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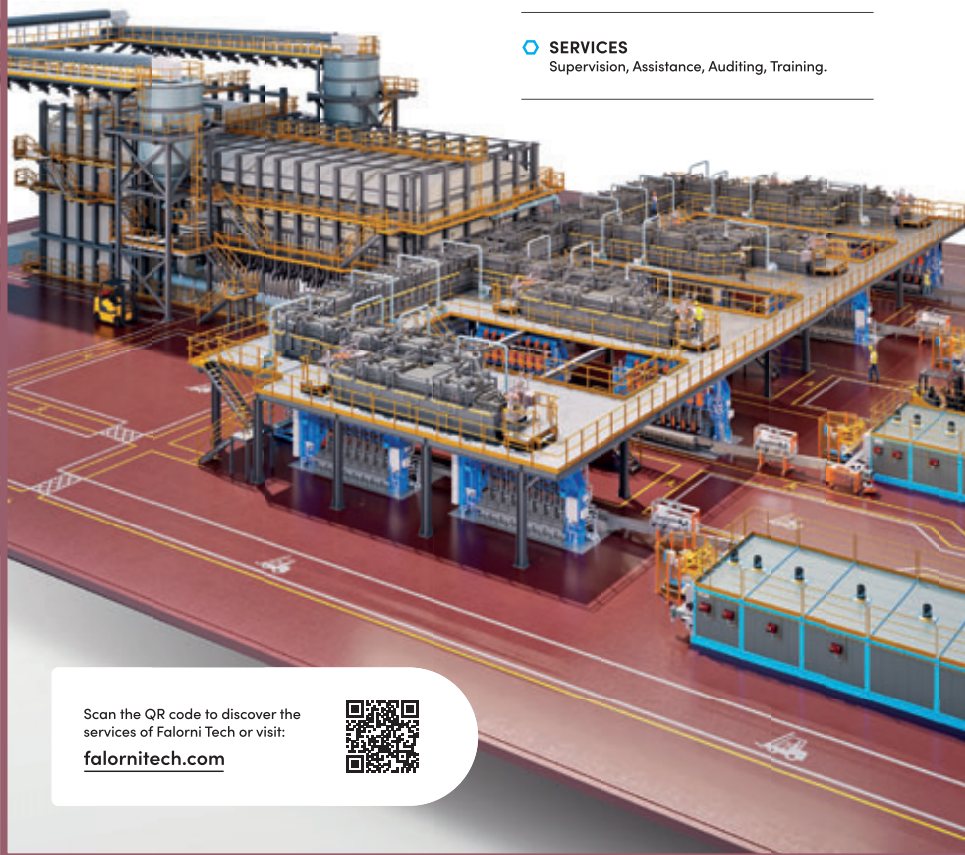


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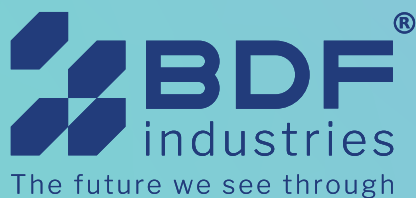
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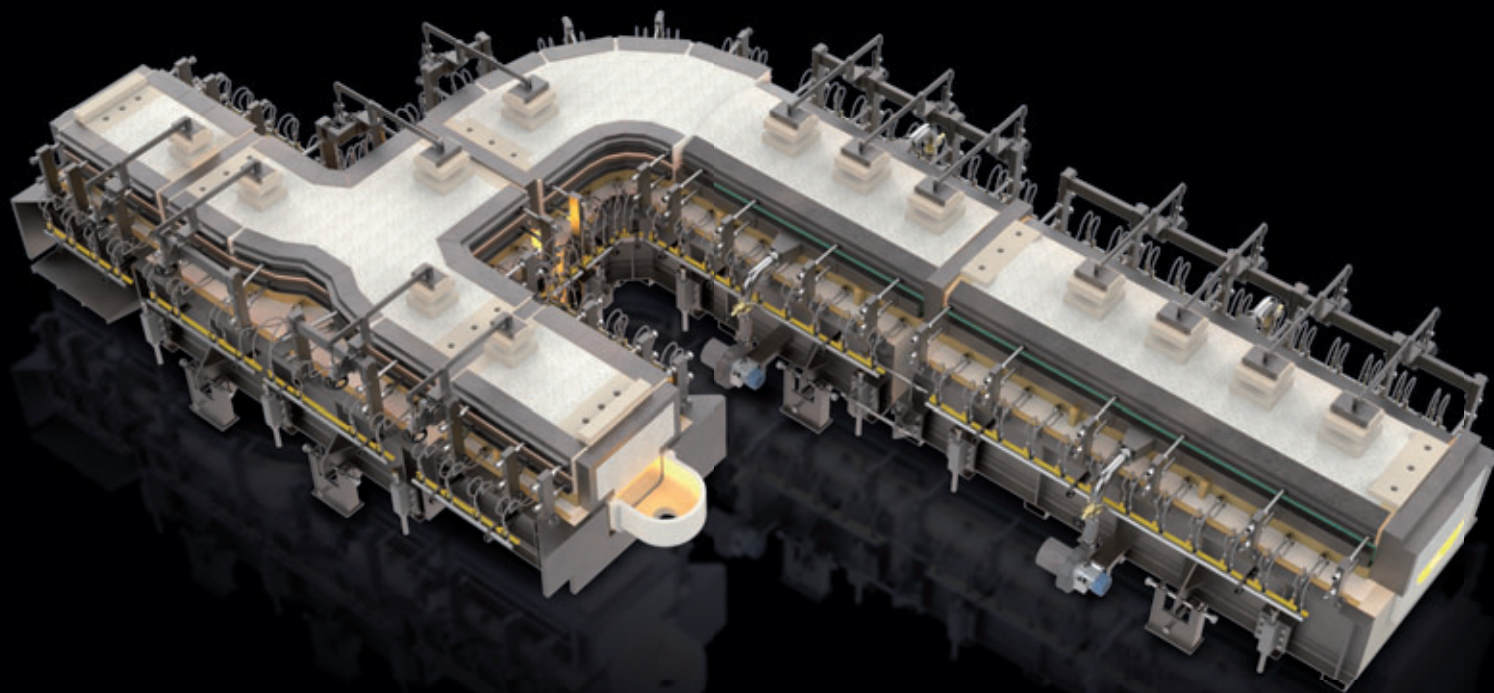
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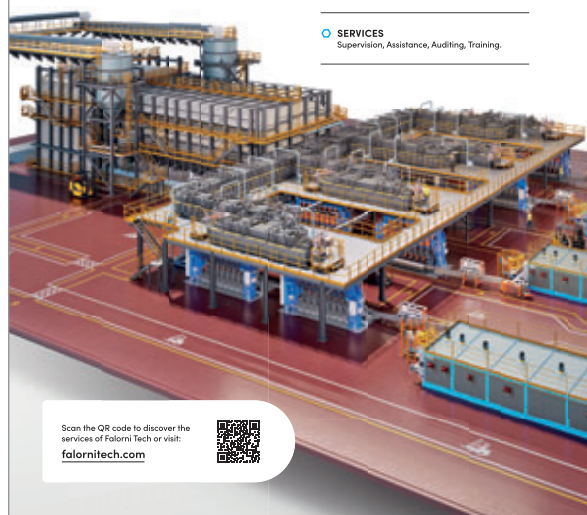
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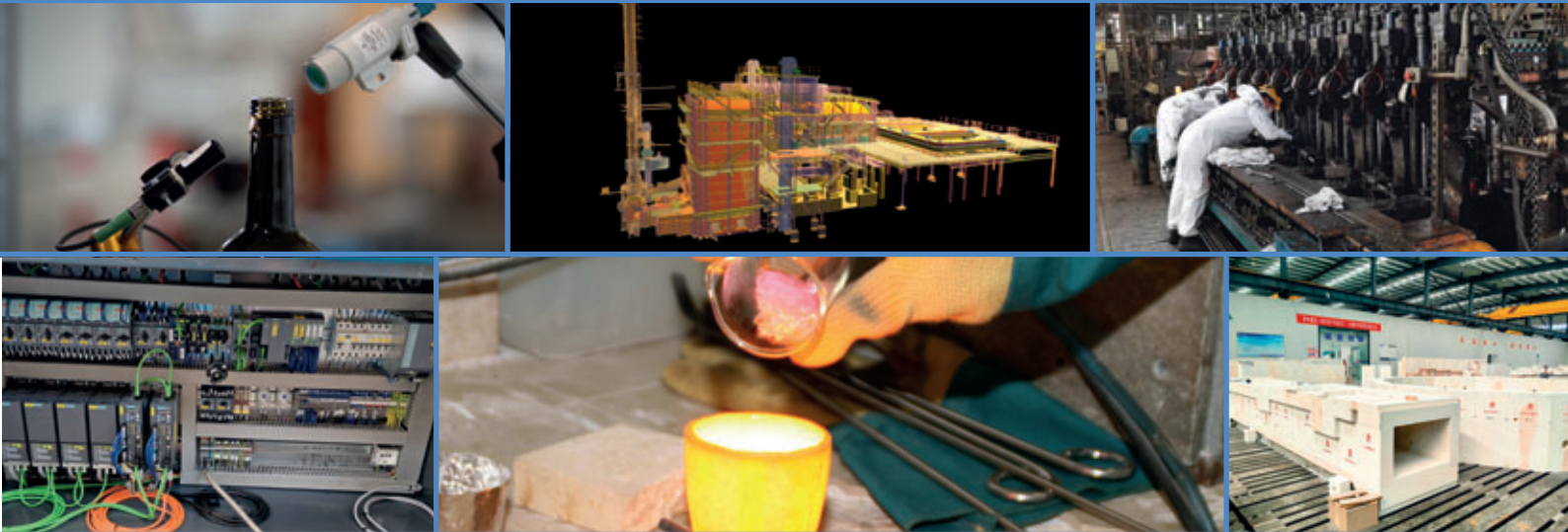
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2024 2	CHINA GLASS	25-28 April	SHANGHAI China	Editorial files: 15-03-2024 Deadline Adv files: 22-03-2024
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2024 3	GLASSMAN LATIN AMERICA	15-16 May	MEXICO CITY Mexico	Editorial files: 12-04-2024 Deadline Adv files: 19-04-2024
	PACKAGING PREMIERE	21-23 May	MILAN Italy	
	GLASS TECHNOLOGY CONFERENCE	27-29 May	AACHEN Germany	
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SPECIAL ISSUE: POST-GLASSTEC REVIEW				

HOT

COLD



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Bottero, through the establishment of its 100% subsidiary **E2Pack**, which has acquired the intellectual property and know-how of historical packaging brands such as Zecchetti, Emmeti, Mectra, Sipac, and Logik, has taken a significant step in expanding its technological offerings for the hollow glass sector, which now extends to the cold end. With this acquisition, Bottero has become **the only company in the world** capable of **providing complete solutions** for **both** the 'hot' and 'cold' parts of forming plants, ranging from the foreharts to the final packaging.

This is a significant milestone for the entire sector, offering hollow glass producers the opportunity to collaborate with a **full-range partner** capable of managing the **entire production process**: from forming, to transportation, to product packaging, with a notable increase in operational efficiency.

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Founded in 2010, Refractories Experience Srl quickly established itself thereafter as a key player in furnace demolition and reconstruction for the global glass industry. Headquartered in Piacenza, Italy, near Milan, the company specialises in a comprehensive range of services, including furnace draining, controlled cool-downs, demolition and the reconstruction of refractory and steel structures. Its expertise also extends to the crucial final stages of furnace preparation, including heating-up and cullet filling.

What sets Refractories Experience apart is its team of seasoned professionals, each of whom has extensive experience

in the hollow glass sector. The company's skilled workforce has successfully completed projects across major glassworks throughout Italy, Europe, Asia and Africa - providing turn-key solutions that cover every step from initial draining to the complete reconstruction and heating-up of new furnaces.

The company's portfolio of services includes:

- Draining
- Controlled cool-down
- Demolition of refractory and steel structures
- Reconstruction of refractory and steel structures
- Heating-up and cullet filling

Furthermore, Refractories Experience is highly-specialised in hot repair work, including the reconstruction of sidewalls using 'AZS' materials and the installation of fused silica crowns. The company is also proficient in the heating-up and sealing of furnaces to meet the exacting demands of its clients.



Committed to health, safety, and quality, Refractories Experience has implemented ongoing reviews and enhancements of all its business processes. This dedication was formalised on 24 November 2015 when the company received ISO

9001:2008 certification from Bureau Veritas for the 'Demolition and rebuilding of industrial furnaces for glass production.' This certification underscores Refractories Experience's ability to maintain high standards across all company operations - ensuring consistent quality and customer satisfaction.

With its proven track record, a focus on continuous improvement, and a commitment to meeting the evolving needs of the glass industry, Refractories Experience remains a trusted partner for glass manufacturers worldwide.



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- Special cover block design for area separation along the control zones
- Separated boundary areas to heat the glass particularly at the sides of the forehearth
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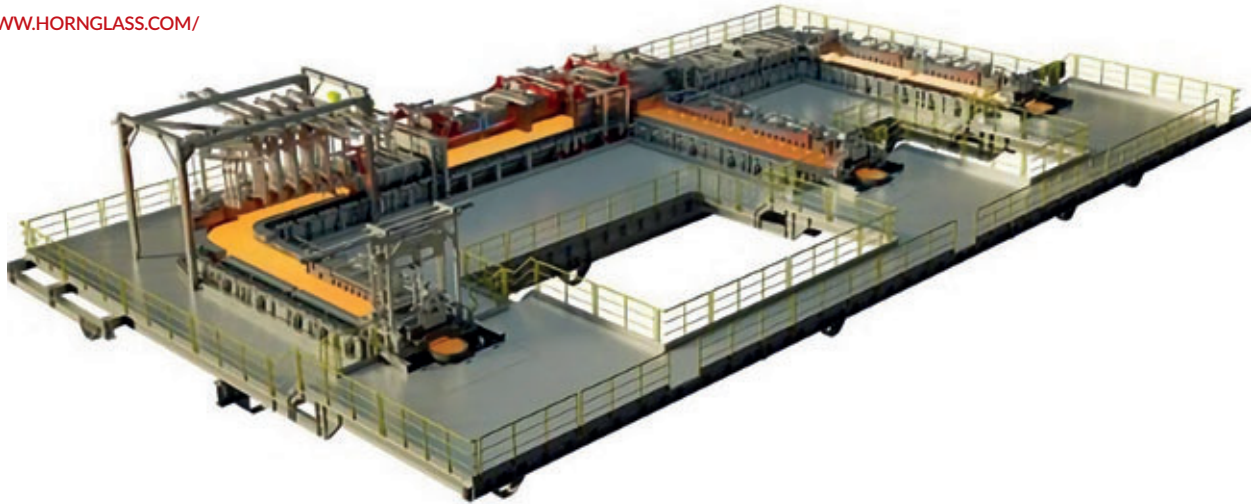
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- High thermal homogeneity (THI) for flint glass and coloured glass (including HORN forehearth boosting)
- Refractory can be designed for additional HORN equipment like: Stirrers, VARI-DRAIN® or forehearth boosting
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- Wide range of production processes

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TIAMA

Platinum medal awarded by EcoVadis

Tiama, a leading provider of glass packaging inspection and process improvement solutions, recently announced that it has been awarded a Platinum medal by EcoVadis, a global leader in sustainability ratings. This recognition places **Tiama** in the top one percent of companies assessed by EcoVadis, demonstrating its unwavering commitment to sustainability.

The Platinum medal is the highest rating awarded by EcoVadis, reflecting Tiama's exceptional performance across four key areas: Environment, Labour and Human Rights, Ethics and Sustainable Procurement. This achievement aligns with the global strategy and vision of Tiama and with the growing sustainability expectations of customers, who increasingly value partnerships with companies that prioritize environmental responsibility and social impact.

