate, quality and safety can be better checked in detail. These advanced procedures to carry out the validation phases of projects is cur-

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### Business Sustainability Ratings

rently a IOCCO standard procedure.

IOCCO adopts the latest technologies available on the market to enable customers to monitor production in real time, reduce failures and downtime, optimize plant availability and production and plan maintenance.

More than one process listed below, can be matched together in the same line as needed:

- Bright finishers assembly
- Centering pins and spacers assembly
- Long life primer application
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- Grommet assembly
- Assembly and gluing of various accessories (bars, centering pins, spacers,...)
- Polyurethane extrusion

on the glass periphery

- Brackets/pins application supporting various devices
- Seals, bond on lace and finishers assembly
- Long life primer application
- Mirror boss assembly
- Centering pins and spacers assembly
- Holders application
- Spacers application
- Encapsulation (PU, TPE, PVC)



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**MIX 30 PRO** protects and sanitizes sandblasted glass surfaces, making them water-repellent and stain-resistant thus preventing the adhesion of dirt, limescale, fingerprints and impurities.

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# FRATELLI PEZZA makes sandblasting easier than ever

Fratelli Pezza s.r.l. will be launching important innovations at Glasstec 2022, a new Web Application for glass and mirror sandblasting.

## THE NEW WEB APP

Fratelli Pezza will present their new Web Application at Glasstec 2022, the App allows to program the automatic sandblasters of the MistralEV+ series

directly from a PC, tablet or smartphone.

With this service Fratelli Pezza s.r.l. wants to help glass companies by optimizing the programming and processing times and significantly reducing production costs and consumption.

The main advantages of the App are:

- to create new programs remotely, as the machine is running, without needing to interrupt the process;
- to have a preview of both the glass that needs to be processed and the sandblasting areas, which is to facilitate programming and limit the consumption of abrasives;
- to name and copy the programs, without the need to ever rewrite them, and to be able to use them with all different glass sizes;
- to save an unlimited number of working programs directly on the device, which will always be recoverable;
- to share programs with Fratelli Pezza and identify the best settings for each process.







## THE MISTRALEV+ SERIES' NEW FEATURES

Fratelli Pezza will also display the newest Mistral 180EV+ series at Glasstec: Mistral EV+ is the sandblasting cabin that meets the requirements of Industry 4.0.

Some of the new features are:

- the monitoring of production times and costs for more precise price-estimates;
- the immediate diagnosis of any faults;
- the predictive and preventive maintenance to ensure continuous operation of the equipment;
- the preview of the processing to facilitate the operator's programming.

## MAIN FEATURES OF THE CABIN

The Mistral EV+ series allows the user to utilise the sandblasting shading in different tones, as well as to set up to 50 blasting areas on the item.

All Fratelli Pezza automatic cabins are equipped with a built-in filtration system with automatic recovery and recycling of the abrasive material.

## MIRRORPROTECTION

Fratelli Pezza has designed an

integrated system, which is unique on the market and eliminates sparks during mirror sandblasting. This allows to considerably reduce production waste with a significant advantage for glaziers in both financial and ecological terms.

## REDUCED CONSUMPTION

A distinctive quality of the Fratelli Pezza machinery is low consumption of electricity and compressed air, which helps with savings on operating costs.

## GLASS MARKING MADE EASY

The marking of glass and mirrors is a growing need in the building glass industry. This is why Fratelli Pezza will bring its complete line of marking systems to Glasstec 2022. These systems allow to imprint marks up to 30 mm in diameter. The automatic marking devices of the EasyMarker line are made to be integrated into the glassworks' production line

and can be combined with both horizontal and vertical equipment (cutting tables, tempering ovens, double-glazing lines, washing machines, etc.).

The portable units Marker 101T and 301T, on the other hand, meet the needs of those who need a portable and highly flexible instrument.

## NEW TREATMENTS FOR SANDBLASTED GLASS SURFACES

Sandblasting is one of the most used techniques for glass decoration as well as to ensure privacy in public and private environments. The sandblasted surface is porous and does consequently tend to retain fingerprints and impurities. Therefore Fratelli Pezza s.r.l. has created MIX-30PRO, a protective nanotechnological treatment for sandblasted glass. The treatment makes the glass water-repellent and therefore easier to clean. It is effective for more than 6500 washes and can be revived. LONGCARE30 is a new product dedicated to the care and maintenance of sandblasted glass surfaces,

and it's compatible with glass treated with MIX-30PRO and other surface protective coatings. In addition to degreasing the surface, it revives the protective effect of MIX30PRO, extending its duration.

## COATING FOR FROSTED AND ETCHED GLASS

Frosted or etched glass can also detain fingerprints and impurities, so it needs to be protected. A little amount of new product GHOST-GLAZE allows a water-repellent and stain-resistant effect on float and extra-clear glass, as well as on frosted and acid-etched glass.

**FRATELLI PEZZA Srl**

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**FRATELLI PEZZA**

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# MAZZAROPPI's TP Compact revolutionises glass tempering

**W**ith tempering furnaces typically perceived as being beyond the possibilities of a small or medium-sized glassworks, MAZZAROPPI's TP Compact now best embodies all the company's values and strengths. Not only. It carries every advantage its customers have come to appreciate - also leaving various preconceptions roundly demolished, like the following:

## **LARGE TEMPERING FURNACES MAXIMISE PRODUCTION**

Mazzaroppi firmly believes that it's the furnace that must work for the glassworks and not the other way around. The TP Compact is a compact furnace with variable load sizes which range from 1300 x 3200 to 1900 x 3600 (1.3 metres x 3.2 metres and 1.9 metres x 3.6 metres), including some sizes in between. Total plant length stands at approximately 17/18 me-

tres, depending upon type. But there's more. The entire electrical system - most notably the fan cabin - is located alongside the machine, with no need for installations outside the plant. More particularly, the design of the TP Compact stands out as a furnace for small and medium-sized glassworks that lack the production volume to justify purchasing a classic 2500 x 5000 tempering furnace. The current market trend is to offer larger machines - often with lower quality components and at reduced prices. However, such apparent savings are quickly rendered superfluous after one has considered derivative costs from the

A new glass tempering furnace that has MAZZAROPPI beaming with pride, the company's new TP Compact hasn't just succeeded in improving the performance and efficiency of its previous model of the same series - it also strives to completely disrupt every traditional conception of tempering furnaces.







significant work of adaptation to one's factory, coupled with today's soaring energy bills - especially for classic hardening furnaces that must remain constantly on to mitigate the risk of damage caused by elevated temperatures.

### **TEMPERING FURNACES CAN'T BE TURNED OFF**

This is one of the main problems that lead small

and medium-sized glassworks to decide against purchasing tempering furnaces. If the furnace can't be turned off - thus consuming constantly - then the sole cost justification remains that of leaving it continuously on - which would mean, in some cases, compromising the regular production of the glassmaker. Here Mazzaroppi has solved the problem with its TP Compact because the machine can be switched off daily and will take just one hour to reach the necessary temperature of 680° after being switched on. That time will drop to half an hour if the furnace has been working the previous day, which optimises consumption given that the oven is only kept on as needed, i.e. when the machine is actually producing and so generating value.

### **POWERFUL TEMPERING FURNACES CONSUME MUCH ENERGY**

Perhaps, in terms of energy optimisation, this model is Mazzaroppi's greatest suc-

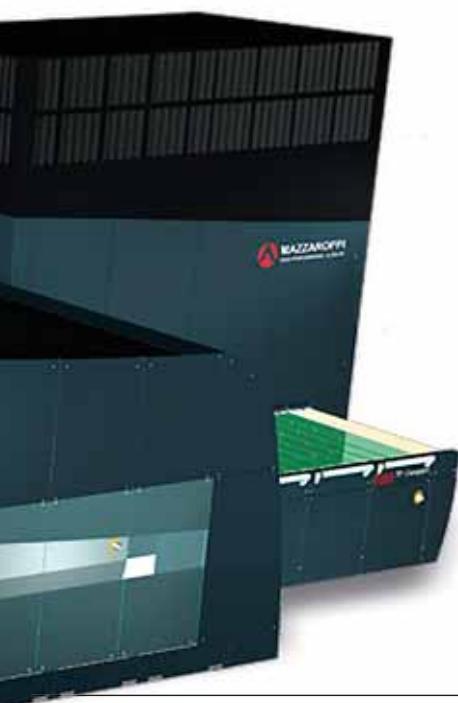
cess to date. In fact, it's thanks to the new TP Compact's intelligent electronic management system that the company has managed to reduce consumption by a further 30 percent in comparison with the model's predecessor - which means the furnace is estimated to consume less than half the energy consumed by many European competitors and about a third of what's consumed among many Asian competitors. Proportionally, also, the electricity required to keep it running is significantly less. Indeed for any company that's after investing in its future, a TP Compact oven will potentially translate into savings that reach several thousand Euros a month. Besides, no infrastructure adaptation is required to enable installation - which also reduces start-up costs.

### **TEMPERING FURNACES ARE SLOW TO CHANGE THICKNESSES**

Many small glassworks don't benefit from using a conventional tempering furnace. The time required

for thickness changes will force them to organise production by dedicating an entire day to one thickness alone - a feat impossible for small and medium-sized glassworks that must focus upon the individual piece as opposed to large quantities. Instead, the TP Compact offers a thickness change in no time at all - without interrupting the workflow. It allows even small glass manufacturers to conquer a market that often requires each company to perform many different processes while often needing only a few pieces per process. Thus, the TP Compact allows even small glassworks to purchase the furnace they've always desired - without disrupting production.

Indeed the product was designed for a specific segment of entrepreneurs and created with their daily needs in mind. Maintenance costs are also very low as compared to the market average. Here, in fact, Mazzaroppi chose to invest in the quality of the materials and design to only put machinery on the market that would practi-



## TP COMPACT

**MAZZAROPPI**  
HIGH PERFORMANCE. ALWAYS

# 200kW



cally never require maintenance while lasting up to 30 years. Also, the safety and reliability of the brand translates into continuous production and no surprises for the customer. Consequently instead, customers can dedicate themselves exclusively to quality and production management - a feature that's es-

pecially appreciated by the company's numerous German, Austrian and Swiss customers.

The TP Compact has been studied, designed and built with such small and medium-sized companies in mind which have never dared, until now, to engage directly in glass tempering

- either owing to the considerable costs of adapting and using a tempering furnace or because they felt they lacked the production volume to justify such an investment. Here TP Compact is a purchase every glassworks can consider in order to grow sustainably while offering customers

superior quality products over which it has total control. For any glassworks this could represent a choice of autonomy over third-party companies to which small entrepreneurs often must entrust their tempering. As such, investment in a TP Compact could represent viewing one's company with fresh perspective while making plans for the next ten, twenty, thirty years and finally becoming the master of one's work in a manner that no longer depends upon large glassworks for delivery times and price management.

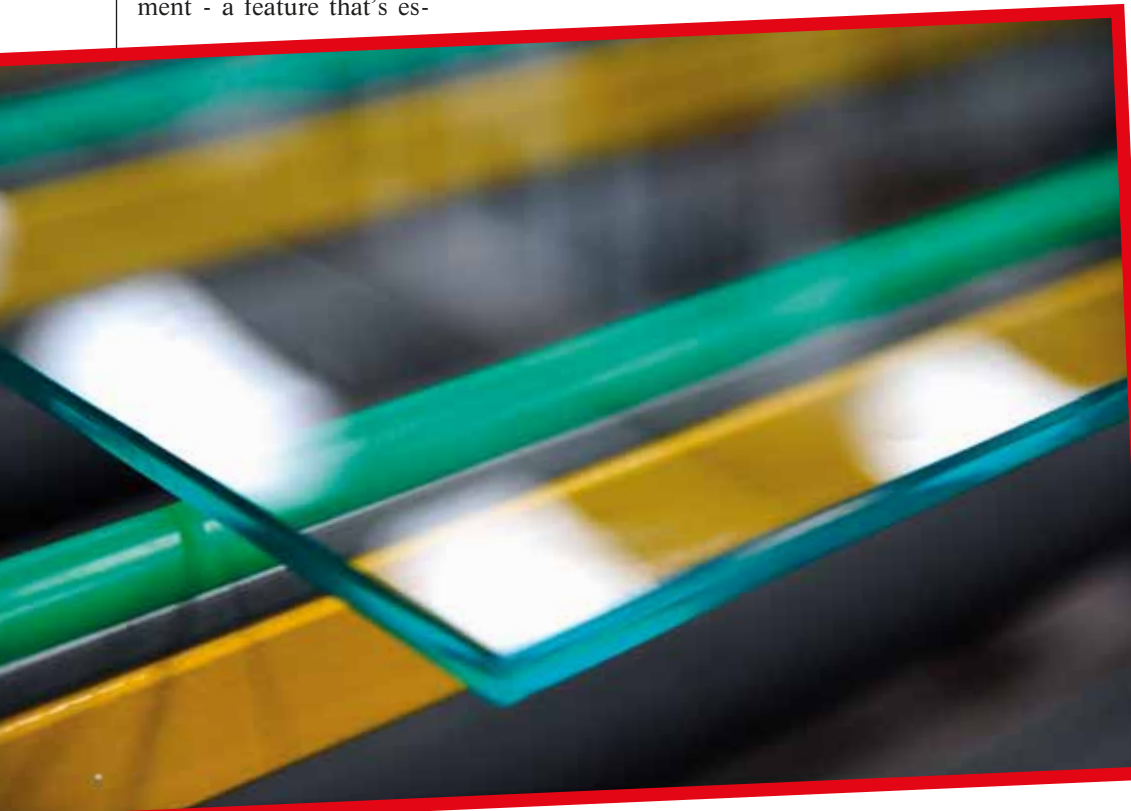
For any employer, reclaiming one's time and taking complete control of workflows is a fundamental choice. It means deciding to conquer one's market while expanding one's customer base by working on the competitiveness of one's offer. It means working for success, which is precisely what Mazzaroppi is after - the success of its customers.

**Mazzaroppi Engineering**



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After 15 years from the first GlassInspector installation, Deltamax vision is still the same: we want to guarantee the highest performance for the glass quality control. Since 2007 Deltamax R&D Department is constantly working to face the technical evolution requested by nowadays markets and to satisfy any client's demand; our innovative and customized systems are now able to detect every kind of defect, even the tiniest, at every stage of the production cycle.

**deltamax.eu**



**DELTAMAX**  
we see it

# DELTAMAX, 15 years of GlassInspector

The return to Glasstec this year, after 4 years marked by unpredictable events that have indelibly affected everyone, coincides with a very important anniversary for Deltamax. In fact, 2007 was the year when Finstral, one of the most important Italian companies in the production of doors and windows in PVC, decided to test the first defects detection system for insulating glass-lines. GlassInspector — this was the name assigned to the prototype — was a product of Deltamax experience in the artificial vision on flat glass, which started in the early 90s thanks to installations on production lines for flat glass and glass for the automotive sector.

The technological evolution of cameras had allowed the development of affordable systems, within the reach of small and medium-sized companies wishing to increase the automation of their production lines, in particular for the detection of defects.

There was still a great deal of scepticism toward systems that seemed complex and difficult to use in daily activities, but the desire to improve the quality of the glass used in its windows led Finstral to accept an agree-

ment aimed at experimenting with a 'scanner'.

The experimentation did not last long, because the results obtained far exceeded expectations, both for the performance in terms of defects detection, and for the ease of use by the operators. Shortly thereafter, the other two lines of the Scurelle plant were also equipped with GlassInspector, a system that is still used with satisfaction by Finstral today, after 15 years.





## INTERVIEW WITH FINSTRAL PRODUCTION MANAGER ROBERTO COLME

Deltamax interviewed Roberto Colme, who is still the production manager of the Scurelle plant as he was back then. He is the one who personally invested in this innovation for their production process.

*It's been 15 years since the purchase of the first GlassInspector. First of all, we would like to ask you if that system is still active.* Of course, the GI is still in operation. It is no longer in the factory where it was installed 15 years ago; it was moved to another warehouse to another line,

but it is fully operational. *Have any changes been made to the system to ensure its effectiveness during these 15 years?*

There were some software updates and a couple of hardware upgrades, like the illuminators, which allowed us to have a product that always works and with increased performance, without the need to completely replace it.

*Did you buy other systems?*

Yes, we currently have two Deltamax systems in Scurelle, two in Oppeano, and one in the plant in Germany. We decided to buy the other scanners precisely because of the advantages we had thanks to the first GI, just a few months after installation.

It was indeed a big change to go from the visual inspection carried out by the operator to an automated system, which is much more accurate and precise. This allowed us to immediately notice defects in the production line, significantly reducing customer complaints: a fundamental advantage for us. In addition to this, the entire production process was naturally optimized, with a reduction in waste and therefore in costs: by being able to check the entire production process, we could identify, for example, the cause of some scratches caused by machinery defects.

*Are you planning to increase defects detection by purchasing other systems?*

The improvements have been



plentiful; at the moment we are very satisfied with the products we already have. However, we are not ruling out purchasing other systems in the future.

*Could you give us feedback on the assistance that we provided?*

We are extremely satisfied. Our contract includes remote intervention in case of need as well as 3 annual on-site maintenance jobs by Deltamax technicians; this way we are ensured with the correct operation of the systems and any software or hardware updates we might need.

## IMPORTANT FEATURES

One of the most important features of GlassInspector is the possibility of upgrading the system, increasing its potential, simply by replacing some of the components subject to wear, like the illuminators. The first version installed in Finstral used neon illuminators, which were then replaced with LED illuminators, then blue light LEDs, and finally

with double illuminators. Together with constant software updates, guaranteed by an assistance contract, the systems used by Finstral have gradually become more precise and reliable, following the growth path of the quality level defined by the company. Over the years, the changes have also affected the structure of the system, now more streamlined and less bulky to facilitate the operator's work.

## INTERNATIONAL SUCCESS

GlassInspector has won over 200 customers, with more than 300 installations in 30 countries around the world. GlassInspector has indeed opened an important path, which in the following years led to the creation of different solutions for insulating glass lines.



Deltamax  
Automazione Srl



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# SCHIAVO's glass solutions for washing machines hit Glasstec

**W**ith a production that's 100 percent made-in-Italy, the going offer at Milan-based Schiavo includes vertical and horizontal washing machines, vertical drilling/milling CNC machines, vacuum lifters and manipulators, as well as warehouses and double glazing machines.

## VERTICAL AND HORIZONTAL WASHING MACHINES

Washing machines are among the main best-sellers, with the company's vertical washing machines divided into 5 models, namely Easy, Top, WD, Plus and Hydro. Horizontal washing machines are

characterized by a single model, the HTL, which also boasts high quality and performance.

- Of the machines, Easy is the simplest and cheapest. Available for glass and with a 1600 and 2000 mm height, the model represents an excellent solution in terms of its quality/price ratio.
- Top is available for glass, is 1600 to 3300 mm high and has a thickness of up to 20 mm. This machine is characterized by a sturdy

structure that's made entirely of stainless steel. Here, again, the product is of a very elevated quality.

- WD is a washing machine with a thickness adjustment, by crank, of up to 20 mm. The available sizes for glass have a height of 1600 and 2000 mm.
- Plus is a washing machine model of superior quality that's designed to last over

After operating for over 40 years in the field of flat glass processing machinery, SCHIAVO is now a leader in the production of machines for washing, lifting and processing flat glass. At Glasstec, the company will showcase the best of its washing technology, including its new FV1000 vertical drilling/milling model.





time. It's available from 1600 up to 3300 mm in size and it has a maximum thickness of 20 mm.

- Hydro is an optimum vertical washing machine model - a robust machine of uncompromising quality. An Industry 4.0 classified machine, the model was created for line-connection with other machines. As such, Hydro is equipped with remote assistance as well as machine data exchange. Available for glass, its height is from 1600 to 3300 mm and it has a thickness of up to 40 mm.
- HTL series washing machines are designed to guarantee high quality and high performance. Extremely reliable, with a robust structure, HTL series washing machines offer superior washing quality with the best tech-

nology available. Made to last longer than many other similar machines on the market, thanks to an accurate analysis of the functions and the utmost attention to detail. Designed to provide the best washing quality both in line, connected to other machines such as double edgers or as a stand alone machine. Available for glass with width from 500 to 3300 mm and thickness up to 40 mm. The HTL model is also classified in Industry 4.0.

## VERTICAL CNC DRILLING/MILLING

For vertical drilling-milling, the FV1000 is a 4-axis CNC machine. Industry 4.0 classified, this model allows glass factories to perform any type of carving, holes and shapes that are necessary for installing hinges, locks and any type of accessory - whether on glass

or glass doors for furniture. Other possibilities include squares, circles, rounded corners, corner cutouts, mickey mouse silhouettes, 'U' shapes and much more. With the FV series the possibilities are nigh endless. It has a rich, built-in shape library with all shapes both editable and savable as new. Also, ISO or DXF files can



be imported into the machine from any computer - either by LAN or Wi-Fi or via USB port with a pen drive. Here the 'direct drawing' procedure uses internally-stored shapes that are easily modifiable by the operator upon entering the relative parameters. The operating mode is extremely simple and fast and can be performed by operators who aren't specifically trained. The FV1000 is equipped with a pneumatic gripper for automatic positioning of the glass. With this accessory, the operator has simply to oversee the loading and unloading of the glass. All other operations are managed automatically by the machine, thus making the process much faster.

### VACUUM LIFTERS

Vacuum lifters are among the products in which Schiavo has invested most in terms of research and product development. In-

deed, particular attention has been paid to safety, especially when such appliances are used on construction sites. Here, in the field of lifting glass sheets, numerous models and options are available to satisfy any need. Each device is characterized by a sturdy steel structure, double-safety circuit and a double-vacuum tank that guarantees sheet grip - even in the event of a power failure. There's also an acoustic and light alarm that alerts the operator when the appropriate vacuum degree has been reached so the plate can be lifted or of a possible drop in vacuum degree and hence a potentially hazardous situation. Suc-

tion cup devices are divided into fixed, manual and motorized. Available models have capacities that range from 180 to 2000 Kg and more - as

per request. Moreover, specific suction cup devices have been designed to lift structural triple-jumbo 6000 x 3300 mm double-glazing panels.



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italian technology

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### HYDRO

Vertical washing machine



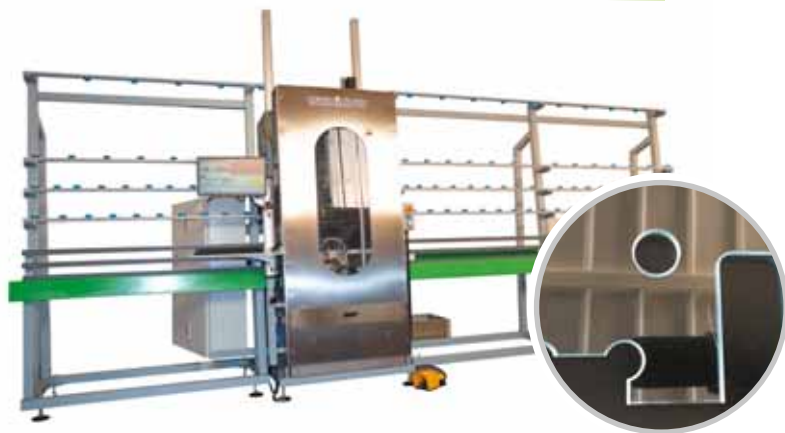
### HTL

Horizontal flat glass washing machine



### FV1000

Vertical milling and drilling machine



### GEBI

Vacuum lifter



## SCHIAVO

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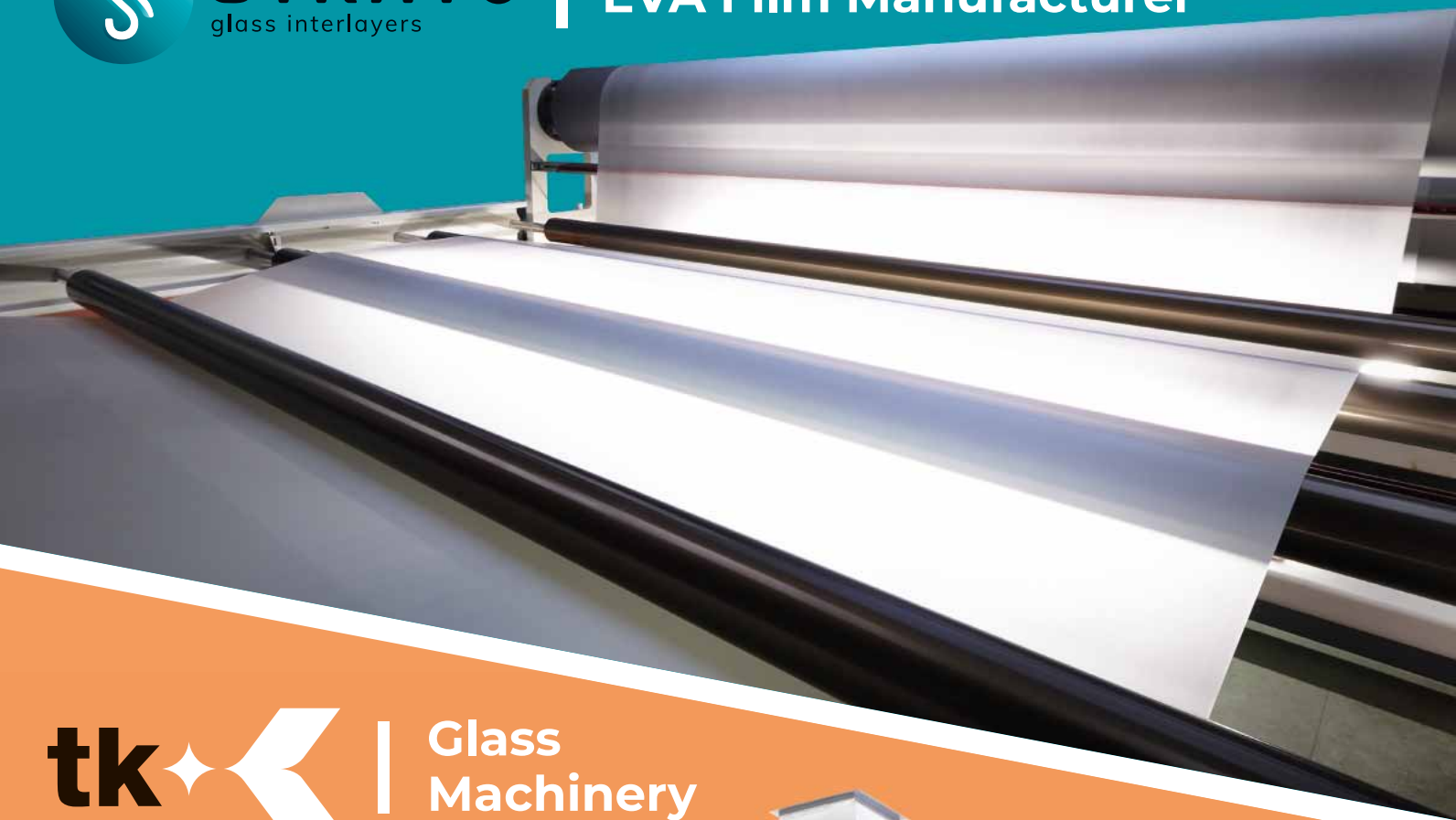
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# SATINAL STRATO®

## Carbon Free earns ISCC+ certificate

**S**TRATO®, the only Italian EVA interlayer manufacturer for safety glass lamination, has achieved ISCC+ certification (International Sustainability & Carbon Certification), thanks to the highly innovative new product range of STRATO® Carbon Free interlayers manufactured in Italy through an entirely sustainable raw

material supply chain and eco-friendly production process.

With this certification, STRATO® has demonstrated the company's superior and unmatched technological leadership in the safety glass interlayers industry thanks to constant investments in Satinal's research and development department: S-LAB.

This achievement represents a further step forward in Satinal's pioneering commitment to important global issues such as sustainability and environmental care: the goal is to consolidate the nature of Italian excellence in the world through new innovative, unique and advanced solutions.

ISCC+ is a sustainability

certification system linked to the goals included in the "2030 World Agenda for Sustainability" presented by the United Nations. It is awarded to companies that monitor and demonstrate the sustainability of products through the controls of traceability requirements and the mass balance of the entire product system, given by a responsible consump-





Using renewable sources for its production processes to make a "green" and traceable product, Satinal - STRATO® Carbon Free is the first ever sustainable glass interlayer in the world and receive ISCC+ certification



tion and production chain. STRATO® Carbon Free expresses the company's renewed focus on environmental 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 also to guarantee its customers traceability along the entire value chain: the result is a new, green and sustainable product with a limited impact on the environment. STRATO® also uses internal fully renewable sources for its production processes. Once again STRATO® proves itself to be an in-

novative and ever-growing brand, committed every day to guarantee premium quality standards, always attentive to the sensitive issues that surround it, playing its role in building a healthy relationship between the development of its products and the planet. Satinal's vision, based on quality and innovation, has driven the company towards economic and environmentally sustainable solutions. Raising awareness of environmental issues and a commitment to respect and protect nature are topics considered as moral and

social obligations. This is why Satinal is always active in the search for new investments to adopt new solutions that improve environmental sustainability, the reduction of harmful emissions and energy efficiency. Do you want to protect the environment and join Satinal's efforts to reduce your carbon footprint? Choose STRATO® Carbon Free. Any customer interested in seeing Satinal solutions is welcome to visit Satinal factory in Italy: a company where you can see under one roof STRATO® EVA film production, an operating

TK Chemical Temper plant, TK Glass Machinery manufacture and the S LAB R&D laboratory with a wide range of testing equipment for your laminated safety glass.

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TK - STRATO

SATINAL



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# CUGHER presents EVA at Glasstec

With companies facing increasing competition within a global market, innovation alone remains the sole pathway towards a competitive advantage. Here CUGHER's own interventions in engineering, production and sales procedures have all generated positive change in its introduction of new products and services.

**T**echnology represents a great ally when it comes to innovating to do things in new ways - enabling transition against the backdrop of digital while contributing to both operational flexibility and the optimization of customer

experience. Indeed, it's precisely in following this goal that Cugher presents EVA.

## THE WONDERS OF AUGMENTED REALITY

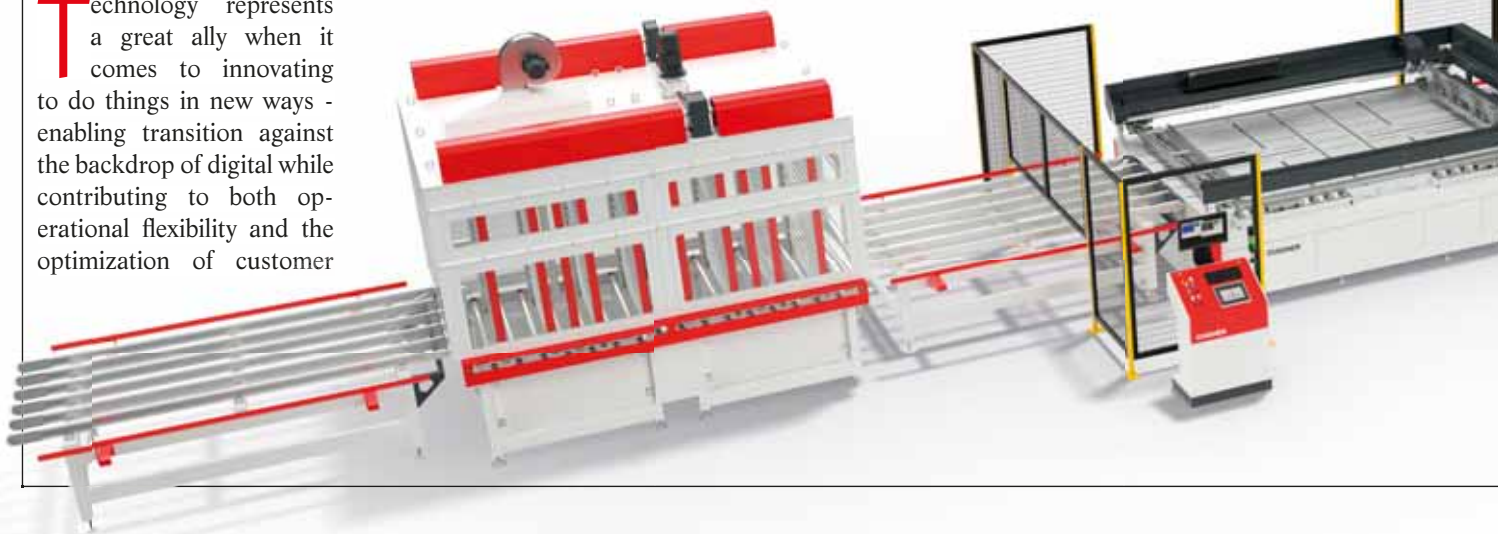
As a brand-new virtual technology that affords a vision of Cugher machinery by leveraging digital, EVA is an innovative application which enables customized configuration of a plant to its direct representation within real space - all through augmented reality. By framing the surrounding environment with a camera device, the connected machinery is projected upon a display - overlapping real space and thereby transforming the bidimensional viewing into a tridimensional

experience that's significantly more immersive and captivating.

Just so EVA facilitates the enrichment of sensorial perception by way of a perfect integration between physical reality and the digital world. Indeed, by simply moving the tablet 'inside and around' the projected machinery, it's possible to discover every detail whilst enhancing the characteristics of each component. Not only. An information section will enable simultaneous consultation of the technological details -with photos and videos included- thus widening the data scope accessible to the user.

## THE SHOW OF ALL SHOWS

Glasstec, the industry's largest trade show





# DISCOVER EVA®

our innovative  
**Line Configurator** by  
**Extra  
Vision  
Application**



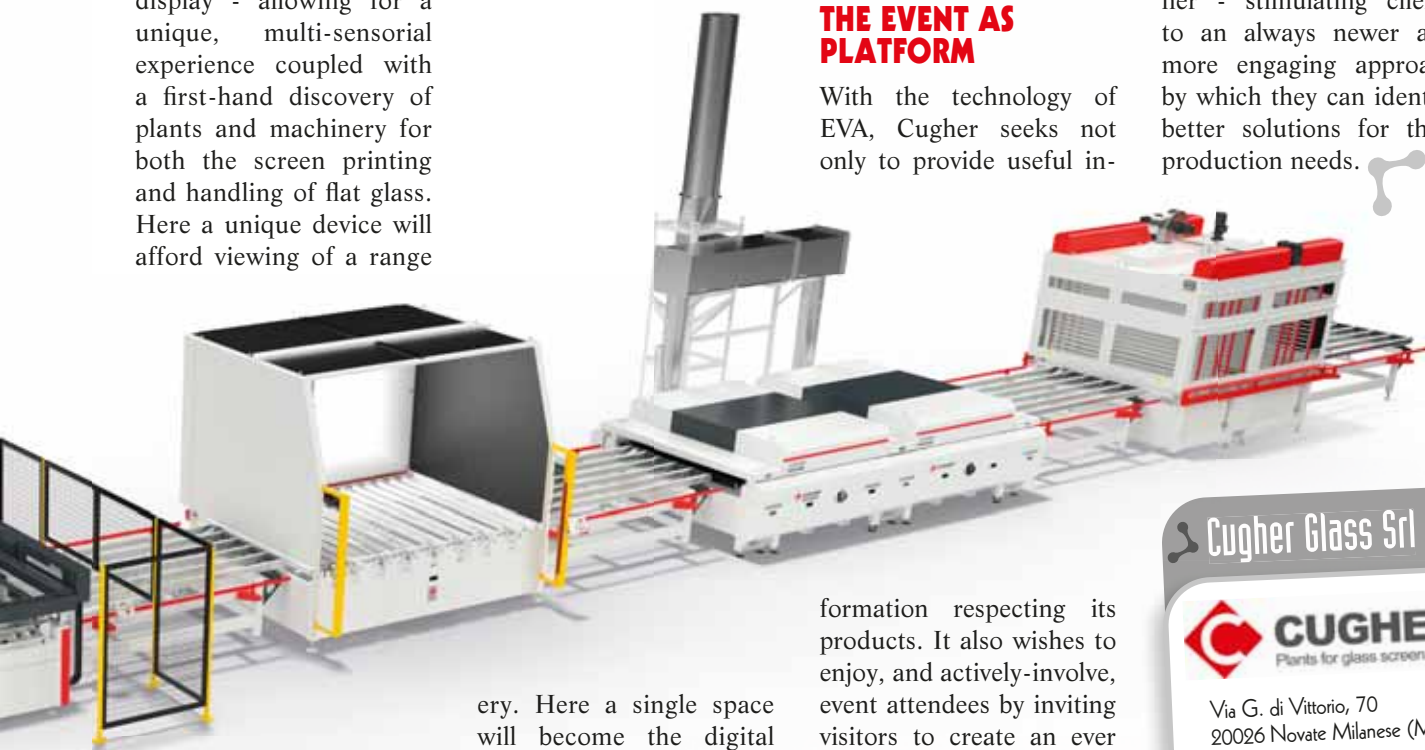
worldwide, will mark the first event to see EVA on display - allowing for a unique, multi-sensorial experience coupled with a first-hand discovery of plants and machinery for both the screen printing and handling of flat glass. Here a unique device will afford viewing of a range

ing international standing within the glass world.