Tiama is dedicated to developing innovative and high-performing solutions while also striving to reduce its carbon footprint and the one from its glassmaker partners. This dual focus is exemplified by our YOUNiverse concept, a holistic approach to smart factory optimization. It has led to significant advancements in our operations and products, benefiting both our customers and the environment.

YOUNiverse is more than just a collection of products; it's a comprehensive approach designed to enhance efficiency, performance and sustainability across the entire manufacturing process. By integrating multiple Tiama solutions, glassmakers can achieve significant reductions in energy consumption, waste and emissions.

By continuously improving its sustainability practices, Tiama is helping its customers meet their own sustainability goals. As businesses face increasing regulatory pressures and consumer demands for sustainable products, partnering with a supplier like Tiama can enhance their own sustainability ratings and reputation.

As a testament to the importance of sustainability in its industry, Tiama has been recognized by customers for its efforts. For example, SGD Pharma, a global leader in pharmaceutical packaging, awarded Tiama a Gold Award for sustainability in June 2024, making it the only equipment manufacturer to receive this distinction.

Moreover, one of its largest customers recently stated, "Sustainability is no longer an option; it's a necessity." This sentiment underscores the increasing demand for sustainable solutions and the value that customers place on partnering with companies like Tiama.

By earning a Platinum medal from EcoVadis, Tiama is demonstrating its leadership in sustainability and its commitment to creating a more sustainable future. This recognition strengthens its relationships with customers and positions it as a preferred partner for businesses seeking innovative, environmentally responsible solutions - the result of a collective effort by all Tiama employees, who have worked tirelessly to make the company more sustainable.

WWW.TIAMA.COM

GROUPE POCHET

Important step in installation of new electric furnace

Groupe Pochet recently announced that the demolition and asbestos removal work on the old furnace at the Pochet du Courval plant in Guimerville, France, began on July 3 and was completed on July 20.

This project marks a crucial step towards the installation of a new electric furnace, the first in France dedicated to

luxury bottling. This furnace will significantly contribute to the reduction of CO2 emissions and the company commitment to a sustainable future.

Groupe Pochet has thanked all the teams involved for their work and dedication.

WWW.GROUPE-POCHET.FR



RATH

Glasstec 2024

RATH offers the global glass industry premium refractories for the entire glass manufacturing process and places a strong focus on saving CO2 and energy.

The international refractories manufacturer will be at glasstec 2024 to present its future-proof refractory solutions - from solutions for the regenerator and the melting end to the new, advanced FOURATH®4 feeder expendables series, newly-developed channel blocks and innovative ceramic hot gas filter elements.

The glass industry now has the contribution of RATH's future-proof refractory solutions and expertise in providing heating and melting solutions from a single source. RATH products are manufactured worldwide in state-of-the-art production facilities and on the basis of the latest application know-how.

With its innovative refractory solutions, RATH also supports the glass industry in its ambitious efforts to reduce its carbon footprint and save energy.

RATH's experts will be at glasstec, in Düsseldorf, October 22 to 25, at the RATH booth in Hall 13, Stand E 16 to explain more about future-proof refractory solutions for the glass industry.

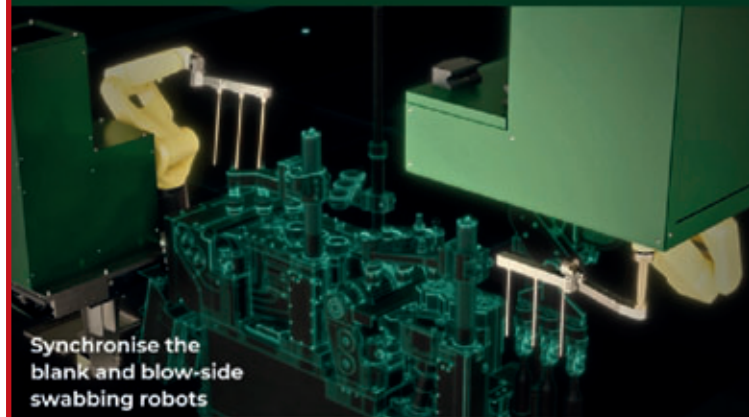
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VERALLIA

Inauguration of all-electric furnace designed by Fives

Verallia, the world's third largest glass packaging producer, and Fives, a leading engineering group, signed a strategic partnership in 2022 that enabled the glass manufacturer to reduce its carbon emissions towards greener glass manufacturing.

The result is a new all-electric furnace that represents a breakthrough in the production of flint and extra-flint glass. The new furnace was

officially inaugurated on September 10, 2024 in Cognac, France. The new technology - Prium® E-Melt, developed by Fives - is one of the most advanced technologies available to significantly reduce CO2 emissions at plant level. The furnace, which produces 180 tonnes of glass per day, equivalent to 300,000 bottles, is used in particular for flagship Cognac brands. It makes it the largest electric furnace for the glass packaging industry in the world.

Carbon footprint

The new furnace reduces CO2 emissions by 60 percent at plant level, emitting between 12,000 and 14,000 tonnes of CO2 per year, compared to traditional gas furnaces, which emit 30,000 tonnes per year. It also improves energy efficiency: around 95 percent of the energy is used directly in glass

production. The project was supported by ADEME, the French Agency for Ecological Transition, as part of the 'France 2030' investment plan.

Game changer

"We are very proud to be pioneers in this area. It's our 100 percent electric furnace, fully illustrating our CSR roadmap and ambitious investment plan to optimize energy consumption at our sites and develop low-carbon furnaces. This project is a joint collaboration with Fives Group, with whom we have defined new standards for electric melting," stated Patrice Lucas, CEO of the Verallia Group. "This is a strategic project for both Verallia and Fives as leaders in low carbon glass making technology. Our technology will be a game-changer for the industry as it enables the highest glass quality with the lowest energy input and minimum carbon emissions," said Guillaume Mehlman, President of Steel & Glass at Fives. The inauguration of the new electric furnace in Cognac reaffirms the decarbonisation strategy of both companies, which aim to operate sustainably and optimize manufacturing processes through constant innovation.

WWW.FIVESGROUP.COM - WWW.VERALLIA.COM

VETROPACK ITALIA

Important milestone reached

In July 2024, Vetropack Italia, part of the Vetropack Group, obtained the prestigious FSSC 22000 v6 + ISO 9001 certification. This recognition not only shows the company's unrelenting commitment to food safety, but also to dedication to providing products and services of the highest quality.

This achievement demonstrates consolidated responsibility towards the market and tireless commitment to ensuring efficiency and reliability. Vetropack Italia has expressed

its satisfaction about offering its customers peace of mind, knowing that its processes comply with the highest international standards.

The company has expressed its intention to continue working with dedication to maintain and exceed these standards of excellence.

WWW.VETROPACK.COM



O-I GLASS

Closure of four furnaces and a plant in the Americas

O-I Glass has approved the closure of four furnaces, which includes a single-furnace plant, in the Americas segment. These closures are part of the company's previously communicated Fit to Win initiative to reduce redundant capacity and begin to optimize its network. Additional furnace closures and other restructuring actions are expected later in 2024.

The furnace and plant closures are expected to occur within the next six months. O-I Glass intends to facilitate the closures in a respectful manner for the approximately 200 people impacted. Current customers of the impacted plants will continue to be served by the same plant or by other plants in the Company's network.

Subject to finalization of certain estimates, the Company expects to record charges associated with the above closures of approximately USD 20M in the third quarter of 2024. Major components of the charges include approximately USD 14M for impairment of plant-related assets, such as furnaces and machinery, and USD 6M for one-time employee separation benefits and other costs related to the closings (of which approximately USD 5M relate to future cash expenditures).

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CELSIAN

MIT R&D AI grant won together with ignition computing

Ignition Computing recently announced that its AI innovation project proposal “Quality Predictions and simulation optimisation for glass production” with CelSian Glass & Solar was ranked highest out of 57 applications for the MIT AI R&D program by the Netherlands Enterprise Agency (RVO).

The SME Innovation Stimulus for Regional and Top Sectors (MIT in Dutch) encourages Small and Medium-sized Enterprises (SMEs) to develop creative initiatives. These top ten sectors in the Netherlands have been designated as those that have the potential to solve global problems and help boost the country’s economy and competitiveness. The MIT R&D AI is the dedicated stimulus program for innovative collaboration projects by SMEs to deploy innovative AI tools in the top sectors.

The project proposal was graded on objective criteria on its potential, innovativeness, sustainability and feasibility. It received excellent marks (94.9/100 points) from the RVO. This grant will allow Ignition Computing to develop simulation acceleration tools for complex multi-physics problems, and deploy them in the glass industry.

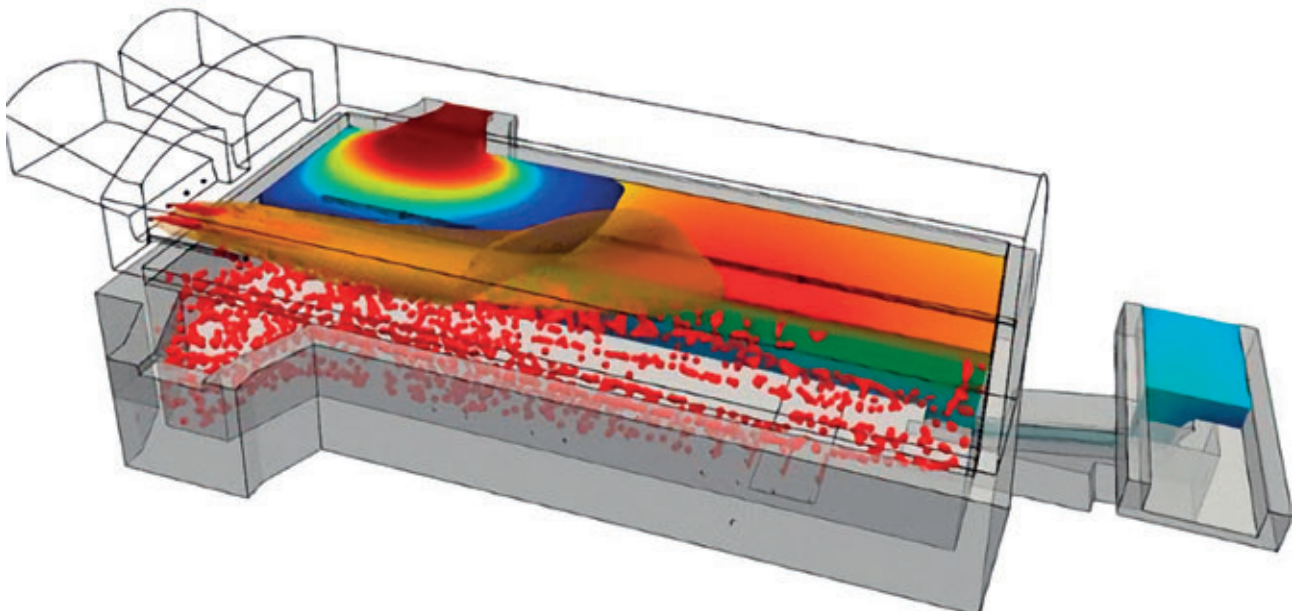
The technology partner CelSian has decades of experience in CFD tools used for the quality prediction of glass making. Ignition Computing will be integrating and adapting Preconnet with CelSian’s market-leading GTM-X tool.

Preconnet is a machine-learning based tool to accelerate simulations by generating preconditioners, initial guesses and proposing solver configurations. Preconnet has been developed for plasma simulations in a previous project with Plasimo. Thanks to its versatility, Preconnet’s functionality can be extended to new simulation challenges.

The glass melting process can take up to multiple days. This makes glass production difficult. Temperature and material fluctuations have implications for the final product. Product quality issues, such as bubbles in glass, may arise. This can lead to the loss of large batches of glass, totalling multiple days of production. New developments in machine learning and simulation provide more accurate predictions of glass quality.

The project is expected to result in improved quality prediction models leading to substantial economic and environmental gains. Through more efficient feed-stock use and energy consumption, each glass oven could save energy costs in the range of EUR 250,000 to 1,250,000 per year as well as reducing CO2 and nitrous oxide emissions. This undeniably positive expected impact fits with the company’s vision of supporting the sustainable industry of the future.

WWW.CELSIAN.NL





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CHINA GLASS 2025

Empowering the green transformation

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

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

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

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

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

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

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

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CINER GLASS

Appointment of Gokhan Sen as Chief Executive of CiNER Glass UK



CiNER Glass has appointed Gokhan Sen as the new Chief Executive of CiNER Glass UK to help oversee the company's expansion plans across Europe.

Sen has been appointed to run the day-to-day operations for Ciner Glass in Europe as the company's glass plant projects in Belgium and Wales continue to progress. Sen will report directly to the Chair of CiNER Glass, Mrs Didem Ciner.

CiNER Glass UK is currently working to build two new state-of-the-art glass factories to help increase its glass production capacity and help serve the European market. The first glass plant will be situated in Lommel, Belgium and involves an EUR 650M investment to supply the European beer, wine, soft drink and mineral water market to key European partners. Construction is →

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Meanwhile, the company is hoping to build a new glass container manufacturing facility which uses recycled glass at the Rassau Industrial Estate, north of Ebbw Vale. The project would be one of the largest investments in South Wales for decades and would look to supply glass bottles to UK food and beverage producers. Following the approval of planning permission in 2022 to build the glass container manufacturing facility, CiNER has been progressing site works at the plant's location while also engaging with suppliers across Wales.

Sen has been promoted to the position of Chief Executive of CiNER Glass after several years working as the Lead Co-ordinator for the company's European projects, helping to oversee the planning application process, setting out and progressing project time-lines while also developing key relationships with customers and partners across both Wales and Belgium.

He will be supported by Nicholas Hall, who has taken on the role of Chief Financial Officer for CiNER Glass UK. Hall joins with over 27 years of capital markets and strategic advisory experience. He will be based in London and report to the CEO to help develop, implement and monitor the progress of each project.

CiNER Glass is a family-owned business with its European operations head-quartered in the UK. In just over a decade, the company has grown to become an industry leader in glass making and has ambitious plans to expand its presence across Europe, with proposed developments in both South Wales and Belgium.

WWW.CINERGLASS.COM



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ARDAGH GLASS PACKAGING

VPPA enters Bulgaria with Rezolv Energy



Ardagh Glass Packaging-Europe (AGP-Europe), an operating business of Ardagh Group, recently announced that it has entered a long-term Virtual Power Purchase Agreement (VPPA) with Rezolv Energy's St. George solar photovoltaic (PV) project in Bulgaria, securing renewable electricity for its glass manufacturing operations across Europe from April 2026.

Schneider Electric, a leading adviser in corporate renewable energy procurement and carbon management, supported AGP-Europe in the VPPA negotiation.

The VPPA -one of the first to be signed in Bulgaria- is intended to provide 110 GWh per year of renewable electricity to AGP-Europe, over 12 years. It complements AGP-Europe's renewable energy supply from wind power, secured in Sweden earlier this year. Together, thanks to their different sources, they are designed to provide AGP-Europe with a consistent renewable power supply throughout the year.

In conjunction with other Power Purchase Agreements in its portfolio, this deal is designed to enable AGP-Europe to meet over 80 percent of its 2030 renewable electricity targets.

Martin Petersson, CEO AGP-Europe, said, "We are pleased to have finalized this agreement in just six months, which is largely due to Rezolv's flexibility, the support and technical know-how of Schneider Electric, and our own experience in this field.

"The Bulgarian solar project perfectly meets our aim to diversify the locations of our renewable energy supply and to support emerging energy markets: AGP-Europe benefits from a supply of renewable electricity while helping Bulgaria's transition to low-carbon energy."

Alastair Hammond, CEO, Rezolv Energy, added, "By signing this VPPA, AGP-Europe has become one of the most important corporate investors in Bulgaria's energy transition. Through it, the company has become the leading enabler of St. George, a 229 MW solar project which, overall, will deliver an average of 313 Gigawatt hours of renewable electricity annually. AGP-Europe is therefore making a direct contribution to reducing Bulgaria's dependence on fossil fuels and to enhancing its energy security."