## THE EVENT AS PLATFORM

With the technology of EVA, Cugher seeks not only to provide useful in-

product range in an ever more customized manner - stimulating clients to an always newer and more engaging approach by which they can identify better solutions for their production needs.



of solutions as if they were truly present - hence unlimited by the physical presence of machin-

ery. Here a single space will become the digital stage showcasing the very know-how and experience that's seen the company come into its own as a player of excellence enjoy-

formation respecting its products. It also wishes to enjoy, and actively-involve, event attendees by inviting visitors to create an ever closer relationship with the brand. Here the company believes strongly in current opportunities offered by technology to present its

**Cugher Glass Srl**



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# High-Tech

## AUTOClaves



# for flat & curved glass



#### KEY SUCCESS FACTORS

- Continuous research, ad hoc solutions personalized with Clients, technological development, excellent performance and quality standards.
- Use certified materials, of top quality components of primary brands, special attention to the internal insulation for energy saving.
- Certified safety systems of the pressure equipment, with inter-block logics to prevent tampering.
- Team of skilled technicians to assist Clients over the phone, via web or directly on site, in the shortest time possible.
- Quality/competitive price ratio, advanced technology, high performance, with considerably reduced working and maintenance costs compared to traditional autoclaves.

#### BUSINESS ACHIEVEMENTS

- Continuous research, ad hoc solutions personalized with Clients, More than 150 plants for the production of laminated flat and curved glass, designed, manufactured and assisted all over the world with the complete satisfaction of our Clients.

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# glasstec

INTERNATIONAL TRADE FAIR FOR GLASS  
PRODUCTION • PROCESSING • PRODUCTS

**20-23**  
**SEPTEMBER 2022**

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# B SOLUTION set to dazzle Glasstec with its Speed Arris

A company that designs and manufactures high-performance glass processing machines -especially for producers of double-glazing and/or tempered glass that combine both new and existing lines B SOLUTION follows every phase from installation to maintenance to service.



With its young experts, all guided by a shared passion and each super-prepared in the unexpressed potential of glass factory production, the B Solution team at Glasstec will be presenting the company's pride and joy for high productivity vertical arrising-grinding solutions, namely its Speed Arris.

## FROM STANDARD TO FULLY-OPTIONAL

A machine addressed to producers of double-glazing and tempered glass, Speed Arris' basic processing covers the arrising and rough grinding of rectangular glass. It can competently serve both high productivity double glazing lines and/or tempering furnaces. Here the different options available afford customers the opportunity to tailor the machine to integrate every available element in order to improve productivity. Indeed, driven by the company logic of 'solutions built to last', B Solution has developed a machine that can





be directly arranged by mechanic/electricians onsite at the customer - and with minimized maintenance.

## AN ARRAY OF OPTIONS

### Z-axis double tool

A flexible automatic system with a tool holder cone that houses up to two wheels and allows for the working of either float or laminated glass of different thicknesses.

### Pre-washing

A pre-washing stainless steel device comprising a series of nozzles that, by clean pressure-sprayed water, washes the front and rear faces of the glass sheet while eliminating the glass powder produced during processing. Here pre-washing prolongs the life of the washing machine.

### Software-shaped glass

Realized in collaboration

with B Solution, Optiway (Optima) software is a glass processing CAM programme by which shaped glass with a straight side can be processed.

### Small glass processing

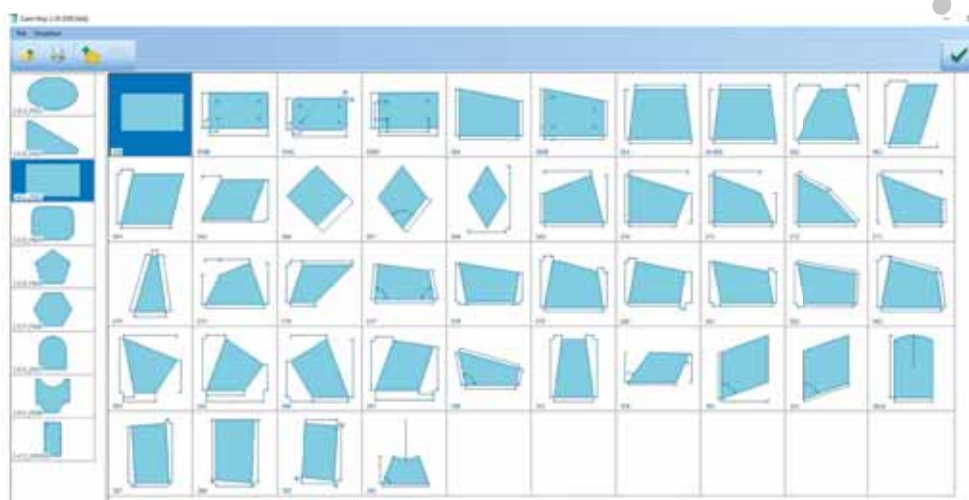
The machine can process very small-sized glass.

### Turbo outlet with double-motorization conveyor

Thanks to a software modification and brushless motor, an accelerated transport speed for faster evacuation of small glasses is possible - though it's also ideal for producers of large glasses.

### Centrifugal system

Using mechanical rotation the system purifies the water by way of a centrifuge, which divides solids from liquid. This ensures constant cleaning of the machine without having to resort to chemical additives that could potentially compromise functionality.

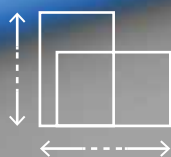


B Solution Srl

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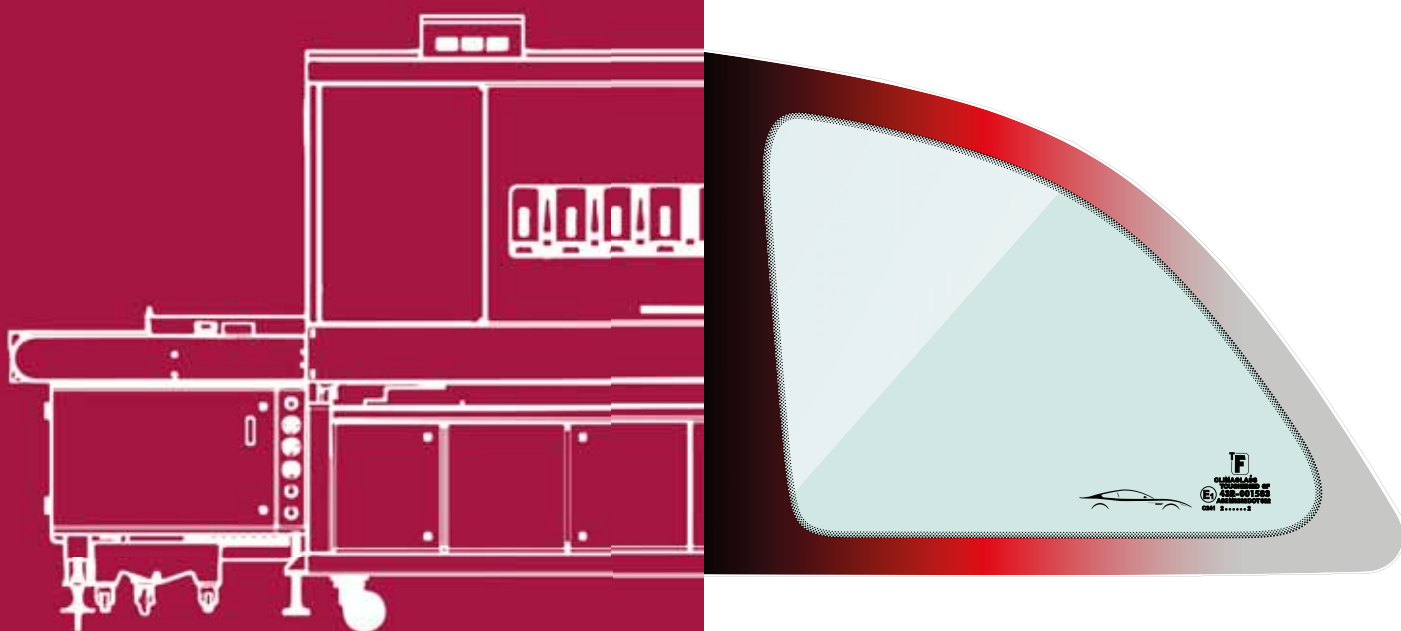
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BE PART OF THE GLASS  
PRINTING EVOLUTION

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# DECORA

GLASS PRINTER



DIGITAL PRINTER  
DESIGNED & BUILT BY  
**Gruppo TECNOFERRARI S.p.A.**  
Via Ghiarola Vecchia, 91  
41042 Fiorano Modenese (MO) - ITALY



# TECNOFERRARI exhibits its trailblazing Decora® G at Glasstec

TECNOFERRARI's latest printing solution embodies reliability, compactness, ease-of-use, robustness and minimal maintenance. Hardly any digital printer, this innovative decoration system for flat glass comes complete with an optical glass centring device, high-resolution inkjet printing and ink fixation - all Made-in-Italy.



The Italian company and leader in industrial automation, TecnoFerrari has been able to develop constantly-perfected, high-performance digital printers that can meet the most complex market demands thanks to the company's many years of experience and well-established know-how.



## ABOUT TECNOFERRARI

Since the beginning of its foundation, Tecnoferrari has remained focused on developing solutions, simplifying processes and improving performance - an approach which, coupled with the company's extreme flexibility, has it typically responding with a tailored solution to the specific needs of each customer.

TecnoFerrari proposes dedicated, effective and safe solutions within every production sector, thanks to its meticulous control at every stage of the process and the relationship it establishes with the customer.

It provides systems for handling, storage and quality control for different industries - especially in such sectors as ceramics, food and beverages, paper and tissue, automotive and pharmaceutical - and digital printers for the decoration of various surfaces like glass, tiles, slabs, wood, building materials.

The company's digital printers entirely developed by the TecnoFerrari team, meet the most complex needs of a market that demands ever higher quality printing performance - both in terms of decoration and effects.

A complete range of print-heads, customized configurations and colours management solutions allow the easy creation of unique products, each with high-resolution design whether for solid fields, floors, walls, geometric or interlocking decorations - even large formats.

### DECORA® G

Using the latest industrial printing technologies and already boasting four patents, TecnoFerrari's Decora® G will be displayed in Dusseldorf during Glasstec 2022 between September 20-23 - with two exhibition areas at Hall 12 Stand B67 for digital printing and at Hall 13 Stand D95 for logistic automation. The digital printer involves a unique UV-LED hybrid printing process with inorganic inks and it combines the excellent print quality that's typical of plotters with the productivity and reliability of single-pass technology. Digital production with Decora® G guarantees no screen printing frame stock and zero set-up time, complete traceability of the individual piece and consistency of the final result - from the first to the last printed glass.

### PRINT ENGINE FEATURES

Among the main features applied to different areas - such as production lines

for flat, tempered or laminated glass - we can find the use of inorganic and time unalterable hybrid inks, the possibility of coloured and RAL inks, compensation for cutting and grinding wear, edge-to-edge printing and automatic management of the APBL cycle.

Decora® G's print engine can handle both vector graphics and variable data, ensuring HD print resolution as well as maximum accuracy of logos, dots, bar codes, QR codes, data matrix and characters. Its ink storage, filtration and refill systems are all automatic. Not only. The machine is equipped with a high-precision conveyor



belt system that includes an optical centring system with quality control. Cleaning of both the conveyor and printheads takes place automatically. The ink recirculation system ensures high discharge as well as active ink temperature control. Both LED technology and an integrated ink fixation system will allow low energy consumption. The printheads are aligned with a metric optical device.

### CUSTOMER CARE

TecnoFerrari provides integrated diagnostics and remote 24/7 support as well

as scheduled maintenance assistance - thus confirming the high quality not only of the machinery but also of customer care that allows high performance over time.

TECNOFERRARI SPA

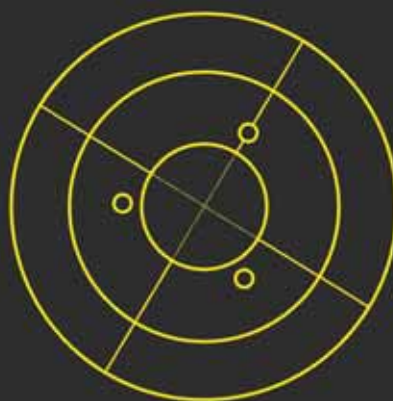
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Glass processing tools producer



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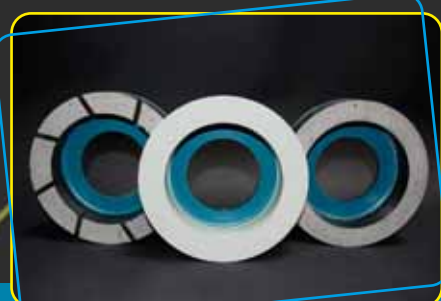
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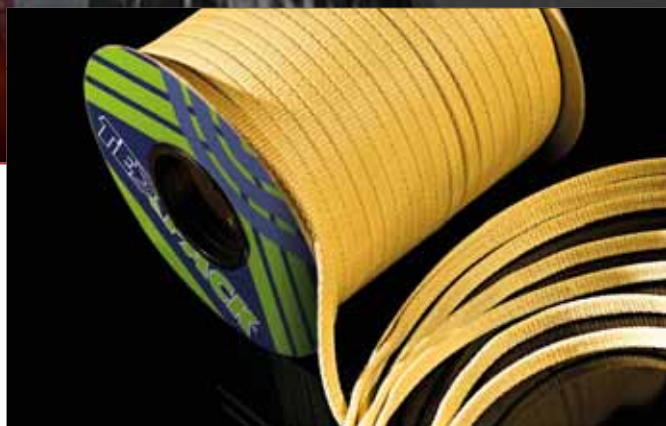
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# Textiles for the glass industry

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.



## 1210N Aramtex® discontinuous filament tapes

Aramtex® tapes are produced using 100% pure paraaramidic yarns with continuous filaments, that are usually woven in several layers, using particularly fine yarns that render the positioning surface extremely homogeneous and smooth and thus preventing the still hot sheets of glass from being scratched. Aramtex tapes have excellent mechanical characteristics (excellent resistance to cutting, abrasion, tearing and compression) while their heat resistance characteristics remain unaltered.



## 1204CM Tenack knitted sleeve

Tenack sleeves are made by braiding AISI 316 L stainless steel wires. This sleeve, which withstands high temperatures and has excellent mechanical properties, is suitable for the glass industry as protection for parts that may come into contact with hot glass that is still soft to prevent thermal shock and microcracks. They are an excellent substitute for Aramtex products when temperatures exceed 350°C.

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# TEXPACK<sup>®</sup>, a continuous investment

## THE HISTORY OF TEXPACK<sup>®</sup>

Texpack<sup>®</sup> was founded in 1993 as a result of the business experience of Giorgio Lanza and Simonetta Ghisi, who began specializing in the manufacture of textile products

in glass, silica, Texil<sup>®</sup>, Biotex<sup>®</sup>, Thermaltext, Pyrotex<sup>®</sup>, Tenack and Aramtex<sup>®</sup> for thermal insulation at temperatures from 200°C up to 1,200°C. Since 1993 Texpack<sup>®</sup> has continued along the line of constant and continuous

Texpack<sup>®</sup> is a manufacturer of packings, tapes, twisted ropes, cloths and sleeves, for thermal insulation for static use, and produces special packings and braided packings with dynamic use for pumps and valves. It produces and markets industrial gaskets of different types and sizes, offering a complete range of sealing systems and products for high temperatures.





investment, following the direction of technological research and using cutting-edge production methods. Texpack® has always looked towards the future, using specialized technical staff for each individual process. Texpack® supplies specific products for the glass industry. These items are used in the production lines of glass bottles, flat glass and tempered curved glass mold coating.

### THE TENACK AND ARAMTEX® PRODUCTS

The Tenack products are ideal for covering stacker rods in the hollow glass industry and for lining moulds for the production of car windows, for covering rollers and pipes in hardening furnaces and in lamination furnaces for flat glass.

The Aramtex® products are used in the industrial sector where extremely high mechanical resistance is required to running temperatures of about 350°C. Used for the rolls coating in the flat glass furnace.

### COD. 1204T TENACK SQUARE PACKING

Tenack square packing is made by braiding wires of AISI 316 L stainless steel. The packing, which withstands high temperatures and has excellent mechanical properties, is suitable for the glass industry as protection for parts that may come into contact with hot glass that is still soft to prevent thermal shock and microcracks.

### COD. 1204CM TENACK KNITTED SLEEVES

Tenack sleeves are made by braiding AISI 316 L stainless steel wires. This sleeve, which withstands high temperatures and has excellent mechanical properties, is suitable for the glass industry as protection for parts that may come into contact with hot glass that is still soft to prevent thermal shock and microcracks.

### COD. 1203N PBI TAPES

PBI tapes are fire-retardant textile products made of PBI yarns, which are particularly suitable for high temperatures. To improve the use of this tape, a double-sided adhesive has been added that helps to ensure correct positioning.

### COD. 12010N ARAMTEX® DISCONTINUOUS FILAMENT TAPES

Aramtex® tapes are produced using 100% pure

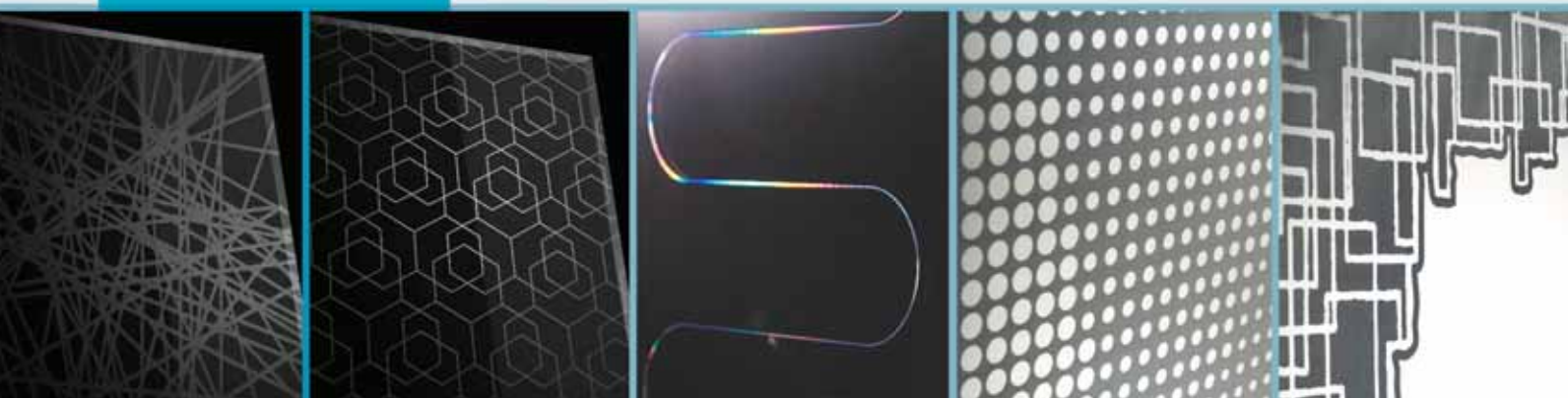
para-aramid yarns with continuous filaments, that are usually woven in several layers, using particularly fine yarns that render the positioning surface extremely homogeneous and smooth and thus preventing the still hot sheets of glass from being scratched.

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## LASERMEK

Laser Scanner  
Innovative Technology  
for **Coating Engraving**  
and **Ablation**



# GLASS COMPANY

## takes innovation and added value to Glasstec

GLASS COMPANY, ever conspicuous in the glass industry for its legacy of cutting-edge solutions, will be exhibiting at Glasstec 2022 in two places - one from Stand 16A18 within the GIMAV area in Hall 16, the other from Stand 12B34 in Hall 12.





Customers and trade show visitors who visit Glass Company's stands this year can expect to see its latest machinery and systems proposals for glass production - all with completely new technological, functional and aesthetic characteristics.

### SOFTMEK

The company's Softmek software will be presented for gauging and processing heated glass for the refrigeration sector, bathroom furniture, heated towel rails, etc. Developed to work in conjunction with Lasermek -the laser range that removes and engraves any coating type, including low-E, paint and silver- Softmek machinery offers glass a high added value for its drilling and cutting features.

### LASER SCANNER

At Glasstec the laser scanner machine will include process demonstrations on

different types of coatings throughout the day.

### FIREMEK

Stand attendees will also see the quality of fire resistant glass produced with the Firemek system, which uses a latest generation intumescent mixture based on Silica. This guarantees high glass performance, superb quality as well as durability in the event of exposure to fire or very unfavourable environmental conditions. Firemek contains sophisticated technology which, thanks to its great ease of use, renders fire-resistant glass production no longer exclusive or the prerogative of just a few manufacturers - such that medium and small businesses can now use it as well.

### LASERMEK

Lasermek covers the range of laser machines designed and proposed by Glass Company Srl - including scanner and beam technology, which were both developed for the engraving and ablation of any type of glass surface coating. Lasermek Scanner is an innovative multifunctional technology that, in a single step, can very swiftly remove portions of coating from tens of centimeters of the final product (mirror, lacquer, hard coating, reflective, etc.) or engrave high quality lines of a few hundredths of a millimeter with extreme precision.

### LASERMEK BEAM

Lasermek beam performs the same processes as those of the above machine, only with longer times given that it removes a few hundredths of coating at each step. Indeed both technologies can be applied to different types of processes:

- For the furniture sector - in particular bathroom furniture and generally any environment or furniture for which mirrors with a high aesthetic impact are required. They allow for the removal of silvering from mirrors - leaving glass completely transparent and able to reproduce any image and/or photo type upon the mirrors or, for example, insert TVs.
- Also for the furniture and construction sector, by choosing an appropriate laser source one can create graphic and decorative workings on the glass surface with an opaque effect. This technology allows for engraving, for example of logos on tempered glass, as well as for





partitions, glass doors and windows, etc.

- For the refrigerated counters sector it's possible to micro-engrave electro-conductive coating on the glass surface, creating lines and coils that are almost invisible to the human eye which, by interrupting conductivity, allow one to obtain heated anti-fogging glass that's also suitable for thermo sector furniture - allowing for simultaneous creation of both heating and decorative panels.
- Glass Company lasers can engrave most coat-

ings to create glasses with special performances - such as (among others) anti bird-collision glass, glass allowing for the passage of radio waves, glass that become antennas and those with antibacterial performances.

### DRILLING AND CUTTING TECHNOLOGIES

At Glasstec, information will also be given on other highly-innovative technologies within the Glass Company laser range, namely the Glass Drilling Laser, the Lasermek Drill and Lasermek Cut glass-cutting

laser. With the Lasermek Drill it's possible to make holes of any shape and geometry - from the classic round hole with square, oval, trapezoidal or mixed square with round holes to recesses and slots at the edge of the glass. Here the maximum hole size is 80 x 80mm - a dimension that can be increased using very sophisticated optics.

Processing times are close to those of classic water-jet cutting systems, only they offer the added advantage of processing with the total absence of water and abrasiveness. As such they generate no expensive

waste that requires disposal whilst having an energy consumption of about 3Kw as opposed to the required jet power - which is at about 40Kw. Created for the automotive, medical and hi-tech equipment glass sector, the LaserMek Cut allows for straight and shaped cuts on glass with a thickness of up to 15 mm. An innovative technology, it finds application in very specific fields of industry and is appreciated for the extreme precision of the cut, coupled with an excellent edge-finish. Both lasers work at low energy consumption and environ-





mental impact as they use no water, oils or diamond and abrasive tools and work with the almost total absence of noise. Not only. By not using mechanical tools they guarantee great drilling and cutting precision. Since the laser beam won't wear out as common tools do, an infinite repetition of drilling and cutting tolerances is guaranteed. Consequently it can be confidently deduced that the laser allows for significant energy savings just as energy costs are weighing so heavily upon the entire industrial sector - offering significant water savings but also a greater respect for the environment given the lack of waste generation and generally very low impact. Also, duration of the laser source exceeds thousands of work hours, thereby rendering this

technology a genuine alternative to traditional drilling and cutting systems.

### **FIREMEK**

For years now, Glass Company innovation has led to the development and subsequent implementation of the company's own technology for producing fire resistant glass, which is suitable for both flat and curved glass - namely Firemek. Initially developed as a manual system, Firemek was implemented over time as a semi-automatic system for the production of a few hundred square meters per month of fire-resistant glass - later becoming a fully-automated turnkey line for the production of large quantities of fire resistant glass. Continuous evolution of the system has since allowed for error-free preparation

of the intumescent mixture owing to the absence of the human component. Automatic weighing of the components, perfect automatic management of the heating and cooling of the mixer during the vacuum process, precision during glass-filling thanks to PC-controlled weight/volume pump dispensing all ensure that daily production of the intumescent mixture based on Silica -which is extremely transparent and without bubbles- can be replicated over time without variation or error. The process ends with a crosslinking of the previously prepared sandwich in an oven that has characteristics specifically-designed for fire resistant glass production. All production line components were designed to reduce and eliminate typical glass defects - making the process as

standardized as possible in conformity with the most stringent European glass protection regulations for classes E, EW and EI to counter flame hazards, noxious gasses and heat. With a sandwich system, consisting of two glass enclosing the intumescent mixture of the Glass Company system, resistance times rise for EI30, EI60, EI90, EI120 glass as the glass layers and intumescent mixture increase.

**Glass Company Srl**

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FOR SMALL, MEDIUM  
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## FOR **FLAT** AND **BENT** GLASS

# HEGLA GROUP at Glasstec: creating added value together



**A**longside many machines operating in real time, booth A55 in hall 14 will have much to offer at Glasstec this year, with HEGLA Group inviting its accredited visitors to return to the exhibition under the motto "Creating added value to-

gether." This was aptly articulated by Managing Director Bernhard Hötger, who told Glass Technology International: "We've focused upon the 'here and now' and want to show solutions that our customers can use to create sustainable added value."



With thirty-two lorries now ordered and its hotel rooms already booked, HEGLA GROUP is doing it again - ever true to form and still anticipating the best outcome when it comes to the Glasstec trade show.



With various lasers and stored programs, the Laserbird can remove functional layers from glass, and add textures and functions to panes such that a standard pane becomes an RF-transparent unit or antibacterial glass – on a pane by pane basis and without any tooling time.



## LASER DIODE TECHNOLOGY IN LSG CUTTING

Hötger went on to say: “In mechanical engineering, a project that was close to our hearts involved significantly improving cycle time in LSG cutting.” This resulted

in the laser diode heating system. The new laser technology focuses precisely upon the film in the scoring contour - reaching the transformation temperature much faster than what’s reachable with conventional heating tubes. “Thanks to bundled heat application, the productivity of the entire cutting process improves by 20 percent,” went on Hötger, adding that “considera-

bly higher pane throughput is now achievable.” The surrounding pane surface remains cold, which makes subsequent cuts possible without any waiting. The technology also benefits edge quality, since it systematically prevents any later delamination. Not only. In a first for HEGLA, the Group will also show its vertical remnant system for reducing glass waste.

## NEXT-GENERATION SOFTWARE

Last year with Cut+ HEGLA-HANIC introduced a completely reprogrammed software (HMI) for cutting-table organisation. At Glasstec, the Bochum-based company will be giving visitors insight into its next generation ERP system, which can integrate all processes from digital order collec-



The ProLam LSR from HEGLA is equipped with its standard laser diode heating system, which increases productivity by 20 percent or more - measured by pane throughput.



The standard now becomes added value – thanks to processing with the Laserbird from HEGLA borident, a standard pane can be transformed into either bird protection glass or an RF-transparent pane.

tion, storage and individual machines to delivery at the construction site. Said Managing Director Jan Schäpers from HEGLA-HANIC: "Standard OPC UA, digi-

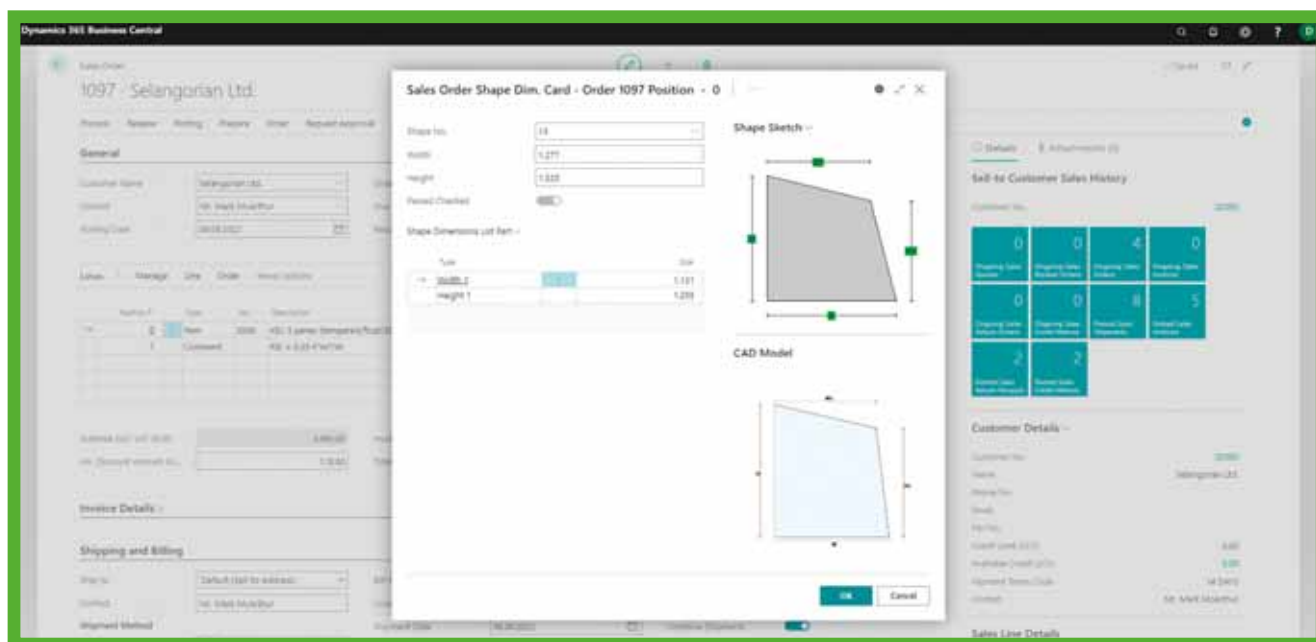
talization and an increasing level of automation have all motivated us to make our ERP ever more open with the Dynamics 365 development platform from Microsoft.” The new software basis now makes it possible to enable many add-ons, including one for financial bookkeeping or controlling via the Microsoft platform. On the other hand, a wide range of programs can be

integrated with just minimal effort. Besides, as a completely redeveloped software it's perfectly adapted to all current systems.

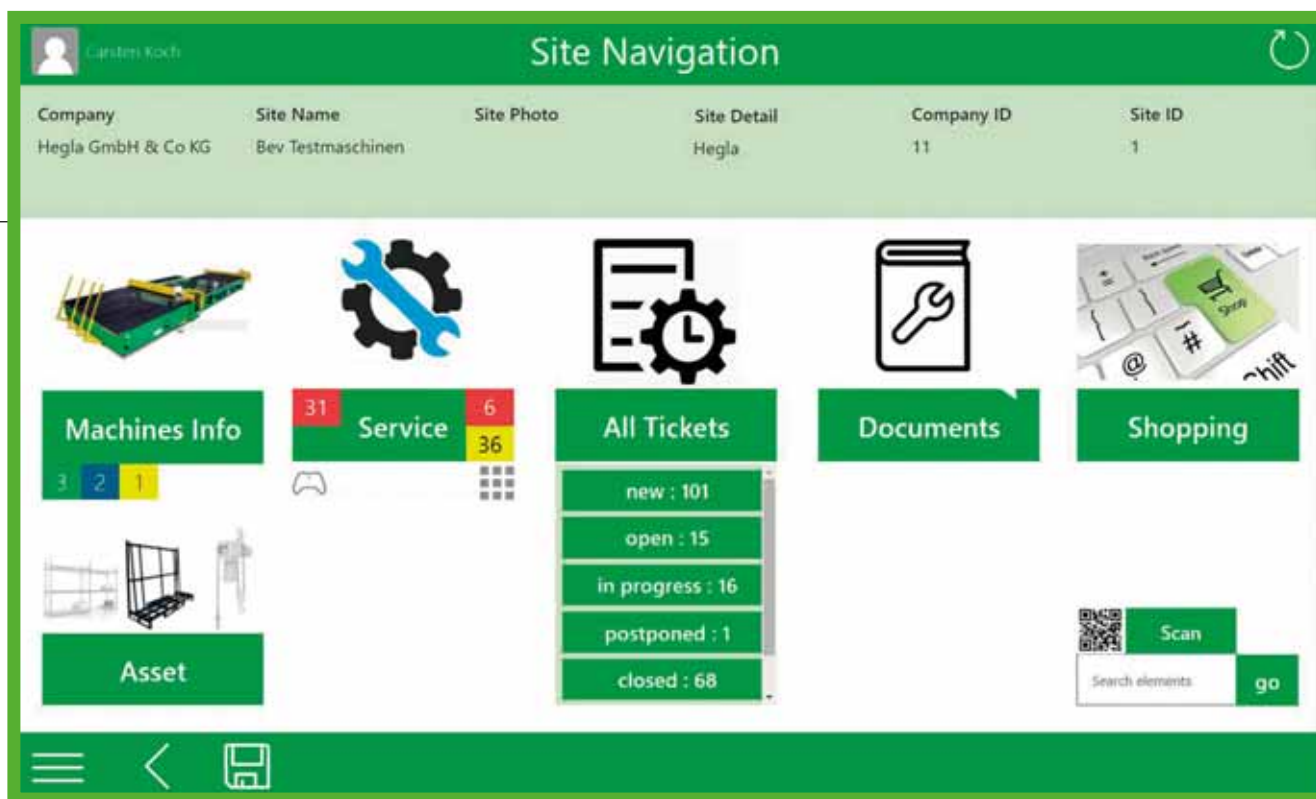
## THE STANDARD BECOMES ADDED VALUE

Be it bird protection glass, antibacterial panes, heatable glass or an RF-transparent IG unit, Halle/Saale's HEGLA boraident seeks to prove the ease with which a standard product can become a commodity

with added value. "With a range of samples we wish to give the impression of how flexibly glass can be finished by removing or transforming the functional layer - or via non-destructive printing with our Laserbird," explained Dr Thomas Rainer, the Head of Development at HEGLA boraident. Here, beyond the choice of creating functional glass without tooling time or an additional service provider, Rainer sees the 'single piece' option as a major advantage: "Via the user-friendly GUI or connection to the ERP, each individual pane can be coated with various finishing treatments without any waiting time."



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HEGLA's New Technology Shop-Floor app enables both product tracking and data access anywhere and at any time. The app's maintenance function has a ticket system and provides cross-manufacturer access to documentation and spare parts lists. For example: functions which simplify maintenance and service.

## GREATER TEMPERING FURNACE EFFICIENCY AND AUTOMATION

"Tempered glass - perfect as only glass can be," is what HEGLA TaiFin from Finland is after. The company is known for both convection technology and closely controllable heating zones that have qualities much higher than the industry standard. "We have one of the best tempering furnaces on the market. Now at Glasstec we wish to show what's possible when strong partners work together," said Teemu Kolka, Manager of HEGLA TaiFin. The optimal bedload is determined with bed optimization from HEGLA-HANIC. For maximum automation, the glass can be put together with automated batch creation from HEGLA – with no operator required. Through 'de-batching' the batch can be separated again. Option-

al quality scanners monitor quality and, in conjunction with the intelligent optimisation of HEGLA New Technology, they adjust the furnace recipes if necessary. Thanks to this holistic approach, a system like this will significantly increase total throughput whilst saving a great deal of energy.