The solar project will comprise nearly 400,000 PV panels and will be one of the largest solar projects in Bulgaria.

WWW.ARDAGHGROUP.COM

SPIE GROUP

New Managing Director at Excelsius

Excelsius, part of the SPIE Group, has warmly welcomed Stephan Lohn as its new Managing Director.

As former Sales Manager and Managing Director in several companies including RHI and PD Refractories (both RHI Magnesita now), he arrives with over 23 years of experience in the refractory and glass industries.

The glass industry faces many challenges, but also exciting opportunities. Advancing technology, the increasing importance of sustainability and the changing needs of customers offer opportunities to further

strengthen the company position in the market and develop innovative solutions.

WWW.SPIE.COM



Stephan Lohn

Welcome to our new Managing Director

HORN

Hybrid oxyfuel furnace

Addressing the industry's decarbonisation challenge, Horn is taking the next step forward in the industry's transition to a resource-efficient and low-carbon economy. Since the glass industry is committed to climate-neutral packaging, hybrid furnaces have been developed and evaluated by Horn as a potential and promising technology to reduce carbon dioxide emissions.

Hybrid furnaces seek to replace a large share of the currently used natural gas by electricity. Horn defines a furnace in general as hybrid if both forms of power, electric and fossil, are needed for sufficient operation. Depending on the kind of furnace, the window for the electric share reaches from 20 percent up to 80 percent.

In the combustion space the location of multiple oxygen burners along the side walls enables a precise regulation of the temperature distribution by adjusting the gas distribution accordingly.

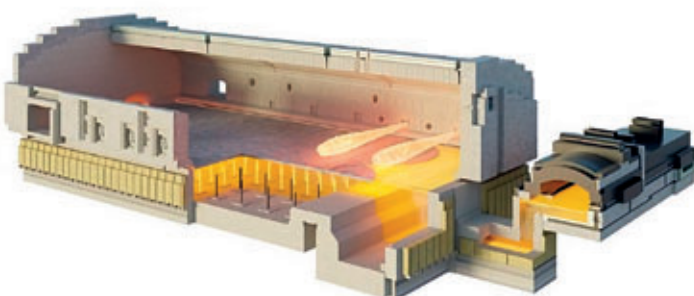
For a high share of electric power, for example, the gas distribution can be shifted more towards the refining area, while the energy in the melting area is predominantly provided via the electrodes. This increases the energy flexibility even more, compared to the Hybrid End Fired Furnace.

Starting from a continuous combustion space, the furnace can be operated with up to 80 percent electric power, with a minimum of around 20 percent. Compared to a completely fossil oxyfuel furnace, the CO₂-emissions regarding the melting can be reduced up to 50 percent.

Features

- Low carbon footprint
- Electric energy input up to 80 percent
- Flexibility of electric boosting
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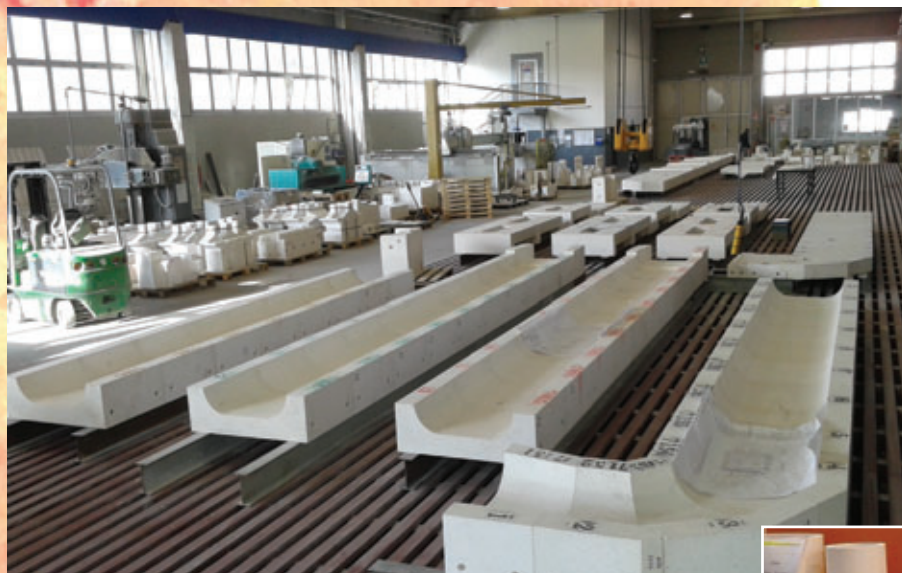
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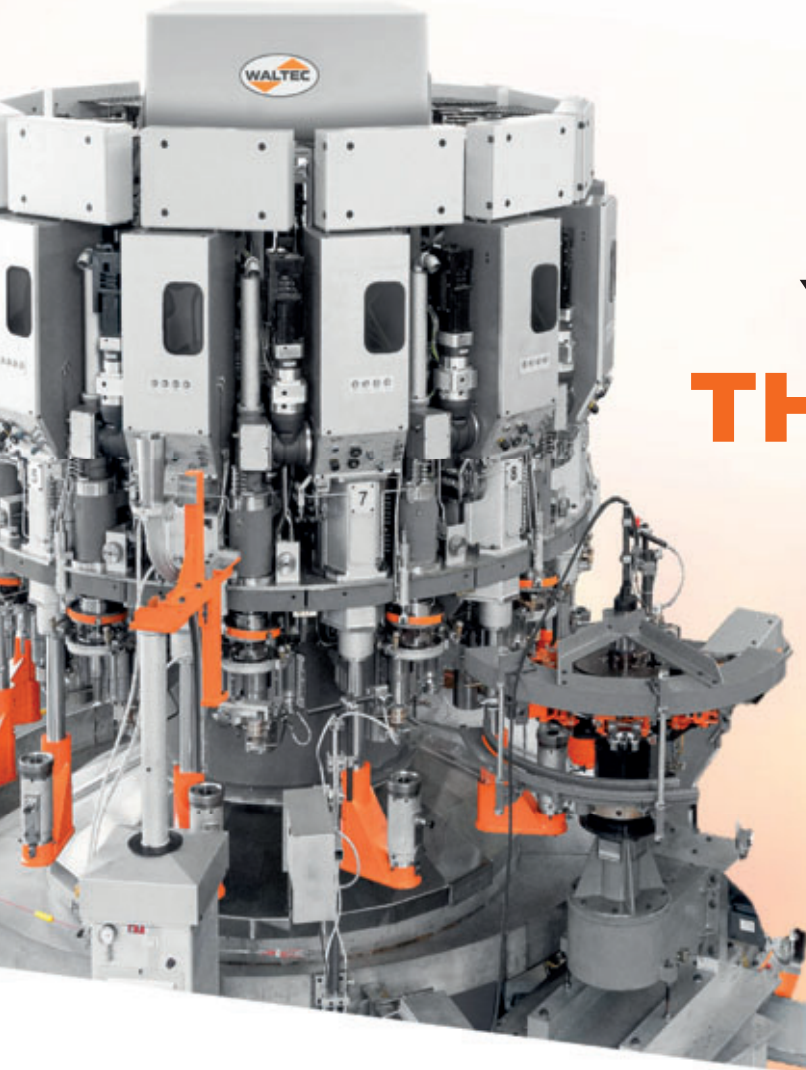


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BEATSON CLARK

Premium in-house decoration service now offered

Beatson Clark has been manufacturing quality glass bottles and jars for over 270 years, and now thanks to its new state-of-the-art facility the company can also spray glass packaging of any colour and achieve dazzling effects such as opaque, frosted, vignette, glitter and pearlescent.



Richard Pike, Decorating Plant Manager at Beatson Clark

What's more, Beatson Clark can offer a flexible service provided by the customer, subject to suitability, as well as its own range of bottles and jars.

"Thanks to the latest cutting-edge technology and innovation, we can create premium, eye-catching effects that can elevate a brand and leave a lasting impression with the consumer," explained Richard Pike, Decorating Plant Manager at Beatson Clark.

"Our new decorating plant is just the latest major investment we've undertaken to strengthen our status as an independently owned market leader and to ensure that customers get the highest quality service and products."

The new decorating plant uses both an electrostatic disc and a spray gun method to achieve a variety of colourful effects, with a quality finish. It uses premium water-based paint which ranges from high gloss to full matt, in a choice of translucency levels, and it can colour-match paint to suit customer requirements.

To help improve shelf life of food, beverage and pharmaceutical products alike, Beatson Clark can also spray a UV coating to glass packaging to protect products from the harmful effects of sunlight, including light strike in beers and changes to the colour and flavours of food products.

WWW.BEATSONCLARK.CO.UK

AGR

Services rendered to Milly Glass Works in Mombasa, Kenya

AGR recently traveled to Mombasa, Kenya, to provide services to **Milly Glass Works**. The services included the presentation of the "Fracture 1: Testing and Breakage Diagnosis of Glass Containers" training seminar by Bill Slusser, Director of Research at AGR, and Peter de Haan, Manager, Research Services – Europe. In addition, an in-depth survey of their glass manufacturing process was undertaken by de Haan in order to identify optimization and refinement opportunities.

American Glass Research is a full service independent, research and testing laboratory with expertise in testing,

design analysis, analytical testing, consulting, training, inspection, product liability and auditing for the glass container industry.

Milly Glass Works has been in business since 1954 and is a prominent manufacturer of glass containers and tableware in the East Africa region.

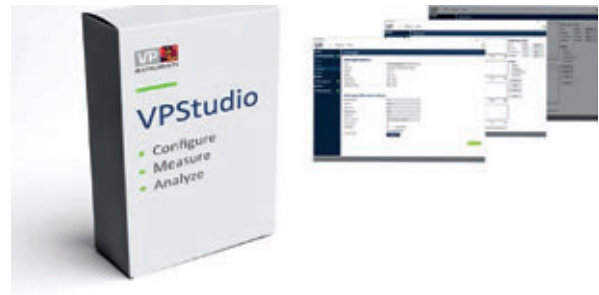
WWW.AMERICANGLASSRESEARCH.COM



VP INSTRUMENTS

VPStudio 4 - simplifying flow meter configuration

VPInstruments, manufacturer and worldwide supplier of flow measurement, instrumentation and energy monitoring systems, recently announced the release of its VPStudio 4. With this latest software innovation, flow meter configuration is much easier. VPStudio 4 features an intuitive interface with automatic flow meter detection. This new feature enables users to effortlessly connect one or more VPInstruments flow meters via USB ports for immediate recognition and setup. Users can configure all 4-in-1 VPFlowScope flow meters with one software. The VPFlowScope flow meters simultaneously measure bi-directional flow, pressure, temperature, and total flow, and feature an optional built-in datalogger.



VPStudio 4 allows full control of the data log export files, with the possibility to set the time interval and reference conditions to match the application and purpose of analysis. Furthermore, the real-time measurement graph displays live data on-screen for instant feedback on your measurements and first insights into your compressed air or gas consumption.

Available in English, French and Dutch, VPStudio 4 is designed for global accessibility, ensuring a seamless user experience.

This significant upgrade emphasizes VPInstruments' commitment to providing efficient and user-friendly solutions for energy flow measurement and analysis. VPStudio 4 is now available for download.

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BETA GLASS

Transformation continues with changes to management team



Beta Glass, a Member of Frigoglass Group and the largest glass container manufacturer in West and Central Africa, continues its rapid pace of transformation which commenced in 2023. Earlier this year, the Company recently announced changes to the composition of its Board of Directors with the appointment of a new Chairman and three independent members with significant experience in diverse global corporations within Nigeria and across the African continent.

Beta Glass now proceeds with changes to its management to complement the transformation program, designed to enhance the Com-

pany's performance and deliver new levels of growth within Nigeria and in neighbouring markets.

In light of the above, Mr. Darren Bennett-Voci will step down from the position of Chief Executive Officer (CEO) on 31 July 2024.

In the meantime, Mr Serge Joris, Frigoglass Group CEO, will serve as interim CEO of Beta Glass until the 30th of September 2024.

Beta Glass also announced that Mr Shanker Dhanikonda stepped down as Chief Finance Officer (CFO) on 5 August 2024 and was succeeded by Ms Hélène Paradisi. Mr Dhanikonda remains at the Company until the latter part of 2024 to ensure a smooth transition. Ms Paradisi has more than 20 years of experience in diverse sectors – such as Logistics, Automotive, and Mining in several African countries. Prior to her appointment as CFO for Beta Glass, she served as Finance Director at the Automotive Division of CFAO in Nigeria. Early in her career Ms Paradisi qualified as an auditor at PWC in Lyon, France.

WWW.FRIGOGLASS.COM

HORN GLASS

Automation a key element of digital production

HORN Glass Industries enables its employees in the manufacturing department to work even more effectively by continuously investing in state-of-the-art production systems. With the recent purchase of a Robo2Go robot cell for setting up the workpieces of a turning and milling centre, the various work processes can now be further automated and occupational safety improved at the same time.

In this way, the company creates an even more productive and attractive working environment for employees in mechanical production.

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VETROPACK

Furnace modernized at Croatian plant in Hum na Sutli

The Vetropack Group is set to modernize one of the three furnaces and the corresponding glass forming machines at its Croatian plant in Hum na Sutli. Vetropack Straža d.d. commenced draining of the furnace on September 2 and expects the first glass produced on the new equipment by December 2024. After draining is complete, the current flint furnace at the plant in Hum na Sutli, will be demolished.



Following the rebuild and a heat-up period of approximately one to two weeks, the modernized furnace is expected to produce its first glass by December.

As a key part of this modernisation project, Vetropack Straža will also introduce new glass forming machines and a completely new set-up for the cold end including newest inspection technology to guarantee highest product quality standards.

Notably, one of the new installations will be a servo-electric driven NIS machine, a first for Vetropack Straža. An optimized layout of the whole plant set-up is set to improve the flow of production. These upgrades are not only crucial for maintaining the high standards of glass

packaging products but also essential for ensuring the longevity and efficiency of manufacturing operations

Higher capacity, lower carbon emissions

The modernisation will result in an increase in production capacity. "I am pleased to say that the modernisation project is carried out in a very time-efficient way. This enables us to bring our product back on the market very soon," said Mario Berc, Technical Manager at Vetropack Straža. With the upgrade, Vetropack Straža will also achieve a higher furnace output, enabling the production of more tonnes of glass per square metre, thus saving space and optimizing production costs. "I want to highlight that this upgrade also reflects our dedication to environmental stewardship. The new furnace and equipment are designed to reduce energy consumption and to lower our specific CO2 emissions, thereby minimizing our carbon footprint and contributing to our sustainability goals," Berc added. In April 2024, the Vetropack Group had defined and submitted its targets for reducing CO2 emissions to the Science Based Targets initiative (SBTi). By 2032, Scope 1 and 2 emissions are to be reduced by 50.4 percent and Scope 3 emissions by 30 percent. In order to achieve these targets, the Vetropack Group is pushing ahead with modernisation measures such as the one in Hum na Sutli.

WWW.VETROPACK.COM

HEINZ-GLAS

EUR 15M received in federal funding for Piesau site

On August 26, 2024, Dr Robert Habeck, Vice Chancellor and Federal Minister for Economic Affairs and Climate

Protection, visited the headquarters of Heinz-Glas Group in Kleintettau. The reason for the visit was the handover of a funding notice for the projects 67DDI041-3 "Glass4FutureInvest" and 67DDI041-2 "Glass4FutureEE" to SP Spezialglas Piesau GmbH in the amount of EUR 14.6M (Glass4FutureInvest) and EUR 375,000 (Glass4FutureEE), which are to be allocated to the federal government's "Decarbonization of Industry" funding programme.

With this support, Heinz-Glas can build a new production build- →

← ing and put an innovative, all-electric glass melting tank into operation. This technology will enable the company to save up to 6,250 tonnes of CO₂ annually and thus make an important contribution to the decarbonization of the glass industry.

In order to overcome the previously known technical limitations, HEINZ-GLAS has researched a flexible, all-electric melting tank. The results obtained will be incorporated into the investment project, which, in addition to the new production building, also includes a conversion of existing systems at the site in Piesau, Thuringia, Germany.

The innovative tank technology is intended to respond better to required production capacities. The use of recycled glass shards is to be variable, depending on the colour of glass to be produced.

“We are investing a total of around EUR 50-60M to convert our oldest site, founded in 1622, from a gas-fired tank to two electric tanks,” explained Carletta Heinz, CEO & owner of the HEINZ-GLAS Group. “This will create the most modern and

environmentally friendly glassworks in the world. The federal government’s funding plays an important role in realizing our project and driving the transformation forward with full force. This biggest step in the targeted CO₂ reduction in our group of companies is only possible if we can rely on affordable, green energy that is available 24/7. I am proud of this project, which connects our roots with a sustainable future.”

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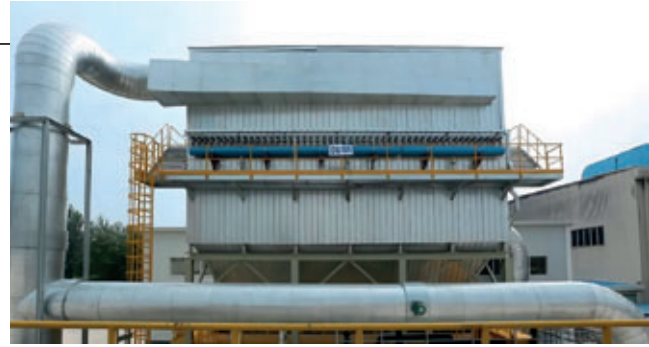


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ARGLASS

Dürr's 2-in-1 process adopted for exhaust air purification

The catalytic filter element concept is a technology that combines the removal of sulfur, nitrogen oxides and dust using catalytic candle filters (CCFs). Arglass has invested over USD 230M to build a second furnace at its Valdosta, Georgia, USA, campus. This new facility, powered by a hybrid gas, electric and oxy-fuel furnace, is capable of melting 495 tonnes of glass per day, supplemented by an additional five megawatts from a solar power installation. Dürr has been commissioned to equip the new melting furnace with a special exhaust air purification system that simultaneously controls particulate matter and sulphur oxides. The environmental technology expert, Dürr, also offers solutions capable of filtering three pollutants at once.

The Arglass solution: candle filter system for sustainable process

The contaminated exhaust air from the furnace is routed to Dürr's candle filter system, a 2-in-1 technology that combines two individual processes for exhaust air purification. This system precipitates particulate matter (PM) and absorbs sulphur oxides (SOx) using candle filters made of ceramic fibres, which can withstand temperatures up to 900 degrees Celsius. After the purification process, the exhaust gas exits the candle filter through the inside of the ceramic wall and flows up into the outlet pipe of the air pollution control system. This exhaust air purification technology is being used for the first time in the U.S. glass production market.

Eliminating NOx: The 3-in-1 catalytic candle filter system

Dürr offers a 3-in-1 exhaust air purification technology. The catalytic candle filter system controls particulate matter, sulphur and nitrogen oxides emissions simultaneously and effectively removes 90 percent of pollutants from the exhaust air. Recent advancements in high thermal shock-resistant candle filter technology have broadened its applications in industrial processes requiring hot-gas filtration (HGF) at temperatures above 250 degrees Celsius, where traditional fabric filter systems are ineffective.

Maintenance on the fly for Dürr exhaust air purification systems

By integrating individual exhaust air purification processes into the candle filter system, the system becomes compact, and maintenance costs are reduced. The modular design allows for maintenance during continued operation, as each filter module can be individually isolated while the exhaust air is redirected through other modules. Unlike conventional systems, the operation of the glass melting furnace is not affected by planned maintenance work, ensuring uninterrupted production. Additionally, Dürr provides comprehensive on-site support for Arglass, with full-time technical staff and a dedicated engineering and service team for the plant's life-cycle support.

WWW.ARGLASS.US

HRASTNIK1860

Glass bottles produced with hydrogen as energy source

In a notable development last year, Hrastnik1860, a member of Vaider Group, successfully pioneered the commercial production of premium glass spirits bottles using hydrogen as the primary energy source. This significant step was made in

collaboration with Bacardi and marks a major advancement toward sustainable production in the glass industry. Hrastnik1860 continues to innovate, utilizing hydrogen to melt glass in one furnace and hybrid technology incorporating up to 40 percent electricity in another. Following the successful initial production, they have reopened orders and will enable customers to produce glass bottles, including lightweight options, during their 'Sustainable week' in December 2024.

A clean fuel for a sustainable future

Hydrogen is emerging as a crucial energy vector in the drive toward sustainable industrial processes, particularly in energy-intensive industries, such as glass manufacturing. As a clean →

← fuel, hydrogen only produces water vapour when burned, eliminating direct carbon dioxide emissions typically associated with the combustion of fossil fuels. Additionally, hydrogen can be easily produced from renewable energy sources via electrolysis, further enhancing its potential as a sustainable and versatile energy solution. These characteristics make it an excellent alternative for industries aiming to rapidly and significantly reduce their carbon footprint.

Hrastnik1860 is committed to investing in a more sustainable future, the company is pleased that various customers have shown interest in producing bottles using this advanced technology, especially for the premium segment, where quantities are often smaller. Production with hydrogen as the primary energy source allows their customers to order series starting from as low as 30,000 pieces, which is particularly appealing for producers of extremely exclusive premium spirits, aiming for purest possible glass – the so-called ‘extra white flint,’ especially for limited editions.



Lightweight bottles - a transformative approach

Redesigning bottles to be lighter is another factor contributing to sustainability by reducing energy consumption, water usage, and CO2 emissions. It optimizes operational and logistical aspects of glass manufacturing and transport costs. Lighter bottles require less raw material, significantly reducing the energy needed for production.

Additionally, this kind of production also consumes less water, a critical factor in conserving this resource. Together, reductions lead to lower operational costs and minimize the strain on resources, directly benefiting clients with cost savings.

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VETROPACK STRAŽA

Continuation to investment in renewable energies

Vetropack Group's subsidiary in Croatia, Vetropack Straža, is in the process of making production at its plant in Hum na Sutli ever more sustainable - with the upcoming installation of a third solar power plant, Vetropack Straža III. The project was set to begin in September 2024 and will span 11 months, during which 4,483 photovoltaic modules and 25 inverters will be installed on the roofs of key facilities. Co-financing of the project known as MF-2023-1-1-120 comes through an agreement with the Croatian Ministry of Environmental Protection and Green Transition and the Environmental Protection and Energy Efficiency Fund. Valued at EUR 1,363,108.89, the project receives co-financing of EUR 817,865.33 from the Modernizacijski Fond (Modernisation Fund).

All the energy generated will be used for producing glass bottles and jars in the plant in Hum na Sutli.

"The project contributes to Vetropack's sustainable development by reducing energy consumption by approximately 1900 MWh and greenhouse gas emissions by 300 tonnes of CO2 per year," said Mario Berc, Technical Manager at Vetropack Straža.

Installing solar plants and using the generated renewable energy in production directly supports Vetropack's goal to reduce CO2 emissions by 30 percent per tonne of glass produced by 2030 (compared to 2019 levels). These carbon emission reduction targets are aligned with science-based data as provided by the Science Based Targets initiative (SBTi). Vetropack first announced its commitment to the initiative in 2022 and has submitted specific CO2 emission reduction targets to the SBTi for validation in April 2024.

On the path to renewable energy since 2019

At Vetropack Straža, previously unused large roof areas had been transformed into a productive asset with the installation of 3,400 solar panels as early as 2019. These panels cover an area of 5,565 square metres and generate an estimated 1,000 MWh of electricity per year, which is used to power air compressors.

Since 2019, Vetropack Straža has further advanced its sustainable energy initiatives, notably by joining the KOER virtual power plant in 2023. This partnership contributes to the stability of the Croatian energy system through the integration of new renewable capacity, enabling Vetropack Straža to play an important role in supporting a more sustainable energy infrastructure.

WWW.VETROPACK.COM

DURALEX

Court validates takeover - all jobs saved

The Commercial Court of Orléans, France, after analyzing the three takeover bids for the Duralex glassworks, accepted on July 26, the proposal for a co-operative production company (SCOP) supported by 60 percent of the staff and led by the site's management. According to this cooperative project all 226 jobs at the company, which was placed in receivership at the end of April, will be saved.

The court spoke of a "coherent and serious marketing and

commercial project" with "strong guarantees", considering that the SCOP appears able to maintain "employees' activities in feasible conditions."

WWW.DURALEX.COM





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Industrial glass projects multiply as **FALORNI TECH** makes strides

GMP&A: CAN YOU PROVIDE AN OVERVIEW OF FALORNI TECH AND ITS EVOLUTION OVER THE YEARS?

SS: Falorni Tech is a business trademark of Falorni Gianfranco srl - a company dedicated to the glass sector. As a company that's been working in the glass industry for many decades, Falorni has a rich experience in several glass sectors. After providing our glass melting furnaces and related equipment mostly in the Artistic and semi-automatic field for the greater part of the company's life, we went on to the area of large size furnaces for automated glass. Falorni Tech was

established to add the necessity of a dedicated brand to the automated glass sector. That helped us to start working on ambitious projects, particularly in the glass container sector. Thanks to our previous experience as well as our great willingness and dedication, we have been able to support our clients in all their needs, up to expanding to different areas of the production process - right up to offering them our full involvement as turnkey supplier of the entire facility.

GMP&A: What led to the formation of Falorni Tech and what distinguishes it from Falorni Gianfranco's original focus?

SS: Before the creation of the

Falorni Tech brand, Falorni Glass was the unique brand of Falorni Gianfranco srl which, with a background in customized solutions mainly dedicated to the artistic and semiautomatic fields, focused on the supply of glass melting furnaces to the glass industry. As Falorni Glass we've had successful projects in many different applications of the glass production process as well as in the automated glass industry - all thanks to our impeccable reputation in the market and long lasting relationships with our clients. That said, we still deemed it necessary to address a new, dedicated brand to demonstrate to both our existing

The images in this article are of the container glass production plant built in Qatar by Falorni Tech as EPC contractor. It has a capacity of 200 tons/day.



With FALORNI TECH now signalling an evolution in the history of Falorni Gianfranco as it moves from small scale glass factories to more ambitious industrial projects, the GMP&A editorial team sat down with Deputy General Manager Simone Scarselli to discuss his company's growth and targets, its acquisition of Famor and the comprehensive glass solutions it will be showcasing at glasstec.



and new clients that we intended to expand our reach into the market with a committed team and associated brand.

Experience teaches us that melted glass quality is among the most important elements of a successful factory start-up. Indeed we strongly believe that it represents a big part of the final result - namely packed bottles. Here's why many clients today are addressing their new turn-key requests to Falorni Tech - an experienced glass melting furnace supplier that responsibly delivers fully-operating factories. Our growth

includes the ability to support the investor right from the start - beginning from detailed feasibility analysis as well as comparisons of different configurations and scenarios of the investment - all to ensure that we're suitably informed to take the best possible decision for each investment type.

GMP&A: Can you elaborate on Falorni's approach to new technologies, particularly in the glass melting sector?

SS: Falorni has a strong background in furnace design. Indeed we've always produced our own fur-





nance equipment. This gives us a deep knowledge of all the systems we develop. Today we're actively monitoring advancements in fusion technology, including hybrid furnaces that use hydrogen as fuel. Our focus is on sustainability - evaluating the costs, technology and energy efficiency of different solutions. In emerging countries where electrical grids may not be stable, an interesting compromise (also depending on cost analysis) may be the hybrid melting technology. Here we help

investors to choose the best technology - all based upon their specific energy infrastructure.

GMP&A: What role has Famor played in Falorni's growth and how has the acquisition strengthened your operations?

SS: As for semi-automatic and tableware fields, Famor has collaborated with Falorni for many years - mainly supplying machinery for glass forming while Falorni provided the furnaces. The acquisition of Famor offered us the possibility to integrate our operations further



in two ways in particular. Firstly, we have acquired additional knowledge in both glass forming and treatment, which improves our capabilities in all services associated with this equipment type that we offer and which are necessary for assisting our clients and solving potential problems when any new start up phase process begins. Secondly, we can bring our 'turnkey approach' to the semi-automatic field, thereby ensuring quality and even more experience.

GMP&A: What message do you want to convey at the upcoming Glasstec event in Dusseldorf, particularly with Famor now part of Falorni?

SS: At Glasstec we will be exhibiting our capabilities as a glass melting furnace and turnkey solutions supplier. We will be also showing the integration of Famor into the Falorni Group, thereby highlighting our improved ability to deliver complete solutions in the semi-automatic glass sector as well as in the automatic glass sector. ■



falornitech
glass melting technology

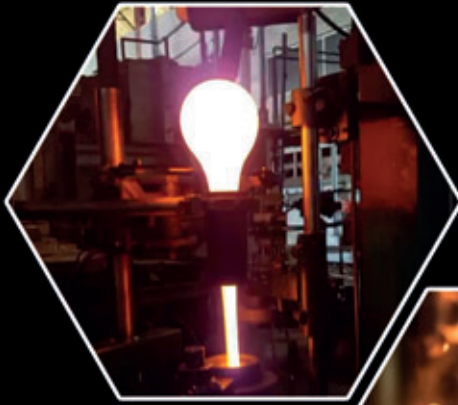
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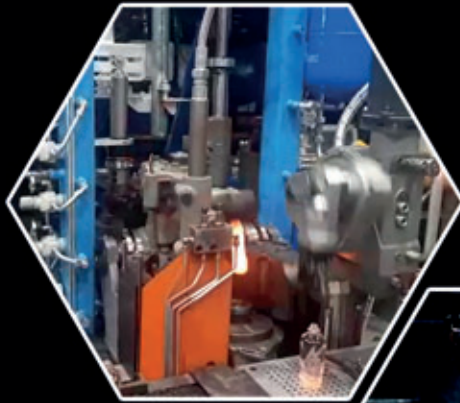
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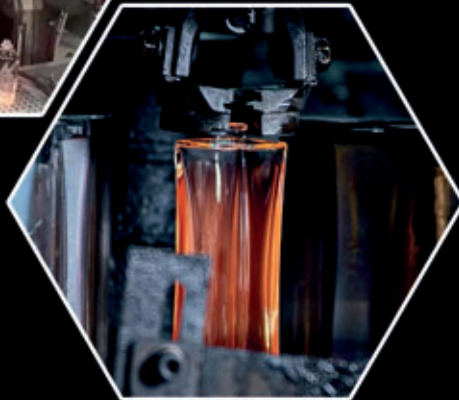
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A technology mix from HEYE that's honed for excellence

With upcoming Glasstec highlights this year including new AI-powered detection systems, NNPB lightweight technology and enhanced safety features like Blank Side Protection Grids, HEYE INTERNATIONAL will be showcasing its solutions for a smarter glass production process, as well as its SmartLink for advanced data analysis and the BlankSideRobot for efficient mould lubrication.

Excited to showcase its latest advancements at glasstec 2024 in Düsseldorf, Heye International is set to exhibit the Heye SmartLink this year, which provides glassmakers with detailed manufacturing process data for individual analysis - acting as a secure data gateway. Users can store and analyse equipment data to gain insights into key production metrics, utilising features such as JSON data exchange format and MQTT-Broker communication for a truly smart manufacturing process.

BLANKSIDEROBOT

Another highlight at the Heye stand will be the introduction of the company's Multilevel Safety and Protection Concept, featuring the Heye BlankSideRobot

and Heye Protection Grids designed to enhance safety and efficiency on the blank side of IS machines. The Heye BlankSideRobot, with its sleek and compact design, performs mould lubrication on the blank side. In addition to key features such as precise swabbing with minimal lubricant consumption and the elimination of the need to reject bottles after swabbing, significant emphasis has been placed on ensuring the safety of both the system and the operating personnel. The robot is equipped with a three-stage collision detection and prevention system to prevent potential collisions between the robot and the invert, along with intelligently designed safety features aimed at enhancing the safety of the personnel.