## CROSS-MANUFACTURER INFORMATION AND OPTIMISED APP MAINTENANCE

The Shop-Floor app from HEGLA New Technology meets the challenge of increasing demand for information and defined processes. Irrespective of the manufacturer, machines and systems can be integrated into the maintenance area of the app with the documentation and spare parts lists, for example, being stored there as desired. An auto-

matic ticket system alerts users to when maintenance is required, then saves the information once maintenance work is completed. Operations managers can also use the app to assign work to employees - putting work organisation on a platform as well. The Shop-Floor Assistant app can be used as a tool for initiating such processes as writing shipping documents or notifying breakages. It also has a function for location-independent product tracking. The QR code in the glass marking or production label can be scanned and read to access the default data. "The Shop-Floor Assistant app from HEGLA New Technology supplies flexible options and information anywhere and at any time," said Dr Markus Schoisswohl, Managing Director of HEGLA New Technology. "We look forward to Glasstec and to

meeting up with the global glass industry," added Bernhard Hötger, adding: "We live in dynamic times and we haven't seen many of our customers for a long time. We hope to have ample opportunity for spontaneous technical and personal conversations."

At Glasstec, the HEGLA Group will be in hall 14 at booth A55.

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# When to think big is to think **MAPPPI**

**Nancy Mammaro - CEO  
Mappi**

In a trade show as important as Glasstec marks a fresh opportunity to take stock of both the present and future of the glass industry. How a company does this says much

about its outlook on the industry. Take the Italian company Mappi.

As Glasstec draws nearer, a cursory glance at MAPPI's portfolio will yield a clear vision of how the company is still in line with the direction it's consistently fol-

lowed over recent years, which is a path based upon a trio of priorities, namely operational flexibility, energy saving and total quality. These aren't only Mappi's priorities, but the priorities of every glassmaker and entrepreneur who

wishes to be a protagonist in the future. Let's look at them as a whole. Then let's also look at the great breakthrough that Mappi is presenting this year: The MTH temper furnace. Let's go in order, starting



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with Operational Flexibility.

## OPERATIONAL FLEXIBILITY

A glassmaker must be prepared to work sheets that are always different in thickness, size and quantity. Furnace set-up must remain easy and swiftly changeable to allow our glassmaker the freedom to concentrate on what's important. Given their technological innovativeness, Mappi furnaces facilitate these shifts - all thanks to a user-friendly approach by which it's easy to give instructions to the machine while also collecting management data. Here, with tempering, it's possible to shift from ultra-thin sheets to those of sizeable thicknesses - right up to the latest innovation introduced a few months ago, the Supertemper option, which allows for the production of flame-resistant glass that attains to E30 standards. All this with the

same furnace controlled by a simple, straightforward touchscreen. Operational flexibility also means using energy with rigorous intelligence - and strictly when needed. Here the furnace only concentrates heat to those areas where glass to be tempered is present, thus allowing for great savings when the furnace isn't

### fully loaded. What's known

is that, on average, a tempering furnace is around 65 percent loaded. This means that, once compared to a traditional furnace -which heats the entire loading surface evenly- a Mappi furnace will save a third of the energy.

### Energy saving

Onto the second pillar upon which Mappi's future vision rests. For years now, thanks to the company's exclusive innovations, patents and dedicated software, as well as its use of materials and







construction solutions of supreme excellence, Mappi furnaces consume significantly less. That's also owing to their ability to be quickly switched off - and remain off overnight. This is practically impossible for a traditional furnace, as anyone who owns will know, and it constitutes a noteworthy saving that's repeated daily and over years.

### TOTAL QUALITY

As for Mappi's third pillar, i.e. total quality, every aspect of its furnaces is envisaged, designed and created with excellence always at top-of-mind. All these qualities can be found in the assembly, testing, technical assistance and customization of each feature. They're also there in the relationship between Mappi and its customers, which is never just

one between supplier and buyer but between partners. Such rigour translates into a range of furnaces that doesn't merely concern itself with consistently producing novelties but rather with producing furnaces that are made to be constantly in the lead - continuously refined and perfected, thanks also to the company's close collaboration with Siemens, leader of Industry 4.0-designed applications, which is no longer the 'horizon' but the very 'here and now' for any who wish to be leaders. This brings Mappi to its latest addition, namely the new MTH - a furnace that has a loading surface reaching 3300 x 6000 mm. Here, besides the dimensions that command our respect, the exhibited characteristics are typical of every Mappi furnace - including operational flexibility, which has both

quality and performance maintained even when there's no need to work at full load. Not only. Owing to its large size, the energy saving is even more substantial, as can easily be imagined. All this while maintaining excellent performance - the 'total quality' which closes our trio of Mappi priorities.

### DESIGN EXCELLENCE

Attention to design marks another shining attribute characterizing any Mappi furnace. And here, the new MTH is no exception. Its angular lines and imposing shapes make it a lead player in many contexts. Not only.

Its LED lines, coloured to underscore and lighten the forms with a touch of novelty and accuracy, are hardly ever seen in a glass factory. Here, in summarizing Mappi's outlook on both the present and the future of the glass industry, a most appropriate catchphrase could be: 'when thinking big, think Mappi!' where 'thinking big' refers not only to size but, above all, to planning, vision, the ability to envisage the future and also anticipate it while having the comportment of a leader. More than ever it's these core values that make the difference today.

**MAPPI**  
INTERNATIONAL SRL



**MAPPI**  
BEYOND GLASS PERFECTION

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# STEFI GLASS INTERNATIONAL:

## Dedication to customization and optimization together

Stefiglass International is a leading manufacturer in Europe in the sector of washing machines, complete lines and accessories for double glazing. With over 40 years of experience in manufacturing glass processing machinery, the company is able to guarantee quality equipment, after-sales assistance and reliable service.





**S**tefiglass International is based in Pieve San Giacomo, in the province of Cremona, about 100 kilometres south of Milan. In the production unit, which occupies an area of 5,000 square metres, a team of highly qualified technicians work on all aspects related to software development and plant design, while quality control and testing are followed directly by the owners, who make use of a wealth of experience and professional-

ism acquired over the years. The plants, built entirely using mechanical, electrical and electronic components compliant with European Union regulations, are also distinguished by particular attention to the environment and eco-compatibility. The production of Stefiglass, in addition to a wide range of standard models, offers customers the possibility to customize systems according to the specific processing needs of each

glass factory. Personalization represents the majority of orders within the company's production activity. This flexibility of construction, functional to the needs of users of the systems, is also a great stimulus to always pursue new objectives.

For this purpose Stefiglass has a Research & Development office dedicated to the optimization of the machines in production and the design of innovative solutions.

## ATTENTION TO DETAIL

Constantly present at the Glasstec Fair for 30 years, owners Giovanni Visini and Elisabetta Anelli explain the company's vocation for export: "We operate 80 per cent with foreign markets and export our machines throughout Europe, Latin America, Canada, the United States and Japan, as well as many others. Our distribution abroad relies on a network of dealers present in the various countries of





reference to whom we offer an initial training on machinery, carried out directly at our Italian headquarters, constantly supported by our competent assistance service.

"Furthermore, with regards to large plants, our company offers direct online

assistance. We have been collaborating with foreign retailers for years, which have allowed us to acquire in-depth knowledge of the needs of each individual market area, proposing more suitable specific solutions for each case. For the most innovative production lines we offer training at our headquarters, inviting our customers to direct demonstrations on the operation of the plants already in operation."

The main quality features of Stefiglass' machines:

- Durable and strong construction, in compliance

with CE norms;

- UE electrical and mechanical components of top quality brands;
- Easy maintenance and easy replacement of spare parts;
- Excellent value for money;

- Customisation of machines and possibility to connection to CNC of other manufacturers.

## PRODUCT RANGE

- Full range of vertical washing machines from 1,300 to 3,300 millimetres;
- Horizontal washing machines;
- Complete IG lines with different models of assembling station, press and optional tilting table;
- Exclusive line of Compact IG models, patented by Stefiglass
- Full range of equipment for IG production.

Stefiglass  
International Srl

**STEFI GLASS**  
MACCHINE ED IMPIANTI PER LA LAVAGNAZIONE DEL VETRO

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# STEFIGLASS

## LV 3300 JUMBO



**Stefiglass propose you  
a new cost effective  
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, which are among the highest. 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.



# ACCELERATING NEW TECHNOLOGIES IN GLASS PROCESSING



After a resounding success at the first post pandemic edition, Zak returns to New Delhi with the 19<sup>th</sup> edition of India's leading expo on glass processing and its allied technologies. Be a part of the display of latest advancements in the field with industry pioneers.

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# TECNOSENS'

## automotive and flat glass dimensional control solutions

Driven by its singular focus towards increasing productivity and production efficiency, TECNOSENS has consistently kept customer-centricity top of mind with its process monitoring sensor integration - all to advance industrial automation which has reliable products and solutions that are also developed in-house.





With over 20 years activity in the world of sensors and measurement systems, Tecnosens S.p.A has been able, from the outset, to look ahead whilst differentiating itself on the market by becoming a solution provider.

No simple distributor, the company is a true partner equipped with R&D that has extensive know-how in multiple measurement technologies and can develop complete solutions for the dimensional control of glass for automotive.

### EXPERIENCE, KNOW-HOW AND SYNERGY WITH CUSTOMERS

Research and innovation are both keywords for Tecnosens. Here collaboration and support are at the centre of all activity in both Sales and R&D De-

partments. Joint efforts between Tecnosens and its customers affords the company the competence to create and propose the kind of dedicated solutions that can capably meet customer needs without ever losing sight of current market requirements.



Concerning quality control systems, its automation division has been a particular point of reference within the automotive glass world for over twenty years now - the main goal being to ensure both productivity efficiency and production optimization. Here's why, to date, Tecnosens has consolidated partnerships with leading automation manufacturers - particularly within the glass sector, for which it is a specialized integrator.

### **AUTOMOTIVE GLASS INSPECTION**

Tecnosens operates expertly within the automotive field by its inspection systems.

Caliber, the company's system for measuring the curvature of the glass, makes the measurement of shape, curvature and perimeter of glass all possible. Here, examples of application fields in which the system is used are auto glass, safety glass, industrial vehicle glass and special glass. Caliber uses LVDT transducer digital contact technology, by which it's possible to take a great quality leap in terms of production - drastically reducing inspection times whilst offering complete measurement traceability for each piece. As for the curvature measure of car windows, Tecnosens offers two different versions, namely "laboratory" and "industrial", as manually-usable

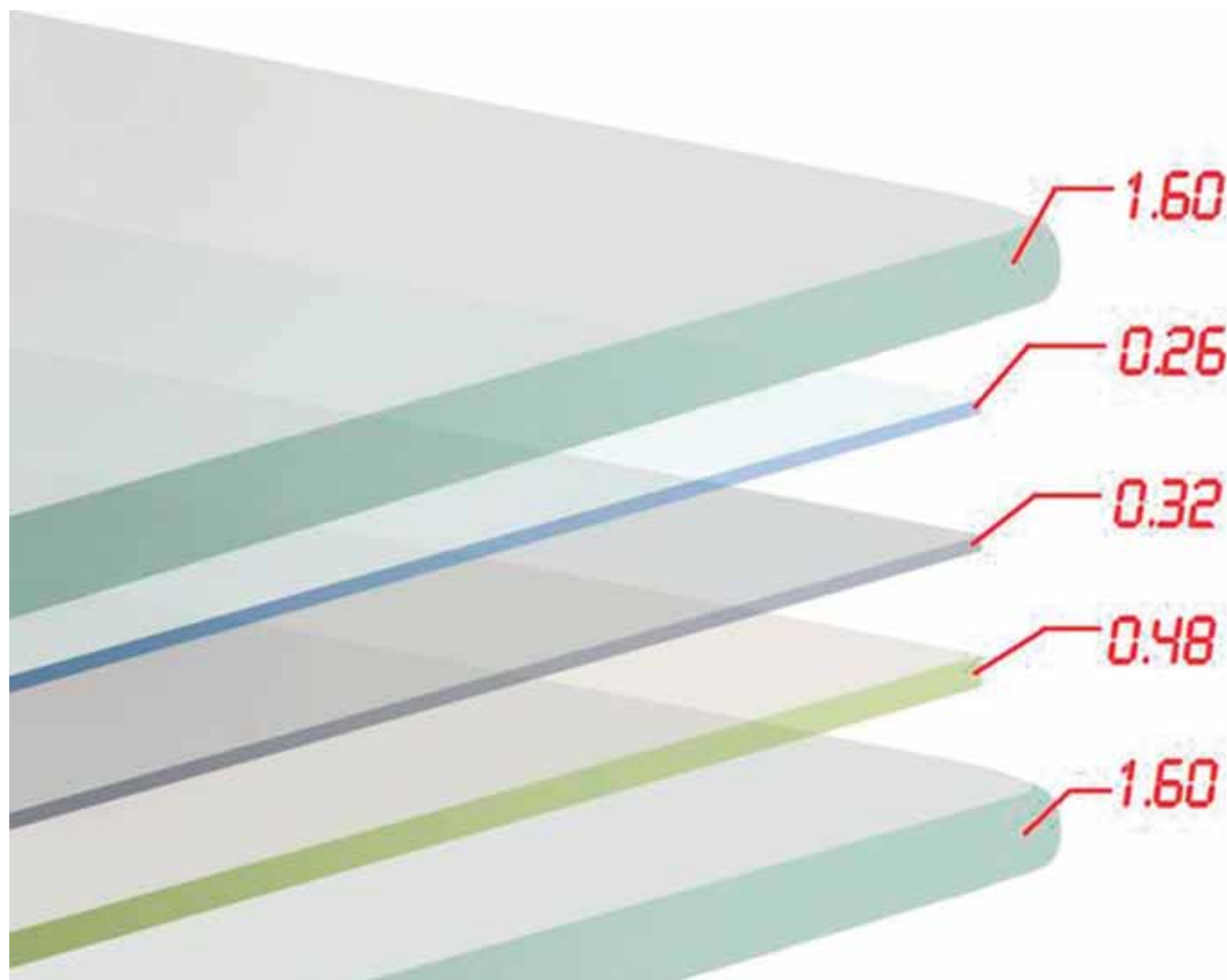
for measuring either within a laboratory or directly in an automatic production line. The advantage of the system is its versatility, given that it's not only suitable for large producers but also where demand is limited. High measuring speed, full traceability and easy configuration are all reasons that motivate so many customers to choose these systems.

### **OPTICAL SENSOR FOR THICKNESS MEASUREMENT ON LAMINATED GLASS**

Used in many special applications, glass is among the most versatile and eco-friendly of materials. Automotive glass is often jointly

laminated with other materials, which gives special properties to the final product, including UV filtering, noise reduction and high strength. Experience already gained with curved glass has prompted Tecnosens to develop new multi-layer instruments which, by way of confocal and interferometric optical technologies, quickly and accurately measure the layers that comprise a laminated glass - including plastic films, **PVB** and **EVA** ones between the layers. These Thickness measurement systems allow for saving and analysis of the acquired data via statistical methods, thereby highlight-





ing the measurement trend as well as the points where the tolerances are exceeded. Such tools are used in various fields, including those of plastic film production, laminated glass and mobile phone glass.

This innovative multi-layer technology can also be used to measure the thickness of plastic film layers (PVB, EVA) prior to their heating for lamination. The sensor allows for measurement of the film thickness even where the material is not entirely transparent. Some films, such as PVB and EVA,

are typically expensive materials. Consequently, keeping their thickness monitored during the process allows for both optimized use of the material as well as cost reduction.

### UNLIMITED TRAINING AND SUPPORT

In today's market, which requires an ever-widening choice of solutions -above all specialized- it's important to examine the proposed added value. And service is as fundamental as the product itself. Here Tecnosens accompanies the

customer step-by-step - not only by proposing optimum technology, but in all after-sales and support stages as well. Training plays a fundamental role in capably leveraging and best capitalizing upon the solutions on offer. It's also crucial for the customer to gain maximum benefit from them. However, good training is hardly enough, which is why Tecnosens remains close to the customer with constant support - worldwide too. Not products alone but also collaboration to achieve a shared goal built upon a

direct relationship with the customer. Such is the direction the company has always sought to follow - investing in a complete and structured service so as to offer added value to its customers.

**TECNOSENS SpA**



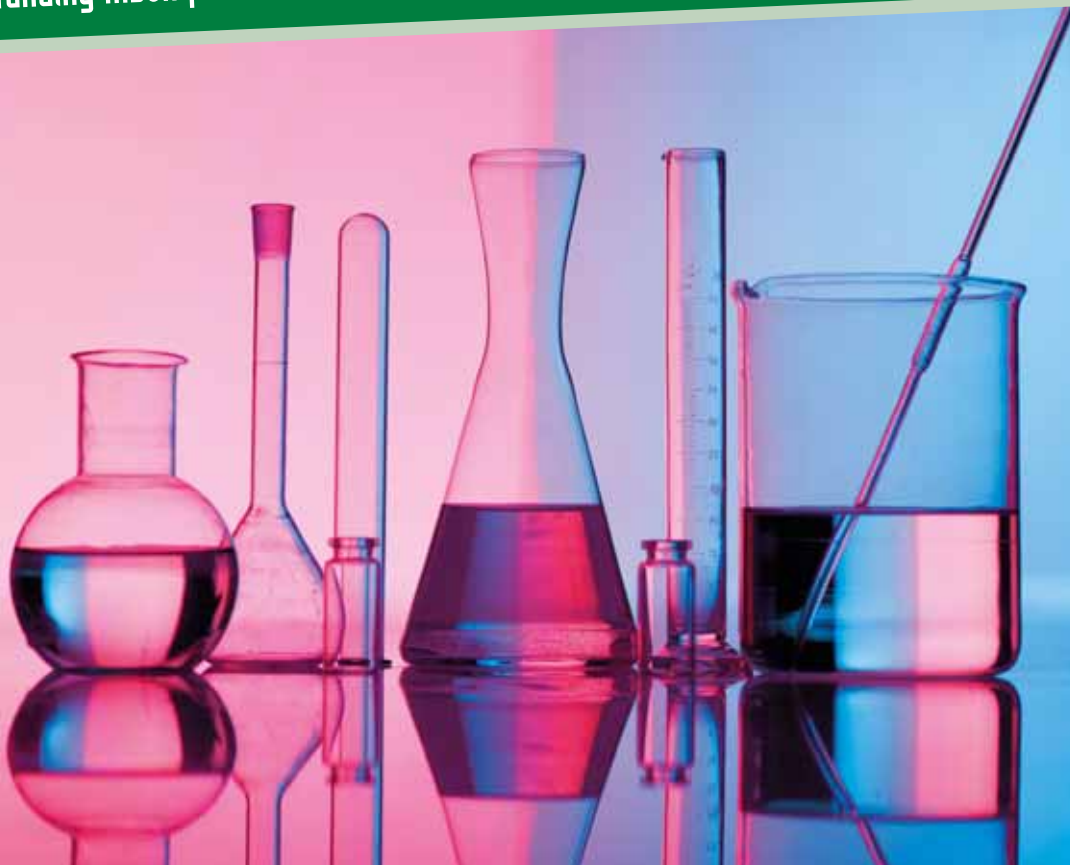
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# TECHNI WATERJET

## and the mechanical properties of glass

With glass being an ideal material for windows and drinking glasses, TECHNI WATERJET's cutting solutions arise from its keen attention to glass' low tensile strength, which won't withstand much force before breaking while its high compressive strength will have it withstanding much pressure without breaking.



**Jonathan Schlick**  
**Manufacturing**  
**Manager**  
**Techni Waterjet**

**DENSITY**  
 A After over 20 years of experience in the field of industrial machinery I'm often reminded that density is a measure of how much mass is contained in a given volume. The denser an object is, the more mass it has in a given volume. Glass is a material with a very high density. In fact, it's one of the densest materials we know. This means it has a very high mass per unit volume. One

of the reasons glass is so dense is because it's made of silicon dioxide ( $\text{SiO}_2$ ) - a very heavy molecule. When combined with other elements to form glass, this molecule makes the resulting material very dense indeed. Another reason glass is so dense is because it's non-porous. This means there are no empty spaces within its structure. This is in direct contrast to a material like wood, which has many empty spaces within its structure. Again, the lack of empty space makes glass very dense. The high density of glass is one of the reasons it's such a useful material. Glass can be

used to create products that are very strong and durable. Not only. It's resistant to many chemicals and can be used in a variety of applications.

### **GLASS TENSILE STRENGTH**

The tensile strength of glass is a measure of its ability to resist being pulled apart. This is an important property for many applications, as it helps to ensure that the glass will not break under stress. The tensile strength of a material is usually expressed in terms of its ultimate tensile strength, which is the maximum amount of

force that can be applied before the material breaks. Glass has a relatively high ultimate tensile strength, meaning that it can withstand a significant amount of force before breaking. However, it's important to note that glass is also brittle as a material, meaning that it can break suddenly and unexpectedly when subject to overmuch force.

### **ELASTICITY**

Glass is a brittle material that can easily shatter when hit or dropped. However, it's also very elastic, meaning that it can bend and deform without breaking. Here's why







glass is often used in windows and windshields: it can flex under impact without shattering. Indeed it's also the elasticity of glass that makes it an ideal material for many applications.

### COMPRESSIVE STRENGTH

When it comes to glass, compressive strength is one of the most important prop-

erties to consider. It's this strength that determines how well the glass can withstand any forces trying to compress it. The higher the compressive strength, the better the glass will be able to resist such forces. There are different ways to measure compressive strength, the most common being to use a compression test machine. This machine will apply force to a small

piece of glass in order to measure the force required to break it. The results of these tests can then be used to determine the compressive strength of the glass. There are many factors that can influence the compressive strength of glass. The type of glass, the manufacturing process, the thickness of the glass - even the environmental conditions. Generally speaking, however, the compressive strength of glass increases with the thickness of the glass. This is because thicker pieces of glass are better able to resist any forces trying to compress them. While the compressive strength of glass is an important property, it's not the only one. Tensile strength, for example, is also important. This measures how well the glass can withstand forces that are trying to pull it apart. The higher the tensile strength, the better the glass will be

able to resist such forces. So when choosing the appropriate glass for some project, it's important to account for all the properties that are important to the project. Compressive strength is just one of many factors one should consider for choosing thickness, type of glass and manufacturing process - all of which can affect compressive strength. Generally, thicker pieces of glass have higher compressive strength. Compressive strength measures how well glass can resist forces trying to compress it.

### YOUNG'S MODULUS

Young's modulus of glass is a measure of the stiffness of glass. It's used to calculate the amount of deflection that a glass sample will experience under a given load. Young's modulus of glass is determined by taking the ratio of the applied load to the result-





ing deflection and will vary according to the type of glass and its composition. For example, soda-lime glass has a Young's modulus of around 72 GPa while leaded crystal glass has a Young's modulus of around 87 GPa. The higher the Young's modulus, the stiffer the glass. Young's modulus of glass is important for applications where high levels of stiffness are required, such as in optical fibres and windshields. It's also a key parameter for designing glass structures that can withstand large loads without failure.

### POISSON'S RATIO

Poisson's ratio of glass is a measure of the compressibility of the material. It's defined as the ratio of the transverse contraction strain to the axial strain. Glass has a relatively high Poisson's ratio, which

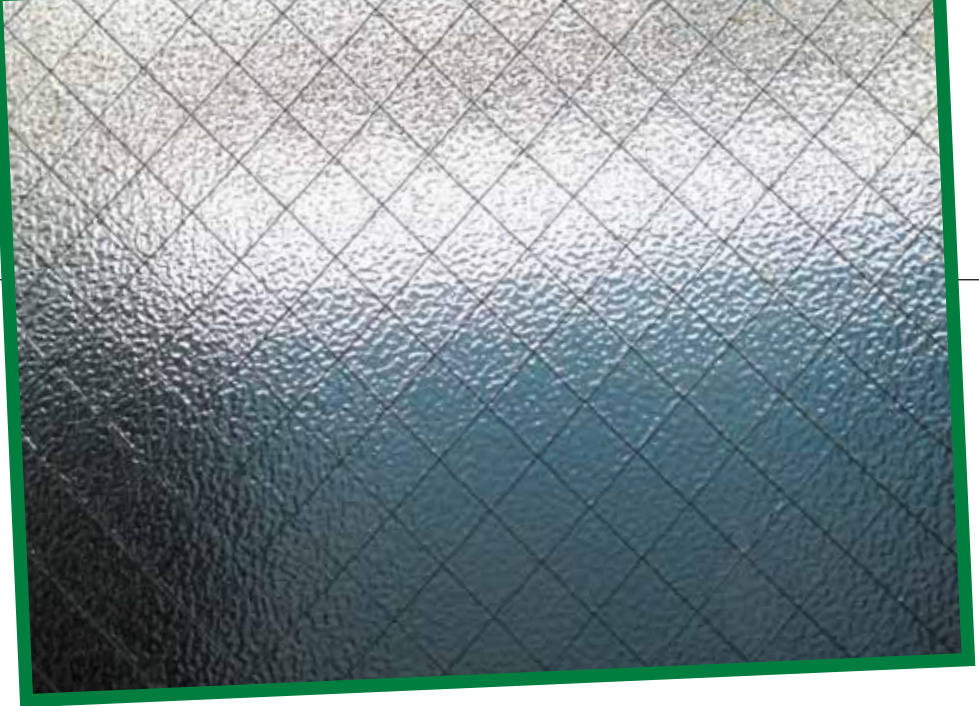
means it's highly compressible. This property makes it an ideal material for use in applications where compressive forces are applied, such as in optical fibre cables. Glass also has a high resistance to shear forces, which makes it ideal for use in applications where shearing forces are applied, such as in the manufacture of bulletproof glass.

### MODER APPLICATION OF GLASS

Glass is also a very hard

material, meaning it can scratch and chip easily. This is why it's important to handle glass carefully and avoid dropping it or letting it come into contact with sharp objects. Glass is also a good insulator of heat and electricity, which makes it useful for a variety of applications. One of the more recent applications for glass is waterjet cutting. Waterjet cutting is a process that uses high-pressure water to cut through materials. This process can be used to cut a variety of materi-

als, including metals, plastics, stone, and even glass. While waterjet cutting can be used to cut any number of materials, there are some advantages to using it on glass. First, glass is a very strong material. This means it can withstand the high pressures involved in waterjet cutting without breaking or shattering. Second, glass is a very smooth material. This smoothness helps to ensure that the waterjet cutting process produces clean, precise cuts. Overall, glass is a strong and durable material that can be used in a variety of ways. Finally, it's important to handle it carefully, however, as it's susceptible to breakage and scratching.



TECHNI WATERJET



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# IDROTECNICA:

## enduring persistence at the edge of innovation

**P**resent in the glass industry for over 35 years, Idrotecnica has constantly updated its equipment - developing new technologies according to the needs and increasingly ambitious parameters of the sector. Now it's the simplicity of the company's operations that's ensured the widespread use of its demineralizers.

### IDROTECNICA TODAY

Idrotecnica's service remains unaffected by today's widespread problems, which often lead to delivery times that are longer than expected. Instead, the company has been consistently organ-

ized to assign any preparation of its standard equipment to a very short time - commonly two to four weeks, or even less, which remain the preparation times typically confirmed during this period. This is all made possible by a joint redesigning of the company's plants and logistics, which allows for a synchronization of existing production times with the orders of customers and their needs. Significant renewal of the Idrotecnica headquarters took place in 2021, which led to expanded plant capacity of the plant - especially in recent months. It allowed

for special storage of the numerous devices ready for delivery. This renovation also occasioned the creation of a green outdoor area for relaxation or outdoor meetings.

### HOW IDROTECNICA WATER DEMINERALIZATION PLANTS STAND OUT

Ease of use, rational innovation, application sector specialization and, at the core of everything, responsibility - these four core values characterize both Idrotecnica's demineralized and pure water production systems and its plants. Beginning with

the latter, responsibility is consistently underscored so that the Idrotecnica team is constantly aware that each installed apparatus produces pure water for an important and sophisticated production process. As such, over thirty years the company's attention has daily been directed to ensure the extreme simplicity, robustness and reliability of everything it designs. Ease of use, because its devices represent a utility for systems rather than the main system to which operators must pay primary attention. As such their installation and operations must remain simple and intuitive.

Rational innovation, because new technologies make everyday life always simpler - broadening new horizons and possibilities. According to the company's technical philosophy, hydrotechnical equipment applies and develops new techniques to better meet and anticipate the needs of the market.



IDROTECNICA manufactures both equipment and systems for the production of demineralized water. It also provides assistance and advice in the washing machine sector. Here, for any glass washing machine, the company represents the reference point for identifying and installing a most suitable demineralization system.

#### APPLICATION SECTOR SPECIALIZATION

Idrotecnica has always 'immersed' itself in its application sectors - all to ensure it remains unlimited to system supply alone. In this way, by combining its thorough

preparation in water treatment with its know-how in the application sector, Idrotecnica represents the ideal supplier and partner for the identification and installation of the system that offers the most suitable solution.

IDROTECNICA

**IDROTECNICA**  
Water Purification Systems

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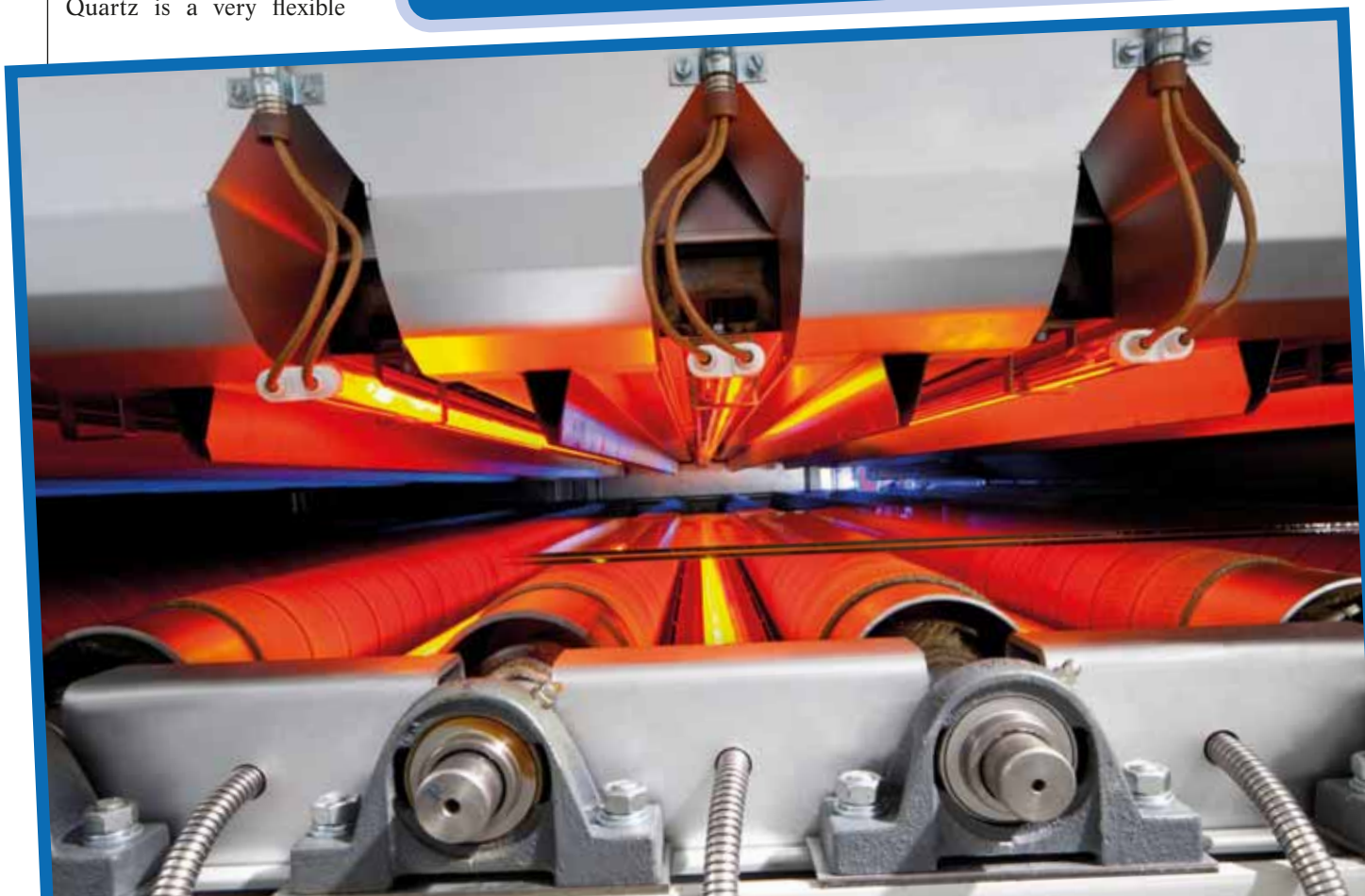


# HELIOS QUARTZ:

## a growth trajectory spanning eight decades

In just over eighty years, Helios Quartz has expanded into a large group of companies with two production plants: the historical plant in Italy (Helios Italquartz Srl) and its new facility in Switzerland (Helios Quartz Group SA), combined with distribution channels within the USA, South America and Asia. Now TÜV certified, Helios Quartz is a very flexible

HELIOS QUARTZ was founded in 1940 as a family-owned business amid the bustle of Milan. Today as international player and key supplier for Quartz Glass processing as well as manufacturer of infrared emitters and ultraviolet lamps, the company also produces specialized equipment for industrial, scientific and medical applications.





and dynamic group that's deeply oriented towards internationalization whilst experiencing a strong and stable growing phase with great momentum. Indeed over the past 10 years the group has opened commercial branches in the USA (Helios Quartz America), in China (Shenyang Helios Tech) and in Hong Kong (Helios Quartz Asia). Thanks to its experience in different fields coupled with its cutting-edge testing laboratory located at

the historical Helios Italquartz Srl plant in Cambiago (Italy), Helios Quartz can competently advise customers while striving to provide them with the best solution for every specific application.

### NOT JUST A REGULAR SUPPLIER - BUT A PARTNER TOO!

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 customer needs and ready to be integrated within existing machines and production lines.

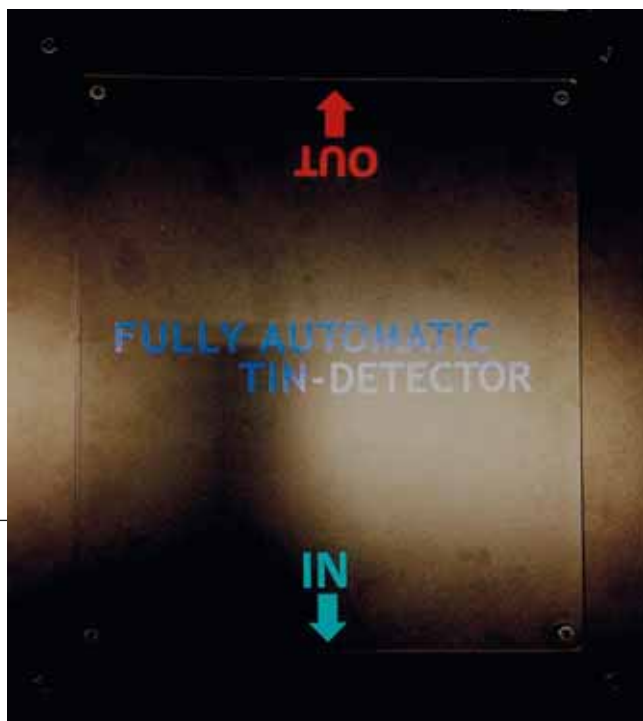
- UV polymerization equipment:

High and medium pressure UV lamps for screen print drying 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 condi-

tions. This detection type is crucial before such processes as laminating, mirroring, printing and decorating. Helios Quartz offers two device types

- 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 individually check each piece of glass. A user-friendly PLC helps the operator in calibrating and managing the different recipes.



**HELIOS ITALQUARTZ Srl**

**helios quartz**

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ARRIS -TRAPEZOIDAL - PENCIL EDGE

### • BD-400



SHOWER GLASS DRILLING MACHINE

- 6 drills in 15 seconds at the same time
- Max 2000 mm x Lenght 1000 mm
- Max./Min. Hole: Ø3- Ø80 mm
- PLC screen

### • HS500



VERTICAL DRILLING MACHINE

- 6 rotative heads
- Max 2500mm x Lenght 3500 mm
- Max./Min. Hole: Ø3- Ø80 mm
- Height: 220mm x Lenght 600 mm



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## INNOVATIVE SOLUTIONS FOR GLASS PROCESSING INDUSTRY



TEKNIK ELMAS is a Turkish company specialized in production of high-quality diamond tools& abrasives for glass processing industry since 2004.

Our company continues its activities in an area of 2700 m2 in Esenyurt

Industrial Zone, in Istanbul

Our greatest motivation is to carry this success further and to

ensure long-term customer satisfaction with the

understanding of product quality and 24/7 after-sales service

We have achieved significant progress in the

market with " innovative solutions for glass

processing

industry " vision and has become

one of the global players.

TEKNIK ELMAS is a part

of TESIR MAKINE

company



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# VDMA examines laser's added value to the glass industry

For many glass products, precision cutting, drilling, coating, melting and texturing state-of-the-art specialist glass are all performed by lasers now as mechanical processes begin to reach their limit.

One example is evidenced by ultra-thin glass processing for displays where glass, often with tiny cut-outs, cannot be cut by using mechanical means. Instead lasers help here to break up coated insulating glass units with finely-drawn patterns without any significant change to the appearance of the glass - thus allowing noticeable improvements to mobile reception inside buildings. Lasers even enable thermal processes. Glass coatings can be heated to hundreds of degrees, thereby enabling change without subjecting the glass itself to such temperatures - a technology that offers enormous benefits, particularly when it comes to processing thermally-tempered glass.

At its February meeting on laser technology, VDMA's industrial working group examined how lasers enjoy such pride of place in glass production today, with various companies presenting the applications that most stand out for them - both in terms of low-maintenance and high cost-efficiency.

## ENERGY SAVINGS

Using laser technology allows processors to save CO<sub>2</sub> - even eliminate its use altogether where alternative energies are used. This is because there's neither a need for energy-intensive process water treatment after additional grinding, nor for producing cutting and separation equipment with high levels of material wear.

## LASER CUTTING TODAY

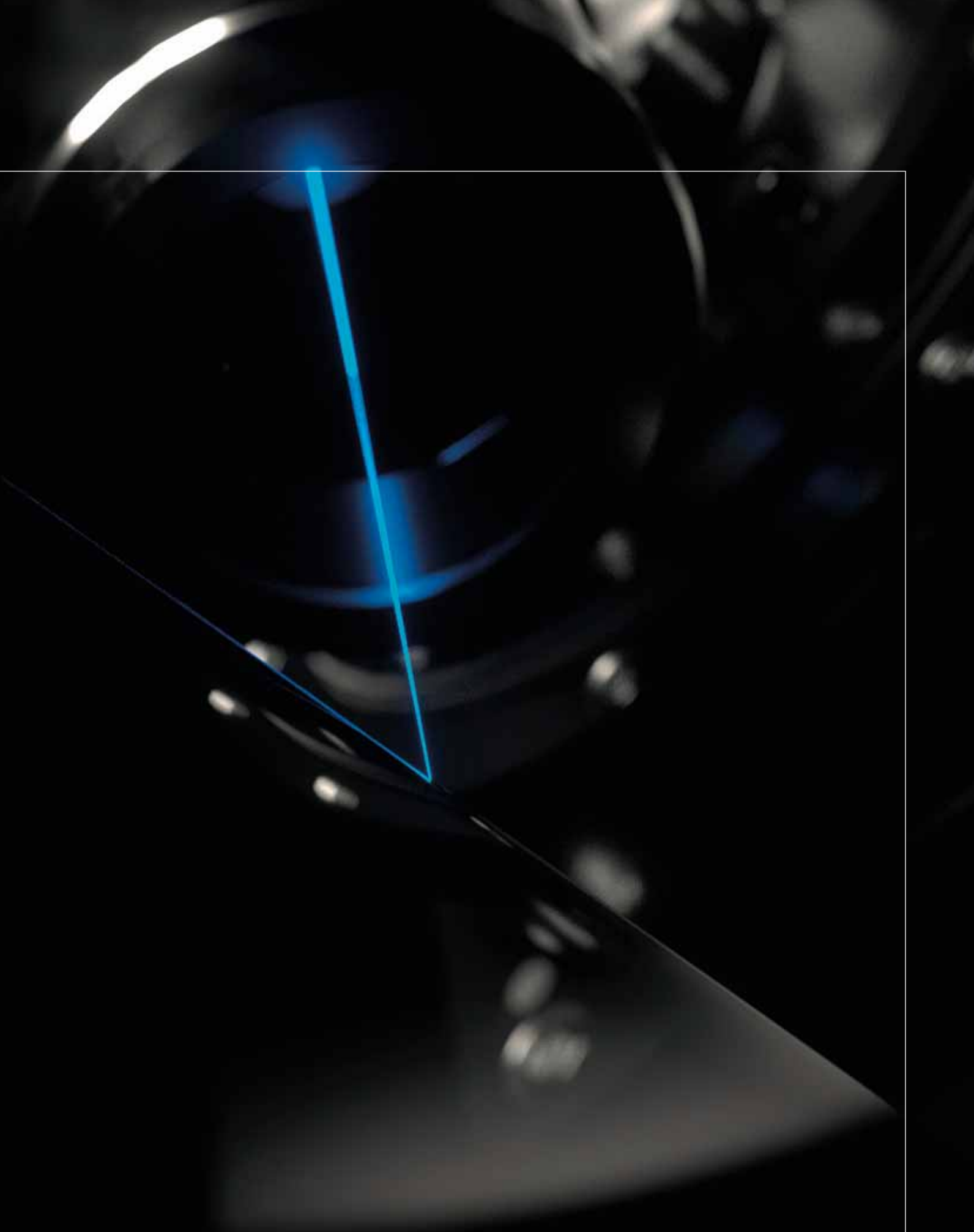
**Flabeg Automotive Germany GmbH**

This Furth im Wald company offers solutions for a wide range of glass and

mirror applications in glass finishing, using lasers for cutting and drilling. Laser cutting has two stages. First, the line to be cut is perforated. Then a crack is drawn along the perforation so that the glass can be split off. Stacking the filaments one on top of the other makes this process possible up to a glass thickness of 12 millimetres and a speed of up to 500 mm/s - though only for flat glass. Laser drilling, on the other hand, has one stage only during which the laser focus is guided through the glass thickness. This process offers more design options for the glass,

such as slight curvature. In both processes, the energy input comes from non-linear processes. This causes structural changes to the glass, highly localised in terms of both space and time, so that the glass is not impaired outside the focus.

For the automotive and building glass segments, glass products must offer such special functions as guaranteeing both heat protection and high light transmission at the same time. Some of the layers applied also have different tasks. If they are electrical conductors, for instance, they can be heated and thus used as windscreens.







#### **Saint-Gobain Group**

For Saint-Gobain various processes are used in production, usually done through a CVD or PVD process.

A silver-based low-E coating, for example, is amorphous in its untreated state. When heated, it crystallises, and its heat protection and light transmission properties increase. The challenge is to only apply the heat treatment to the low-E layer. Classic processes that heat the entire pane of glass cannot achieve this. The coated pane now passes under a laser line that is just 100  $\mu\text{m}$  wide. This heats the layer to temperatures of up to 500°C, while the glass temperature rises no higher than 150°C.

#### **Schott AG**

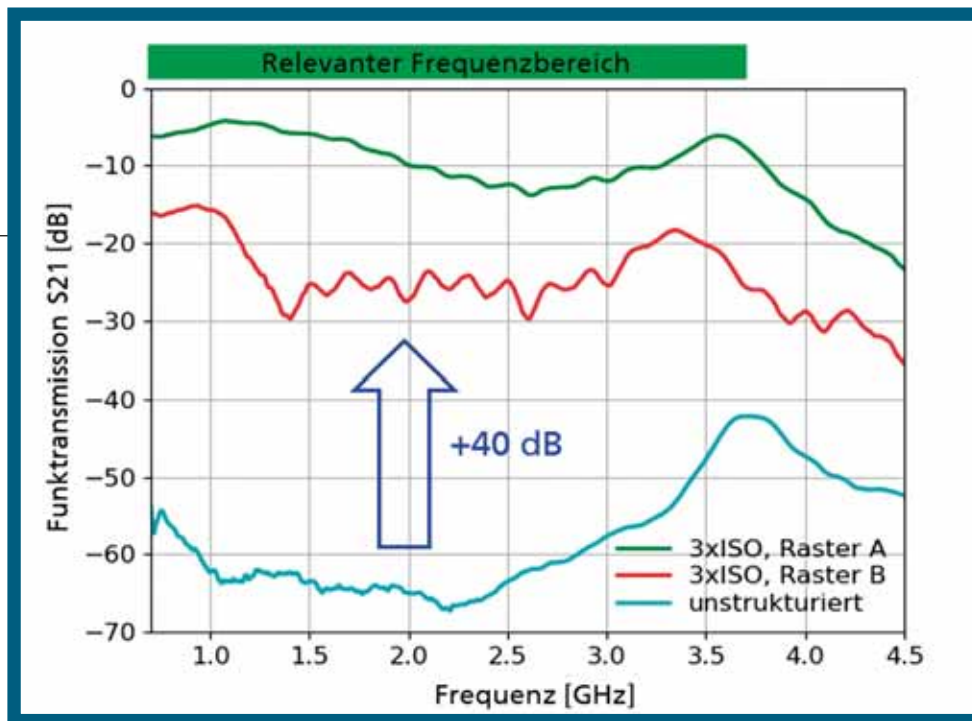
The renowned Mainz company has gained extensive experience with a wide range of laser processes over the last few years, especially for processing ultra-thin glass. For instance, Ultra-short pulse lasers allow the glass to be hardened, printed and coated in a larger geometry first, before being separated into numerous small items in the final step. This puts significant demands on the separation process: clean cuts with no particle contamination and an edge quality that allows the cut items to be used immediately in the end product are both essential. These products are used in areas that include medical diagnostics, decorative elements or markings in product tracing.

Schott's production also uses laser micro bonding – a technology used to weld different materials together that's especially useful for miniature applications in the medical and technical fields. The heat formed in the laser focus area is limited to a small space. As a result, the surrounding material remains undamaged and, when different materials are welded with the glass, their various thermal expansion coefficients are not a problem.

#### **Institute for Solar Energy Systems**

Fraunhofer's ISE conducts research into radio-transparent insulating glass. Coated glass is an integral part of modern buildings, providing light while also having a positive effect upon the building's

energy budget. However, an unfortunate disadvantage of coatings, across the entire glass surface, is that they reflect not only heat radiation but also the electromagnetic radiation used for mobile communications and data services – even more so than reinforced concrete. In the ISE's view, one solution would be to structure the layer in segments by using a laser to remove the coating in fine lines. Here segment size plays a role in improving radio wave reception in the various frequency bands. The GSM standard with a frequency of 900 MHz, for example, needs segments that are significantly smaller than the wavelength of around 33 cm ( $\lambda/4 = 8.3$  cm). On the other hand, 5G applications at around 3.4



GHz need segments that are much smaller than 8.8 cm ( $\lambda/4 = 2.2$  cm). But heat protection also needs to be retained at the same time. Different segment geometries demonstrated a significant improvement in the frequency ranges relevant today. Nevertheless, radio wave transmission cannot be increased equally across all frequency ranges, as one grid size remains always fixed.

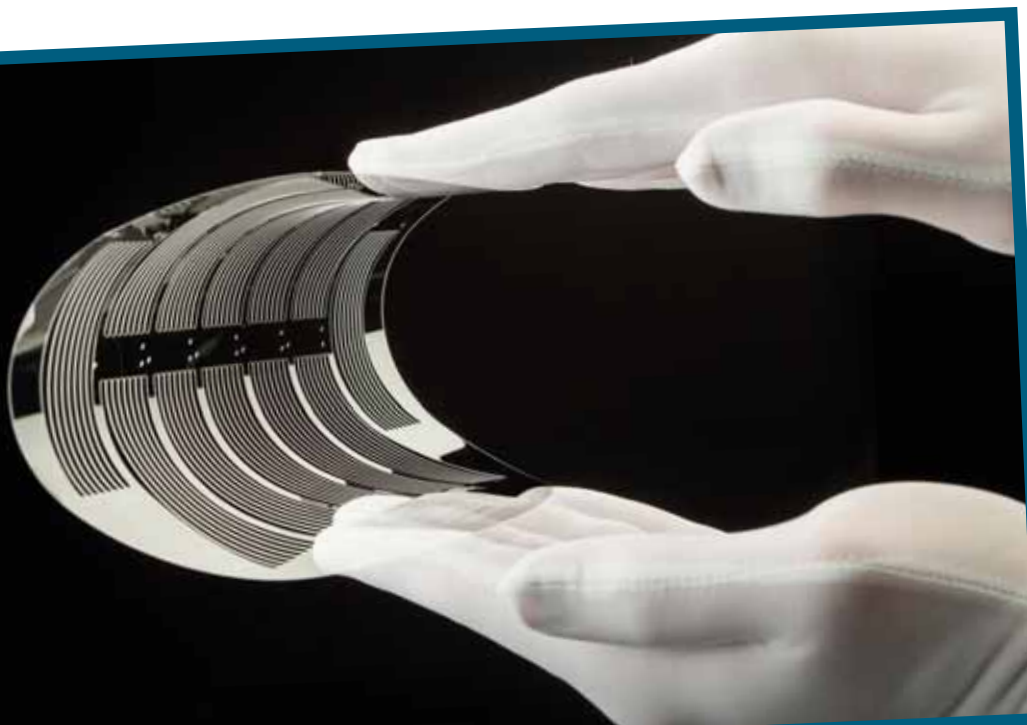
#### Corning Laser Technologies GmbH

CLT uses a wide range of laser systems in the devel-

opment of fully-automated production systems, conducting a wide range of process steps. As well as ablative processes for glass and coatings, such as in drilling and chamfering applications, the company uses lasers to conduct cutting and separation steps in particular. This production technique not only impresses with high edge quality – i.e. in terms of both edge strength and surface roughness – but also enables a high absolute accuracy of the separated parts thanks to precise beam guidance. Lasers thus enhance quality

in the production of glass products very effectively. Much more important, however, is the potential to unlock completely new market segments that are not possible – or take a great deal more effort – with conventional methods. Examples here include processing ultra-thin glass ( $t < 50 \mu\text{m}$ ), chemically hardened glass and glass with decorative or technical finishing and coating. Consumer electronics, augmented reality, architecture and the automotive industry are all key fields in which this is used.

However, in order to use a laser system economically in production, the production machines need to be custom-built for the product in question. As well as a fundamental understanding of laser-material interaction, this also demands enormous expertise in the technical implementation of process control. To this end, systems suited for industrial applications and 24/7 use with a high level of automation and options for deep integration are needed, which achieve maximum utilisation of the laser systems and thus the shortest possible cycle times. For maximum efficiency, components for beam shaping and transportation need to be adapted to both the product and the respective laser system. Thanks to Corning's consistent further development of the laser processing technology, it is now possible to process even three-dimensional glass workpieces reliably while achieving yet further options in design and functionality.



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# ONECHARGE wows the glass industry with lithium battery benefits

**A**s one plant manager recently enthused: “Lithium batteries have made it possible for us to switch our forklift fleet from propane to electric power. In the past the energy of electric, lead-acid batteries simply didn’t suffice!”

## SO WHY THE NEED FOR AN ENERGY SHIFT?

Since large glass sheet and plate handling whilst loading and unloading slab bundles requires much energy, leading US glass manufacturers have long

been scouting for ways to reduce their carbon footprint and improve the efficiency of their material handling operations. Take special forklift attachments like hydraulic glass clamps and stabilizers. These are powered by the

truck battery too - which further increases energy consumption. Here’s why forklifts need to be operated with the highest precision -for safety reasons- so top forklift performance can be expected 100 percent of the time.



The switch from propane to lithium batteries as the main power source for forklifts that handle and load glass marks an important innovation which now has companies like ONECHARGE helping glass manufacturers reduce their operating costs while making their facilities safer and cleaner.

For years now electrification of the fleet has been on the agenda for glass and bottle producers, since lead-acid batteries just couldn't provide enough energy for the equipment and multiple battery swaps during a shift would typically disrupt operations. This had many companies stuck with propane-powered forklifts while having to endure the exhaust emissions and high fuel and maintenance costs associated with an internal combustion engine. Finally, after a leading US window and glazing glass manufacturer partnered with OneCharge to adopt the new technology, cutting-edge, high-capacity lithium batteries are now commercially available.

### ONECHARGE'S CONTRIBUTION TO THE INDUSTRY

In October 2020 a OneCharge customer initiated a series of demo projects at its plant to test the new lithium batteries - all with a view to confirming that the new technology could support the top performance of forklifts in stress conditions. This saw a heavy-lifting, four-wheel sit-down forklift (Class I) with up to 12K pounds of lifting capacity powered by the OneCharge 80V/1050Ah battery.

Working through multiple shifts, the truck demonstrated stable performance in this demanding application. Moreover, the battery's state of charge didn't drop below the recommended 30-40 percent, and charging proceeded both during naturally-occurring breaks and at lunchtime. Once the test was successfully conducted, the company went on to switch its forklifts -one location at a time- to lithium power. Here OneCharge provided a variety of its 80V POWER Series batteries, which range in capacity from 600Ah to 1200Ah, depending upon conditions at each facility. Actual operation profiles were studied to ensure battery capacity was just right to support the top performance of high load capacity lift trucks through multiple shifts.

### RESULTS, ROI AND FUTURE PLANS

Following the successful demo project, as well as adoption of lithium batteries at the test facilities, the glass manufacturer is currently implementing a program of switching its forklifts to lithium electric at its other plants. Right after the switch to lithium, the company saw



an improvement in operational efficiency - within a cleaner and safer workplace. These same benefits are supported by a lower total cost of equipment ownership and reduced operational energy costs. But what's perhaps more significant is that lithium batteries now have the company reducing its carbon footprint and achieving its corporate sustainability goals. Indeed those carbon credits are expected to appear on the balance sheet during cost calculations in the near future. In sum, efficient, powerful, and clean Li-ion batteries have proven they can do the job in the most demanding applications - such as glass

and bottle production, as well as paper and metals handling. And considering that tried-and-tested lithium solutions are hardly newcomers anymore, an acceleration of Li-ion adoption is now being seen - even in those industries that have hitherto stuck to diesel or propane options.

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# GLASSTEC eyes the future - spotlight on the industry's macro-trends

**T**ill now industry exhibitors have endured a four-year wait to finally showcase their innovations in glass production, processing and finishing technologies. To these they add their new ranges of products and glass applications

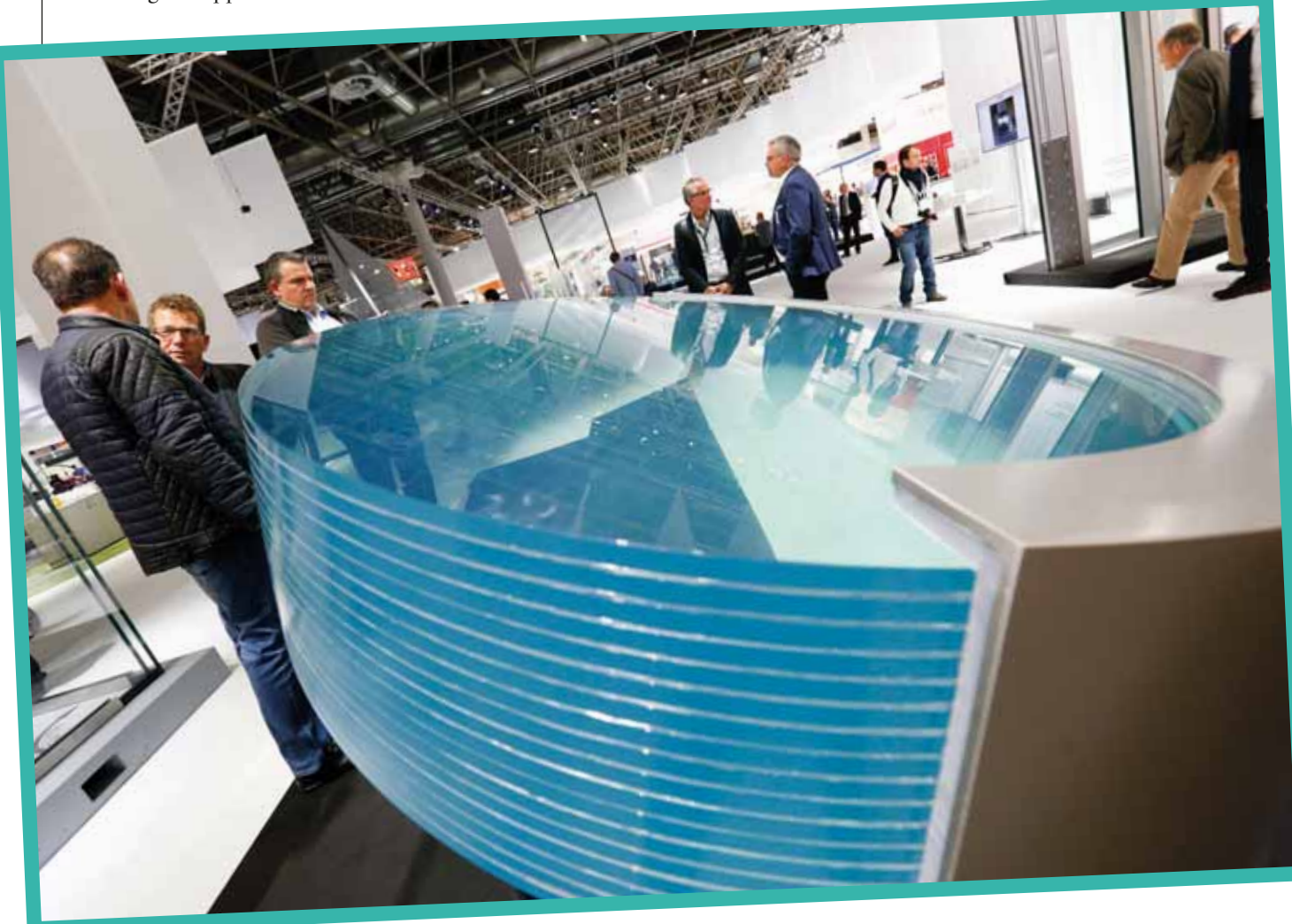
to the mix whilst taking advantage of opportunities offered by a varied and complementary scientific study programme. Thanks to in-depth conversations with experts from all levels of the value chain, five main issues were identified - each underscored

as an essential area for the future development of the glass industry and for our society as a whole. Specifically, these are:

- Climate (reduction of emissions and renewable energy);
- Urban planning (glass in

the architecture of the future);

- Value (a sustainable value chain);
- Resources (the efficient and sustainable use of resources);
- Well-being (a better quality of life, thanks to glass).



Further punctuating the International Year of Glass, GLASSTEC 2022 will have sector operators celebrating their long-awaited opportunity to meet in person once more - this time in Düsseldorf, Germany, from 20 to 23 September.

Said Glasstec Project Director Birgit Horn: "These macro-trends will be at the centre of attention both in the conference rooms and within specific exhibition spaces, but also at the exhibitor stands themselves. This means we'll be offering sector operators a wealth of information, innovative solutions and opportunities - all to expand their network contacts within the glass world."

Already registered exhibitor numbers signal encouraging forecasts for the trade fair. As Horn adds: "The number of registrations at the beginning of the year tallies as similar to those reached in 2018 - namely pre-pandemic levels. With the last edition organised in Düsseldorf being among the most popular, the signal sent by the glass sector is very positive indeed." In the wake of this upward trend, Glasstec presents German and international exhibitors all united by the motto 'Let's go live!' accompanied by the enthusiasm to meet again in person.

### NEXT IN GLASS - GLASS TECHNOLOGY LIVE

This exhibition is dedicated to innovation in the field of applications with glass. Entitled 'glass technology live', it will be organised by

the network of polytechnics in Darmstadt, Delft, Dortmund and Dresden. Experts from a wide range of disciplines and sub-sectors will return to thrill visitors and fuel the debate with life-size models and innovative glass structures. The first of a series of videos will soon be published online containing exclusive previews of the details and programs of the next edition of glass technology live. The videos will be available on the glass technology live website and on glasstec's social channels. Focused on the five macro-trends mentioned above, the glasstec conference will illustrate the know-how of the sector, ranging from theory to practice. Each day, Glasstec 2022 visitors will be able to discover news and developments in the sector during meetings dedicated to glass production, processing technologies and products.

An integral part of the complementary program is also the International Architecture Congress. Organised jointly this year with the Chamber of Architects of the North Rhine-Westphalia region, the congress will be held on Tuesday (22 September, Congress Centre Düsseldorf East) and will be entitled: 'Weitblick. Zukunftsfähige Architektur mit Glas' (translated 'Forecasts



on glass in the architecture of the future').

### LIST OF GLASSTEC CONFERENCE SESSIONS

- Tuesday 20 September: Glass processing and finishing. Efficient manufacturing and digital solutions
- Wednesday 21 September: Glass productionThe path to climate neutrality
- Thursday 22 September: Products and applications with glass (1) New products and trends in the world of glass
- Friday 23 September: Products and applications with glass (2) Photovoltaic glasses and new applications with glass



This rich programme is completed by further presentations within the Glasstec conference space, including that of VDMA on communication with machines and that of EuroW-indoor on energy efficiency and sunlight use. Included is also the 'Glassinar' cycle - a series of stimulating interventions dedicated to the role of glass in building and architecture. The full Glasstec conference programme is available here.

### COMPETENCE CENTRE AND WORLDSKILLS GERMANY EVENT

The large number of exhibitors expected at Glasstec will offer sector operators a comprehensive overview of the latest market innovations -from products to tools- without forgetting assembly and lifting equipment. For years, the focal meeting point for establishing relationships and exchanging information among glass process-



## INTERNATIONAL ARCHITECTURE CONGRESS

In architecture, glass has always been synonymous with transparency, lightness and versatility. It was and still is the material for visionary designs of the future and trendsetting buildings of modern times. Here's why the International Architecture Congress 'Foresight. Sustainable architecture with glass' will be held at Glasstec on 22 September. The Congress is a cooperation project between Glasstec, the Chamber of Architects North Rhine-Westphalia, the Technical University TU Dortmund and the architecture trade journal DETAIL. Tickets are available online via the Ticketshop of Messe Düsseldorf: [www.glasstec.de/1130](http://www.glasstec.de/1130).

ing sector experts has been the stand of the Association of German glassmakers, the Bundesinnungsverband des Glaserhandwerks e.V., which is also where German state vocational schools will have a space.

### THIRD CONSECUTIVE EDITION

The special exhibition entitled Crafts LIVE will present, among other things, the most interesting and innovative practical applications in the field of glass

processing. This year, attention will also focus upon WorldSkills, an initiative considered a 'World Championship of professions' of sorts. On the occasion of 'WorldSkills Germany', which will be held right inside Glasstec, young glassmakers from all over Germany will compete to qualify for "EuroSkills 2023".

The event is organised by the Association of German Glassmakers and the Association of Young German Glassmakers (Verband der Jungglaser und Fensterbauer e.V.).

Bohle Group will be providing the machinery and workbenches used. Five participants from Germany have already been selected, while the remaining three places will be awarded to international challengers. Simultaneously, there will be the challenge to assemble the transport supports organised by the Hegla Group as well as a series of demonstrations scheduled by the IFT Rosenheim institute.





Finally, the ‘glass art’ exhibition will see the participation of international artists and galleries - all showcasing their interpretations of glass as a creative material.

### GLASSTEC START-UP ZONE 2022

This platform helps the youngest and most innovative companies to network. On the occasion of Glasstec it's possible to meet the most influential figures in the glass sector together with numerous experts linked to companies, research institutes and public bodies. Here's why the START-UP ZONE is the ideal place for young and innovative companies to forge contacts and cultivate relationships. For German and international start-ups, securing a place in the START-UP ZONE

is an opportunity not to be missed. Indeed this exhibition space is reserved for companies that are less than five years old, with less than twenty employees and an annual turnover or total assets of less than EUR 10M. Exhibitors still have time to apply and can register now at [www.glasstec.de/application](http://www.glasstec.de/application).

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**GLASS-TECHNOLOGY INTERNATIONAL** is the leading international magazine for professionals involved in the flat and bent glass industry, from building to automotive, and from furniture to household appliances. **G-TI** is useful for those working in float glass plants as well as glass processors/fabricators, glazing contractors, automotive glass installers, window and door manufacturers, glass merchants, wholesalers, etc. With about 100 pages per issue, it is the bi-monthly tool for keeping abreast of new technology, new products, company life and all innovations in the world of flat and bent glass.



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**Glass Industry  
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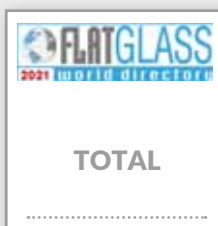
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[www.mazzaroppi.com](http://www.mazzaroppi.com)



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[www.prodim-systems.com](http://www.prodim-systems.com)



**HORNOS INDUSTRIALES PUJOL**

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



**RBM ITALIA - SURFACE GROUP**

[www.rbmitalia.it](http://www.rbmitalia.it)



**R.C.N. SOLUTIONS**

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[www.rollmac.it](http://www.rollmac.it)



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



**SCHIAVO**

[www.schiavotech.it](http://www.schiavotech.it)



**SKG - SKILL GLASS**

[www.skillglass.it](http://www.skillglass.it)



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**STEFI GLASS**

[www.stefiglass-international.com](http://www.stefiglass-international.com)



**SYSTEM CERAMICS**

[www.systemceramics.com/it](http://www.systemceramics.com/it)



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**TECNOFERRARI**

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



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



**TEXPACK**

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[www.omvvismara.eu/](http://www.omvvismara.eu/)



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[www.zippe.de/en](http://www.zippe.de/en)



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## Glass manufacturing and Processing

### FLOAT GLASS

**Sisecam**  
**Teknik Elmas**  
**Tesir Makine**

## Stocking, handling and movement

### COMPLETE STOCKING LINES / ENGINEERING

**Cugher Glass**  
**ECOL**  
**Glaston Group**  
**Hegla**  
**IOCCO Group**  
**Keraglass**  
**Lisec Group**  
**North Glass Technology**  
**Macotec**  
**MOVETRO**  
**Schiavo**  
**Torgauer Maschinenbau**  
**Tuomas**

### COMPLETE HANDLING AND MOVEMENT LINES

**Bando Kiko**  
**Bottero**  
**Cugher Glass**  
**CMS**  
**ECOL**  
**Forvet**

**Glaston Group**  
**Hegla**  
**IOCCO Group**  
**Keraglass**  
**Lisec Group**  
**Macotec**  
**North Glass Technology**  
**Schiavo**  
**Torgauer Maschinenbau**  
**Tuomas**

### MACHINES FOR HANDLING GLASS SHEETS

**Ashton Industrial Sales**  
**Bando Kiko**  
**Bavelloni**  
**Bottero**  
**CMS**  
**Di Gregorio**  
**ECOL**  
**Forel**  
**Glaston Group**  
**Hegla**  
**IOCCO Group**  
**Italcarrrelli**

**Keraglass**  
**Lisec Group**  
**Macotec**  
**Schiavo**  
**Torgauer Maschinenbau**  
**Tuomas**

### HANDLING ROBOTS

**Ashton Industrial Sales**  
**Bavelloni**  
**Bottero**  
**CMS**  
**ECOL**  
**Hegla**  
**IOCCO Group**  
**Lisec Group**  
**Neptun**  
**Schiavo**  
**Torgauer Maschinenbau**  
**Tuomas**

### HANDLING EQUIPMENT FOR FLOAT GLASS

**Bovone Elett.**  
**Bottero**  
**Di Gregorio**

**ECOL**  
**Glaston Group**  
**Hegla**  
**IOCCO Group**  
**Italcarrrelli**  
**Lisec Group**  
**Schiavo**  
**Torgauer Maschinenbau**  
**Tuomas**

### TROLLEYS AND CLASSIFIERS

**CMS**  
**Di Gregorio**  
**Forel**  
**Hegla**  
**Lisec Group**  
**Macotec**  
**MOVETRO**  
**Schiavo**  
**Si.Ste**  
**Tecno Glass**  
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**Hegla**  
**Italcarrrelli**  
**Lisec Group**  
**Schiavo**

## VACUUM LIFTING EQUIPMENT

**Bottero**  
**CMS**

Di Gregorio  
ECOL  
Fenzi

**Forel**  
**Glaston Group**

**Hegla**  
**Lisec Group**  
**Schiavo**

Si.Ste  
**Torgauer Maschinenbau**  
**Tuomas**

## CRANE SUCTION CUPS FOR LARGE SHEETS

**Bottero**  
Di Gregorio  
Fenzi  
**Glaston Group**  
**Hegla**  
**Lisec Group**  
**Schiavo**  
**Tuomas**

## TRANSPORTATION TONGS

**Bottero**  
Fenzi  
**IOCCO Group**  
**Schiavo**  
**Tuomas**

## SUCTION CUPS

**ADI - Surface Group**  
**Bottero**  
**CMS**  
Fenzi  
**Glaston Group**  
**Hegla**  
**Schiavo**  
Si.Ste  
**Tuomas**

## CONVEYOR BELTS

Ashton Industrial Sales  
**Cugher Glass**  
Di Gregorio  
ECOL  
**Glaston Group**  
**Schiavo**  
**Tuomas**

## PACKAGING MATERIALS AND SYSTEMS

ECOL  
**Hegla**  
**Schiavo**  
**Vismara**

## ACCESSORIES

BOST  
**Bottero**  
**CMS**  
Fenzi  
**Hegla**  
**Helios Quartz**  
**Mole Moreschi**  
**Schiavo**  
**Tuomas**

## Straight-edge and shape cutting

## COMPLETE STRAIGHT-EDGE LINES

**Bando Kiko**  
**Bavelloni**  
**Bottero**  
**CMS**  
Euromec  
**Forvet**  
**Glaston Group**  
**Hegla**  
**Lisec Group**  
**Neptun**  
**Schiavo**  
**Schiatti Angelo**  
**Teknik Elmas**  
**Tesir Makine**  
**North Glass Technology**

## COMPLETE SHAPE CUTTING LINES

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

## AUTOMATIC CUTTING MACHINES FOR AUTOMOTIVE GLASS

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

## LOADING AND TILTING MACHINES

**Bando Kiko**

**Bavelloni**  
**Bottero**  
**CMS**  
ECOL  
Euromec  
**Forel**  
**Glass Company**  
**Glaston Group**  
**Hegla**  
**Intermac - Biesse**  
**IOCCO Group**  
**Lisec Group**  
Macotec  
**Neptun**  
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## CUTTING TABLES

**Bando Kiko**  
**Bavelloni**  
**Bottero**  
**CMS**  
Euromec  
Fenzi  
**Forel**  
**Glaston Group**  
**Hegla**  
**IOCCO Group**  
**Lisec Group**  
Macotec  
**Schiavo**  
Tekno Kilns  
**Triulzi**  
**Tuomas**

## CUTTING OPTIMIZERS

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

## CUTTING PATH OPTIMIZERS

**Bando Kiko**  
**Bottero**  
**CMS**  
Euromec  
**Glaston Group**  
**IOCCO Group**  
**Lisec Group**  
Macotec  
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**  
Macotec  
**Schiavo**  
**Tuomas**

## ROUND OR SHAPE CUTTING MACHINES

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

## CUTTING ACCESSORIES

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

## SAW MACHINES

Di Gregorio  
**Schiavo**  
Tecno Glass

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

**CMS**  
**Schiavo**

## BREAKING SYSTEMS

**Bando Kiko**

**Bavelloni**  
**Bottero**  
**CMS**  
 Euromec  
**Glaston Group**  
**Hegla**  
**IOCCO Group**  
**Lisec Group**  
 Macotec  
**Schiavo**  
**Teknik Elmas**  
**Tesir Makine**  
**Tuomas**

## CUTTING MACHINES WITH BREAKING AND EDGE DELETING DEVICES

**Bando Kiko**  
**Bottero**  
**CMS**  
 Euromec  
**Glaston Group**  
**Hegla**  
**IOCCO Group**  
**Lisec Group**  
 Macotec  
**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**  
 Ashton Industrial Sales  
**B Solution**  
**Bando Kiko**  
**Bavelloni**  
**Bottero**  
**CMS**  
**Forel**  
**Forvet**  
 Hiseng Glass Machinery  
**IOCCO Group**  
**Neptun**  
**Schiavo**

**Schiatti Angelo**  
**SKG - Skill Glass**  
**Teknik Elmas**  
**Tesir Makine**

### COMPLETE BEVELLING LINES

**Adelio Lattuada**  
**Bando Kiko**  
**Bottero**  
**CMS**  
 Hiseng Glass Machinery  
**IOCCO Group**  
**Schiavo**  
**Teknik Elmas**  
**Tesir Makine**