PROTECTION GRIDS

Complementing the BlankSideRobot are specially developed Heye Blank Side Protection Grids. The grids, positioned on each section and integrated into the machine control system, provide additional safety on the blank side. They can be synchronised with the Heye BlankSideRobot or function autonomously. When operating in standalone mode, the protection grids are controlled manually, facilitating tasks such as manual lubrication or section maintenance on the blank side. In combination with the Heye BlankSideRobot, the protection grids synchronise with the robot's lubrication cycle, ensuring optimal safety. As a next step in the evolution of a proven and successful product, Heye will

showcase the Dual Motor Shears at their stand. The key enhancement lies in the redesigned shear arms featuring an innovative gob guide. This new design offers improved rigidity, resulting in enhanced precision and extended durability for this easy-to-maintain equipment.

SMART PLANT

Heye's Smart Plant, which combines various innovative solutions and elevates glass-making technology to a new level, will be showcased at the glasstec exhibition with two products: Heye GobMaster and Heye SmartLink. Heye GobMaster is a camera-based system, which provides precise control of the gob weight in BB production processes. The software anal-



yses geometric data from 3D images generated by two cameras, allowing for accurate calculation of the gob volume and weight. Should malfunctions or deviations be detected, the system responds immediately by rejecting the article at the hot end. Simultaneously, mechanical adjustments are made automatically to correct the deviations by adjusting the tube height and plunger position at the feeder. As

equipment for the cold end, the SmartLine 2 to be presented at the show contains an improved motion control concept, reducing the costs of spare parts inventory and improving performance.

Further new developments have been made in the area of AI. As a complement to the Ranger 2 check detection system, the company is launching its additional image processing variant that includes additional AI functions.

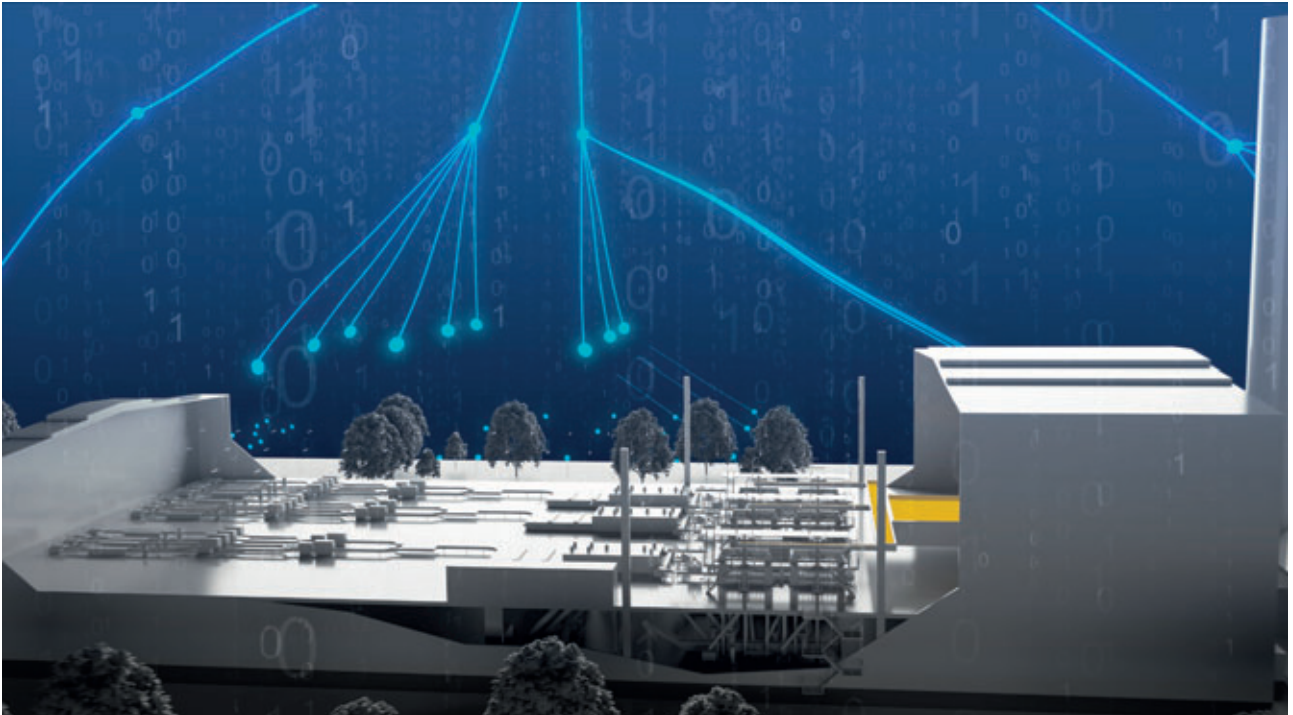
NNPB LIGHTWEIGHT TECHNOLOGY

Fundamentals of good glass-making never change – new technologies enhance them. The experts at Heye see themselves as 'glass people' with the



TRADE SHOW

Trade show

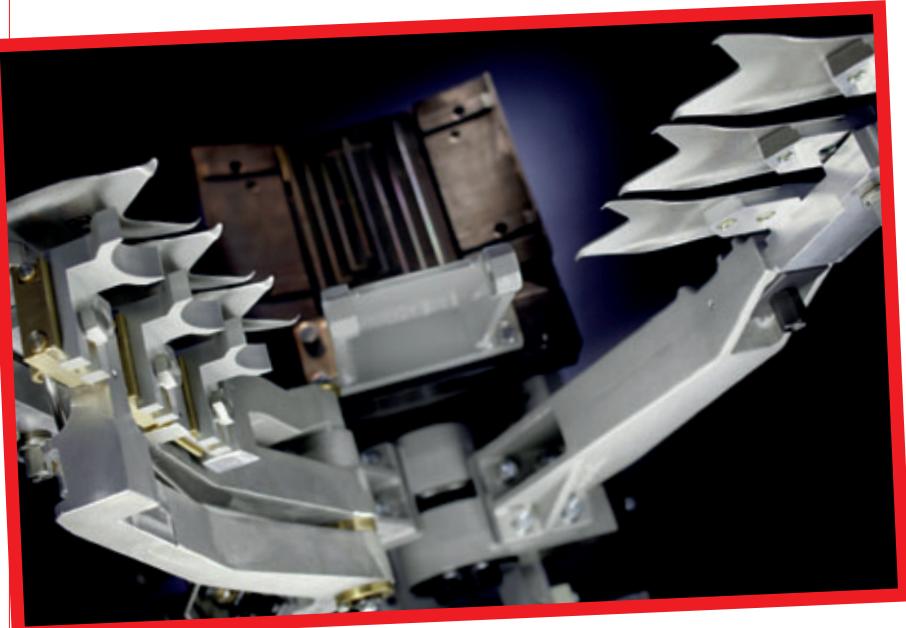


play where trade show attendees can learn how they can take their glass production to new heights. ■

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necessary expertise to produce good containers. This is always a suitable mix of innovations and fundamentals. A tried and tested operation is the NNPB lightweight technology, which is more relevant than ever today: less raw material and energy, higher quality and added value with higher output, revenue and margin. To talk to Heye's experts at glasstec 2024, the company stand at 14C18 will have product highlights on dis-

ABOUT HEYE INTERNATIONAL

Based at Obernkirchen, Germany, Heye International GmbH is one of the international glass container industry's foremost suppliers of production technology, high performance equipment and production knowhow. Its mechanical engineering has set industry standards for more than six decades. Extensive industry expertise, combined with the positive attitude and enthusiasm of Heye International employees is mirrored by the company motto 'We are Glass People'. Its three sub-brands HiPERFORM, HiSHIELD and HiTRUST form the Heye Smart Plant portfolio, addressing the glass industry's hot end, cold end and service requirements respectively.

NNPB EXPERTISE TECHNOLOGY AND ASSISTANCE

HiPERFORM

see us at
Glasstec
booth no.
14C18

LESS WEIGHT & ENERGY

- + Less raw material and energy per container
- + Higher cavity rate
- + Lower unit costs per container
- + Better quality, higher added value
- + Higher output, revenue, margin

**WE ARE
GLASS
PEOPLE**

Seamless cold end operations redefined by **MSK** technology

Leveraging EMSY software developed in-house, MSK delivers head-turning efficiency at the cold end via customized solutions that is able to process various bottle types coming by multi-gob technology at the hot end systems – all characteristics that contribute to the company's well-earned global leadership in glass production technologies after over 50 years of winning expertise.



Reiner Hannen,
President & Founder

A specialist in the entire cold end that designs customized solutions that are complete from planning, production and commissioning to after-sales service, since almost 50 years, MSK offers high efficiency, flexibility and expertise at the cold end from the lehr onwards, even for the demand of frequent job changes as a result of multi-gob technology at the hot end. Such solutions are able to navigate job changes that are fact and more frequent, dynamic line

management and flexible palletizing systems.

INVESTMENT SECURITY FOR THE FUTURE

The MSK approach is identifiable by a structured modular principle. That means customers are also equipped for future requirements thanks to standard equipment based on modular design variants. The EMSY software developed by MSK ensures automated, dynamic line guid-

ance with recognition and sorting of a wide variety of glass containers. Here uniform software provides the basis for efficient networking of all machines at the cold end and standardized interfaces to MES or ERP systems.

MSK plans, programmes and builds its systems itself, so it has full control over quality. MSK also attaches great importance to after-sales service in particular. With more than 50 of its own engineers, technicians and spe-

MSK EMSY service pad for simplified maintenance, troubleshooting and spare parts supply



EFFICIENCY THROUGH DIGITALIZATION

The entire cold end from the discharge conveyor after the lehr, with container transport to the palletizers, the pallet packaging system and the pallet conveyor technology to the warehouse, is all uniformly controlled using the company's own MSK EMSY software. MSK customers particularly value the software, which has already been supplied over 1,000 times. Interface-free, the cold end is a guarantee for sim-

cialists, MSK Service is available at five locations around the clock as required. Required spare parts are kept in stock in MSK's own spare parts warehouses and can be delivered quickly or manufactured specially for customers in its own production plants. Efficient staff training, regular maintenance, rapid troubleshooting and spare parts deliveries ensure on-site availability and performance. Remote support and digital software products from MSK are solutions that ensure optimum efficiency in customer service.

For 50 years now and with almost 7,000 systems sold, MSK has been shaping the international market as a technology leader through constant innovation and quality in the cold end sector. What makes MSK unique is its comprehensive product portfolio - from the outflow of the lehr to the warehouse, all from a single source. For over ten years, Christina Hannen and Linda Hannen have headed the 100 percent family-run company together as CEO and a strong female duo. They share a fascination for technology and pioneering innovations with company founder Reiner Hannen, who advises the management as President of the Board - still responsible for major investments within the Group.

Sustainable MSK packaging concepts for carbon reduction



High efficiency at the cold end thanks to MSK EMSY



LINE MANAGEMENT

ple operation and excellent efficiency. The software is precisely tailored to MSK machines and, thanks to easy-to-understand 3D animations and graphics, reduces training time for personnel and simplifies troubleshooting for the entire system. Once parameters have been entered, they can be automatically transferred to other machines. Moreover, important status information can be viewed at a glance.

Support at a distance and digital software products also ensure high efficiency in service. Here remote service via the MSK IXON Cloud enables errors to be localized without the need for on-site technicians. The system provides a secure connection for remote access to PLC software, EMSY operator screen and HMI screens for controlling machine panels or

in-field Ethernet components. The MSK software portfolio includes a digital MSK EMSY service pad for simplified maintenance, repair and spare parts supply. Digital assistance via camera, video and chat functions together with digital documents makes communication and support around the MSK system more efficient.

INNOVATION FOR SUSTAINABILITY

Since the beginning, customer challenges have often been the basis for MSK innovations. As one of the leading suppliers for the entire cold end, MSK sees itself as being responsible for implementing environmentally-friendly machine concepts, energy savings, minimizing emissions and digitalization in line with Industry 4.0.

In the field of packaging technology, the MSK shrink frame technology, which was established on the market back in 1981, combined with the MSK undershrink process is still the basis for millions of tons of CO₂ savings today. The reduction in film thickness from 110 µm in the past to 80 µm in most cases today was achieved while at the same time increasing the stackability of the glass container layers to a pallet height of up to 2.40 m and more. The lower film consumption and optimized truck utilization reduce the carbon footprint while halving transport costs. The use of PE tier sheets instead of cardboard trays results in 100 percent reusable or recyclable pallet packaging. The use of films with PCR content in MSK systems is also possible and well-established.

Machine features such as maintenance-free timing belt technology or the use of counterweights to reduce motor power through balancing reduce energy consumption and also increase the service life of the systems. Water-based powder coatings and the avoidance of hydraulics and lubricants protect the environment. MSK will be presenting its latest cold end solutions at Glasstec 2024 in Düsseldorf in Hall 13, Booth C30. ■



Linda and Christina Hannen, CEO



**MSK
VERPACKUNGSSYSTEME GMBH**

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savings through technology



VSM++ and Viking forehearth boost SORG's green offer

A global leader in glassmaking technologies, SORG Group is to unveil its latest breakthroughs in sustainable melting and conditioning. Indeed Glasstec 2024 will be showcasing such innovations as the VSM++ electric melter and Viking Forehearth, both of which promise to enhance both efficiency and sustainability - advancing SORG's commitment to driving cleaner, more innovative glass making processes worldwide.

SORG GROUP: PIONEERING TECHNOLOGY FOR THE FUTURE OF GLASSMAKING

A world leader in raw material preparation, melting, conditioning technology and services for the glass industry, the Sorg Group stands at the forefront of innova-

tion and sustainability. The group comprises Nikolaus Sorg, EME and SKS, each contributing specialist expertise to distinct areas of glassmaking. Together, these companies offer a seamless hot-end process, from batch and cullet handling to advanced melting technologies, furnace design, and comprehensive lifecycle services. A strong commit-



ment to developing innovative, sustainable solutions defines the Sorg Group's approach, as it explores alternative melting technologies, enhances process efficiency, and drives automation. Underpinning this collective effort is a shared belief in quality, performance, and customer support.

VENERABLE BEGINNINGS

Founded in 1872, Nikolaus Sorg has a rich heritage spanning five generations of innovation in the glass industry. Over the decades, the company has achieved some of the most significant breakthroughs in glass melting and conditioning,



securing more than 100 patents. Today, Nikolaus Sorg provides security, stability, and high performance to glassmakers in over 80 countries worldwide. EME, another

vital member of the group, is one of the world's leading suppliers of batch preparation plants, cullet handling equipment and batch charging solutions. Originally focused on materials handling and mining

equipment, EME pivoted in 1950 to bring its expertise to the glass industry, where it has since delivered some of the most advanced and complex projects for container, float and specialty glass applications. Known for an innovative approach, EME also excels in customer service, executing projects of any size with precision and care. SORG Keramik Service GmbH (SKS), the third pillar of the group, consolidates seven subdivisions to provide comprehensive furnace solutions. From construction and rebuilds to emergency repairs and ceramic welding, SKS offers a single-source service for every stage of a furnace's life cycle. With over 200 in-house experts, SKS ensures clients receive expert support, whether for furnace audits, routine maintenance, or challenging hot repairs - capabilities that are unmatched in the industry.



IMAGE WITH COURTESY OF ARDAGH GLASS PACKAGING

MELTING

A TRANSFORMATIVE ADDITION TO SUSTAINABLE GLASSMAKING

As industry leaders, the Sorg Group continually adapts its vision to meet evolving challenges. At glasstec 2024, Sorg will unveil a range of new concepts, developed to support glassmakers in their journey toward more efficient and sustainable production. Among the highlights are two innovations that promise to redefine the glassmaking landscape: the VSM++ and the Viking Forehearth. Together, these technologies represent another leap forward - enabling manufacturers to achieve greater efficiency and sustainability.