### COMPLETE AUTOMOTIVE GLASS EDGING AND BEVELLING LINES

**Adelio Lattuada**  
**Bando Kiko**  
**Bavelloni**  
**Bottero**  
**Glaston Group**  
 Hiseng Glass Machinery  
**Intermac - Biesse**  
**IOCCO Group**  
**SKG - Skill Glass**  
**Teknik Elmas**  
**Tesir Makine**

## DOUBLE-EDGE GRINDING MACHINES

Ashton Industrial Sales  
**B Solution**  
**Bando Kiko**  
**Bavelloni**  
**Bottero**  
**CMS**  
**Forvet**  
 Hiseng Glass Machinery  
**Intermac - Biesse**  
**IOCCO Group**  
**Schiatti Angelo**  
**Teknik Elmas**  
**Tesir Makine**

## VERTICAL-EDGE GRINDING MACHINES

**Adelio Lattuada**  
**B Solution**  
**Bando Kiko**  
**Bavelloni**  
**Bottero**  
 Di Gregorio  
**Forel**  
**Glass Company**  
**Glaston Group**  
 Hiseng Glass Machinery  
**Neptun**  
**Schiavo**  
**Schiatti Angelo**  
 SGM - Special Glass Machinery

**North Glass Technology**  
**SKG - Skill Glass**  
**Tesir Makine**

### GRINDING SPINDLES

**Schiavo**  
 Tecno Glass  
**Teknik Elmas**

### BEVELLING MACHINES FOR ROUND AND SHAPED GLASS

**Adelio Lattuada**  
**Bando Kiko**  
**Bavelloni**  
**CMS**  
 Hiseng Glass Machinery  
**Intermac - Biesse**  
**Schiavo**  
**Teknik Elmas**  
**Tesir Makine**

## STRAIGHT-EDGE BEVELLING MACHINES

**Adelio Lattuada**  
**Bando Kiko**  
**Bavelloni**  
**Bovone Elett.**  
**CMS**  
**Glass Company**  
 Hiseng Glass Machinery  
**Schiavo**  
**Schiatti Angelo**  
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### BEVEL POLISHING MACHINES

**Adelio Lattuada**  
**Bando Kiko**  
**Bavelloni**  
**Bovone Elett.**  
**CMS**  
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## STRAIGHT-EDGE ENGRAVING MACHINES

**Bavelloni**  
**Bottero**  
**CMS**  
**Intermac - Biesse**  
**SKG - Skill Glass**  
**Teknik Elmas**

## SHAPED GLASS ENGRAVING MACHINES

**Bavelloni**  
**Bottero**  
**CMS**  
**Intermac - Biesse**  
**Teknik Elmas**  
**Tesir Makine**

## CORNER GRINDING MACHINES

**Adelio Lattuada**  
 Ashton Industrial Sales  
**B Solution**  
**Bavelloni**  
**CMS**  
**Intermac - Biesse**  
 SGM - Special Glass Machinery  
**SKG - Skill Glass**  
**Teknik Elmas**  
**Tesir Makine**

## SHAPED GLASS GRINDING MACHINES

**Adelio Lattuada**  
 Ashton Industrial Sales  
**Bando Kiko**  
**Bavelloni**  
**Bottero**  
**CMS**  
**Forel**  
**Glass Company**  
 Hiseng Glass Machinery  
**Intermac - Biesse**  
**Teknik Elmas**  
**Tesir Makine**

## BELT GRINDING MACHINES

**Adelio Lattuada**  
 Ashton Industrial Sales  
 Fenzi  
 Hiseng Glass Machinery  
**IOCCO Group**  
 Si.Ste

## LATHES - VERTICAL AND HORIZONTAL

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

## EMBOSSING MACHINES

**CMS**  
 Fenzi

## PORTABLE MACHINES

Fenzi  
**Helios Quartz**  
 Si.Ste  
 Tecno Glass

## DIAMOND TOOLS

**Adelio Lattuada**  
**ADI - Surface Group**  
 Ashton Industrial Sales  
**Bando Kiko**  
 Bovone Diamond Tools  
**Bottero**  
**Diamut - Biesse**  
 Fenzi  
**Glaston Group**  
 Lanzetta

Marrose Abrasives  
**Mole Moreschi**  
**Neptun**  
**Schiavo**  
**Talamoni**  
**Teknik Elmas**  
**Vincent - Surface Group**

## DIAMOND BELTS

**Mole Moreschi**

## SEAMING LINES

Ashton Industrial Sales

## MANUAL LINES

Ashton Industrial Sales

## POLISHING WHEELS

**Adelio Lattuada**  
**ADI - Surface Group**  
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Bovone Diamond Tools  
**Diamut - Biesse**  
**Dogo**  
Fenzi  
**Glaston Group**  
**Italmole**  
Marrose Abrasives  
**Mole Moreschi**  
**RBM Italia - Surface Group**  
**Schiavo**  
Si.Ste  
**Teknik Elmas**  
**Vincent - Surface Group**

## POLISHING AGENTS AND OXIDES

**ADI - Surface Group**  
Bovone Diamond Tools  
Fenzi  
**Schiavo**  
**Teknik Elmas**  
**Vincent - Surface Group**

## POLISHING BELTS

Di Gregorio  
Fenzi  
**Schiavo**  
Si.Ste

## COOLANTS

**Adelio Lattuada**  
Bovone Diamond Tools  
Fenzi  
**Schiavo**

## GLASS GRINDING AND BEVELLING COOLANTS

**Schiavo**  
**Teknik Elmas**

## SEPARATORS FOR GLASS-SOLIDS

Ashton Industrial Sales  
**Dieffe Macchine**  
**Filtraglass**  
**Immes**  
**Schiavo**  
**Vitrosep**

## ACCESSORIES

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

## Washing

## HORIZONTAL WASHING MACHINES

Ashton Industrial Sales  
**Bando Kiko**  
**Bavelloni**  
**Bovone Elett.**  
Di Gregorio  
ECOL  
**Forel**  
**Glass Company**  
**Glaston Group**  
Hiseng Glass Machinery  
**IOCCO Group**  
**Lisec Group**  
**Neptun**  
**Schiavo**  
SGM - Special Glass Machinery  
Si.Ste  
**Triulzi**

## VERTICAL WASHING MACHINES

**Adelio Lattuada**  
Ashton Industrial Sales  
**Bavelloni**  
**Best Makina**  
Di Gregorio  
ECOL  
**Forel**  
**Glass Company**  
**Glaston Group**  
Hiseng Glass Machinery  
**IOCCO Group**  
**Lisec Group**  
**Neptun**  
**Schiavo**  
SGM - Special Glass Machinery  
**North Glass Technology**

Si.Ste  
S.T. Group  
**Stefiglass**  
**Teknik Elmas**  
**Tesir Makine**  
**Triulzi**

## WASHING MACHINES FOR AUTOMOTIVE GLASS

**Bando Kiko**  
ECOL  
**Glaston Group**  
**IOCCO Group**  
**Tesir Makine**  
**Triulzi**

## WASHING PURIFICATION SYSTEMS

**Dieffe Macchine**  
**Forel**  
**Glass Company**  
**Glaston Group**  
**Immes**  
**IOCCO Group**  
**Schiavo**

## LIQUID WASHING CONCENTRATES

**Schiavo**

## ACCESSORIES

**Helios Quartz**  
**Idrotecnica**  
**Neptun**  
**Schiavo**  
S.T. Group

## Mirror production

## COMPLETE PLANTS & CONVEYORS FOR MIRROR PRODUCTION

**Bovone Elett.**  
**IOCCO Group**  
**Triulzi**

## PAINTING EQUIPMENT

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

## DRYING OVENS

**Bovone Elett.**  
**CMS**

## AUTOMOTIVE MIRROR BENDING FURNACES

**Bovone Elett.**  
Technosens

## MANUAL SILVER- SPRAYING EQUIPMENT

Fenzi  
**Glass Company**

## PAINTS AND CHEMICAL PRODUCTS

Fenzi

## ACCESSORIES

Fenzi  
**Helios Quartz**

## Insulating glass

## COMPLETE INSULATING GLASS LINES

Ashton Industrial Sales  
**Bavelloni**  
**Best Makina**  
Di Gregorio  
**Forel**  
**Glass Company**  
**Glaston Group**  
**Marval**  
**Neptun**  
**Schiavo**  
SGM - Special Glass Machinery  
S.T. Group  
Thermoseal Group  
**Triulzi**

## AUTOMATIC SEALING LINES

**Bavelloni**  
**Easy Automation**  
**Forel**  
**Glaston Group**  
**Lisec Group**  
**Marval**  
S.T. Group  
**Teknik Elmas**  
**Tesir Makine**

## AUTOMATIC SPACER BENDING MACHINES

**Bavelloni**  
**Best Makina**  
Fenzi  
**Forel**  
**Glaston Group**  
**IOCCO Group**  
**Lisec Group**  
**Marval**  
**Schiavo**  
S.T. Group  
Thermoseal Group

## DESICCANT SALT FILLING MACHINES

Ashton Industrial Sales  
**Bavelloni**



## Best Makina

Di Gregorio

Fenzi

**Forel**

**Glaston Group**

**Lisec Group**

**Marval**

**Neptun**

**Schiavo**

Stefani

S.T. Group

Tecno Glass

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**Triulzi**

## SPACER CUTTING SAWS

Ashton Industrial Sales

**Bavelloni**

**Best Makina**

Di Gregorio

Fenzi

**Forel**

**Lisec Group**

**Marval**

**Neptun**

**Schiavo**

S.T. Group

Tecno Glass

**Tesir Makine**

Thermoseal Group

## BUTYL EXTRUDERS

**Bavelloni**

**Best Makina**

Di Gregorio

**Forel**

**Glaston Group**

**Lisec Group**

**Marval**

**Neptun**

**Schiavo**

Si.Ste

Stefani

S.T. Group

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**Triulzi**

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**Best Makina**

Di Gregorio

**Easy Automation**

Fenzi

**Forel**

**Lisec Group**

**Marval**

**Neptun**

**Schiavo**

Si.Ste

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Tecno Glass

Thermoseal Group

**Triulzi**

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**Easy Automation**

Fenzi

**Forel**

**Glaston Group**

**Lisec Group**

**Marval**

**Schiavo**

S.T. Group

Tecno Glass

## POLYURETHANE ENCAPSULATION

**Glaston Group**

**Lisec Group**

**Marval**

**Schiavo**

## SILICONE EXTRUDERS

**Best Makina**

Di Gregorio

Fenzi

**Forel**

**Glaston Group**

**Lisec Group**

**Marval**

**Schiavo**

S.T. Group

Tecno Glass

**Triulzi**

## POLYSULPHIDE SEALANT EXTRUDERS

**Best Makina**

Fenzi

**Forel**

**Glaston Group**

**Lisec Group**

**Marval**

**Schiavo**

Stefani

Tecno Glass

**Triulzi**

## GAS FILLING EQUIPMENT

Di Gregorio

Fenzi

**Forel**

**Glaston Group**

**Lisec Group**

**Marval**

**Neptun**

**Schiavo**

Si.Ste

Sparklike

Stefani

S.T. Group

Tecno Glass

Thermoseal Group

## DESICCANT SALTS

Ashton Industrial Sales

Di Gregorio

Fenzi

## Neptun

**Schiavo**

Stefani

S.T. Group

Tecno Glass

Thermoseal Group

## SPACERS/PROFILES

Ashton Industrial Sales

**Edgetech Europe**

Fenzi

**Schiavo**

S.T. Group

Tecno Glass

Thermoseal Group

## GEORGIAN BARS

Ashton Industrial Sales

**Hegla**

Tecno Glass

Thermoseal Group

## BUTYL

Ashton Industrial Sales

Fenzi

Stefani

Thermoseal Group

## POLYSULPHIDE SEALANTS

Fenzi

Stefani

## HOT MELT

Ashton Industrial Sales

Fenzi

Stefani

Thermoseal Group

## OTHER SEALANTS

Fenzi

Stefani

## PANTOGRAPHS

**Fratelli Pezza**

## ACCESSORIES

Ashton Industrial Sales

**Deltamax Automazione**

**Forel**

**Helios Quartz**

**Schiavo**

Sparklike

Stefani

S.T. Group

**Tesir Makine**

**Triulzi**

## Tempering

## TEMPERING FURNACES (ARCHITECTURAL GLASS)

**Glass Company**

**Glasstech Inc.**

**Glaston Group**

## Hornos Industriales Pujol

Jinglass

**Keraglass**

**Landglass Technology**

Lema

**Lisec Group**

**Mappi International**

**Schiavo**

**North Glass Technology**

Tecnosens

Tekno Kilns

**Texpack**

## TEMPERING FURNACES (AUTOMOTIVE GLASS)

**Glass Company**

**Glasstech Inc.**

**Glaston Group**

Jinglass

**Keraglass**

**Landglass Technology**

**Mappi International**

**Mazzaroppi Engineering**

**Satinal Spa**

SGLASS

**North Glass Technology**

Taifin

Tecnosens

**Texpack**

## CHEMICAL TEMPERING EQUIPMENT

**Glass Company**

**R.C.N. Solutions**

## 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 Spa**

SGLASS

Taifin

Tekno Kilns

**Torgauer Maschinenbau**

## Bending

## BENDING FURNACES (ARCHITECTURAL GLASS)

**Hornos Industriales Pujol**

Jinglass  
**Keraglass**  
**Mappi International**  
**Mazzaroppi Engineering**  
**R.C.N. Solutions**  
 SGLASS  
 Tecnosens  
 Tekno Kilns  
**Texpack**

## BENDING FURNACES (AUTOMOTIVE GLASS)

**Glass Company**  
**Glasstech Inc.**  
**Glaston Group**  
 Jinglass  
**Keraglass**  
**Mappi International**  
**Mazzaroppi Engineering**  
**R.C.N. Solutions**  
**Satinal Spa**  
 Si.Ste  
 Taifin  
 Tecnosens  
**Texpack**

## ACCESSORIES

**Ayrox**  
**Deltamax Automazione**  
**Glass Company**  
**Glasstech Inc.**  
**Glaston Group**  
**Hornos Industriales Pujol**  
**Keraglass**  
**Mappi International**  
**Satinal Spa**  
**Softeco**  
 Tekno Kilns

## Laminated glass production

## COMPLETE PLANTS

**Bovone Elett.**  
**Bottero**  
**Forel**  
**Glass Company**  
**Glaston Group**  
**Hornos Industriales Pujol**  
**IOCCO Group**  
**Italmatic**  
**Lisec Group**  
**Mazzaroppi Engineering**  
**R.C.N. Solutions**  
**Satinal Spa**  
 Si.Ste  
**Texpack**  
**Triulzi**

## LAMINATED WINDSCREEN BENDING FURNACES

ECOL  
**Glass Company**  
**Glasstech Inc.**

**Glaston Group**  
**Keraglass**  
**Mappi International**  
 Taifin  
**Texpack**

## AUTOCLAVES

Bürkle  
**Glass Company**  
**Glaston Group**  
**Hornos Industriales Pujol**  
**Italmatic**  
**Lisec Group**  
**Triulzi**

## AUTOCLAVE-FREE LAMINATED GLASS PRODUCTION

Bürkle

## CLIMATIC CABINS

**Forel**  
**Glaston Group**  
**IOCCO Group**  
**Lisec Group**  
**Triulzi**

## INFRARED OVENS

ECOL  
**Forel**  
**Glass Company**  
**Glaston Group**  
**Hornos Industriales Pujol**  
**IOCCO Group**  
**Lisec Group**  
**Satinal Spa**  
 SGLASS  
**Triulzi**

## PRESSES/BENDING MACHINES

**Forel**  
**IOCCO Group**  
**Lisec Group**  
**Triulzi**  
**RESIN LAMINATING**  
**MATERIALS AND EQUIPMENT**  
**IOCCO Group**  
**Satinal Spa**  
**Teknik Elmas**  
**Torgauer Maschinenbau**

## EVA (ETHYLENE VINYL ACETATE)

**Satinal Spa**

## PVB

Everlam  
 Kuraray - Trosifol  
 Tecnosens

## PVB - SHAPING AND CUTTING EQUIPMENT

**Ayrox**  
 ECOL  
**Forel**  
**Glaston Group**  
**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 Spa**  
**Softeco**  
 Taifin  
**Triulzi**

## Drilling

## AUTOMATIC DRILLING LINES

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

## MULTI-SPINDLE DRILLING MACHINES

**B Solution**  
**Bando Kiko**  
**Bavelloni**  
**CMS**  
**Forvet**  
**Glass Company**  
**Glaston Group**  
**Intermac - Biesse**  
**IOCCO Group**  
**Neptun**  
**Schiavo**  
**Schiatti Angelo**  
**SKG - Skill Glass**  
**Teknik Elmas**  
**Tesir Makine**

**Vismara**

## DRILLING MACHINES WITH OPPOSITE DRILLING HEADS

**B Solution**  
**Bando Kiko**  
**Bavelloni**  
**Bottero**  
**CMS**  
 Di Gregorio  
 Fenzi  
**Forvet**  
**Glaston Group**  
 Hiseng Glass Machinery  
**Intermac - Biesse**  
**IOCCO Group**  
**Neptun**  
**Schiavo**  
**Schiatti Angelo**  
**SKG - Skill Glass**  
**Teknik Elmas**  
**Tesir Makine**  
**Vismara**

## COLUMN DRILLING MACHINES

**B Solution**  
**Bottero**  
 Di Gregorio  
 Fenzi  
**Neptun**  
**Schiavo**  
 Si.Ste  
**Tesir Makine**  
**Vismara**

## PORTABLE DRILLING MACHINES

**CMS**  
 Fenzi  
**Schiavo**  
 Si.Ste  
**Teknik Elmas**  
**Tesir Makine**

## DRILLING AND MILLING MACHINES

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

## DIAMOND DRILLS

**ADI - Surface Group**  
 Bovone Diamond Tools  
**Diamut - Biesse**  
 Fenzi  
**Glaston Group**  
 Lanzetta  
**Mole Moreschi**

**Neptun Schiavo**  
Si.Ste  
**Teknik Elmas**  
**Tesir Makine**  
**Vincent - Surface Group**

## ACCESSORIES

**CMS**  
Fenzi  
**Neptun Schiavo**  
Si.Ste  
**Teknik Elmas**

## Other equipment and plants

### TURNKEY PLANTS / ENGINEERING - FOR BUILDING GLASS

**Bando Kiko**  
**Bottero**  
**Cugher Glass**  
**Glaston Group**  
Horn  
**Intermac - Biesse**  
**IOCCO Group**  
**Keraglass**  
**Lisec Group**  
**Torgauer Maschinenbau**

### TURNKEY PLANTS / ENGINEERING - FOR AUTOMOTIVE GLASS

**Bando Kiko**  
**Bottero**  
**Cugher Glass**  
**Easy Automation**  
Horn  
**Glaston Group**  
**Intermac - Biesse**  
**IOCCO Group**

### KEY PLANTS / ENGINEERING - FOR DISPLAY GLASS

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

### EDGES ROLLER COATING MACHINE

Eurotech Way  
**WORK CENTRES - CNC CONTROLLED**

**Bando Kiko**  
**Bavelloni**  
**Bottero**  
**Glass Company**  
**Glasstech Inc.**  
**Glaston Group**  
**Hegla**  
**Intermac - Biesse**

**Neptun SKG - Skill Glass**  
**FLOAT PLANTS/LINES (EQUIPMENT & ACCESSORIES)**

**Bovone Elett.**  
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

Bürkle  
**Giardina Group Glass Division**

### SPRAYING TECHNOLOGY

Bürkle  
**Giardina Group Glass Division**

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

Bürkle  
**Giardina Group Glass Division**

### SANDBLASTING SYSTEMS, EQUIPMENT AND PLANTS - OPTIMIZERS

Di Gregorio  
Fenzi  
**Fratelli Pezza**  
**Glass Company**  
**Schiavo**  
**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**  
Rollmac division of GeMaTa  
**North Glass Technology**  
**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

Ashton Industrial Sales  
**Glass Company**

### LASER MARKING

Ashton Industrial Sales

## Artistic glass production

### CERMAMIC INKS

**Glass Company**

### CHAMBER ELECTRIC KILNS

**Glass Company**  
**Keraglass**  
Tekno Kilns

### ACCESSORIES

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

### CUTTERS

Si.Ste

### CUTTING WHEELS

Si.Ste

### MANUAL GRINDING MACHINES

Di Gregorio

## UV ADHESIVES

Si.Ste

## Miscellaneous

### ADHESIVES FOR GLASS BONDING

Si.Ste

### AUTOMATION

Ashton Industrial Sales  
**Easy Automation**

Horn  
**IOCCO Group**

Tecnosens  
**Torgauer Maschinenbau**  
**Zippe**

### AUTOMOTIVE GLASS APPROVAL SERVICES

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

### AUTOMOTIVE GLASS QUALITY CONTROL

**Ayrox**  
**Bando Kiko**  
**Cugher Glass**  
**Deltamax Automazione**  
**Glaston Group**  
**IOCCO Group**  
**Softeco**  
Tecnosens

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

**Ayrox**  
**Softeco**

### COATING OF GLASS SHEETS - SYSTEMS & MATERIALS - HOT / COLD END

Bürkle

### COLOURS & ENAMELS - OTHER APPLICATIONS

**Ayrox**

### CUTTERS

**Tesir Makine**

### CUTTING WHEELS

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

### DEIONIZING AND WATER SOFTENING EQUIPMENT

Fenzi



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**Glass Company**  
**Idrotecnica**  
**Lisec Group**  
**Triulzi**

## DEIONIZING AND WATER SOFTENING EQUIPMENT

**Immies**

## DIAMOND ROUTER EQUIPMENT - PORTABLE

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

## FLAT GLASS QUALITY CONTROL DEVICES

**Ayrox**  
**Deltamax Automazione**  
**Forel**  
**IOCCO Group**  
**Softeco**  
**Tecnosens**

## FURNACES

**Glass Company**  
**Horn**  
**Texpack**

## FURNACES / HYDROGEN GENERATORS (WATER ELECTROLYSERS)

**Nel Hydrogen**

## GLASS COATING AND TINTING

**Bürkle**  
**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**

## HINGES FOR GLASS DOORS

**Si.Ste**

## INSPECTION INSTRUMENTS & INTENSIMETERS

**Tecnosens**

## INFRARED TUBES

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

## KILNS

**Glass Company**  
**Keraglass**  
**Lisec Group**

**Tekno Kilns**  
**Fenzi**

## METAL ACCESSORIES

**Si.Ste**  
**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

**BOST**  
**Cugher Glass**  
**Glass Company**

## PUMPING AND APPLICATION SYSTEMS (AUTOMOTIVE GLASS)

**IOCCO Group**

## PURIFIERS FOR REFLUENT WATER

**Dieffe Macchine**  
**Immies**

## PUTTIES AND SEALANTS

**Fenzi**

## QUARTZ EQUIPMENT

**Helios Quartz**

## SHAPE CHECKING DEVICES

**Easy Automation**  
**IOCCO Group**

## RAW MATERIALS

**BOST**

## 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**  
**Lisec Group**

## SURFACE STRESS MEASUREMENT INSTRUMENT

**Ayrox**  
**Glass Company**  
**Tecnosens**

## WINDSCREEN STRESS MEASUREMENT INSTRUMENT

**Tecnosens**

## WINDSCREEN AND BACKLITES

**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**



# Preview

**glasstec**

In the following pages, readers will find a highly useful guide regarding advertisers of this issue who are exhibiting at Glasstec 2022

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ADELIO LATTUADA	16	A60	ITALMATIC PRESSE STAMPI	15	D25
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Hall 14 - Stand C25

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THE LEADING MAGAZINE FOR THE INTERNATIONAL FLAT GLASS INDUSTRY



hall 14 / stand E37

### People to contact at our stand

**DENNIS TIEGS**  
**MANUEL WEIB**

**COO A+W CLARITY**  
**HEAD OF MARKETING**

## A+W Software

for Glass, Windows & Doors



### A+W at Glasstec 2022:

**Scan barcodes with a smartphone – completely automated production with A+W SmartFactory**

It's just two months until GLASSTEC 2022. After a two-year break due to the Corona pandemic, this year it is finally possible to see products and solutions and meet exhibitors in person once again.

Surely, you're already looking forward to the multitude of innovations that await you at this exciting industry event, where

you can make new contacts and find inspiring ideas for your company.

The glass industry is discussing the topic of digitalization and its opportunities and risks quite intensively at the moment – we at A+W can digitalize your processes and help you blaze a path to Industry 4.0.

One innovation is barcode scanning via mobile app on a smartphone with our **A+W Smart Companion**. For the industrial scanner as we know it is quickly becoming obsolete. Smart devices equipped with the A+W Smart Companion app, great computing power, and outstanding graphics algorithms will soon replace it. A+W Smart Companion represents a completely new product generation, which, like other current A+W solutions, was designed with mobile application in mind.

A+W Smart Companion assists users along the entire value chain, which saves time and money, for processes become more flexible.

**A+W SmartFactory** is a completely newly developed, scalable production system, a higher-level production system that controls processes completely automatically



for an optimized glass flow and networks people, machines, software, and products. It is in a position to responsively coordinate all coupled machines and software modules with the production data provided. We will present A+W SmartFactory at Glasstec. It is worth not-



**Experience A+W in virtual space - find out what's behind it at glasstec.**



ing that this system is suitable for companies of all sizes.

We would be happy to see you at Booth E37 in Hall 14 in order to demonstrate these and many other new functions from the A+W Clarity world. See for yourself and get to know A+W as an innovative and mobile partner, one who stands by you even in turbulent times.

Look forward to the preview of new developments and the first prototypes of the brand-new modules!

Make an appointment right away to prevent wait times at our booth.



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E-mail: [info@a-w.com](mailto:info@a-w.com)

[www.a-w.com](http://www.a-w.com)



hall 16 / stand A60

### People to contact at our stand

**ADELIO LATTUADA** OWNER  
**NICOLA LATTUADA** SALES DEPARTMENT  
**GINO S. GRAMAGLIA** SALES DEPARTMENT  
 OUR TECHNICAL AND COMMERCIAL STAFF



Once again, automation will be the star on the Lattuada stand at Glasstec.

**Lattuada**, together with its strategic partner Knittel Glass, for several years has been offering robotic solutions for any type of need and application related to the glass industry (CNCs, double-edgers, cutting, tempering or IG lines, etc.).

The solution presented during this Glasstec edition will be a fully automatic robotic line with a 13-wheel edging machine equipped also with a dubbing device, model TLR 13 DD PC facing a Kuka robot moving on a track, to manage the glass loading, its turnaround to process the 4 sides and its unloading. It is also possible to run the glass through an in-line washer, model CT 2300/500/4S.

A special place will also be given to an automatic mitring machine model TLR 11 AV C PC, with both Lattuada A-WR System, for a completely automatic wheels setting management



and i-AL package, a comprehensive pack of mechanical, electronic and software systems especially designed to deliver the maximum possible automation in glass processing and a full integration with the customer entire production system.

True to the philosophy of a continuous improvement and a high customization, this mitring machine will be

also equipped with some brand-new features:

- KDL: a special device equipped with two sensors mounted at the outlet to measure the exact length of each glass pane exiting the machine
- Load cells: to monitor the tightness of the main glass conveyor. This makes it possible to constantly check that the pressure is correct and constant along the entire length of the conveyor. Each individual screw-jack is in fact monitored to check that they are all adjusted evenly.
- Machine electrical consumption reading device
- Condition monitoring sensors on the two conveyor gearboxes to prevent possible breakage

Last but not least, this edition will mark a major visual change: a new logo, a new corporate image, a clear vision of the future.

### 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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**hall 16 / stand B58**

## People to contact at our stand

**DINO ZANDONELLA NECCA** PRESIDENT / CEO  
**LORENZA DAL MASO** GLASS DIVISION MANAGER



**ADI** will be at Glasstec trade show, with its complete range of UHS® tools for horizontal and vertical CNC machines. The biggest advantages of this series of tools are fast start-up, zero chipping and long life. Moreover, the special combination of bonds provides the highest performance in terms of working speed.

Designed initially for the automotive industry, the UHS® bond has successfully found application in the CNC working process. Customers who choose to invest in such a key equipment, as UHS tools never go back to standard ones.

The UHS family of tools, which includes routers, PE wheels and trapezoidal wheels, are intended for automotive, solar and architectural glass sectors.

ADI's R&D Department is always focused on increasing the performances of the tools. The UHS® Bond concept has been applied to cup wheels for single and double edger at high feeding speed.

Besides ADI is not just a tool supplier, but a Total Service Partner: for those who have issues with damages on the glass surfaces, ADI can propose GLASS RENU, the patented Scratch Removal System. Unique system in the current market, for its dry working process, it's much easier to use in both indoor and outdoor areas. The possible applications of this system are limitless, ranging from the architectural industry to the automotive, marine and maintenance of public transportation.

Moreover especially these two last branches of the maintenance mar-



ket, highlighted to ADI the need to deliver solutions for the maintenance of other materials, different from glass, but equally present in those environments.

Thus was born **PXCare**, the first of a series. It's engineered to restore all plexiglass surfaces (polymethylmetacrilate). In fact this kind of materials are widely used on cruises and boats, in consideration of their higher resistance to impact, transparency and lighter weight if compared to glass. Thanks to its patented discs, PXCare grants an extreme flexibility of use, and can be operated manually or with the use of random orbital sanders. The special No Wave Technology (+nwt) mixes different abrasive technologies, allowing a dry tooling cycle, and giving to the surfaces an optimal sharpness of the image reflected, avoiding at the same time the orange-skin effect.


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


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**hall 12 / stand C35**

## People to contact at our stand

**TIMO SUOMI**  
**MIKKO SUOMI**  
**REIMA MÄKINEN**

**CHARLOTTE TOUSSAINT**  
**ANDRE SILNOV**  
**SALLA SUOMI**



**ISO 17025 accredited calibration and testing for polarimeters**

**AYROX** has over 25 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.



**AEM of for automatic edge stress measurement**

## 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**

## Ayrox YouTube Channel



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hall 15 / stand B41

People to contact at our stand

**GIANLUCA BONFANTI**  
**DANIELE NARDO**

MANAGING DIRECTOR  
SALES MANAGER

**LB 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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[www.bsolutionsrl.com](http://www.bsolutionsrl.com)

**hall 15 / stand F41**

People to contact at our stand

**S. BANDO****K. NAKADA****O. TAKAHARA**

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**Feel the customer with Bando's heart**

## **YOUR DREAM REALIZED** **BANDO TECHNOLOGIES**

**ADVANCED EDGE QUALITY****INDUSTRY 4.0****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 16 / stand B60

### People to contact at our stand

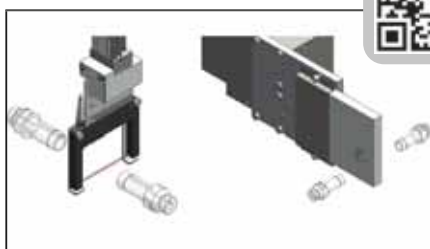
OUR SALES PERSONNEL AND DEALERS WILL BE AVAILABLE AT OUR BOOTH TO INTRODUCE OUR TECHNOLOGIES FOR THE GLASS INDUSTRY.



machining parallelograms and off-square shapes which make it suitable for staircase railings and balustrades. The model on show will be provided with drilling bit presetting and redressing for enhanced automation.

Also on display, our straight-line mitering machine model **Bavelloni VE 500 V10**. This straight-line edger, specifically designed for heavy glass sheets (up to 350 kg/m), can grind flat edge with arrises and chamfers with variable angles (0° - 45°). It features a robust structure, double drive conveyor, wide touch-screen control panel and separated inlet arm motorization (Jumbo mode) to load large panes while the machine is working. VE 500 V10 can be customized with several options for different requirements, such as: higher racks and/or longer arms, HiWash washing machine integrated in the outlet arm, cerium polishing kit and different connectivity possibilities including teleservice, like the model on show. Our equipment is Industry 4.0 ready therefore it can be easily connected to and exchange useful data with the customer's ERP system.

Visitors to our booth will also have the chance to see a wide selection of **Bavelloni diamond and polishing tools** resulting from a combination of research in metallurgy and extensive application knowledge. With a solid expertise in the field of grinding technology, Bavelloni can provide tooling for



Visitors will appreciate the ease of use, speed and precision of **Bavelloni VDM 1636 CN**, our vertical drilling/milling centre which has become quite popular in just a few years. VDM 1636 CN features a single working station fitted with one double drilling head and rotating tool storage (8+8 position) capable of multiple tasks: drilling, countersinking, milling and notch grinding. Thanks to its features, it is the ideal choice for producing doors and for architectural applications. It also comes with a functionality for



Bavelloni equipment and for the main machinery producers.



Last but not least, the revolutionary technology by **Techni Waterjet** ([www.techniwaterjet.com](http://www.techniwaterjet.com)) will also be presented at this glasstec edition. On show, Techni Waterjet i510 - G2, belonging to the Intec-G2® Series, a range of precise, easy-to-operate, safe and highly reliable waterjet cutting machines featuring Quantum™ Electric Servo Pump (ESP), the innovative pumping technology designed by Techni.

### Product Range

- **STRAIGHT-LINE EDGING AND BEVELLING MACHINES**
- **SHAPED GRINDING AND BEVELLING MACHINES**
- **DOUBLE EDGING MACHINES AND LINES**
- **WASHING MACHINES**
- **DRILLING & MILLING MACHINES**
- **CNC GRINDING MACHINES**
- **TABLES FOR STRAIGHT AND SHAPED CUTTING**
- **FULLY INTEGRATED SOLUTIONS**
- **DIAMOND AND POLISHING TOOLS**



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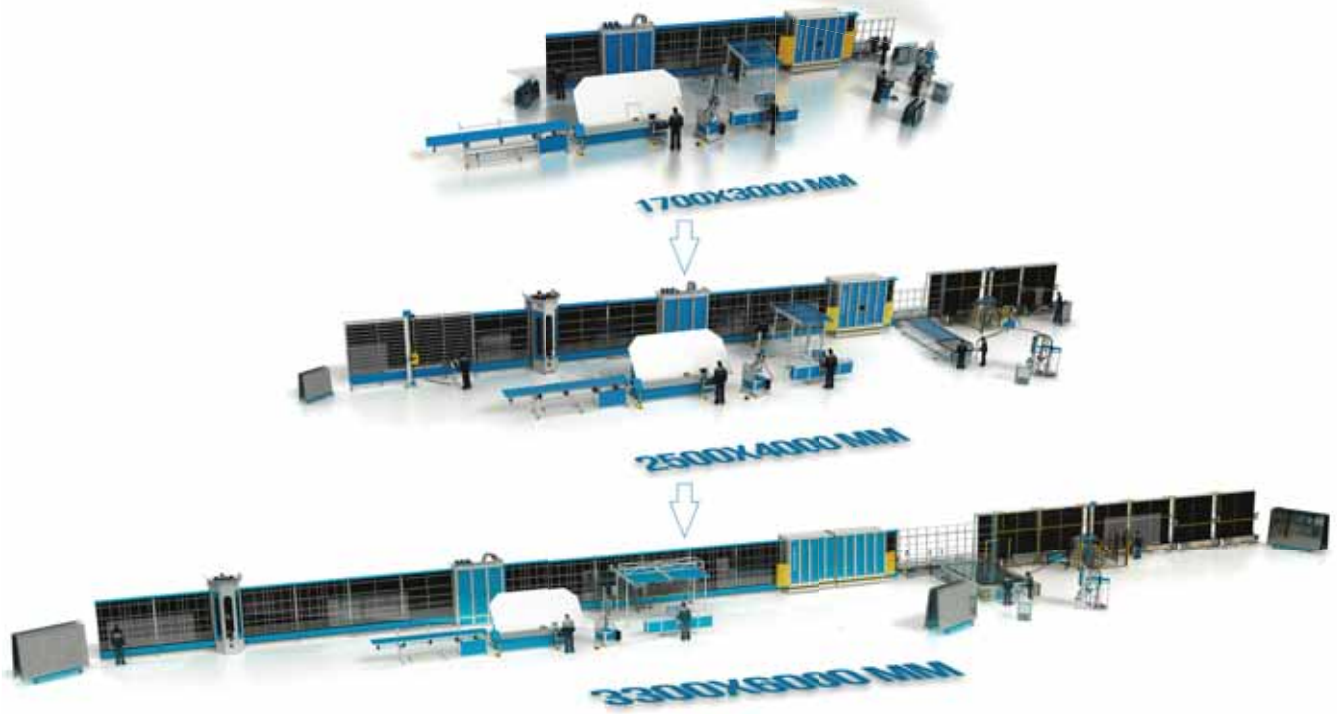


hall 17 / stand A74

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 $\infty$ )
- AUTOMATIC TWO COMPONENT EXTRUDERS FOR SECONDARY SEALING(1700X3000MM TO 3300X6000MM)
- GLASS LAMINATION LINE
- 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



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**hall 14 / stand F33-F34**

## People to contact at our stand

**DAVIDE CIGNA**
**SALES DIRECTOR**


**Bottero S.p.A.** will participate to Glasstec 2022 with a unique Corporate booth for Hollow and Flat Glass located in hall 14F33\ F34.

We trust that Glasstec 2022 will be a perfect moment to meet our Clients again, especially after two-years of forced limited personal relationships.

People want to meet and to discover the latest technology developments and Bottero S.p.A. will be more than happy to welcome Clients from all over the world and to have the opportunity to show them our technology roadmap and our latest achievements.

Bottero business strategy is focused on two main pillars: sustainability and automation.

In terms of sustainability Bottero S.p.A. is focused on respect and value resources, people, stakeholders and environment with the aim of leaving a better world to the future generations.

In terms of automation Bottero S.p.A. R&D investments are focused on the glass processing, integration, data collection and data analysis. The capability to integrate and scale up processes, from the basic stand-alone machine up to the whole factory automation is the focus of both Flat and Hollow Glass businesses.

Bottero S.p.A., since 1957, is among the very few high-tech producers in almost all glass processing fields by developing: stand-alone machinery for Flat Glass, machinery for glass containers production (Hollow Glass), complete lines for float and laminated glass production for various industry application: architectural, home appliances,

automotive and electronic industry (smart-phones).

In the last 5-years, linked to the growth of solar energy and photovoltaic system demand, Bottero S.p.A. has enhanced its presence in the renewable energy business segment.

Thanks to important investment in R&D and smart solution for factory automation, Enel Green Power has chosen Bottero S.p.A. technologies for their new 3GW Gigafactory Tango, located in the heart of the industrial area of Catania (Italy). It will become the largest photovoltaic panel manufacturing hub in Europe, with five lines for photovoltaic panels manufacturing having a 600 MW capacity each.



Bottero S.p.A. with over 800 employees (over 25% of the workforce made of engineers from R&D and service activities) has a turnover of 200 million euros with plants in Cuneo (the Headquarter), Vicenza (Revimac), Rovereto (GlassFORM.ai in joint-venture with Tiamo) and China (Bottero Glass Industry Foshan).

Our exports value reaches 95% of the entire turnover.

"We have more than 50,000 active instal-

lations worldwide – says Marco Tecchio Bottero's S.p.A. CEO - in the last decade, applying the principles of Industry 4.0 we made significant investments in automation, bringing innovative solutions to the glass industry with the aim of obtaining automatic control and production process optimization "

Moreover, thanks to Enel's order for the Catania site, Bottero's turnover will grow starting from this year. The construction site is already open and after the start-up, with the first 600 MW capacity in September 2023, it will be fully operational by July 2024.

Within the process automation roadmap, Bottero S.p.A. has created and inaugurated in Rovereto (Trento) GlassFORM.ai, a joint venture with Tiamo (France).

Using edge technologies (i.e. big data and machine learning), this joint venture will develop automation tools to

- provide solutions to automatically manage the forming process according to the production targets
  - contain environmental impacts through energy saving, light weighing and resource optimization
  - reduce exposure of operators to machine adjustments via automatic controls
  - compensate the loss in process know-how leveraging on the deployment of Artificial Intelligence technologies.
- Come and join us


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**ELETTROMECCANICA**

**hall 16 / stand C41**

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hall 15 / stand E32

## People to contact at our stand

**MARCELLO E ANDREA AIUDI** TECHNICAL & SALES MANAGERS

**comss**  
SILK SCREEN PRINTING MACHINE



### 1974 – 2022

**COMSS s.r.l.** has more than 48 years of activity and experience in artistic and industrial screen printing.

The two generations still present in the company combine their experience and dynamicity – the ideal combination for those who turn to COMSS looking not only for a supplier, but also a partner able to supply plants and follow-up with technical and post sales services.

Our technical services involve close contact with our clients, on-site where the plant is to be installed. In fact, knowledge of the company and its organization are essential to be able to install a new production line that is perfectly integrated with existing machinery.

The production of customized machinery and plants is what enables us to do this, and is – and has always been – COMSS' strong point.

Customization can regard functional work dimensions, automation and layout, as per the area available for the installation of the same plant. Our screen printers, transport systems and conveyors, as well as drying ovens, have all been designed with modularity in mind, enabling clients to update and increase their plant at a later date.

Post-sales involves, first and foremost, spare parts and assistance, fundamental to be able to guarantee continuous production of the plants.

Online assistance also plays an important part in reducing machine downtime

needed, and for this reason all our machines have Internet connection.

COMSS services also include training courses for screen printer operators for companies who are beginning to work in the sector.

Screen printing, in fact, is one of the sectors where human presence is important in reaching high quality levels of the finished printed products.

Training takes place on-site at the company's premises, where the operator will be working, and using the machine he will be working with.

COMSS can also supply screens ready to use for different sectors.

### Product Range

- **SILK-SCREEN PRINTING MACHINES AND EQUIPMENT**
- **SILK-SCREEN PRINTING PLANTS**
- **DRYING SYSTEMS**



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hall 16 / stand C56

## People to contact at our stand

**CARLO PROPERSI**  
**SERGIO GERVASONI**  
**ALESSANDRO COLELLA**

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



## CMS Glass Technology: high performance machining centres and exclusive integrated lines for glass processing

YPSOS is the vertical machining centre for grinding, milling and drilling glass sheets. Designed to increase CMS' customers' productivity, Ypsos allows you to optimize productivity by using 2 spindles to grind and polish the glass. The SCADA software allows for all the key machine components to be monitored and supervised via specific synoptic views. The operator simply needs to indicate which processing are needed and YPSOS will deal with finding the right tool to fit. Alternatively, Ypsos will warn the operator if the tool is not loaded in the storage or if there is insufficient useful life to finish the processing.

VERTEC is the CNC vertical drilling machine. It allows for drilling, counter-sinking, milling and notching operations on monolithic, laminated and Low-E glass.



Characterized by two 9+9 station tool storages, two opposite coaxial electro-spindles, a tool cooling system with internal and external water and a high-precision, automatic hole measuring system.

The new CMS cutting bench AGIL TR for monolithic glass has been designed for all those companies that need a versatile and compact product for cutting float glass sheets. The table allows for sheets of up to 3810x2600mm and with a thickness of between 2 and 19 mm to be cut. It is also fitted with tilting arms to load and unload the glass, the C axis to cut a shape and a double zero system for a semi-automatic cut of the laminated glass.

Lastly, CMS will exhibit the automatic horizontal seaming machine. it allows the glass edge to be processed as soon as it is cut before removing it from the bench, which avoids it being handled twice. The processing is done dry with

simultaneous suction of residue via a three-level filtering.

The range of CMS machines for glass also includes 3-4 (GEA and Speed) and 5-axes (Maxima) CNC horizontal machining centres and a widest selection of 3-5 axes machines for waterjet cutting.

All CMS' machines have the same simple and intuitive CMS Active - HMI interface and can be interconnected to one another via CMS CONNECT, CMS' IoT software for Industry 4.0 monitoring and preventive diagnosis.



## Product Range

- **VERTICAL MACHINING CENTRES**
- **HORIZONTAL MACHINING CENTRES**
- **CUTTING TABLES AND CUTTING LINES**
- **LOADING SYSTEMS**
- **WATERJET CUTTING SYSTEMS**



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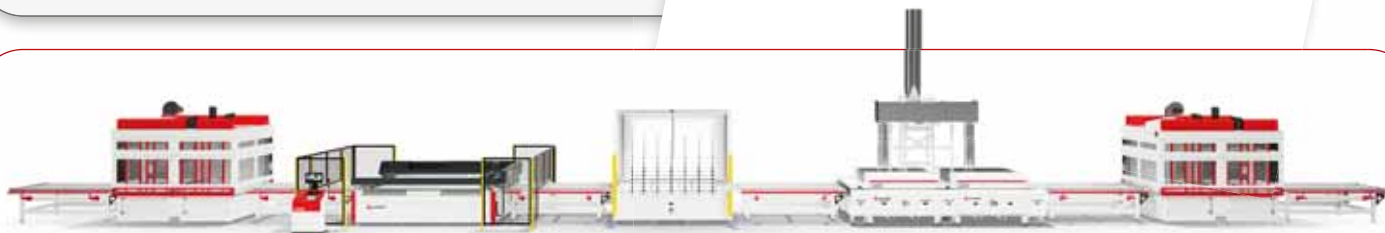
hall 16 / stand A29

### People to contact at our stand

<b>BARBARA MAZZA</b>	<b>GENERAL MANAGER</b>
<b>MARINO BONETTI</b>	<b>SALES MANAGER</b>
<b>PAOLO BARDOTTI</b>	<b>MECHANICAL DEP. MANAGER</b>
<b>ANDREA ZORZITTO</b>	<b>AUTOMATION DEP. MANAGER</b>
<b>MARIANNA CROCI</b>	<b>MARKETING MANAGER</b>
<b>SILVIA VIVA</b>	<b>SALES ACCOUNT</b>

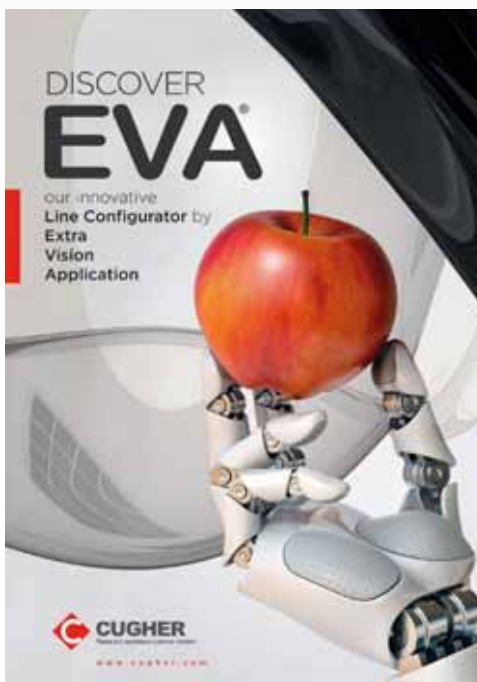


**CUGHER**  
Plants and machinery customer oriented



At Glasstec 2022 Cugher will present **EVA**: through an **Extra** prospective, it will be possible to have a new **Vision** of machinery for flat glass. Everything thanks to an **Application** which allows the configuration of a Cugher line and its representation through the *augmented reality*. Through a unique and immersive experience that combines physical reality with digital world it will be possible to deepen Cugher core products:

- **Silk-screen Printing Machines** that best fit the production needs thanks to options that ensure excellent image definition, precision and uniformity of the ink.
- **System dedicated for handling, transport and storage** for glasses with any dimension and shape, guarantying excellent integration and synchronization with all line components.



Every solution, stand-alone machinery or entire plants, is **customized** to efficiently perform for each sector:

- **AUTOMOTIVE**, ensuring high productivity, print repeatability ( $\pm 0,08$  mm) and short cycle time (from 6 to 15 seconds).
- **HOME APPLIANCE**, a sector where speed is essential, the production change-over is very simple and fast.
- **BUILDING AND INTERIOR DESIGN** in which R&D, Architectural LAB, is specialized in the creation of long-term specific solutions.
- **SOLAR**, guaranteeing wet film uniformity, 98% good parts and 7/7 working plant and high reliability.

### Product Range

- **SILK-SCREEN PRINTING MACHINES**
- **HANDLING**
- **IR AND UV DRYERS**
- **VISION SYSTEMS**
- **ORDER MANAGER 4.0**
- **COMPLETE AUTOMATIC LINES**

- **Dryers (IR, UV or combined)** with specific features and flexibility to satisfy both silk screen printing and digital printing on glass.
- **Vision systems and quality control** provide opportunity to best control the glass and the print quality in every detail and to monitor and adjust the process.
- **Order manager 4.0**, the interface between machinery and Customer's operating system.

### Services

- **CUSTOMIZED ENGINEERING SOLUTIONS**
- **SPECIALIST ADVICE: A FREE STUDY ON THE TECHNICAL NEEDS AND PECULIARITY OF THE CUSTOMER**
- **CUGHER HELP DESK: THE NEW AFTER-SALES SERVICE THAT GUARANTEES A CONTINUOUS PRESENCE AND A SPECIALIZED INTERVENTION**



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hall 16 / stand D19

### People to contact at our stand

**GIANLUCA DIENER**   **CHIARA CORRIDORI**   **GIORDANA DALLASERRA**



**Deltamax** was born in 1989 as a spin off of a research centre located in Trento – at that time with a different name, SIPAR. In 1992 SIPAR installed the first inspection system in a float glass line for Pilkington, in its Porto Marghera plant.

In 2007 Deltamax installed the first scanner for defects detection on IG lines, named GlassInspector, starting a new era with the development of solutions for flat glass quality control for small and medium businesses.

Fifteen years later Deltamax has focused its business on flat glass quality control and is still working on new technologies to satisfy the most demanding Customers and to face the challenges proposed by modern materials and production processes.

#### IG Lines Solutions

2007-2022: GlassInspector turns 15, a scanner for the detection of defects on insulating glass lines that marked the turning point in the history of Deltamax,

starting the production of artificial vision solutions for small and medium-sized businesses.

Over the years, the inspection systems made by Deltamax have been renewed in terms of components, performance, and type of detection, multiplying the available responses to customers with the most disparate and specific needs.

There have been more than 200 installations on insulating glass lines in more than 30 countries around the world, demonstrating the reliability of the software, satisfying customers with different levels of quality.

Alongside the GlassInspector system, still relevant today thanks to the upgrades we made to both the software and the hardware, Q+ has also established itself in recent years. It is the only system on the market that can detect the infamous halos, the Achilles' heel of standard solutions.

Recently two new solutions for insulating glass lines have been installed

for both long-time and new customers: IGU scanner and the ADV version of GlassInspector.

The ADV version of GlassInspector, which can be installed after the spacer installation station (manual or with automatic system), allows you to integrate the defect detection system with the monitoring of the spacer position. The presence of any defect will therefore stop the glass before it enters the press, letting you intervene before the creation of the insulation.

IGU scanner is the system that allows you to check the finished insulating glass unit: installed after the press, before the sealing machine, IGU scanner detects defects of various kinds (scratches, stains, bubbles or inclusions, dirt, residues) in the transparent area of the IG unit, checking also the position of the spacer. The available parameters let you adjust the desired quality level by setting the dimensions of the acceptable defects or the tolerance for the position of the spacer. A quality control at the end of the line to guarantee the quality of the products before delivery to the customer.



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**Diamut** is the brand leader in the production and marketing of diamond tools for the processing of glass, stone and ceramic materials, used on the majority of the machines on the market. Diamut will be present at Glasstec 2022 showing a wide range of products, among which Helix, a Diamut patented product, which sets new standards in drilling operations, and Chevron, Diamut's definitive solution for laminated glass.

Diamut's commitment to research and innovation has led to the definition of a new binder "cobalt free" used on all products. The use of "cobalt free" powders provides a benefit to the operator during the entire production process of the tool, including the disposal of processing waste. It also represents an important advantage for customers granting a saving on waste disposal costs deriving from the material processing.

The Helix System is able to perform drilling operations with integrated upper and lower countersinking on glass sheets up to 19mm thick, using a single tool on CNC machines.

Helix overcomes all the limits of traditional drilling. Today's technology forces operators to use two tools, as well as imposing

limits; it does not integrate countersinking of the lower part, thus requiring the use of different drill bits for bores of different diameters.

Helix is an innovative tool managed by dedicated software. This tool no longer descends vertically, but works helicoidally; the entrance of the tool takes place from the bevelled side of the tool and

the glass is ground to create a hole instead of being drilled.

Chevron is Diamut line of tools with arrow-cutting profile which has been specially designed to optimize the removal of plastic film and to ensure removal capabilities that have never been achieved previously with traditional tools. Furthermore, compared to a standard tool, the new V-shaped design limits and delays the generation of the classic cutting at the centre of the groove caused by the plastic film that affects the performance of the tool.

The results go above and beyond all current standards. The new, innovative arrow profile allows the Chevron grinding wheel to channel the water to the centre of the tool, facilitating cooling and thus improving

performance and final results.

The Chevron line of tools is available in a wide range of different configurations according to machining operations to be carried out and the type of machinery on which these will be performed. The tool is available in 100mm, 150mm and 200 mm diameters, and can be mounted on both CNC and vertical machines, for trapezoidal, flat and groove profiles.



### Product Range

- CUP AND PERIPHERAL WHEELS
- DRILL BITS
- ROUTERS
- CUTTING DISCS
- WRITING BITS
- SPHERICAL TOOLS
- TOOLS FOR THIN GLASS SHEETS
- PRESETTER
- TOOLHOLDER FOR CNC





hall 16 / stand A06

### People to contact at our stand

**ENRICO BONANNI**  
**GIANLUCA DAMELICO**

**SALES MANAGER**  
**TECHNICAL MANAGER**



**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/beveling 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



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**hall 16 / stand D17**
**People to contact at our stand**
**DANILA FREZZA**
**ALESSANDRO FREZZA**
**DOGO**  
 Glass processing tools producer

**Procyon**

Cerium oxide synthetic rubber-bonded wheel


**Peacock**

Synthetic spiral felt wheel


**Black Panther**

Resin-bonded arris cup wheel

The family-run company was founded in 1994 in Badile, a small town in the district of Milan.

The history of **DOGO s.r.l.** has always been linked to the values that best represent its philosophy: quality, research and innovation. Over the years, the company has grown and evolved, so much so that in the 1990s it decided to successfully launch the production of its own line of products, managing to best combine the great heritage of tradition and craftsmanship with the highest level of technology, maintaining over the years a close link with one of the values that is today the most identifiable synonym of quality and creative genius: Made in Italy.

### The production: quality, tradition and innovation

Thanks to over twenty years' experience in the polishing branch, gained in contact with some of the most important Italian and worldwide companies, extreme attention is paid to the choice of materials, such as binders and abrasives of various types and to all the accessory elements, in order to offer our customers high quality products.

The company has always been committed to the pursuit of excellence and wants to anticipate the needs of its customers, acting as a single point of contact for the supply of multiple items for polishing the edge of flat glass.

### We are your PARTNER

We offer our customers many years of know-how in the design and manufacturing of high-performance products.

We like to think that we are not just your supplier but your partner with whom you can meet the challenges of your growth and development projects.

**GLASS MANUFACTURERS ALL OVER THE WORLD HAVE BEEN TRUSTFULLY USING THE FULL RANGE OF OUR POLISHING WHEELS FOR MORE THAN TWO DECADES**


**Puma**

Resin-bonded groove wheel, cup and peripheral


**Elephant**

Rubber-bonded polishing wheel, HS and CE


**Leopard**

High concentration porous cerium oxide wheel

**NEW**


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hall 15 / stand F56

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, trap-ezoidal and backlight type, application up to 200 m/min.

Can be integrated with automatic Bus Bar application tape application and pre-cut 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.

**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**



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hall 17 / stand C67

**Edgetech**  
A Quanex Building Products Company

### **Super Spacer® warm edge spacers offer flexibility all along the line**

At glasstec 2022, discussions around digitalization, manufacturing automation, innovative window solutions and sustainability will be a constant. "With Window 4.0, the hour of flexible spacers is also upon us", says Charlotte Hawkes, Head of Marketing, IG International. In addition to the topic of energy efficiency, the focus of Edgetech's trade fair presentation will therefore be on the manufacturing advantages of Super Spacer® flexible warm edge spacers when processed in automatic production lines.

#### **If not now, when for Warm Edge?**

Against the backdrop of current developments in energy prices and climate protection, Joachim Stoss, Vice President International Sales IG at Quanex, places the issue of sustainability at the top of the agenda: "We have to save energy, and we have to do it quickly and everywhere. That's why we as an industry must also make it clear that there is no way around the warm edge any longer. It is part of the basic equipment of all new insulating glass. Super Spacer offers the best Psi values of up to 0.028 W/mK and enable savings of up to 6% on heating costs. Moreover, the costs for the warm edge Super Spacer are negligible. They account for less than 1% of the total cost of an installed window. So, what is there to wait for?"

#### **Variability and flexibility**

Super Spacer® flexible warm edge spacers made of silicone structural foam are suitable for manual processing in special designs and for automatic application in the edge seal of classic windows, insulating glass units in structural glazing facades, and for hot and cold curved insulating glass. Silicone structural foam spacers come prefabricated from the roll and are automatically applied along the edge of the glass. So a large part of the setup time is eliminated and the line is maximally flexible in terms of window dimensions, glass type, number of glazing units and spacer width. "Super Spacer is set parallel to the millimeter and guarantees a visually appealing, but above all tight edge seal", adds Joachim Stoss.



#### **Flexible spacers for precise positioning**

New developments such as 4-pane insulating glaz-

ing and complex structures with integrated, intelligent functions can only be manufactured economically and precisely with a high degree of automation in conjunction with flexible spacers. A robot can place the foam-based prod-



ucts in parallel with millimeter precision in a matter of seconds, thus guaranteeing a flawless and tight edge seal. "Automation and digitization will also give medium-sized window producers competitive advantages in the medium term," says European Technical Manager Christoph Rubel, "with high-quality products and flexible production that responds quickly to customer wishes and manufacture of smaller series economically."

"Of course, we will also be presenting our new Super Spacer T-Spacer SG at the trade fair, which has a larger surface area for the application of the primary seal. Like all Edgetech products, it is a metal-free, silicone-based warm edge spacer made of structural foam with integrated desiccant and also has excellent thermal insulation properties thanks to its low thermal conductivity of 0.19 W/mK. The spacer's composition provides improved shape memory, which is important for the long-term integrity of the edge seal. The resilient structural foam follows the climate-induced movements of the glass and relieves much of the load on the butyl seal. This is an invaluable advantage, especially in climates with very low, very high or highly fluctuating temperatures," says Christoph Rubel.

#### **About Edgetech Europe GmbH, A Part of Something Bigger<sup>SM</sup>**

Edgetech Europe GmbH, located in Heinsberg, Germany, is a fully owned subsidiary of Quanex Building Products Corporation, (NYSE: NX) a global, publicly traded manufacturing company primarily serving OEMs in the fenestration, cabinetry, solar, refrigeration and outdoor products markets. Edgetech Europe GmbH services markets in continental Europe with a total of 490 employees and 17 extruders. We are "A Part of Something Bigger" by improving the performance and aesthetics of end products through continuous innovation, helping customers achieve greater production efficiencies, and giving back to communities where we operate. Visit [quanex.com](http://quanex.com) for more information.

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



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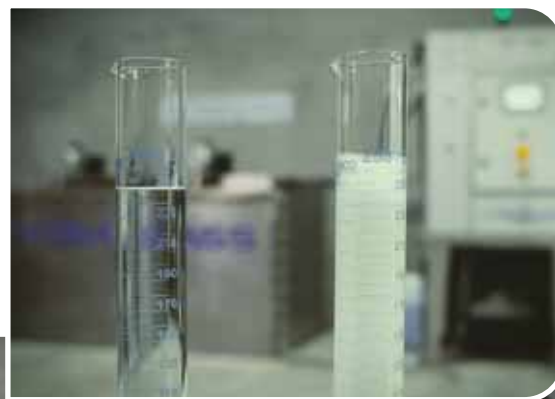
### FILTRAGLASS IS ALREADY WARMING UP THE ENGINES FOR GLASSTEC 2022

At Glasstec, from 20 to 23 September in Düsseldorf, **Filtraglass** will present XtremFlow, its new range of water filtering systems for large volumes of water, which will be at the Filtraglass stand, available to be seen first-hand for all those interested in the system.

The XtremFlow range, which includes six different models, differs from all its predecessors mainly because it works with a new filtering system: the filter press. This new feature has made it possible to multiply the number of litres that a Filtraglass machine can filter. However, this isn't the only novelty XtremFlow offers. All new models include a touch screen on the control panel that makes it possible to program the machine, set it to operate in automatic or manual mode, and more. Other great new features include a pH control meter, a turbidity control

system, and a complementary filter to produce top-quality filtered water for use in CNC spindles.

The Filtraglass team will be on-site at the fair to serve any company that is looking for a solution to reduce their tap water consumption and improve their productivity while always respecting the environment.





hall 16 / stand C40-42

People to contact at our stand

**CARLO ZUCCARELLO** SALES AREA MANAGER

# FOREL

## **FOREL AT GLASSTEC 2022 AUTOMATION, INNOVATION, NOVELTIES AND BEST SELLERS**

### **The insulating glass line with integrated logistics**

At Glasstec '22 the latest addition to the **Forel** range of automation will be in operation: fully automatic IGU line with thermoplastic spacer applicator.

The line is loaded automatically from the Art. SS Sorting



System, Forel's stock handling and storage system for glass sheet management within production, capable of automating output from production control software and programming.



At the heart of this 'High Tech' double glazing line is the new Art. TA Thermoplastic Applicator, designed and developed for ease of use and continuous productivity, extruding and applying the Thermoplastic product perfectly and accurately. The software already contains the most used production programs commonly associated with the various requirements related to this kind of IGU. The user interface is very user-friendly, simple to understand and intuitive to operational demands.

The line continues with a series of innovative features to accommodate the specific characteristics of the panels. Among these, Forel has paid particular attention to the Art. AP coupling press developing a dedicated option that allows the module to process both traditional rigid spacer bar and thermoplastic glass production.

The final step of the lines process is usually entrusted to the Art. SR 'High Tech' sealing robot. The process is completed with the new Art. GU automatic unloading system. The Art. GU model to be exhibited at Glasstec features a unique system that allows the safe storage of both rigid profile panels and those produced with thermoplastic spacer.

Forel will also be exhibiting machinery options for the preparation of traditional rigid spacer: the Profile Bender Art. PB, Desiccant Loader Art. DF and the Manual Butyl Applicator Art. MB.



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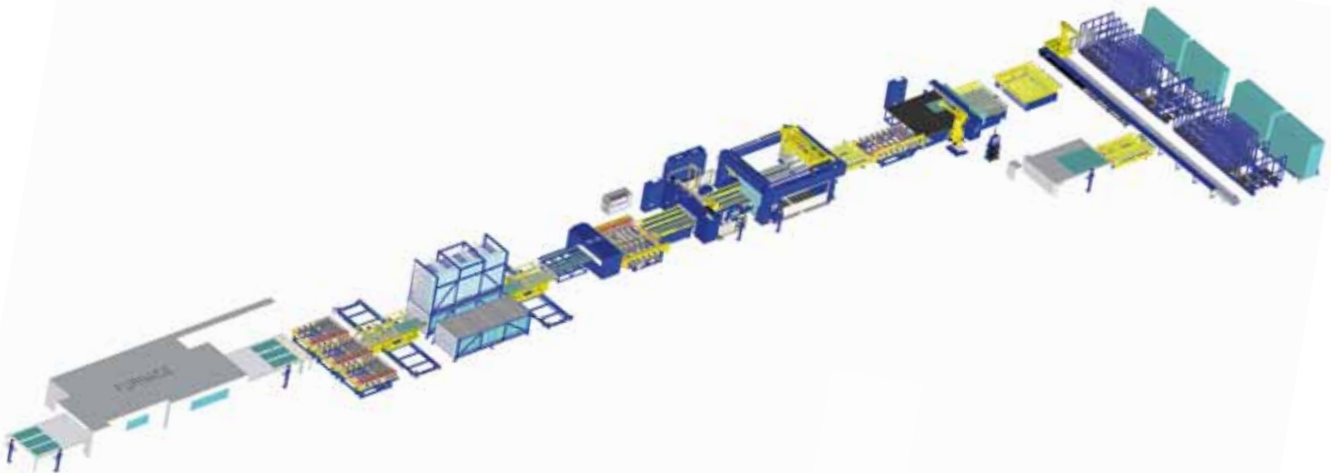


Innovative Solutions in Special Glassworking Machinery

At Glasstec **Forvet** will display live his full line composed by the Chiara Modular 2000 grinding machine, the FC 16M 2000 WJ machining centre and the new Sortiflex sorting system along with FC 16M 1600 Mill combined with Busetti CNC double-edging machine.

The line on show is a clear sign of how automation of processes speeds up production times, paving the way for higher margins, also thanks to a significant reduction in costs. But that's not all: the benefits include increased productivity, higher quality, greater safety, less variability, reduced waste and greater end customer satisfaction. In the field of process automation, a great deal of attention and study has been dedicated to the handling and management of glass within the production process, which today is increasingly complex and multifaceted. Integrations and optimizations of and between processes become the main focus.

Finally, the **Sortiflex** temporary buffer is able to optimize the flow of glass from different origins and convey it to a single outlet, or from a single origin to several outlets. The sheets are removed from the processing line by a dedicated shuttle. The glass storage buffers are built with a patented system that provides two overlapping storage levels that double the number of available positions with the same footprint. The Sorting optimization software designed and developed in-house allows fully automated in-line control. A key function is the optimization conveyor table for automatic oven loading/unloading: this special table receive the glass from the Navetta45 and provide to distribute the glass with optimized pattern over the belt surface. The loading cycle is obtained by individual belt drive that allow the glass to be loaded in line over the conveyor length. The loading bed will be composed according to the oven surface size.



With the **Chiara Modular 2000** edging machine, edge and arris grinding and polishing operations are carried out simultaneously (patented system) on all sides of the glass, even out of square. The work cycle is fully automatic, without the need for any manual adjustment. The automatic vacuum system with suction cups controlled by the NC makes this grinding machine one of the most efficient for working low-E glass, avoiding contact with the coated surface (regardless of the type of coating).

The **FC 16M 2000 WJ** machining centre combines two technologies managed by a single numerical control: two production principles – diamond tool and water jet – which interact, one benefiting from the advantages of the other.

In November 2021, Forvet became part of the Biesse Group, an international company that designs, manufactures and distributes systems and machines for processing wood, glass, stone, metal, plastic, and composite materials for the furniture, housing and construction, automotive and aerospace sectors. Founded in Pesaro in 1969 by Giancarlo Selci, it's been listed in the STAR segment of the Italian Stock Exchange since 2001. A large share of its consolidated turnover – 85 percent – is achieved abroad. It operates in over 160 countries with 14 manufacturing sites and a direct presence in the main world markets. The Group's customers include industry-leading companies and some of the most prestigious names in Italian and international design. Today it has 4,300 employees.

## Product Range

- **COMPLETE HANDLING AND SORTING SYSTEM**
- **INTEGRATED ROBOTIC SYSTEM FOR LOADING/UNLOADING**
- **DEDICATED SHAPE CUTTING AND BREAKING SYSTEM**
- **INTEGRATED DRILLING, MILLING AND WATERJET MACHINES**
- **AUTOMATED AND INTEGRATED EDGING LINES**
- **WASHING AND DRYING MACHINES**



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hall 16 / stand B21

### People to contact at our stand

<b>MICHELA PEZZA</b>	<b>PRESIDENT</b>
<b>FABIO GABRIELI</b>	<b>TECHNICAL DIRECTOR</b>
<b>PAOLO DE BORZATTI</b>	<b>SALES MANAGER</b>

# FPE

FRATELLI PEZZA

The Italian company **FRATELLI PEZZA S.r.l.**, leader in the production of sandblasting and marking systems for flat glass, will display for the first time 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 the competitive development of any glasswork. The cabins will enable to manage an unlimited number of working programs, copy, rename, delete or backup them. There will be counters for monitoring the processes, a report of any alarms and preventive maintenance information. In addition to this, when a sandblasting area is entered into the program it is displayed through a graphic simulator. But the absolute novelty for Glasstec 2022 is the launch of a web application that will allow the customer to program the machine remotely via PC, tablet or smartphone. All auto-



matic cabins are then 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 display 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 is available in 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 (tempering lines, double glazing, washing machines, etc.), receiving an impulse that activates the marking operation in a totally automatic way. On the other hand, Marker 101T and 301T are manual and portable units which, just as like the Easymarkers, enable to carry out a logo up to 30 mm in diameter.



### Product Range

- **SANDBLASTING AND MARKING MACHINES**
- **PROTECTIVE COATINGS FOR CLEAR AND SANDBLASTED GLASS**



**FRATELLI PEZZA S.r.l.**

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hall 12 / stand D66

### People to contact at our stand

**STEFANO TIBÉ** SALES MANAGER



**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



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hall 16 / stand A18 – hall 12 / stand B34

### People to contact at our stand

**CLAUDIO BERNABUCCI**  
**CRISTINA SANTINI**

**MANAGING DIRECTOR**  
**ADMINISTRATIVE DEPARTMENT**

GLASSCOMPANY



**Glass Company Srl**, a leader in the sector for special glass processing machinery, will be at GLASSTEC 2022 with its software **SOFTMEK** which works combined with **LASERMEK**, the laser range specifically designed for the glass sector, in particular for any type of coating cutting and removal, such as silver, reflective, electro-conductive, organic paints, tempered paints, etc., leaving the glass completely transparent. Laser Scanner machines are able to carry out fast and high precision processing of small, medium and large size glass sheets, consuming less than 1KW/h of electricity.

Glass Company personnel will be glad to discuss the numerous applications sectors of **LASERMEK** and **SOFTMEK** technology and it will be possible to see the machine running with processing demonstrations throughout the day, on different types of coatings.

Glass Company will have on show **EI** fire resistant glass produced with **FIREMEK** line, a turnkey system dedicated for the production of fire resistant glass, suitable also for small and medium-sized companies, both with regards to their ease of use, as well as for their affordability. Glass Company personnel will discuss the main parts of the line and the products required to produce EI30, EI60, EI90, category glass, etc.

Glass Company can also supply the tested and approved intumescent mix together with **FIREMEK** machines and equipment.

**VULCAN**, the new intelligent glass tempering furnace generation will also be shown, a technology which offers an important energy consumption reducing combined with high efficiency and final product quality, in collaboration

with **JINGLASS**, of which we are agents and resellers in Europe.



### Product Range

- **LASERS FOR REMOVAL , MARKING AND ENGRAVING OF ALL KINDS OF SURFACE COATING ON GLASS, INTERNAL 3D GLASS ENGRAVING**
- **LASERS FOR CUTTING AND DRILLING GLASS IN THICKNESS UP TO 15MM**
- **TURNKEY SYSTEMS FOR THE PRODUCTION OF (EI30, EI60, EI90, EI 120, ETC.) FIRE RESISTANT GLASS**
- **FLAT AND BENT GLASS TEMPERING FURNACES OF ALL SIZES, FROM VERY SMALL FURNACES TO LARGE FORMATS FOR CONSTRUCTION GLASS**
- **GLASS PAINTING AND DECORATION SYSTEMS**
- **GLASS LAMINATION SYSTEMS, FROM THE SIMPLEST WITHOUT AUTOCLAVE TO THE MOST EFFICIENT WITH AUTOCLAVE.**
- **MACHINES FOR SURFACE TREATMENT OF GLASS (PLASMA, ANTIBACTERIAL COATING, EASY TO CLEAN, ETC.)**
- **QUALITY CONTROL INSTRUMENTATION FOR TEMPERED GLASS, LASER ENGRAVED, SMART INDUSTRY, ETC.**



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DATE**

OCT. 31 - NOV. 3, 2022

Greater Columbus Convention Center Columbus, Ohio USA

# 83<sup>rd</sup> Conference on Glass Problems

*where the glass manufacturing industry meets*

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Alfred University

Endorsed by:





hall 13 / stand C63

### People to contact at our stand

Glasstech representatives will be available to discuss our full range of bending, tempering, and annealing systems for the worldwide automotive, solar and architectural glass markets.

**glasstec**  
WHERE INNOVATION CONTINUES

### External Press Bending XL & XL/T

In 2022, 20 years after launching the first EPB system, Glasstech's most capable EPB system is ready to produce large area windshields and roofites. The newest EPB system can form parts with an overall size of 1.6 m by 2.13 m in either low stress mode for windshields or heat strengthened mode for some laminated roofites. This EPB system incorporates features that can improve transmitted optics, technology that can form more complex shaped parts with high performance coatings and incorporates enhanced maintenance diagnostics while maintaining production rates below 10 seconds per part.