VSM++: SUPERCHARGED DEVELOPMENTS IN ELECTRIC MELTING

With over 100 all-electric melters built to date, including one with the highest-ever pull rate, Nikolaus Sorg continues to advance its VSM[®] technology for tonnages up to 800 tons per day for float glass and other applications. As the latest iteration, the VSM++ builds on the proven design of the original VSM[®] by incorporating a hollow cylinder at the centre of the furnace, featuring an inner hole. This innovative feature is paired with an adapted rotation crown and top electrodes, positioned both inside and outside the cylinder, to ensure an even distribution of raw materials across the melt. As a result, superstruc-

ture temperatures are dramatically reduced, ranging from just 150 to 300°C. This groundbreaking design is currently in the evaluation phase and is set to be introduced to the market shortly.

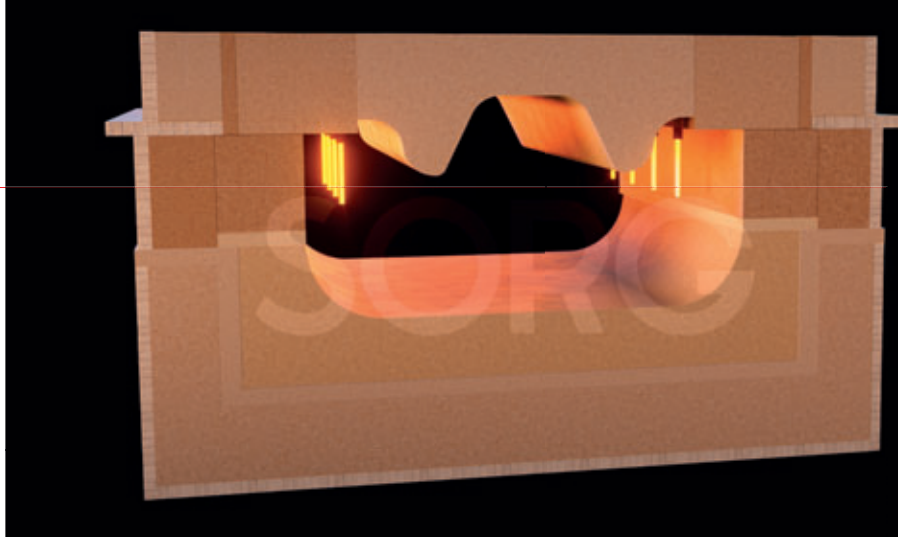
VIKING FOREHEARTH: SUSTAINABLE INNOVATION IN GLASS CONDITIONING

Continuing Sorg Group's pioneering efforts in sustainable glassmaking, the Viking Forehearth offers a significant advancement in glass conditioning technology. Conditioning is one of the major contributors to CO₂ emissions in the glass production process. While electrically-heated conditioning systems have existed for some time, they have typically been restricted to special applications due to limitations such as slow response times, contamination from electrical heating and wear or corrosion of the heating elements. The Viking Forehearth changes this paradigm with a 100 percent electrically heated conditioning system designed for all tonnages. The forehearth benefits

from electrodes integrated into its specially designed superstructure, which completely prevents local overheating. This design also protects the glass melt from potential impurities, as the electrode material is kept from falling into the glass bath - ensuring a cleaner and safer conditioning process. The Viking Forehearth's versatility and sustainability mark a significant step forward in reducing the environmental impact of glass production.

LEADING THE FUTURE OF SUSTAINABLE GLASSMAKING

Sorg Group continues to set new standards in the glass industry - driven by its commitment to sustainability and efficiency. With unrivalled expertise in electric and hybrid technology, the company is well-positioned to meet the growing demand for cleaner glass production methods. Its long history of innovation, combined with a forward-looking approach, enables Sorg to develop groundbreaking solutions that will shape the future of glassmaking for years to come. From reducing energy consumption to lowering emissions, Sorg's technologies reflect a dedication to driving positive, long-term change across the global glass industry. ■



SORG
GROUP

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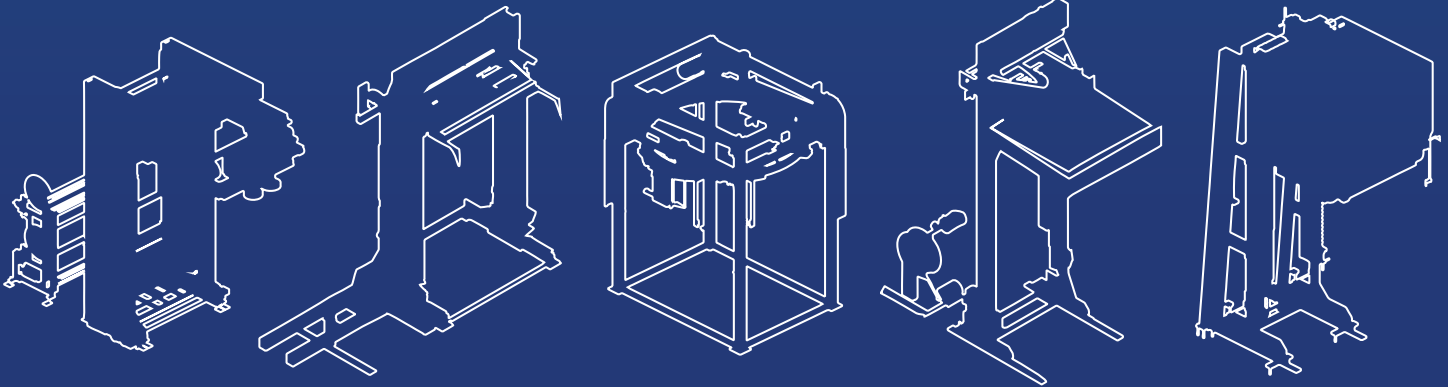
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As global leader, **OMS Group** specialises in the design and production of **end-of-line packaging solutions** and **complete packaging lines**.

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Advanced batch mixing technology heralds **TEKA MASCHINENBAU** leadership

Being at the forefront of mixing technology for over 60 years now, TEKA MASCHINENBAU GmbH has remained untiring in its dedication to delivering high-quality solutions to the glass manufacturing industry. Renowned for their exceptional quality, reliability and innovation, the company's glass batch mixers are highly-trusted by many of the world's foremost glass manufacturers.

A LEGACY OF EXCELLENCE

With more than a thousand glass batch mixers installed worldwide, TEKA has solidified its position as a key player in the industry. Whether for float glass, containers, solar panels, pharmaceuticals, or industrial glass appli-

cations, TEKA mixers are synonymous with superior performance and longevity.

A TRUE ORIGINAL

At the heart of the company's product line is the world-renowned TEKA THZ turbine-pan mixer, a 'classic' that has become a preferred choice for





demanding glass production environments. Combining simplicity, efficiency and rugged durability, the THZ mixer offers exceptional value with a reputation for delivering outstanding long-term performance. Continuous improvements over the years have refined the THZ into a highly versatile machine, engineered to meet the most stringent demands of glass manufacturers. Whether mixing materials for large-scale glass production or specialized applications, the THZ glass batch

mixer delivers reliable and consistent results.

CUSTOMIZABLE FOR ANY APPLICATION

Available in sizes ranging from 250 to 7,500 litres, the THZ glass batch mixer can be tailored to suit specific production needs. Customers can choose from a variety of wear-resistant liners, discharge gates, and protective hood configurations. Additionally, TEKA offers custom-designed material inlets and a broad range of accessory items

to further enhance the mixer's capabilities.

Key features of the glass batch mixer include:

- **Versatility:** suitability to a wide array of glass mixing applications
- **Efficiency:** delivery of outstanding homogeneity with every batch
- **Reliability:** proven durability in high-demand environments
- **Compactness:** ideal for retrofitting into existing plants
- **Low Maintenance:** intelligent design simplifies maintenance procedures

BUILT FOR CONTINUOUS BATCHING

The TEKA THZ mixer is designed to handle continuous batching operations worldwide. Its robust construction includes a protected mixing pan floor and walls, safeguarded by exchangeable wear liners available in various grades, including nickel-poor options for enhanced durability. Spring-loaded mixing arms, adjustable to compensate for wear, ensure optimal performance over time. Such adjustable angles of the mixing paddles maximize mixing efficiency, thereby achieving superior batch homogeneity whilst minimizing wear on the equipment. The drive system, powered by a heavy-duty gearbox and motor, is built to withstand shock loads - further extending the mixer's lifespan.

MAINTENANCE-FRIENDLY DESIGN

TEKA mixers are engineered with maintenance in mind. A central lubrication system for the mixing arms is available - making upkeep especially convenient for larger models. For heavy-duty applications, TEKA offers mixing paddles, wall scrapers and wear guards made from materials like cast iron, nickel-poor cast iron with tungsten-carbide surfaces and polyurethane elastomer (PU).

INDUSTRY PROTAGONISM

Industry protagonism



PRIORITIZING SAFETY AND THE ENVIRONMENT

TEKA takes pride in designing mixers that promote workplace safety and environmental sustainability. The THZ glass batch mixer boasts near-dust-free operation - all thanks to advanced sealing systems that prevent dust from escaping during mixing and discharge. A special rotor seal ensures that no dust accumulates underneath the

mixer, thus safeguarding both employees and the environment.

INNOVATION IN ACCESSORIES

TEKA glass batch mixers offer a variety of innovative accessories to improve production efficiency. For instance, steam-injection through rotating lances ensures optimal steam distribution throughout the batch, while

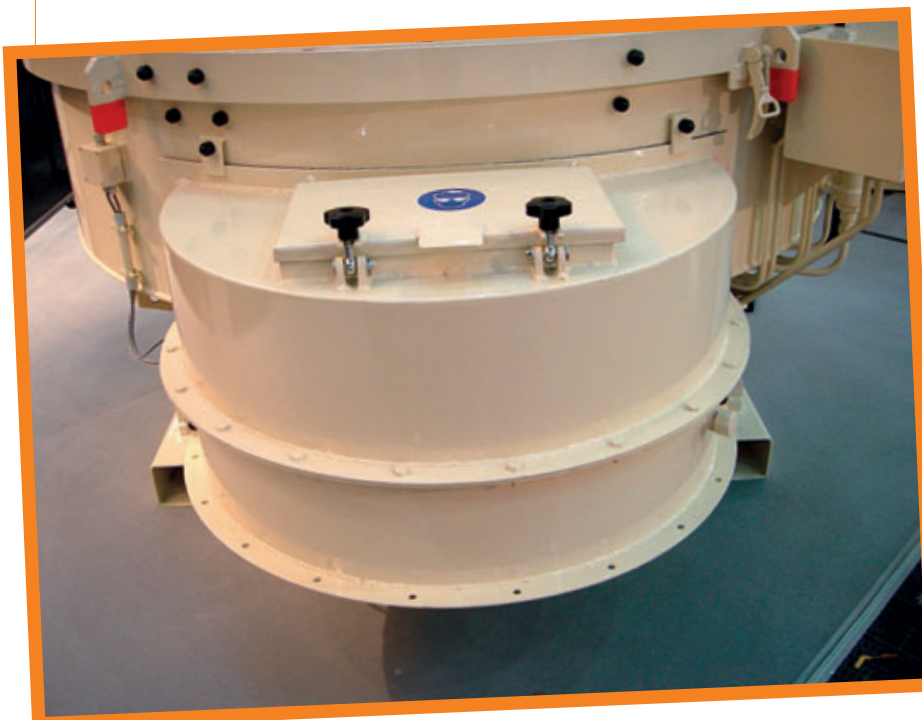
the mixer's ability to double as a weigh bin when mounted on load cells adds to its versatility.

COMPREHENSIVE AFTER-SALES SUPPORT

TEKA's commitment to its customers extends far beyond the initial sale. Its dedicated after-sales service includes a reliable and timely spare parts supply, as well as technical support from a team of highly-trained technicians. The company's field service technicians, backed by years of expertise, provide on-site training for local plant operators to ensure smooth and efficient operation of the equipment.

COMMITMENT TO CONTINUOUS IMPROVEMENT

At the core of TEKA's philosophy is its dedication to continuous technological progress. Thanks to a focus upon energy savings, work safety and long-lasting performance, the company remains a leader in the evolution of glass batch mixing technology. With decades of industry expertise, a reputation for uncompromising quality and a commitment to innovation, it is setting new standards in the world of glass manufacturing. Whether it's producing glass for construction, for pharmaceuticals or for solar panels, TEKA's glass batch mixers offer an optimum combination of work safety, reliability, performance and value. ■



TeKa

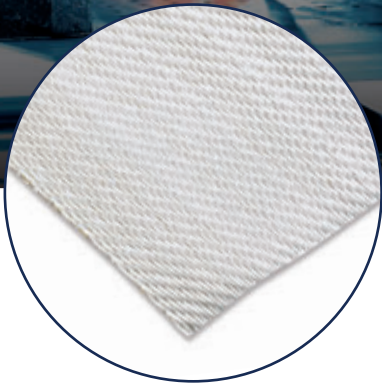
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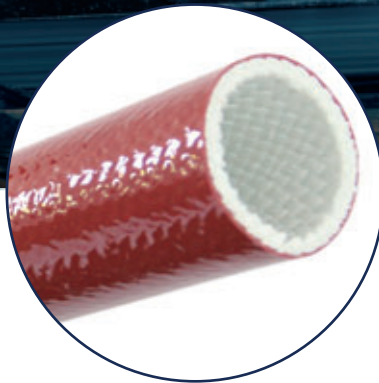
Textiles for the glass industry

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



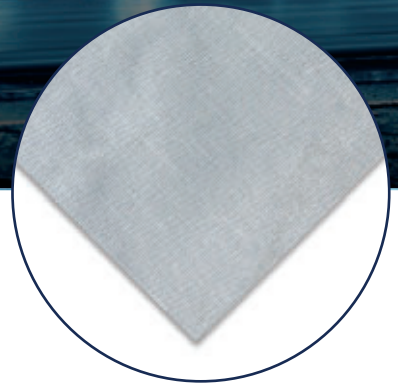
Cod. 1040VS SILICA CLOTH

Silica cloth is made with silica yarns. The silica yarns are made of continuous glass fibres with a diameter of 6 µm and over, and with an additional treatment to increase the overall proportion of SiO₂ to over 94%. The product is used as a reinforcement for composite materials, and as an acoustic, thermal, hydraulic and electrical cable protection insulator. Under normal conditions it has good chemical stability.



Cod. 3267R PYROTEX® SLEEVES

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



Cod. 3240VT020 GLASS CLOTH

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



Automation strengths by VETROMECCANICA highlighted at Glasstec 2024

A rising player in the glass industry, VETROMECCANICA will be showcasing its advanced handling solutions for glass containers in Dusseldorf this year. With a focus on both efficiency and automation, the company has expanded its global footprint and product offerings – becoming a key provider in over 70 countries.

The world's key players will once again meet at the most important trade fair for the glass industry—Glasstec Düsseldorf 2024. This marks Vetromeccanica's second appearance at Glasstec, a rising company in the glass sector that has experienced consistent growth in recent years. Vetromeccanica aims to establish itself as a global reference point in the glass industry. Since its founding in 1992, the company has been offering handling solutions for containers made from GLASS, PET, HDPE and aluminium. From its inception, as its name suggests (vetro means 'glass' in Italian), Vetromeccanica focused on the construction of mechani-





ing thousands of turnkey installations. This concept is at the heart of the advertising campaign (which flanks this article) created to promote Vetromeccanica's participation in the Düsseldorf event. The ad visualises the company's role in the cold-end sector using a chessboard metaphor. The tagline promises 'checkmate in just five moves' - a reference to the five stages of the production chain that Vetromeccanica manages entirely: engineering, manufacturing, assembly, installation and start-up, as well as after-sales service. "We are looking forward to finally meeting our current and future customers in October at Glasstec Düsseldorf," says Luca Bucci, Area sales manager. "It will be a great opportunity for us to present Vetromeccanica's latest innovations to the glass industry. We also warmly invite everyone to visit our headquarters near Parma, Italy, to witness firsthand the 'work in progress' of our glass installations."