### Automotive Glass Inspection – G/R

Full surface part gauging with CMM accuracy at production rates comparable to most production lines is now available. Glasstech's AGI Gauging and Reflection Inspection Technology has been enhanced to measure the full surface of complex shaped glass along with its peripheral size in less than 18 seconds. Specific off form data points can be recorded along with a .jpg image of the glass shape's conformance to either an approved limit sample or the part's design intent. The AGI – G/R can be configured to measure part sizes up to 1600 mm by 2134 mm. This new AGI technology not only provides high resolution surface data but realizes significant fixture cost savings by eliminating all discrete electronic measuring devices typically used.



### Carbon Footprint Reduction

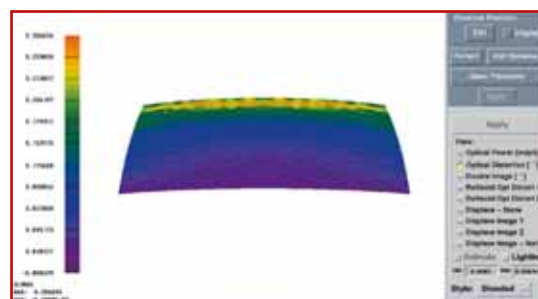
Reducing our carbon footprint should interest all of us and Glasstech's Forced Convection Technology combined with our newly developed quenching technology reduces energy consumption and lowers the creation of greenhouse gases. Glasstech's FCH technology directly converts natural gas combustion into the heating source for the glass. This direct heat source generates less CO<sub>2</sub> emissions than most utility based electrical power generation used on traditional electrical radiant heaters. Additionally, the newly developed quenching technology consumes approximately 15 to 20 percent less energy when tempering 3.2 mm glass which directly reduces CO<sub>2</sub> generation.



**Automotive Glass - Design to Inspection**  
Glasstech has developed capabilities

that can validate the manufacturability of the initial OEM shape from inception through fabrication and final inspection. Shape Modeler™ can be used to evaluate the Automobile

company's glass design for optical properties and manufacturability. Employing Glasstech's EPB, DBIV, or DBX forming processes to shape the glass and the AGI-G/R & AGI-T systems for verifying part compliance to design intent closes the loop in glass design and fabrication. Glasstech's suite of products support the entire automotive glass market from design through inspection.



### Product Range

- ARCHITECTURAL
- AUTOMOTIVE
- SOLAR
- INSPECTION
- PREDICTIVE MODELING
- SYSTEM ENHANCEMENTS, SPARE PARTS AND SERVICE SUPPORT



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hall 15 / stand A40/A41

### 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

### SHAPING THE SUSTAINABLE FUTURE OF GLASS

**Glaston** is more than happy to meet our glass industry friends in person again at this year's glasstec 2022 to share information about our latest developments:

#### Flat glass tempering:

The Glaston flat glass tempering lines Glaston FC Series, RC Series and Jumbo Series incorporate modern convection technology for the highest yield and flexibility.

**Glaston Chinook** is the market's most efficient heating system, based on the highest number of measurements and automatic process adjustment. **Glaston Vortex Pro** enables you to produce the highest quality glass products. One of our latest innovations to automate the flat tempering process are the online stress calculation solution using measured process data to calculate temperature and stress distribution in the quenching part of the tempering process. Another innovation is our unique white haze detection solution using artificial intelligence (AI). The tempering process autopilot reduces the need for operator input and offers process control without parameters.

#### Flat glass laminating:

**Glaston ProL** flat glass lamination line provides unprecedented flexibility for mixed production. The convection heating chamber makes switching between glass types and different glass sandwiches easier than ever. Glaston has introduced new convection control technology for structural interlayers that offers a significantly wider operating

window, even with complex laminates. With our lamination process autopilot, the furnace learns to achieve the most optimal way to run, instead of having operators make adjustments manually.

#### Insulating glass manufacturing:

**Glaston MULTI'ARRISSER** is a 3-in-1 solution for economical glass edge arissing, flat edge arissing and corner dubbing of the highest quality. With a maximum arissing speed of 60 m/min based on the proven cup wheel technology, it is the fastest single-head machine in the world.

**Glaston TPS®** (Thermo Plastic Spacer) is not just a machine. It is an ingenious system solution for highly efficient insulating glass manufacturing. Glaston is the inventor of this technology with several million installed TPS® IG units worldwide.

**Glaston ACTIVE'SEALER** is the new sealer family member that combines Glaston's proven dosing technology with an outstanding economic advantage. It is especially designed for mid-range markets. The new **Glaston CORNER'REFINER** has been designed as a quick and easy auxiliary tool for existing automatic sealing robots to treat the corner contour of each IG unit.

#### Automotive and display glass processing:

**Glaston CHAMP Evo** automotive glass preprocessing solutions enable enhanced efficiency in the daily production of windshields, sidelites, backlites or quarterlites. This means a yield greater than 98%, shorter

cycle times, minimized downtime due to quick-response software and an excellent cost-per-unit ratio.

**Glaston Matrix Evo**, the automatic windshield bending furnace for fast, efficient and high-performance production, features a new windshield press for bending deep sags and wrapping around corners to match the tightest tolerances. Glaston's active convection technology improves automotive glass heat treatment processing of coated, printed and complex glass types and enables faster heating.

Come meet with our industry experts at Stand **A40/A41 in Hall 15** – we will tell you more!

### 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 MULTI'ARRISSER



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hall 16 / stand A05

### People to contact at our stand

**LUIGI GASTALDO**  
**ARMANDO GIRO**

**C.E.O.**  
**CHAIRMAN**

## 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 cus-



tomized according to customers' needs and ready to be integrated in existing machines and production lines;

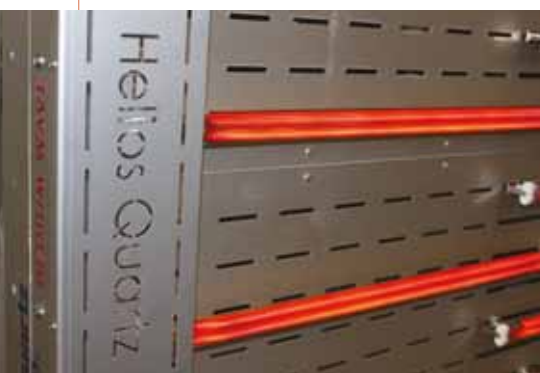
• **UV POLYMERIZATION EQUIPMENT:**

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>            |



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



For more than 45 years **HEGLA** has been playing an important role in flat glass cutting and processing. All this time **HEGLA** has been known for outstanding quality as well as continuous development and product innovation.

With the ProLam LSR, **HEGLA**'s mechanical engineering team presents a newly developed, time-saving cutting system for cutting laminated safety glass. Equipped with the patent-pending laser diode heating system as standard, productivity is increased by more than 20% compared to conventional heating technology. The shortened processing time also reduces the energy costs as a positive side effect. Since heat energy is introduced to the cut contour precisely, the surrounding area remains cold. Subsequent cuts can be made without any cooling time.

With Cut+, **HEGLA-HANIC** introduced completely reprogrammed software (HMI) for cutting table organisation last year. At **glasstec**, the company from Bochum will be giving visitors insight into the next generation of the ERP system that can integrate all processes: from digital order collection, storage and individual machines to delivery at the

The standard becomes added value – thanks to processing with the Laserbird from **HEGLA boraident**, a standard pane can be transformed into bird protection glass or an RF-transparent pane.



construction site. The new software basis now makes it possible to enable many add-ons, such as for financial bookkeeping or controlling via the Microsoft platform. On the other hand, a wide range of programs can be integrated with only minimal effort. As completely redeveloped software, it is perfectly adapted to all current systems.

Be it bird protection glass, antibacterial panes, heatable glass or an RF-transparent IG unit: **HEGLA boraident** from Halle/Saale want to prove how easily a standard product can become a commodity with added value. With a range of samples, the company wants to give the impression of how flexibly glass can be finished by removing or transforming the functional layer, or via non-destructive printing with the Laserbird.

Tempered glass, as perfect as only glass can be, is what **HEGLA TaiFin** from Finland aspire to achieve. The company is known for convection technology and closely controllable heating zones with qualities much higher than the industry standard. At **glasstec** the **HEGLA TaiFin** presents its CTF Tempering Furnace with full convection.

The Shop-Floor app from **HEGLA** New Technology meets the challenge of increasing demand for information and defined processes. Irrespective of the manufacturer, machines and systems can be integrated into the maintenance area of the app and documentation and spare parts lists, for example, can be stored there. An automatic ticket system alerts users when maintenance is required



The **HEGLA TaiFin** CTF tempering furnace with full convection promises tempered glass as perfect as only glass can be.

and saves the information when maintenance work is completed. Operations managers can also use the app to assign work to employees, putting work organisation on a platform as well.

As a leading manufacturer **HEGLA** has three production facilities in Germany and also International Sales and Service companies in the US, France, UK, Russia, Singapore, Dubai, Poland and India. A highly competent worldwide network guarantees **HEGLA**'s global presence and responsiveness in sales and services.

**HEGLA** is looking forward to meeting visitors in Hall 14, stand A55-E55.

### Product Range

- GLASS STORAGE AND PREPARATION SYSTEMS
- CONVEYOR SYSTEMS
- FLOAT GLASS CUTTING TECHNOLOGY
- LAMINATED GLASS SEPARATION TECHNOLOGY
- COMBINED FLOAT AND LAMINATED GLASS CUTTING MACHINES
- DYNAMIC STORAGE SYSTEM FOR RESIDUAL SHEETS
- AUTOMATIC BREAKING SYSTEMS
- SORTJET - AUTOMATIC SORTING SYSTEMS AFTER BREAKOUT
- DE-STACKING AND TRANSPORT TECHNOLOGY FOR COATING PLANTS/ MIRROR COATING LINES
- PLANT AND PRODUCTION LOGISTICS FOR PHOTOVOLTAIC PANEL PRODUCTION
- SOLUTIONS FOR INTERNAL AND EXTERNAL GLASS LOGISTICS

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



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hall 15 / stand D24

People to contact at our stand

**FEDERICO MARCENARO** SALES TECHNICIAN



At Glasstec 2022 Idrotecnica, as for over 20 years, will be present with its stand at the German exhibition.

**Idrotecnica** water demineralizers are spread all over the world to supply pure water to glass washing machines and guarantee the highest quality standards; for this reason Idrotecnica is now considered a point of reference in the production of demineralized water for the second processing of glass.

At the exhibition in Düsseldorf will be presented several innovations of the recent years.

**Cororesi** is the new system that allows to increase significantly the recovery of reverse osmosis units, reducing water consumption in the range of 50 and 60%.

This system is suitable for medium and large glass industries with medium and high intensity operation, and allows the following advantages:

- significantly reduce (from 50 to 70%) the volume of used water
- optimize and improve the operation of the demineralizer

At the Idrotecnica stand will be presented the new industry 4.0 solutions for the remote monitoring and control of demineralization plants.

The combination of high sensors and PLC industry 4.0 allows to have plants with an advanced diagnostic system that helps to organize maintenance in advance and prevent anomalies.

Reverse osmosis demineralizers and quartzite/carbon filters will also be exhibited, available in numerous versions to meet the individual needs according to the type of glass to wash, the after washing process, the washing machine as well as company logistics.



### Product Range

- **REVERSE OSMOSIS DEMINERALIZERS**
- **ION EXCHANGE DEMINERALIZERS**
- **CLOSED-CIRCUIT SYSTEMS**
- **FILTERS, SOFTENERS, ELECTRODEIONIZERS, ETC.**

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



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## INTERMAC



### Intermac technology, software, and services to help spread digital culture in the 4.0 Factory.

Integrated handling systems, collaborative robotics, and new technology for work centres: InterMac's sophisticated technology places particular emphasis on automation and integration that support our clients in the challenge to Industry 4.0.

The Glasstec audience will be able to find out first hand, through machinery, product lines, and perfectly functioning integrated technological tools, how InterMac is capable of creating digital, automated, and interconnected factories.

### Intelligent automation

The solutions that InterMac provides for its clients are the Master machining centre with ROS, the ideal solution for those who need automated solutions combining flexibility, production standards, the Genius cutting table

integrated with the storage and handling of glass sheets, systems tailor made and designed to enhance company performance, optimising levels of automation, efficiency and safety of the production unit.

The Busetti F series is the ideal solution for flat edge grinding operations with standard 2 mm or 15 mm axis with 45° profile, ideal for small, medium and large glassworks companies with flexible production.

### Software IC, from evolution to innovation, now for all glass processing machines

With a new renewed graphic interface that's user-friendly and easy to pick up thanks to self-learning concepts, but without compromises in terms of functions and programming with a robust, reliable platform, the software has a modern interface, extremely user-friendly, guaranteeing a total control of the design process, from drawing to the finished piece.

The entire **Movetro** range is the point of reference for the design and installation of automatic systems for the storage and handling of glass

sheets. All the Movetro solutions are tailor made and designed to enhance company performance, optimising levels of automation, efficiency and safety of the production unit.

Movetro's main strengths are its flexibility and great ability to adapt its product range according to the times and to technology evolutions.

### STATIC STORAGE

#### Semi-automatic and automatic classifiers.

The Movetro SA and Movetro A classifiers are the ideal solutions for storing large quantities of glass in small spaces, making it quickly and easily available for machining: handling is carried out electrically, in conditions of complete safety.



### Product Range

- **CUTTING TABLE FOR MONOLITHIC AND LAMINATED GLASS**
- **WATERJET SYSTEMS**
- **DOUBLE EDGING MACHINES AND SYSTEMS**
- **LOADING AND UNLOADING SYSTEMS**
- **VERTICAL WASHING MACHINES**
- **CNC WORK CENTRES**
- **STORAGE & HANDLING SYSTEMS**



## CLASSIC DYNAMIC STORAGE

### Ground loading devices

The Movetro range includes a varied choice of loading devices that may also be tilters, for receiving the sheet from the bridge crane, or with suction cups for picking the sheet up from the rack, or a combination of the two. Movetro loading devices are "com-patible with the tables or machines of any manufacturer". Special versions are available upon request for sheets up to 18 meters wide.

### Overhead loading devices

The CAM single-beam and CAB twin-beam overhead loading devices are automatic solutions for the handling and overhead loading of single sheets. They're designed for those looking not only for space savings, safety and automation but also top production flex-ibility, given that they need to load several cutting lines simultaneously.

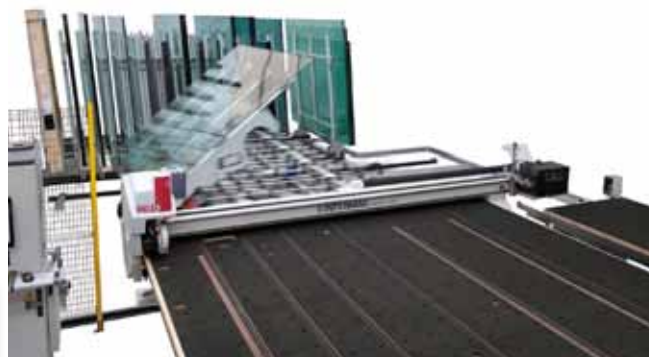
## COMPLETE INTEGRATION WITH INTERMAC CUTTING LINES HIGH PERFORMANCE, PERFECT INTEGRABILITY

Movetro is a complete range of smart storage and handling systems, fully integrated with the Intermac Genius line of cutting tables.

### BIESSE S.p.A.

Biesse Group is an international company that designs, manufactures and distributes systems and machines for processing wood, glass, stone, metal, plastic and composite materials aimed at the furniture, housing & construction, automotive and aerospace sectors. Founded in Pesaro in 1969 by Giancarlo Selci, it has been listed in the STAR segment of the Italian Stock Exchange since 2001. 85% of its consolidated turnover is

achieved abroad. It operates in over 160 countries with 14 manufacturing sites and a direct presence in the main world markets. Its customers include industry leading companies and some of the most prestigious names in Italian and international design. Today it has 4,300 employees.



## Product Range

- **AUTOMATIC STORAGE AND HANDLING SYSTEMS**





hall 15 / stand C42

### People to contact at our stand

**PAOLO REFFO SCARSO**  
**ELISA ZANOTTI**

**SALES MANAGER**  
**MARKETING MANAGER**

**iMMMES®**  
PROJECT AND PRODUCT



### IMMMES SRL: THE TOP IN WATER PURIFICATION

Glasstec 2022 marks a fundamental step for the Italian company. Coming finally out of 2 years of restrictions, it now finds itself more prepared and organised than ever before. These are years of continuous growth both in number of customers and average size of the plants. The company is celebrating the achievement of the important threshold of 500 plants installed worldwide in the market of purification of grinding water, which is seeing a growing awareness all over the planet.

The unique technology that equips Immmes DTP makes it by far the most efficient integral purification system for the modern, sustainable factory using total recirculation technology and supplying your machines with absolutely pure water, suitable for feeding the most sophisticated equipment such as CNC spindles. Modularly designed to offer the best service from small factories up to giants in the glass industry, without any difficulty the DTP tackles the toughest challenges, returning

entrepreneurs with plenty of substance, stability and savings. The plant's average payback period (value based on the last 4 years) is around 3 years.

Perfectly developed around the highest demands on performance, control, safety and interconnection, it meets the requirements of modern Industry 4.0 systems and IE4 Efficiency class classification, allowing, in countries where this is applied, large tax incentives.

All DTP systems are equipped with remote control for servicing and updating.

In addition to the systems in the DTP range, Immmes manufactures and installs other professional products for water treatment in the glassworks:

- Reverse Osmosis and Resin systems for DEMINERALISATION,
- Systems for purifying water from COLOUR contamination (biological or synthetic)

Come and visit us at our stand **Hall 15 C/42** we are waiting for you to personally verify the effectiveness of our DTP (we have a working plant in operation) and we could evaluate directly with you the advantages for the application on your factory.

For a more complete and detailed view [www.immmes.com](http://www.immmes.com)



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hall 15 / stand E61

### People to contact at our stand

**MASSIMILIANO IOCCO**  
**MARIO ZELINDO**  
**ANGELO DI GIACOMO**  
**GABRIELE TINARI**

GENERAL MANAGER  
 EXPORT SALES 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**



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hall 15 / stand D37

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.

Italcarrrelli 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, Italcarrrelli'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



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hall 15 / stand D25

### People to contact at our stand

**ROBERTO FREDIANI**  
**ADRIANO FREDIANI**  
**MASSIMO GHITTURI**

MANAGING DIRECTOR  
CEO  
MEMBER OF BOARD OF DIRECTORS



### 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 windscreens.

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 intro-

duction 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.



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[www.italmatic.eu](http://www.italmatic.eu)

**hall 15 / stand E42**

## People to contact at our stand

### COMPANY STAFF



Alongside the big names, 'Made in Italy' is also made up of small- and medium-sized companies with a strong family footprint that know how to move forward, despite everything, even at small steps and without the help of anyone - just like a family - just like **Italmole**.

By maintaining its artisan spirit, and dedicating a significant part of investments to innovation, Italmole exports almost all of its products.

Over the past 10 years, important changes have taken place that have obliged companies to be organized differently. Digitization has cancelled and cooled personal relationships by forever changing the way people work.

The relationship with change, however, can be paradoxical, change is scary and it is not always easy to face but, at the same time, it is also fascinating and leaves room for creativity - those who overcome this fear are the ones who succeed in changing.

Company personnel are decisive in facing this process, success comes above all from collaboration between people who believe in the possibility of a combination of tradition and innovation, teamwork and it is this working together that allows to obtain the best results.

The basketball champion Michael Jordan said: with individual talent you can win games, with intelligence and teamwork you can win the championship.

This is the story of Italmole, that after 41 years on the market continues to represent 'Made in Italy' around the world, following the values of trans-

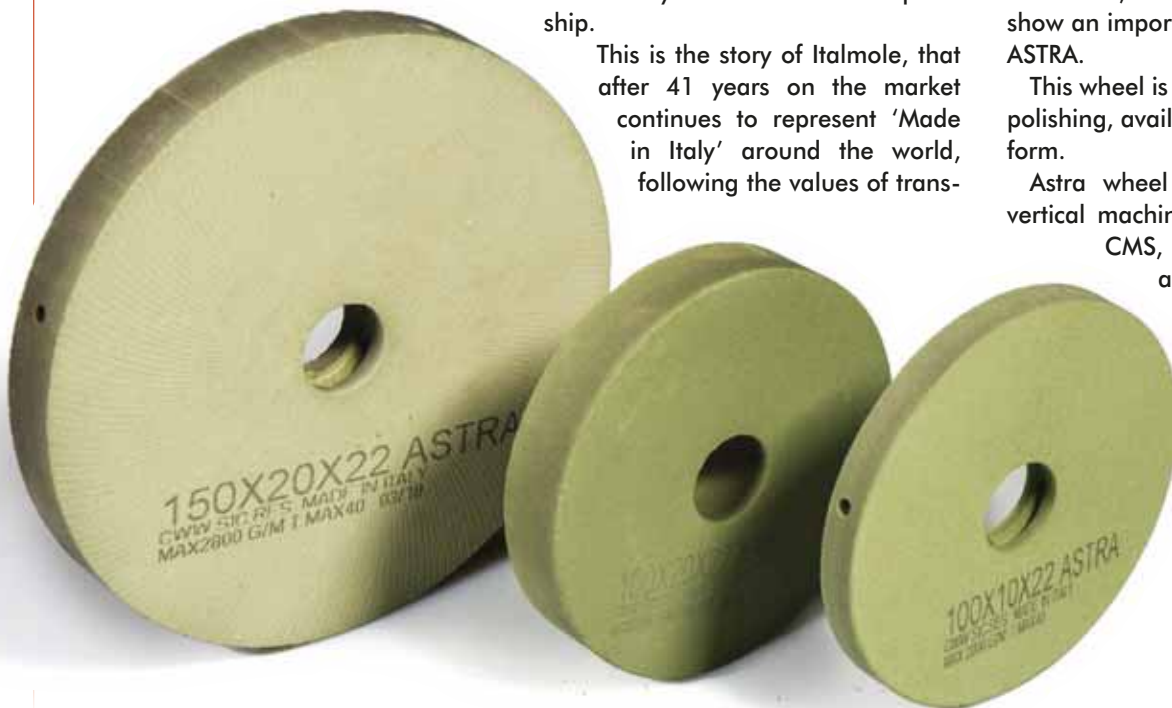
parency, correctness and seriousness as in the past, while researching new technologies and innovations, guaranteeing better quality of continuously evolving products, and always keeping up with market needs and demands.

At Vitrum, this year, Italmole will be presenting its range of products known at global level, starting from the most 'copied' BD peripheral wheels, BD2 engraving wheels, up to the complete range of BLACK-RED-AR1 thread aris wheels -AR2 and AB4. Last but not least, cup wheels for flat wire type X and L that are seeing more and more interest all over the world.

Moreover, Italmole will also have on show an important innovation named **ASTRA**.

This wheel is more silent and super-polishing, available only in peripheral form.

Astra wheel is suitable for CNC vertical machines such as VERTMAX, CMS, SKILLGLASS, as well as horizontal machines such as MASTER, CMS, BOTTERO-BIMATECH.


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hall 16 / stand B41



keraglass

### People to contact at our stand

**STEFANO SPEZZANI**

**LUCA CALANCA**

**MAICOL SPEZZANI**

**SIMONE CECI**

**ANDREA BUGADA**

**ALEXANDRE KOCHEN**

**FRANCO CAPECCHI**

**PATRIZIA DURIIVIG**

**ORIENTA GUALTIERI**

**PAOLO RIGHI**

**GIULIA FERRARI**

**RODRIGO ALARCON, MARCO ASTOLFI,**

**LUCA CARANI, ANDREA SPINETTI**

**FOUNDER, VICE PRESIDENT**

**DIRECTOR, ADMINISTRATIVE & OPERATING OFFICER**

**SALES DIRECTOR**

**AREA MANAGER**

**AREA MANAGER**

**AREA MANAGER**

**AREA MANAGER**

**SALES SUPPORT**

**MARKETING DEPARTMENT**

**TECHNICAL & SERVICE MANAGER**

**SERVICE DEPARTMENT**

**TECHNICAL SUPPORT**

From 20 to 23 September 2022, **Keraglass** is coming to Glasstec with a 430 m<sup>2</sup> stand, exhibiting its flagship products that have made the Italian company a key player in traditional tempering as well as digital printing.

On the one hand, Keraglass will be exhibiting Vision 900, the machine that has revolutionised the tempering furnaces sector in terms of quality and efficiency (as confirmed by emissivity of 0.01 for large size low-e glass), combined with an aesthetic profile that boosts performance, imparts stylistic elegance and optimises visibility for operators.

The furnace is equipped with a 500° pre-heating convective chamber system, which enables perfect heating of the latest generation low-e glass, increasing the system's productivity by 30% and further lowering energy consumption.

The heart of the machine is the Supervision Intelligent system with live-sight control, which allows the operator to clearly see and precisely monitor each stage of the process. The result is a glass end-product without any hidden defects



that is made to measure and tailored to the client's requirements, with all the requisites needed to decorate the walls of modern buildings while ensuring energy saving and environmental sustainability.

The Glasstec exhibition floor will be also a worthy stage on which to showcase the new digital printing technologies. Targeting different sectors, the two latest-generation lines are all-round solutions for decoration, enamelling, digital printing and drying processes.

The new Keraglass technology provides a significant boost in the automation process of the machines, considerably reducing operator intervention. From the glass cleaning system to drying, the machines offer high levels of flexibility and engineering design.

The common denominator uniting all products in the Keraglass range is their ability to address market needs and propose innovative solutions in line with customer expectations.

### 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**
- **AUTOMATIC LOADING-UNLOADING MACHINES**
- **90° DEVIATORS**
- **CONVEYING LINES**
- **PACKING MACHINES**
- **LAMINATING LINES WITH PVB**
- **MULTI-LEVEL LAMINATING KILN WITH EVA**
- **DIGITAL PRINTING MACHINE**
- **ROLLER CLEANING MACHINE**



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hall 12 / stand A71

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.



R&D and technical progress today.

At present, LandGlass has established an 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.

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 in 12A71.

### 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

### Worldwide after-sales support

LandGlass has established a service network with worldwide coverage through technical service centres located in Europe, America, Southeast Asia,



### 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



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**hall 17 / stand A30****People to contact at our stand****PLEASE ASK AT THE LiSEC RECEPTION FOR THE SALES  
REPRESENTATIVES DEDICATED TO YOUR COUNTRY**

# ***LiSEC***

**Finally glasstec is back!**

all.in.one:solutions: The **LiSEC** motto of glasstec 2022 is not only the slogan of this year's trade fair - it also shows LiSEC's total solution competence in all topics related to glass processing and finishing for more than 60 years regarding machines, software solutions and services.

This year you can expect the latest technical innovations and highlights from LiSEC live in the usual great trade fair atmosphere! LiSEC's sales team and product specialists are looking forward to show you

the products, discuss open questions and to find the best solutions for you! So visit LiSEC from 20th to 23rd September 2022 in Düsseldorf / Germany - we are looking forward to welcome you at our booth in hall 17 at stand A30!

If you can't be there live in Düsseldorf - no problem. We can give you the feeling as if you were live at the glasstec! LiSEC streams the highlights, product demonstrations and interesting insights from the fair live via [show.lisec.com](http://show.lisec.com) and offers the possibility to get to know the machine and software solutions online at the virtual LiSEC Campus!

**SHOW.LISEC.COM**

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hall 16 / stand B39



### People to contact at our stand

**NANCY MAMMARO**  
**ERMANNO PETITTI**  
**ANTENORE TOSELLI**  
**GIULIO DALLA COSTA**

**MANAGING DIRECTOR**  
**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  $\pm 1^\circ\text{C}$ , 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.

#### SYNCR0 | 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 2700X6000 TO 3300X6000
- **BENDING AND TEMPERING FURNACES FOR ARCHITECTURAL AND AUTOMOTIVE FLAT GLASS**
- **LAMINATING PLANTS**
- **HEAT SOAK TEST PLANTS**



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hall 12 / stand D66

People to contact at our stand

**GIANLUCA CERIANI** SALES 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



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hall 15 / stand C58

### People to contact at our stand

<b>ANTONIO MAZZAROPPI</b>	GENERAL MANAGER
<b>ORSOLA ABBATE</b>	ADMINISTRATION MANAGER
<b>TOMMASO MAZZAROPPI</b>	SERVICE MANAGER
<b>NIKOLAS FRACASSO</b>	CUSTOMER SERVICE
<b>MARIAELENA PICCOLO</b>	SALES MANAGER
<b>MICHELE SPANO</b>	PRODUCTION ENGINEER



**MAZZAROPPI**  
HIGH PERFORMANCE. ALWAYS

**Mazzaroppi Engineering** is a family-owned business that believes in the importance of human relationships. Each customer is considered a part of the family - becoming a partner that shares decades of the company's history. Here the construction of a new machine represents the birth of another creation, to which Mazzaroppi becomes as intimate as if it were a child. Indeed each machine has a personal name by which it's identified - and its birthday usually gets celebrated with the customer that purchased it.



### ENERGY SAVING APPROACH

- **M PSS4.0:** Power-Saving Software
- **M I-ZONE:** Intelligent Heating Zone
- **M OPTICON:** Optimized Convection Process
- **M EXACT AIR:** Optimized Air-Charge Study
- **M HI-REACT:** Highly Responsive Furnace Study
- **M 1H680°:** Just-in-time ignition from 20° to 680° in an hour
- **M MULTI-CORE:** Responsive Thickness System
- **M SAVE 70%:** Power saving up to 70% compared to competitors

Such features allow the company to reduce energy consumption - thus affording its customers a chance to not only optimise production but also make significant savings. By its machines Mazzaroppi can



eradicate those legacy concepts of enormous energy consumption so typical of obsolete tempering furnaces.

### MAXIMUM QUALITY

- **M NOTROPHY:** 97% Anisotrophy Reduction
  - **M EDGE CARE:** Edge-Lifting Reducing Software
  - **M ARIS:** Roller Wave Intelligent Setting
- To guarantee the quality and high performance of its products, Mazzaroppi constantly subjects them all to meticulous tests - demonstrating the company's achievement of a decrease in anisotropy to -97%.

Thanks to the technology of Mazzaroppi's machines, heat is distributed precisely and homogeneously upon the glass surface - thereby minimising roller wave and edge lifting phenomena.

### REDUCED MAINTENANCE

- **M LESS COST:** Extra Saving Maintenance
- **M NOSO2:** Less Pollution, Less Maintenance, Safe Operators
- **M PILOT:** Unique Remote Control Real Time Assistance

The manufacture of Mazzaroppi machinery is based upon the choice of certified European materials of the highest quality. As such it requires either rapid maintenance or, in some cases, no maintenance at all. Consequently, and with machinery quality guaranteed, a remotely-connected customer support team of specialised engineers remains available for any problem,

any time - on hand to solve arising issues promptly and thus reducing downtime.

### USER FRIENDLY

- **M SMART USE:** User-Friendly Furnace, No Specialist Needed
- **M M-ANALYTICS:** Automatic, Real Time Individual Process Reports

All the company's machines have been built to follow customer production needs - adapting swiftly to any glass thickness or size without waiting times. They also store and compile automatic reports, detailing all individual load characteristics to best facilitate the work of operators. Thanks to the use of intelligent 4.0 software, the machinery can adjust quickly and automatically to different production specifications, thereby rendering highly-specialised operators unnecessary for machines to reach their full potential.

### RESIDUAL VALUE

- **M VALUE40:** 40% Value guaranteed after 10 Years

All the machines produced by Mazzaroppi Engineering are built with top quality European materials. Not only. They are assembled with an artisan attention to detail - each one meticulously tested at the production site prior to being shipped to the customer. Such characteristics mean that Mazzaroppi machines have an average lifespan exceeding 30 years. Consequently, one of its tempering machines still has a residual value of 40% on the market after 10 years of use.



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## People to contact at our stand

<b>MARCO MORESCHI</b>	<b>OWNER</b>
<b>BARBARA DODA</b>	<b>SALES MANAGER</b>
<b>YURI CATTABRIGA</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 101 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 A20** 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





## People to contact at our stand

**MATTEO ROLLA**  
**STEFANO BAVELLONI**  
**FABIO PALELLA**

**SALES DIRECTOR**  
**CHIEF OF OPERATIONS**  
**SALES OFFICE**



### Exhibit at Glasstec, Built for today's world

Quick project has become the reference solution for vertical NC drilling and milling / grinding. Thanks to the latest 2 models born, Neptun now has the widest range on the market of vertical NC machines for all work needs and company sizes.

The top of the range is the **Quick 2 T8**, the uncompromising drilling / milling centre:

- Milling/grinding with still glass for maximum speed and accuracy of tool positioning
- fast tool change with rotary magazine simultaneous to the axes in less than 8 seconds.
- axis movement at 25 mtr/min,
- 0.15 mm positioning tolerance thanks to axes controlled by linear encoders
- drilling speed up to 4 mm/second

Alongside the top of the range we will show the latest addition, the **Quickmill 100-22**, a single-head milling/drilling CNC, ideal for companies with less intense production and automation

LV Evo



needs. Although built for industrial use Quickmill 100-22 has technical solutions that meet smaller budgets.

**LV Evo** is the perfect balance between quality and price.

Automatic opening up to 30 mm thickness, larger brushes diameter with motorization in the upper part, PLC that allows you to add options for different applications.

LV Evo also meets all the technical requirements for integration into Industry 4.0 or SCADA systems.

The **Rock11 AWA** could not be missing.

In addition to the well-known features that have made it famous, such as the

heavy structure in cast iron, the spindle/motor indirect transmission system and the spindle in a sturdy cast iron box, the

patented kevlar conveyor for a long life and the PLC Touch screen, the model exhibited has additional patent.

- **ETS** for squaring to size the glass.
- **AWA**, for the automatic management of the wheels
- **RC-4** for processing parallelograms shapes.

In short, a 'traditional' edger covered by the largest number of patents.

Rock11 AWA



Quickmill 100-22

### Product Range

- **VERTICAL NC MACHINES**
- **STRAIGHT LINE EDGERS**
- **ALL TYPES OF WASHERS**



hall 12 / stand B51

## People to contact at our stand

NORTHGLASS SINCERELY WELCOMES YOU TO OUR STAND  
FOR MORE INFORMATION YOU ARE INTERESTED IN. YOU CAN  
ALSO VISIT OUR WEBSITE FOR DIFFERENT 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 glass deep processing machine industry, going public at Shenzhen Stock Exchange (stock code: 002613). Today, NorthGlass has developed into a high-tech industry group integrating in R&D, manufacturing, sales and service with continuous innovation capability, composed by 4 bases respectively in Luoyang, Shanghai, Tianjin and Beijing. NorthGlass has also expanded her product series with tritubo fans, glass processing automation system, glass storage system, glass cutting machine, etc., up to now more than 300 product models in total. At the same time, the NorthGlass SiNest industry invested by North Glass Co., Ltd. was successfully incubated and took the lead in the layout of new wall materials for prefabricated green buildings.

### GLASS TEMPERING FURNACE

NorthGlass flat/bent glass tempering furnace, is ranking stable forefront of the worldwide industry within last 19 years since 2002 when the sale amount of furnaces exceeded 100 sets. Accumulatively more than 5000 NorthGlass glass tempering furnaces are running around the world.

T-Series: Standardly furnished with "Finer Heating Control Partition" and "Intelligent Heating Control System based on glass exit-chamber temperature", suitable to produce highest quality tempered glass with big production quantity and high efficiency and stability. It is the ideal choice of domestic & foreign large-scale glass processors for industrial upgrading.

A-Series: Standardly furnished with "Intelligent Heating Control Module" and "Super Flat & Spotless technology", optionally with

"5G Gapless Forced Convection technology", A-series tempering furnace can efficiently & stably temper almost all kinds of glass with minor optical distortion and slight iridescence. It is the most popular choice of glass tempering furnaces for all different scale glass processors.

B-Series: Completely upgraded and reborn from NorthGlass's classic B-series furnace, furnished with recently developed "2G Temperature Control System" and "Basic Gapless Forced Convection System", significantly improve the production efficiency and glass quality meanwhile reduce the energy consumption. It is an affordable choice for small & medium scale glass processors.

### GLASS AUTOMATION SYSTEM

Glass Automation System can not only provide turnkey projects, but also provide personalized optimization to existing glass of production. In the whole automation system, we can provide you with raw glass storage systems with space-saving, cutting machine with automatic loading, cutting and breaking-out, Buffer control system and other accessories, such as MES (manufacturing execution system), NorthGlass box, AGV, buffer system, automatic loading / unloading system, etc.

### COATING MACHINE

Equipped with vacuum sputtering cathode, NorthGlass coating line can be widely applied in glass industry, consuming electronics industry and PV industry, etc. from designing to manufacturing.



### PROCESSED GLASS

NorthGlass is also one of the biggest glass manufacturers of high-quality oversized architectural glass. Dimensions up to 3300mmx

24000mm, —, 3600mmx18000mm, —, 8000mmx4000mm, which are the largest sizes 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 glass deep-processing technologies independently developed by NorthGlass have been applied in many famous landmarks construction projects, such as China National Grand Theatre, Bird Nest, Lusail Towers, 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



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hall 14 / stand C83

## People to contact at our stand

PRODIM'S SALES AND SUPPORT TEAM WILL BE AVAILABLE TO PROVIDE LIVE PROLINER AND PRODIM SOFTWARE DEMONSTRATIONS

**PRODIM**

### **Proliner Generation X Glass packages – The best solution for digital templating**

As a leading specialist, Prodim invests heavily in the continuous development of the Proliner Glass packages, making the best even better! The Proliner Generation X Glass Packages have taken the market by storm.

### **Proliner Architectural Glass package: Easy to use, accurate and able to measure in multiple planes.**

The package includes:

- measurement of multiple planes.
  - leap function.
  - edit all your drawings onsite.
  - motion detection, allowing an alarm to go off if the Proliner is accidentally moved, preventing incorrect measurements.
  - textured grip on the measuring pen for easier handling.
  - good visibility of the measuring wire.
  - excellent battery management.
  - a large storage capacity.
  - connect your smartphone (Android) to the Proliner.
  - transfer all your files from the Proliner via Bluetooth, and from the phone, send them directly to the office.
- Proliner Architectural Glass package

### **Prodim Factory 5.0 – Integrated Photogrammetry**

Prodim's latest software release "Prodim Factory 5.0" sets a new bar for today's fabricator. Check the main improvements below:

### **SITE CONTROL – Check your digital templates with photos**

Match an image captured by your camera with your measurements or drawings.



You can show your picture in drawing/editing view or in the rotating 2D/3D view.

### **INTERPOLATE – Simplify, connect and enhance complex shapes**

Quickly simplify complex shapes, connect open shapes and address imperfections. Reduce points! Simply slide between smooth and accurate to the position you want.



### **Proliner Bent Glass package: Measure – Model – Flatten – Frame – Compare**

- create 3D Glass surfaces based on Proliner measurements
- transform 3D surfaces to 2D unfolded production shapes
- create digital support frames to construct moulds
- 3D Match surface models for IST and SOLL quality control





hall 11 / stand D40

People to contact at our stand

OUR STAFF WILL BE AT YOUR SERVICE THROUGHOUT THE SHOW.



**Pujol Group** a fourth-generation company founded in 1911, consolidated worldwide in more than 90 countries as a company specialized in the sector of laminated glass, offering a complete 360° service based on furnaces and complete rolling solutions, consumables, training, and technical assistance service, covering all needs of our customers. Is made up of 70 highly trained professionals each specialized in their respective fields, the Group has three production units covering an area of 20,000 m<sup>2</sup>, half of which (10,500 m<sup>2</sup>) dedicated to production.

### HORNOS PUJOL

During Glasstec 2022 Pujol will show their **LAM-PRO**. A high-performance model designed for high-professional companies and high productivity demands. It offers these advantages

### Product Range

- **LAMINATION FURNACES**
- **HEAT SOAK FURNACES**
- **FUSING, BENDING & CHEMICAL**
- **TRANSPARENT EVA FILMS**
- **COLOUR EVA FILMS**
- **PDLC LAMINATED GLASSES**

- Flexibility; Independent isolated work chambers
- Productivity: Fast automatic cooling system.
- Software control system
- Uniformity; Distributed double-layer radiation system.
- Ergonomics.
- Bending Chamber (optional)
- Eco-Friendly;
- Adapted to Industry 4.0

### EVALAM

Is currently the company that has set the standard around the world for EVA and other interlayers for architectural use. On Glasstec will show:

**EVALAM Visual:** Developed for lamination experts looking for a product with high added value. Is the ideal lamination solution when optics and durability are essentials, Excellent performances as it's incomparable transparency, high adhesive strength, superb acoustic insulation, and a crosslinking index like no other on the market.

**EVALAM N-Fluent:** Designed to minimise the overall costs of the post-lamination process. Its innovative formula prevents

product fluidity and saves time and costs in edge cleaning. This in turn translates into direct benefits for the processor.

**EVALAM COLOR:** Developed for temperatures in the 120°C range without causing changes in colour near the edges. The 14 basic colours in the range allow for a large chromatic assortment. Four shades of white and one black shade, which carry European certification for outdoor use.

**AB-AR:** A structural interlayer developed by EVALAM with high-performance mechanical resistance that provides post-breakage passive safety when tempered glass is used. Is the ideal solution for structures whether for use in glass facades, structural windbreaks, walkable floors, stairs, ceilings, railings, as well as anti-vandal security. Excellent performance especially in post-breakage stability states above 50°C

### I-On By Pujol

PDLC that allows to convert spaces with transparent glass into spaces with total privacy simply by applying or interrupting the current. Total integration in home automation systems and remote control using: Compliance with all regulations required by the ECC law of laminated glass for the construction of glazing outdoors and indoors.



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**hall 16 / stand B58**
**People to contact at our stand**

**SIMONA BIAMINO** SALES MANAGER  
**MIRIAM MUNARI** SALES MANAGER


**SURFACES GROUP**

**R.B.M.** Italia will be at Glasstec with renewed enthusiasm after the forced stop at the 2020 edition. These have been years of intense activity, innovation and new solutions for the flat glass industry.

RBM Italia has designed and launched three families of hybrid grinding wheels that are enjoying great success in international markets. As output of intensive R&D, they represent an undoubted innovation for glass processing.

RBM's new Hybrid Grinding Wheels sum the merits of hard and soft grinding wheels in one tool.

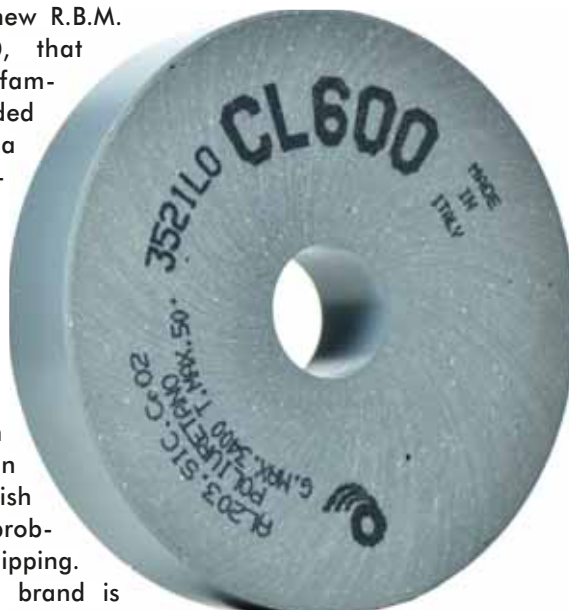
**X510** which is a semi-rigid bond with cerium oxide. This wheel grants an excellent shine finishing, with extremely long life and very low water consumption. This is specific for double edger machines.

**RP320** is the new wheel for the arris polishing. It is suitable for very high speed applications on all machines. It performs well at all RPM and grants an extremely long life

Now the brand new R.B.M. product is **CL600**, that completes the family of "hybrid bonded wheels". This is a semi-rigid polyurethane wheel in grit 600, specific for the final polishing on CNC machines.

Just like the RP320, this is the best choice if you need to work at high speed and have an excellent bright polish avoiding all the problems of lines and chipping.

Today the R.B.M. brand is synonymous with 100% made in Italy, high quality and reliability. The company is based in Baldichieri (Asti), in northwestern Italy, and still has a background as a manufacturing company with a remarkable history of technology and experience. It has joined a large group, which offers it significant opportunities for



growth and investment in research and development. With a strong focus on customized solutions and very fast delivery times, which is one of R.B.M.'s strengths, the partnership with customers will be enriched.



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hall 16 / stand C04

### People to contact at our stand

<b>ELENA CALVI</b>	CEO & OWNER
<b>DAVIDE RICCHI</b>	CO-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>GIORGIO BOTTIGLIONI</b>	SOCIAL MEDIA SPECIALIST

**RCN**<sup>TM</sup>  
solutions

**RD**<sup>TM</sup>  
clean concept

### RCN SOLUTIONS will be at Glasstec.

New location for RCN, leaving the traditional position to join the Gimav area where all the excellence of the Italian manufacturers of machinery will exhibit.

The 174sqm stand have been designed to show the latest and also conceived as a place where the customers can come to discuss their projects, thus combining display with customer centricity, program on which RCN is focusing energies daily.

As a matter of fact, a wide range of solutions in lamination with different combinations to increase production and facilitate logistics will be available for discussion, responding to customers' requirements.

RCN SOLUTIONS will turn the spotlights on its absolute innovation, launched in 2021, RD CLEAN CONCEPT, a new concept in lamination. Designed and manufactured by RCN, this system provides clean edges at the end of the laminating process, without needing cutters or tools to remove excess of EVA film, thus granting the safety of the operator.

This system has several advantages: time and job saving resulting in an effective maximization of the production costs, with an eye on the service efficiency, if we consider that the laminated glass is clean and ready to be installed at the end of the process. After more than twenty years of manual job, searching

different tools to facilitate job, the definitive response to this problem comes from RCN only.

RD CLEAN CONCEPT is an RCN

unique product and there is not other existing system granting such a definitive, successful result. The inventor of this novelty, Davide Ricchi, will be in the stand waiting for all those visitors who will be interested to know more.

The new Multiplied, the line for over-sized measures and beyond, will be also on display. This system will enable customers to combine kilns sizes based on modules of 2 metres length.



The other proposals consist of chemical tempering plants, from small laboratory kilns to biggest plants or customized ones, including the supply for pure potassium salts - thus granting a complete, excellent chemical tempering. The chemical tempering can also be used to harden some types of glass cups.

Product range includes REVA BF, the laminating interlayer based on a totally RCN chemical formula and development.

Every production batch of REVA BF involves the use of fresh raw materials from international suppliers and controls to assure top quality level.

RCN production is completed by bending kilns designed for special curves and are an integral part of a special machines layout named ISF - Integral Sequencing Framework - the complete production flow including bending, chemical tempering and lamination. RCN machines are "smart machines", namely machines that include the communication with other machines but also with persons and other devices thus responding to the prerequisites of Industry 4.0. RCN's new application "Easy Connect" is the key instrument to have production under control at any time, in any place: production at hand with just one click.

The RCN team is strong, unique and highly reliable. The members are as important as machinery because they are heart and engine of the technical solutions RCN submit. They are professional persons providing proactive support, technical assistance, listening skill and pleasant welcome of the visitors.



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**hall 16 / stand D03**

## People to contact at our stand

**MICHELE FASSINA**  
**FEDERICO DALLA BENETTA**  
**RICCARDO BOOZ**

**AREA MANAGER**  
**AREA MANAGER**  
**LABORATORY**



**Rollmac**, the commercial branch division of Gemata Spa, world leader in the design and production of roller finishing and coating machines, is a reliable and expert partner in the supply of finishing machinery, from single machines up to complete lines. The experience acquired over the years in the global market has brought the branch to offer final users complete know-how service and support to project completion.

**JUMBOGLASS** is the new reverse roller technology for the continuous enamelling and design printing of float glass sheets "jumbo" size. It is a rollercoater with tubular welded steel framework, for an unmatched torsional resistance, which offers the possibil-

ity of processing larger glass sheets, expanding the working width.

**COLORGLASS** is the single-roller machine, suitable to the enamelling and design printing of glass sheets by means of an engraved cylinder. Thanks to its high versatility and ease of use, it is the indispensable working tool for in-house laboratory or production lines. It is suitable from small dimensions such tiles and decorations to big sizes such internall walls, doors and façades.

**MULTIGLASS** is the rollercoater for enamelling, coating and design printing on flat glass sheets by means of an engraved roller. The technology is quite flexible and, without any particular changes or setting changes, special paints and products can be used to give

the plate particular properties. Special care has been taken in the uniformity and homogeneity of painting, that must not have overcoating, unpainted areas, drops or excess paint on the entry/exit edges.

**GLASSLINE** edge coater system designed for the complete automation of the Automatic Sheet Rotation (ASR) process. The ASR process is particularly useful for coating glass sheets which are too large, too heavy, or which cannot be handled manually.

Rollmac – Gemata is certified ISO 9001, ISO 14000, and Italian "Safe Work" standards

Live printing demonstrations and tests will be carried out during the show.



## Product Range

- ENAMELLING AND GLASS COATING MACHINES
- DRYING SYSTEMS
- EDGE COATERS
- CONVEYING SYSTEMS



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## tk Glass Processing Machinery

For over 20 years TK has been one of the reference brands for the design and production of furnaces for the laminating, chemical tempering and HST of glass: forefront of Made in Italy technology, following Industry 4.0 guidelines. Working in close partnership with the customers, TK rely on the best Italian technology and European components to meet the quality standards and the requirements set.



## STRATO EVA interlayers

STRATO® is the first brand of EVA films produced in Italy, made out of thermosetting material that makes the interlayer insensitive to water, moisture and heat.

EVA STRATO® interlayers are certified according to European (UNI EN ISO) and American (ANSI-SGCC-ASTM) standards. In addition to this, all the industrial production processes are certified in accordance with UNI EN ISO 9001 standards.

STRATO® product range is available in different colours and finishes to be used in safety glass lamination for architecture, interior design and photovoltaic applications (ex. BIPV Building integrated photovoltaic), without any risk of delamination.

### CONTACT US

#### *Glass Processing Machinery*

TK Srl

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#### *EVA interlayers*

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# SATINAL



[www.satinal.it](http://www.satinal.it)



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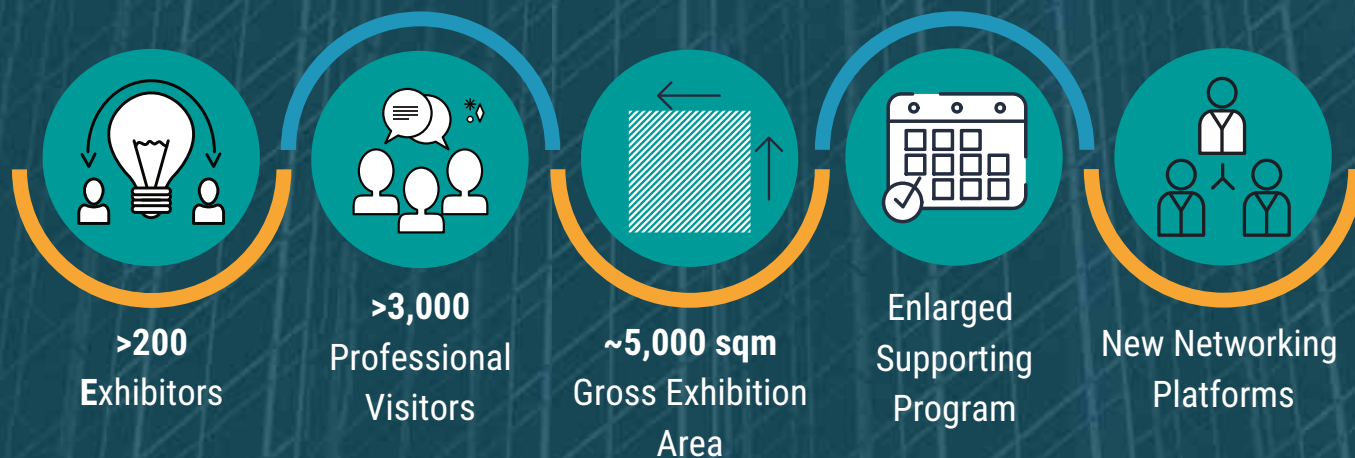
# GLASSTECH ASIA 2022 & FENESTRATION ASIA 2022

*The Glass Hub of Southeast Asia*

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**26** - **28** **OCTOBER**  
**2022**

**MARINA BAY SANDS  
CONVENTION CENTRE,  
SINGAPORE**



## *Exhibitor Profile:*

- Glass Production & Manufacturing Technology
  - Processing & Finishing
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## People to contact at our stand

**ALESSANDRO SCHIATTI**

**CINZIA SCHIATTI**

**COMMERCIAL AND TECHNICAL STAFF**

**PRODUCTION MANAGER**

**SALES MANAGER**



At GLASSTEC we are going to talk about SUPERIOR PERFORMANCES.

What does it mean?

GLASS can at first be considered "superior" because it is a primary economic resource, environmentally friendly and respectful of energy sources deriving from the recycling and reuse of materials.

"Superior" is also the level of evolution of our technology, thanks to its upgrade in the direction of automation and optimization. Thanks to the automation, in fact, we can increase the profitability of processes and profit margins.

The **Schiatti** machines are known on the international market for their reliability and also for their ability to keep up with the needs of the times providing the most suitable innovations and improvements to operators.

Schiatti straight and double edgers have a new plus: the automatic adjustment of the diamond wheels. The machines were already able to manage automatically the adjustment of the polishing wheels through their PLC and now, also the glass removal step can be performed in automatic by means of the same Mitsubishi PLC.

On display during Glasstec the fully automatic model FPS20RS together with other straight edgers such as the mitre machines mod. SME10 and FPS50M3 which represent the Company core business.

We will have to meet at Glasstec, one of the main meeting places and showcase for technical developments in the sector.

It is time to face global challenges, and to make them economically sustainable as well.



## Product Range

- **STRAIGHT GRINDING MACHINES FOR PENCIL, FLAT EDGE AND ARRIS AND 45° MITERS (SINGLE OR COMPLETE LINES)**
- **DOUBLE EDGING MACHINES FOR PENCIL AND FLAT EDGE AND ARRIS (SINGLE OR COMPLETE LINES)**
- **BEVELLING MACHINES**
- **VERTICAL AND HORIZONTAL DRILLERS**
- **DRILLING CENTRES**
- **GLASS LOADER/ UNLOADER**
- **CUSTOMIZED SOLUTIONS**



hall 15 / stand F55

### 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 assis-



tance 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



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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.

### Key benefits

- Automatic reading and 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



**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.

**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.





**hall 12 / stand C35**

## People to contact at our stand

**TIMO SUOMI**
**MIKKO SUOMI**
**REIMA MÄKINEN**
**SALLA SUOMI**
**ANDRE SILNOV**

# softeco



**Four point bender for EN1288 mechanical strength testing**

Strong with 35 years' experience, **Softeco** offers consultancy in safety glass production and quality control. We arrange complete testing services and official test reports as well as applications to the granting authority and delivery of approvals for European ECE R43 and American DOT. In addition, Softeco also specializes in PVB treatment equipment and more particularly in PVB shaping and stretching technology. We also have PVB roll handling systems for different needs.



**PVB shaping and cutting line**

## Product Range

- QC EQUIPMENT FOR TEMPERED AND LAMINATED GLASS
- COMPLETE RANGE OF QUALITY CONTROL EQUIPMENT FOR AUTOMOTIVE SAFETY GLASS
- CHECKING FIXTURES AND TRAINING
- QC PLANS AND INFORMATION FOR ARCHITECTURAL AND LAMINATED BUILDING GLASS
- QC PLANS AND INFORMATION FOR AUTOMOTIVE SAFETY GLASS PRODUCTION
- ECE R 43 AND DOT ANSI Z 26.1 APPROVAL SERVICES
- TESTING SERVICES FOR SAFETY GLASS ACCORDING TO DIFFERENT NORMS, INCLUDING EN
- PVB SHAPING MACHINERY
- WEDGED PVB-UNWINDING AND CUTTING SYSTEM, AS WELL AS OTHER PVB TREATMENT EQUIPMENT



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hall 16 / stand B56

### 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



With over 30 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 2022: washing machine model SPRINT and washing machine model SUPER.

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.

### 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**



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hall 16 / stand C61

People to contact at our stand

**MARCO POGGI**

AREA MANAGER

**SYSTEM  
Digital**

a coesia brand

**creaglass**

System Ceramics' wealth of knowledge and skills in the field of digital decoration will allow the Fiorano Modenese company to be among the protagonists with Creaglass, a high-performance single-pass Drop On Demand inkjet digital printing system that offers important application solutions in the field of architectural and building glass, glass for household appliances, autos and means of transport in general.

This is a highly innovative technology for the sector, modular and flexible, which System Ceramics has developed thanks to the dedicated business unit System Digital, resulting from the proven experience of the parent company in the world of digital ceramic decoration and transferred to the processing of similar materials and surfaces.

Creaglass consists of modules of 2.5 metres each, corresponding to

the different phases of the printing process and can be configured at any time according to individual production or space requirements.

In addition to its modularity, this new technology also features extreme flexibility, allowing any type of artwork to be printed simultaneously in double or quadruple rows on glass with different shapes, sizes and inclinations.



[www.systemdigital.it](http://www.systemdigital.it)



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**hall 10 / stand E62**

## People to contact at our stand

**TOMASINO TALAMONI**  
**ROSELLA MITIDIERI**
**OWNER**  
**EXPORT MANAGER**


**Talamoni srl is specialized in the manufacturing of wheels and holders for glass and tile cutting.**

The company has been in business since 1994 in Ornavasso (vb) in the north of Italy, a territory deeply involved in the processing of micro mechanics.

Started by Mr and Mrs Talamoni, the company was born as a glass tools producer providing hollow glass to industries such as Bormioli.

Through the years, the company has maintained the craftsmanship of the process, which means high precision and attention to detail thanks to the quality of the products and to its competitive prices, Talamoni has become supplier to the main glass and tile industries.

The product line at Glasstec is the following:

- automatic cut: tungsten carbide wheels for glass cutting with holders for the mains glass cutting table. Wheels for glass cutting and engraving are grounded with specific machines which can guarantee quality and constant production batches.

Wheels are available in different dimensions, as well as finishing and cutting angles.

- manual cut: professional oil hand glass cutters. Talamoni offers a wide range of hand glass cutters models born from the twenty-years experience in hard metals processing. Talamoni products have high quality



standards that combine the benefits of craftsmanship in production with an innovative processing system.

- lubricants and cutting oils for glass: Talamoni produces oils that are ideal for lubrication during glass cutting, optimizing the longevity of the cutting wheel.

### **At Glasstec 2022 Talamoni will be presenting the new D-RO6015 wheel**

After many tests with important clients, Talamoni has determined that this new wheel hollows to achieve perfect cuts with float, laminated and stratified glass.

The hard metal wheel D-RO6015 is produced with a special mix of components that, thanks to sintering, offer the product an excellent durability and quality.

D-RO6015 is a wheel with a 6 mm diameter that's available from 110 to 165 degrees and with different finishings - each of which can change according to the glass thickness being processed. The wheel is available both in the standard plastic support (clips) and in the metal support.

The benefit to clients, resellers and users is that they can purchase and use an all-in-one product that guarantees perfect cuts.


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hall 12 / stand B67

### People to contact at our stand

<b>MATTEO GRIGOLO</b>	SALES AREA MANAGER
<b>LUIGI VILLA</b>	SALES AREA MANAGER
<b>ALBERTO ANNOVI</b>	INKJET PRINTING TECHNICAL MANAGER



### The next printing evolution for the glass industry

In the glass industry, automation evolution never stops: best performance, high quality and continuous development are required to respond quickly and accurately to the needs of the market.

This is the reason why TecnoFerrari has decided to attend Glasstec, the trade fair dedicated to glass in Dusseldorf, with its range of top digital printers and the latest evolution in the field of digital colour printing, which will be launched exclusively.

### Product Range

- **DIGITAL PRINTING SOLUTIONS**
- **CONSULTING**
- **FLOW ANALYSIS**
- **AGVS (AUTOMATED GUIDED VEHICLES)**
- **CUSTOMIZED SOFTWARE**
- **CUSTOMER CARE**

TecnoFerrari, founded in 1966, is specialized in automatic logistic solutions for different sectors and is present worldwide, thanks to its partners and subsidiaries. The know-how acquired over time, especially in the ceramic industry, has allowed the company to extend its solutions also to the glass sector.

Today, TecnoFerrari has developed digital printers with high performance that allow printing exclusive products with intense high-resolution designs or solid patterns. The Decora G, TecnoFerrari digital printer line dedicated to glass expresses the highest performance in the automotive and home appliance sectors. Decora G is suitable for production lines for flat, tempered or laminated glass using UV-LED hybrid inorganic inks that are unalterable over time. Optical glasses centring device and high-resolution printing enable high detail quality from first to last printed glass. Zero set-up times and traceability of each glass guarantee high productivity. Every TecnoFerrari printer is customized and designed for high levels of performance.

### Special Devices

- **MULTI-HEAD PLATFORM**
- **AUTO CONVEYOR & PRINTHEADS CLEANING**
- **OPTICAL CENTRING SYSTEM**
- **THICKNESS, SIZE AND QUALITY INSPECTION**
- **HIGH DISCHARGE PROPRIETARY INK DISTRIBUTION SYSTEM**
- **MULTI-ROW PRINTING MODE**
- **HIGH PRECISION CONVEYOR WITH SINGLE BELT**
- **INTEGRATED LOW ENERGY CONSUMPTION INK FIXING SYSTEM**
- **VARIABLE DATA MANAGEMENT AND LINE SUPERVISOR**
- **HD PRINT RESOLUTION**



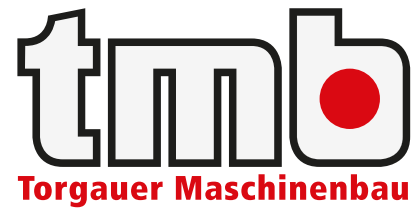
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hall 15 / stand F03

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



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hall 16 / stand A40

People to contact at our stand

**TRIULZI QUALIFIED STAFF**

**TRIULZI**  
You name it, We'll do it.

**PREVIEWED AT OUR BOOTH AN INNOVATED DESIGN OF OUR MACHINES, BEST DESIGN AND BEST PERFORMANCE**



**COMPACT WASHER , TOSCANA  
MODEL NEW DESIGN: MAXIMUM  
PERFORMANCE AND MINIMUM  
FOOTPRINT**

- Made entirely of stainless steel
- Working width 1,000 mm
- Min. glass size 100 x 50 mm

**JUMBO VERTICAL CLOSED TOP  
- ENERGY EFFICIENCY  
WATER SAVING WASHER**

- Made entirely of stainless steel
- Working height 3,300 mm jumbo sizes - to be integrated in line
- Automatic thickness adjustment
- Low Emissivity glass detection with frequency control
- Complete with high pressure prewash section with tank
- 6 cylindrical brushes/3 water tanks, heated water
- Controlled by PLC and touch screen operator panel
- Very silent operation

**HORIZONTAL SCRUBBING  
- ENERGY EFFICIENCY WASHER -  
WATER SAVINGS**

- Made entirely of stainless steel
- Working width 2,600mm
- Top scrubber section with disc brushes
- 3 shifts daily performance capability
- 4 cylindrical brushes/2 water tanks heated water

- Conductivity water sensor for water control, cascaded water flow
- Controlled by PLC and touch screen operator panel
- Antistatic bar fitted to exit of upper drying section
- Remote control
- Very silent operations
- Bevel gear transmission

**CUSTOMIZED  
SOLUTION**



**TRIULZI**  
You name it, We'll do it.

**Product Range**

- **OPEN AND CLOSED TOP VERTICAL WASHERS**
- **HORIZONTAL WASHERS FROM MINI TO JUMBO SIZE**
- **LAMINATING GLASS LINES**
- **INSULATING GLASS LINES**
- **AUTOMATED SYSTEM FOR CURVED GLASS**
- **WET POWDER APPLICATION SYSTEM FOR AUTOMOTIVE**
- **ULTRASONIC BATH GLASS WASHING EQUIPMENT**
- **FIREPROOF GLASS WASHING EQUIPMENT**
- **CUSTOMIZED SOLUTIONS FOR ANY GLASS PROCESS**



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#### TUROMAS Glasstec 2022. Let's go live.

**TUROMAS will return after 4 years to the Glasstec 2022 - marketplace, trendsetter, innovation and information platform for the global glass industry. It will open its doors to visitors from 20 to 23 September 2022 at the Düsseldorf Exhibition Centre.**



1,276 exhibitors from across 50 countries will be showing the latest developments and innovative solutions in glass production and processing technologies. And with 2022 being the International Year of

Glass, glasstec 2022 is promising to be extra special.

Turomas will be there, as always, and awaits you in Hall 15 / Stand A22.

#### SR-06, Rack Shuttle system for jumbo glass.

Storage and loading line for glass up to 6 meters capable of working with all sort of low emissivity coatings and thicknesses from 1.8 mm to 25 mm. The shuttle takes the complete glass-filled rack and transports it to the loading position.

The SR storage systems are particularly notable for their modular construction, which makes it possible for them to grow as the company grows, and for their almost unlimited capacity to adapt to the size and distribution of space, bridging the columns and even working between different warehouses.

#### RUBI 406VA: More automation, more flexibility, more space.

The RUBI 406VA is the first autonomous cutting table for 6-metre glass. Its innovative design enables the loading, cutting and automatic unloading of jumbo glass, ensuring maximum productivity and automation in the smallest possible space.

The automatic loader is integrated into the structure of the cutting table itself, optimising the processes in just 35 m<sup>2</sup> meaning extensive economic and logistical benefits for the customer.

#### Product Range

- SMART GLASS STORAGE AND LOADING SYSTEMS
- FLOAT GLASS CUTTING SYSTEMS
- LAMINATED GLASS CUTTING SYSTEMS
- CUSTOMIZED PROJECTS

The cutting bridge has been specially designed by the Turomas engineering team and made from extruded aluminium, a lightweight material that allows greater speed and acceleration to be achieved.



#### ACR- Advanced Coating Removal for EasyPro

Turomas launches ACR Advanced Coating Removal, a new generation of decoating system able to meet the needs of today's market and the requirements of the most demanding customers: larger amounts of glass in multiple coating formats.

It incorporates patented innovations which help to process the coated glass, such as the Advanced Cooling System which avoids the increase in temperature at the edges of the wheel and the Two Phase Decoating System which prevents the protective layer edges to lift off. Also, the gear is equipped with a high-flow three-phase hoover for waste collection during the decoating process.

#### SOFTWARE TUROMAS

TUROMAS will present and launch a new range of products based on Industry 4.0. These applications understand how industry works, based on the data provided by the machines themselves.

They run state-of-the-art software that guarantees ideal interconnection of the machines with any ERP Optimiser available on the market.

The software solutions provide optimal use of resources to manage production from a single control interface, monitoring and controlling glass stock in real time or managing non-automated glass warehouses.

Information is power, and that has been the aim of TUROMAS: to provide the necessary information to make our customers' day-to-day work easier – in a standardised, open way for all software manufacturers.



**hall 16 / stand B58**

## People to contact at our stand

<b>CARLO CRESCINI</b>	<b>SALES MANAGER</b>
<b>MORENO MOLON</b>	<b>SALES MANAGER</b>
<b>FRANCO DI NARDO</b>	<b>PRODUCT SPECIALIST</b>



**VINCENT** is capable to provide the whole complete solutions for grinding with cup wheels on all cup wheel edging machines.

About three years ago VINCENT started a revolution in the flat glass processing on double edging machines introducing the STARFLEX set of diamond cup wheels. This universal set is able to grind a wide range of glasses, from thin 3mm mirror glass to thick glass, or even laminated glass, always using the same sequence of tools. The specifically developed bonds and the perfect match of the metal and resin wheels allow excellent removal capacity at high speed.

Starflex set, introduced first on cups diameter 175mm for use in high production double edging machines is today available also on diameter 150mm for all straight line edging machine.

Vincent has also created CERIUM CE200 polishing cup wheels for the final steps of glass processing that can be used at very low pressure and high speed and still provide a perfect edge surface quality from the very first piece. CERIUM cup wheels ensure excellent final polishing quality that reduces roughness of the edge to a very close level to the glass surface.

In 2021, the sequence for double edging machines was completed with the introduction of polishing cup wheels, which give extraordinary finishing results in all working conditions. SURFACE and REX polishing wheels are specifically developed for the flat edge processing on double edging machines and straight line edging machines. On thick laminated glasses smudging is avoided due to the innovative deep bores. At the same time, excellent working continuity is achieved on thin glasses.

Last but not least, Vincent outdid itself with the ARRIS polishing wheels, specifically developed for high quality finish of the arris.

Thanks to its R&D competence and technical application know-how, VINCENT is now able to offer a complete sequence of tools that grant easy machine setup for all glass processing on all cup wheels grinding machines. As a result, there is a considerable increase in productivity.

VINCENT wheels are available with different attachments and sizes to fit all machines available on the market.

VINCENT is a leading manufacturer of cutting, grinding and dressing tools for Natural Stone, Quartz Agglomerate, Glass and Ceramics Tiles. Founded in 1974, head-quartered in Thiene (Italy), which is also one of the main production sites and the R&D centre, VINCENT combines nearly 50 years of experience and know.


[www.vincent.it](http://www.vincent.it)


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hall 16 / stand A59

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)



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**hall 15 / stand F19**

## 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.

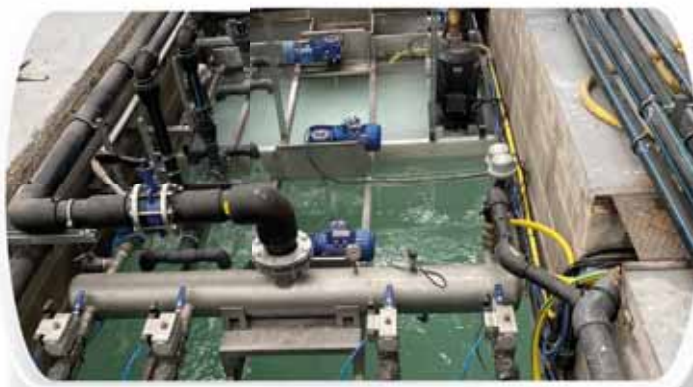
The VITROSEP water treatment and solutions portfolio is one of the most technologically advanced and specialized available in the glass market. In addition to offering a wide range of particle separators based on filtration processes, VITROSEP brings innovations in the field of optimization and control 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 the International Year of Glass and the celebration of its 30th anniversary, VITROSEP wants to make visible in Glasstec 2022 the importance of sustainability and efficiency in water treatment.

VITROSEP will be located in hall 15 number F19. 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. You will also be able to see in operation additional systems for the quality control of water chemical parameters in operation.



hall 13 / stand A31

### People to contact at our stand

**DR. PHILIPP ZIPPE**  
**DR. ANDREAS EMRICH**

CEO  
CTO

# zippe

right from the start



Our core business is the development and construction of batch and cullet plants.

We pride ourselves on being amongst our customers' most reliable partners, with an infrastructure, the expertise and capability to deliver projects of any magnitude.

As one of the few full-service providers in our industry, our spectrum covers all service areas within plant construction – engineering, planning, design, production, automation technology, installation, site management for all disciplines, commissioning, training for personnel, and services for ongoing operations.

Be it flat glass or hollowware, Zippe batch plants ensure that the batch for every glass type is fully automatically fed into the furnace with the exact consistency and homogeneity needed, at the required amount and at the right point in time – 24 hours a day, every day.

State-of-the-art control technology is a key element for optimal operation of a batch plant. There are around 40 Zippe automation and control systems specialists hard at work for you. This means

we are one of the few companies able to develop and realise complete control systems in house.

Our 24-hour support service enables our customers to contact an expert around the clock either by phone or email.

**Zippe** has been focused on the future for more than 100 years and, having realised well over 650 batch plant projects, has the longest standing experience in our industry sector.

**Zippe** – right from the start.



### Product Range

- **BATCH PLANTS**
- **CULLET PLANTS**
- **ENGINEERING**
- **AUTOMATION**
- **MODERNIZATION**
- **FACTORY CULLET RECYCLING**
- **GLASS RECYCLING**
- **BATCH CHARGING**
- **GLASS LEVEL CONTROLLING**
- **PREHEATING**
- **MAINTENANCE AND SERVICE**

[www.zippe.de](http://www.zippe.de)



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# FLATGLASS

**2022**

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**glasstec**

20-23 September 2022  
Dusseldorf, Germany



The new Thermoplastic Spacer Applicator Art. TA by Forel has been developed to perfectly position the product, on the basis of two key principles: **productivity and ease of use.**

This solution already includes all the most widely used production settings and the various options for thermoplastic products: the interface it's **simple, intuitive and user-friendly.** According to the production schedule entered in the line server, the Applicator automatically adjusts all the working parameters involved, proceeding quickly and reliably.