INNOVATIONS AND SOLUTIONS

At Glasstec 2024, Vetromeccanica will showcase installations completed in recent years, including new cold-end solutions for green-field furnaces, simplified cold-

cal parts and conveying systems for the glass industry. Over the years, the company has diversified its product offerings, attracting numerous prominent customers from the food and beverage and plastic conversion industries. In 2019, Vetromeccanica expanded by building a 6,000-square-metre production facility near its headquarters, entirely dedicated to the hollow glass industry. In 2023, the company further grew its operations by acquiring an additional production facility in Gattatico (Reggio Emilia), devoted to assem-



CONTAINER HANDLING



end lines and refurbished palletizers. The company’s offerings also include telescopic shuttle cars and ‘Alpine’ mass-flow conveyors, which seamlessly connect new furnaces to existing ones. Vetromeccanica provides a comprehensive service package that covers feasibility studies, design, manufacturing and installation of

cold-end lines and associated equipment, such as palletizers and shuttle cars. Moreover, it has delivered numerous cold-end lines and palletizers for replacing outdated equipment alongside projects for electrical revamping and mechanical maintenance of ageing systems. Key upgrades include the supply of new electrical panels,

updated software and certifications that ensure machine conformity. Also, Vetromeccanica has replaced layer formation tables and corresponding separators - further enhancing efficiency.

VETROMECCANICA AT GLASSTEC 2024

This year Vetromeccanica’s portfolio has been bolstered by two major projects in the APAC glass market, featuring both cold-end lines and end-of-line palletizers. APAC Area Manager Filippo Mattioli shares his excitement: “We are very proud of these positive results. We are working diligently to continue expanding Vetromeccanica’s presence globally.” Given this momentum, it’s no surprise that the Vetromeccanica sales team is eagerly anticipating the chance to engage with visitors at their stand during Glasstec. Their enthusiasm reflects the company’s commitment to maintaining its upward trajectory in the global glass market. Vetromeccanica’s journey from a small company specialising in glass handling solutions to a major international player is a testament to its dedication to innovation, quality, and customer satisfaction. As it prepares to showcase its latest advancements at Glasstec Düsseldorf 2024, Vetromeccanica is poised to reinforce its reputation as a key player in the global glass industry. ■

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A new glass industry: **STARA GLASS'S** systemic approach

The global glass industry faces growing pressure to significantly reduce CO2 emissions in line with international decarbonization targets. Stara Glass, a consistent leader in driving innovation within this energy-intensive sector, has developed a visionary roadmap to meet these critical challenges.

By embracing a multifactorial, systemic approach to decarbonization, Stara Glass is charting a sustainable path forward for glass production.

A SHARED VISION FOR DECARBONIZATION

A leader in the design and development of melting fur-

naces, Stara Glass stands at the forefront of innovation aimed at reducing emissions throughout the glass production process. The company holds a key role within the Hydra Group - providing cutting-edge solutions for furnace design and construction, as well as a range of associated



In a systematic approach to setting new sustainability standards for glass production, STARA GLASS is pioneering a multifactorial decarbonization strategy by focusing on energy savings, hydrogen, carbon capture and electrification. Leveraging innovation, partnerships and circular economy solutions, the company seeks to lead the charge toward a carbon-neutral future for the industry.

services. These include advanced combustion system design and innovative approaches to the recovery of refractory materials. Sustained by decades of experience, Stara Glass offers turnkey services that not only ensure high productivity but also lead to significant reductions in NOx emissions and CO₂ output.

A FOUR-PILLARED STRATEGY

The heart of Stara Glass's decarbonization efforts are four key development areas that support a sustainable future for the glass industry. These are:

1. ENERGY SAVING

Through the Life Sugar Project (Sustainable Glass: Architecture of a Furnace Heat Recovery System), Stara Glass has achieved groundbreaking advancements in heat recovery. By employing steam reforming to convert waste heat into hydrogen, the project achieves energy savings of up to 15 percent compared to traditional technologies. A pilot installation is scheduled at the Vetriere Meridionali plant by 2025, with full commercialization expected by 2026. In addition, Stara Glass is exploring further heat recovery solutions, such as scrap preheating and gas





preheating, which is aimed at maximizing efficiency while reducing both carbon emissions and fuel consumption.

2. HYDROGEN

Hydrogen represents a promising alternative to fossil fuels in glass melting processes. Stara Glass plays a pivotal role in the Horizon H2-GLASS project, where hydrogen combustion is tested in various operational furnaces, with a special focus upon developing burners suited for both regenerative and fossil fuel-based technologies. The project addresses key challenges, including refractory compatibility, combustion geometry and essential safety features - making it a critical step toward large-scale adoption of hydrogen in glass production.

3. CARBON CAPTURE

Stara Glass is also pioneering efforts in carbon capture as part of the Horizon COREu project, which began in January 2024. This initiative is focused on developing carbon capture technologies tailored to the European glass industry - providing technical guidance and solutions for its seamless adoption across operations. Stara Glass is committed to ensuring that glass manufacturers can integrate these systems without compromising efficiency.

4. ELECTRIFICATION

Electrification is a cornerstone of Stara Glass's decarbonisation strategy. By increasing the electrical energy input in glass furnaces, immediate benefits are

achieved in terms of both efficiency and sustainability. Stara Glass's approach includes the possibility of intervention with existing furnaces, enhancing the proportion of electric energy used in the melting process. This 'electric booster' helps reduce the consumption of fossil fuels such as gas and oil, contributing to the decarbonisation process - particularly when the electricity used is sourced from renewable or 'green' energy. However, it is important to highlight that this solution is implemented only when technically feasible - as not all systems can accommodate these changes.

In addition to retrofitting existing furnaces, Stara Glass is advancing hybrid furnace technologies that

rely on over 50 percent electricity for the melting process. The company is also exploring fully electric solutions, customizing systems based on local energy availability and market conditions

PARTNERSHIPS DRIVING INNOVATION

Stara Glass firmly believes that collaboration accelerates progress toward decarbonization. As a result, the company actively engages in various innovation networks, such as the Glass Futures project in St Helens (UK). These partnerships help foster collective efforts towards carbon neutrality and drive industry-wide advancements.

TRADITIONAL FURNACES AND WASTE RECOVERY

Beyond its pioneering work in decarbonisation, Stara Glass is committed to supporting its customers through daily assistance with furnace maintenance, consumption optimisation, and continuous product quality improvement. For instance, the company's structural hot maintenance services reduce air infiltrations,

improve combustion efficiency, and lower fuel consumption, all of which contribute to a more sustainable operation. In addition, Stara Glass is advancing the circular economy by developing cutting-edge solutions for recovering waste materials. From recovering refractory materials to reusing waste heat and resources, the company aims to close the loop on the glass production process - essentially reducing waste and promoting resource efficiency. Stara Glass's approach ensures that every aspect of production aligns with a sustainable future - positioning the company as a key driver of innovation within the sector.

CONCLUSION

The glass industry is at a pivotal moment in addressing its environmental impact, and Stara Glass offers a systematic and comprehensive approach to decarbonization. Focusing on energy savings, hydrogen combustion, carbon capture and electrification, Stara Glass is setting new standards for sustainable glass production.

Through ongoing innovation and strategic partnerships, the company continues to pursue leadership in reducing the carbon footprint of the glass sector. As the industry strives for a sustainable future, Stara Glass remains a steadfast partner, helping to turn decarbonization goals into reality while championing a circular economy where waste is minimized and resources are maximized. ■



STARA GLASS

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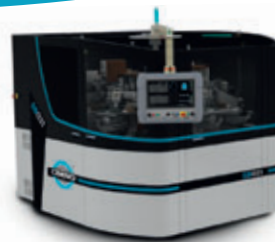
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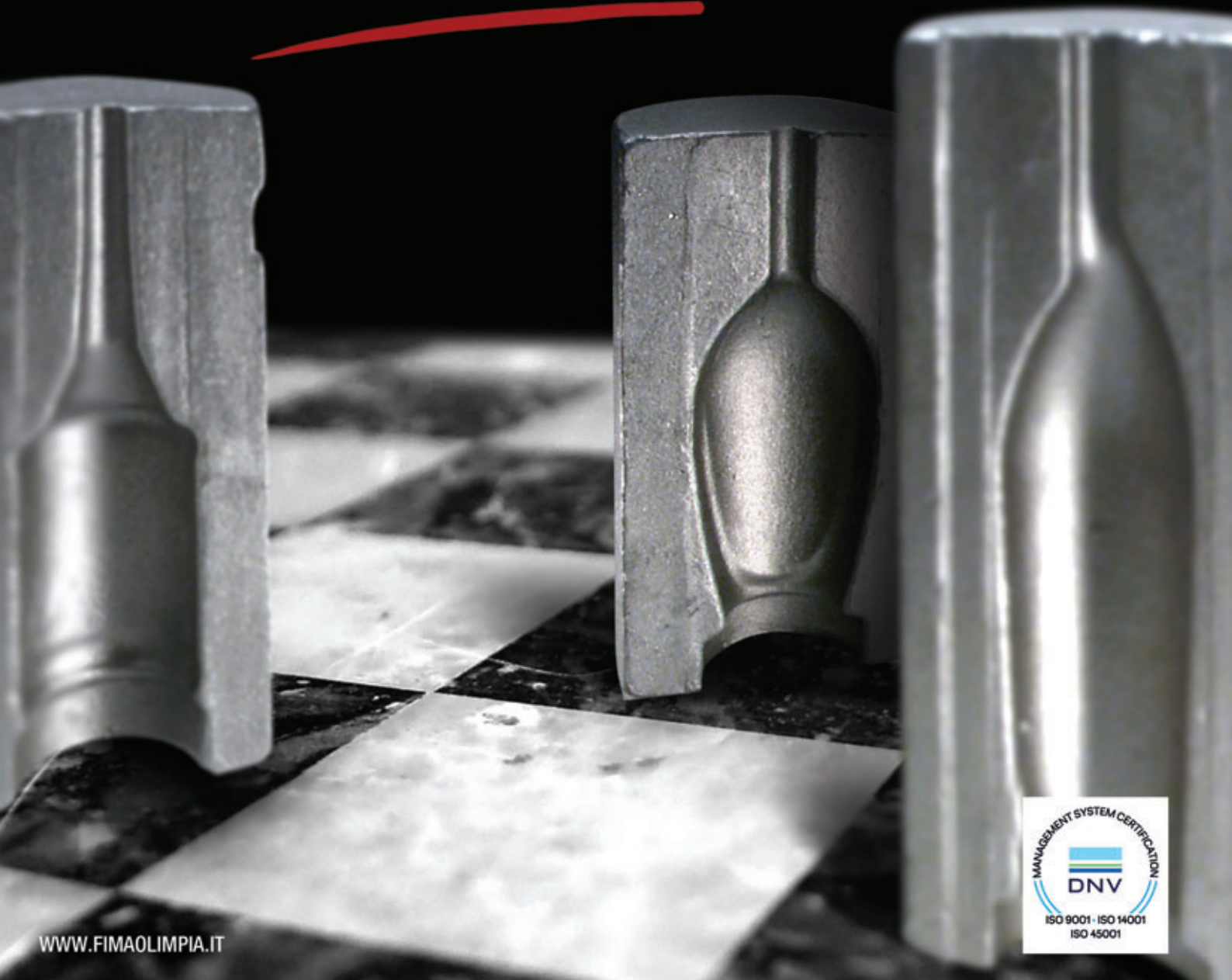


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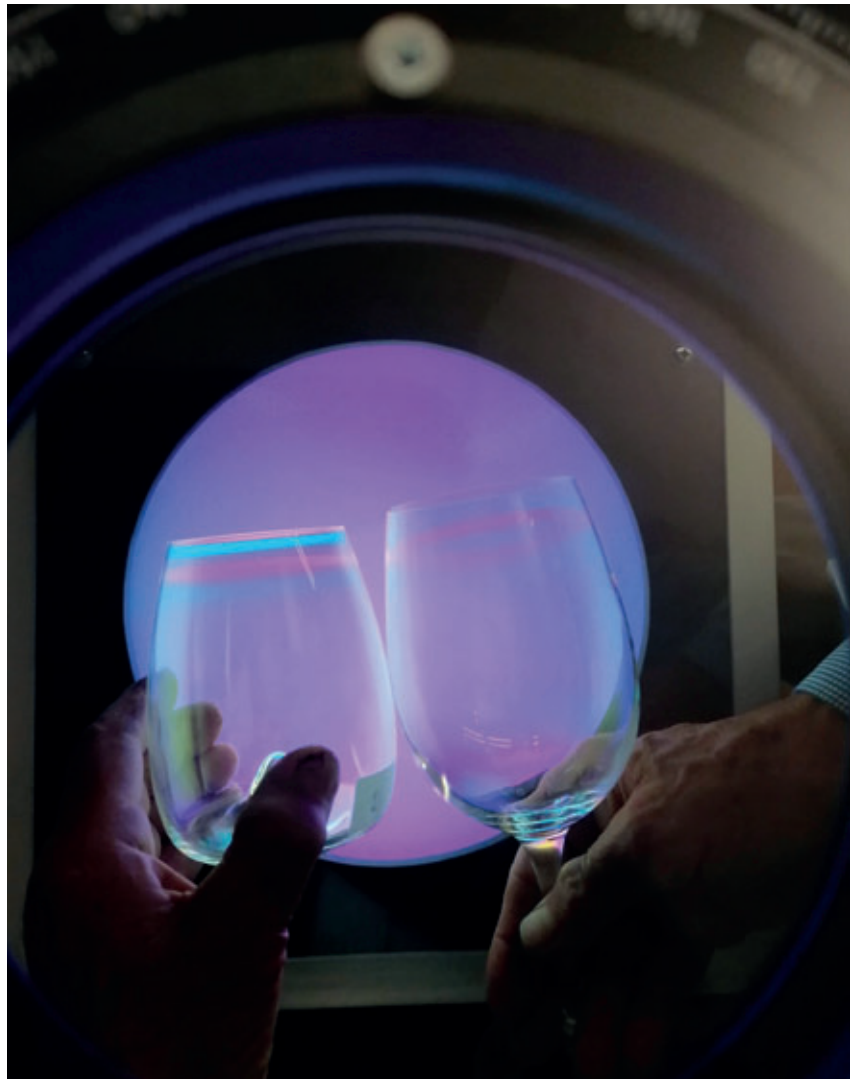
High-level delivery drives **GLASS CONSULTING GROUP**'s continuing achievement

A TRUSTED NAME SINCE 1984

Founded in 1984 by a team of seasoned glass technicians, Glass Consulting Group (GCG) has established itself as a leader in the glass industry. With a rich expertise that spans from container glass to tableware to perfumery glass and specialty glass, the company has consistently evolved by leveraging advancements in technology and innovative methods. This commitment to continuous research and adaptation is a cornerstone of GCG's success. The company also provides specialized technical assistance through a network of trusted companies it represents, offering a wide range of tailored solutions to meet the diverse needs of glass manufacturers worldwide.

GLASS FRIT SPECIALISTS

For over 30 years, GCG has been at the forefront of delivering high-quality products to the glass industry. Known for its fast delivery and exceptional service, the company prides itself in its ability to meet the unique demands of its clients - whether through a broad selection of products or through specialized



A leading provider of developed solutions for the glass industry for a full four decades now, GLASS CONSULTING GROUP specializes in glass frits, dosing systems and technical services. Offering its tailored expertise, the company consistently exhibits a strong focus upon both innovation and quality as it continues to meet the diverse needs of the industry globally.

technical expertise. Here the characteristic success of GCG lies in its people. Only certified chemical engineers with the highest qualifications join its ranks. The company meticulously assembles the most appropriate team for each project, ensuring personalized guidance and fostering long-term relationships that deliver maximum benefits to clients.

GLASS COLOURING FRITS

Glass Consulting Group offers an advanced line of glass frits for forehearth colouring. These high-performance frits are tailored to match the glass composition and processing parameters of each customer, enabling the production of coloured bottles, perfume bottles, tableware, glass building blocks - and more.

DOSING SYSTEMS FOR COLOURING FRITS

GCG's dosing systems are designed for precise handling of colouring glass frits, accommodating high, medium and low flow rates. Its machines include a storage hopper, feed device and a scale that controls product discharge by measuring weight loss. When paired with an appropriate electronic con-



SUCCESS STORY



trol unit, these systems can operate in loss-in-weight batching mode or continuous mode, offering seamless integration into production lines without the need for interruptions. The systems are highly customizable, with a range of motor drives and options to suit any process, making them indispensable for manufactur-

ers seeking precision and efficiency in their operations.

COMPREHENSIVE TECHNICAL SERVICES

GCG provides a suite of technical services to support glass manufacturers in optimizing their operations:

- Glass colour matching

- Production process reviews and troubleshooting
- Formulation assistance and analysis
- Training programmes
- Service Lab for qualitative and quantitative analysis with spectrophotometer WDXRF (Wavelength Dispersive X-Ray Fluorescence) and atomic emission spectrophotometer ICP; Color analysis with UV-Vis spectrophotometer; Polariscope for measuring glass tensions; Granulometric analysis of raw materials; Glass defect analysis with microscope.
- Combustion equipment for forehearths

COMMITMENT TO QUALITY

Quality is the backbone of GCG's operations. The company's internal control processes are certified in compliance with UNI EN ISO 9001:2015, a testament to its commitment to excellence. This rigorous quality management system, certified by SGS, ensures that every aspect of GCG's operations -from manufacturing to service delivery- meets the highest standards of precision and reliability. Here highly-qualified personnel oversee all quality assurance and production processes - ensuring that GCG continues to deliver on its promise of quality and innovation in the glass industry. ■



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VIDEOSYSTEMS
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Carousel inspection transformed by VIDEO SYSTEMS's AI-driven Oculus

Redefining performance standards in check detection, VIDEO SYSTEMS's Imago® Oculus 5th Gen is now revolutionizing carousel inspection thanks to its AI-driven capabilities. This cutting-edge system offers such advanced features as enhanced video speed, ergonomic design and AI-powered image analysis. Indeed Oculus's new rack design, edge computing and seamless integration all make it an essential tool for modern quality control processes.



AI AT THE EDGE OF CAROUSEL INSPECTION SYSTEMS

The latest iteration of the Oculus system, now in its fifth generation, has dramatically redefined the performance capabilities of carousel inspection systems. Any previous benchmarks or comparisons are now obsolete, as the introduction of artificial intelligence (AI) has significantly elevated what the system can achieve. Over the past 18 years, Oculus has established itself as a pioneer in the detection of checks on carousel machines. Today, with the introduction of the fifth-generation model, a new standard has been set

ARTIFICIAL INTELLIGENCE



for the industry. For Video Systems, this is not an endpoint but a new starting line - poised for future innovations that will further meet the ever-growing demands of the market. The enhanced functionality and power of Oculus now make it an excellent tool in modern quality control processes. Historically, detecting checks on carousel machines was a laborious and complex task, often involving outdated methods that contributed to significant production downtimes. Drawing upon over

three decades of expertise in non-contact vision technology, Video Systems introduced the Imago® Oculus solution in 2007. Since then, the system has evolved through five generations, serving as a testament to the company's commitment to innovation. With a standard configuration of eight cameras and endless upgrade possibilities, Oculus provides comprehensive check detection for every component of the container. Collaborative partnerships with end-users and machine build-

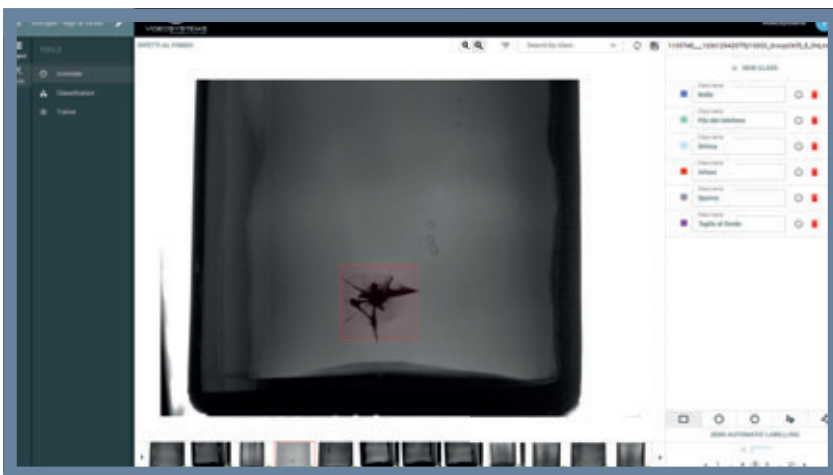
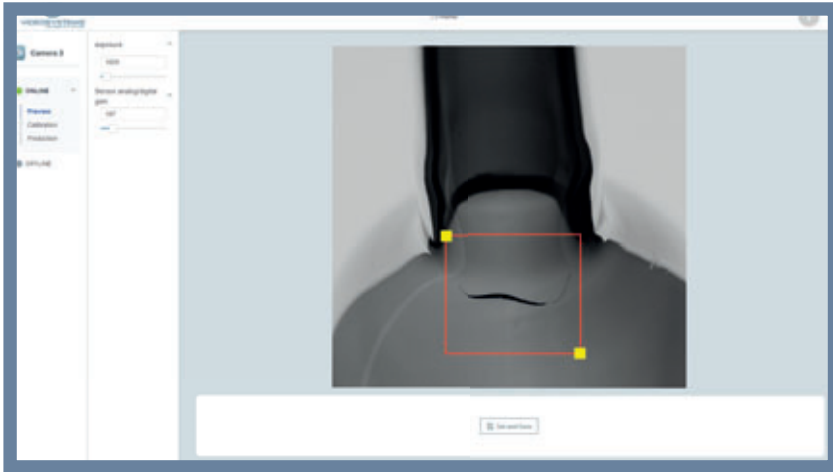
ers have played a key role in refining the system, ensuring seamless integration with carousel machines of any make or vintage. Today, the system undergoes stringent testing across all carousel machine generations, allowing customers to elevate their quality inspection processes with ease.

THE 5TH GEN: NEW CAPABILITIES UNVEILED

The fifth generation of Oculus has been completely re-engineered, introducing a host of notable improvements. These include:

- A 25 percent reduction in camera size, making the system more ergonomically friendly for use on inspection machines.
- A 50 percent increase in video speed, with the adoption of automotive-grade standards for video signal transmission.
- Enhanced camera data monitoring for hardware functionality, ensuring real-time detection of any camera malfunctions.
- The use of video cables exceeding 20 metres in length.
- A new smart lighting module.

The system's computing power



significantly improving defect detection while reducing false rejects. Video Systems has harnessed 20 years of AI experience, beginning in 2001, to power the system with GPUs that enable edge-based AI processing. The same models developed for more complex systems, such as Omnia (for sidewall analysis) and Linea (for contactless crack shoulder detection), have been integrated into Oculus. The system operates with both reflection-based imaging and backlit image acquisition, using diffused intelligent lighting modules. It is further supported by the Ingenium® VSAi platform, which handles image annotation, training and AI model optimization. Ingenium® VSAi can be offered as a SaaS cloud service or deployed on-site at customer facilities - offering flexibility and scalability.

This integration of AI brings the latest advancements in inspection technology to Oculus - significantly boosting its performance in quality control.

A REDESIGNED USER EXPERIENCE

The user interface of the Oculus system has been redesigned to integrate the latest functionalities and improve user experience - based largely upon customer feedback. The new interface features a summary page where all eight cameras can be viewed simultaneously - along with real-time production statistics. Users can select individual cameras to adjust parameters both online and offline, allowing for the fine-tuning of analysis settings by reprocessing saved images. Once ideal parameters are identified, they can be applied for real-time analysis. Users also have the ability to review the most recently inspected bottles and defects. Moreover, the interface for defining inspection zones has been significantly improved, providing greater control. The system's AI-powered image analysis connects seamlessly with the Ingenium® VSAi platform, allowing users to

has been significantly upgraded, enabling advanced functionalities such as the ability to save images of inspected containers. Users can review results and reprocess saved images offline, offering a level of flexibility that is crucial for continuous quality improvement. Most notably, Oculus is now equipped with AI engines, similar to those used in Video Systems's other high-performance systems like Omnia, Extrema and Linea, which have been in development over the past 20 years. With this update, the entire Imago portfolio is now powered by one or more AI systems, making Oculus a cutting-edge solution in the realm of optical quality control and inspection.

DESIGN ROOTED IN CUSTOMER FEEDBACK

The Oculus rack has been redesigned to meet the needs of the mar-

ket, particularly those of end-users and carousel machine manufacturers. The new rack is as compact as possible whilst remaining expandable - allowing for multiple racks to be stacked upon the same machine. The insertion and extraction process for the Ingenium® processing units has been simplified, improving overall ease of use. In addition, the unit now integrates control for the lighting system, thereby enhancing system functionality. The cameras have also been reduced in size and their design optimized for user-friendliness. All components feature a sliding system, making it easy to insert and remove parts, simplifying replacements in the event of malfunctions.

SMARTER THAN EVER

With the integration of AI, the Oculus system has become smarter, making machine setup simpler and

ARTIFICIAL INTELLIGENCE

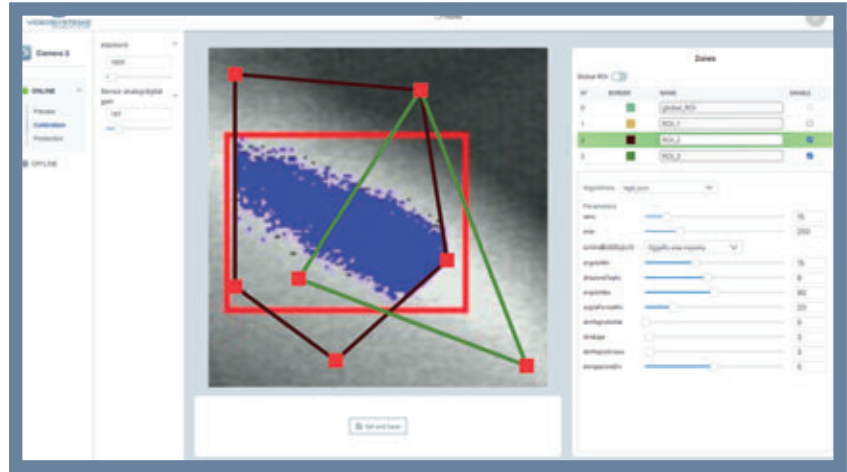
train, compare and optimize AI models for peak performance.

A SOLUTION WITH UNIVERSAL APPEAL

Oculus is designed with robust connectivity and interoperability - making it an ideal fit for a wide range of industrial environments. Equipped with a digital I/O interface and various adapters, the system can be connected directly to any carousel machine on the market, whether it's a brand-new model or a much older, legacy version. This ensures the Oculus system is suitable for both new installations and retrofitting existing equipment, - offering cost-effective upgrades to state-of-the-art visual inspection technology. The system also supports plant connectivity via a gigabit Ethernet interface, compatible with standard communication protocols such as TCP/IP, UDP and IIoT standards like MQTT and AMQP. For automation integration, Oculus supports MODBUS/IP and OPC-UA protocols. Additional features include an HDMI output for video display, two USB ports for keyboard and mouse connectivity and an optional WiFi interface. These capabilities make the fifth-generation Oculus system a comprehensive solution for optical quality control on carousel machines.

A RESILIENT, MULTI-BRAIN DISTRIBUTED SYSTEM

Oculus is an edge-computing system, where each camera is equipped with its own processing unit. This decentralized design is a strategic choice by Video Systems to ensure greater resilience and superior performance compared to centralized systems. In traditional centralized setups, the failure of the main PC could bring the entire system to a halt. With Oculus, if an individual processing unit fails, only the camera linked to that unit is affected, while the rest of the system continues to



operate. Additionally, replacing a faulty processing unit is quick and straightforward. The system has been engineered to handle both current and future camera functionalities, allowing the system to scale automatically without the need to replace a central PC, as is often required with centralized systems. This architecture makes Oculus a more robust, efficient and future-proof solution.

MORE THAN JUST A CRACK INSPECTOR

The fifth-generation Oculus goes far beyond simple crack detection. It represents a significant leap forward in industrial vision technology. Powered by advanced AI engines, the system can classify and identify a wide range of defects, extending well beyond surface imperfections. With specialized software packages, the

system can perform tasks such as dot code decoding, alphanumeric mold number reading, and custom inspection functions, all integrated into the new GPU processing system. In essence, the fifth-generation Oculus is a fully-fledged edge vision system designed to meet the most demanding requirements, offering unparalleled accuracy and flexibility in defect detection and classification. ■



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Sustainable machine regeneration and overhaul at LUBEN GLASS

Still leading the way in environmental responsibility with its offer of specialized regeneration and overhaul services for glass industry equipment, LUBEN GLASS parts remanufacturing reduces waste and costs. Reconditioned with eco-friendly production practices, the company's components offer up to 40 percent savings to meet original equipment specifications - all while maintaining high performance.

At the forefront of the glass industry, Luben offers a specialized service in the regeneration and overhaul of equipment, machines, and mechanisms, which is driven by an in-house mechanical workshop. This capability enables the remanufacturing and refurbishment of worn or damaged parts - a critical process that ensures that systems maintain long-term efficiency while simultaneously reducing costs and minimizing the environmental impact associated with component replacement.

QUALITY IN RECONDITIONED PARTS

The workshop's operations align with principles of sustainability, actively promoting the remanufacture of any article from mould gauge (which checks whether the centre and measurement are correct), to such spare parts as mould holders and neckrings, to machines (mechanical and electrical parts). Not only does this help to reduce waste. It also fosters a more responsible approach



Before



After

to environmental preservation within the glass industry. Both from a technical and economic standpoint, the benefits of using reconditioned parts are numerous. With consumers and companies increasingly opting for refurbished components, the advantages are rendered clear.

Here studies suggest that reconditioned parts offer a comparable quality to new ones - all while providing cost savings of up to 40 percent on average. Beyond the financial benefits, remanufactured components further contribute towards greater environmental sustainability, which

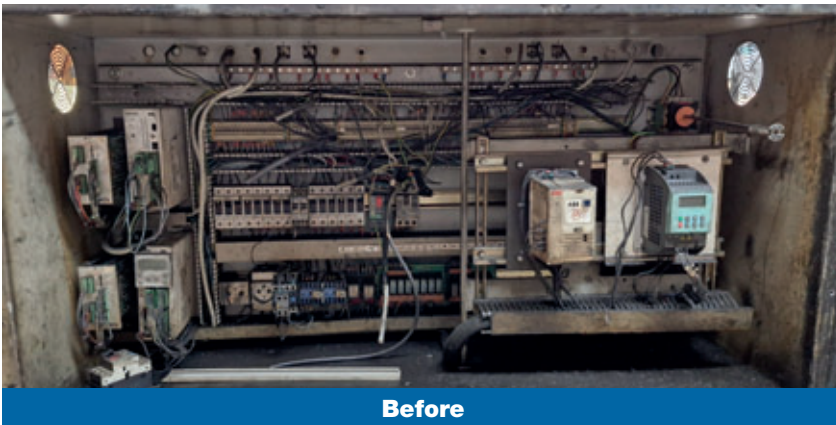
becomes ever more essential as industries shift towards greener production practices.

UNCOMPROMISED PERFORMANCE

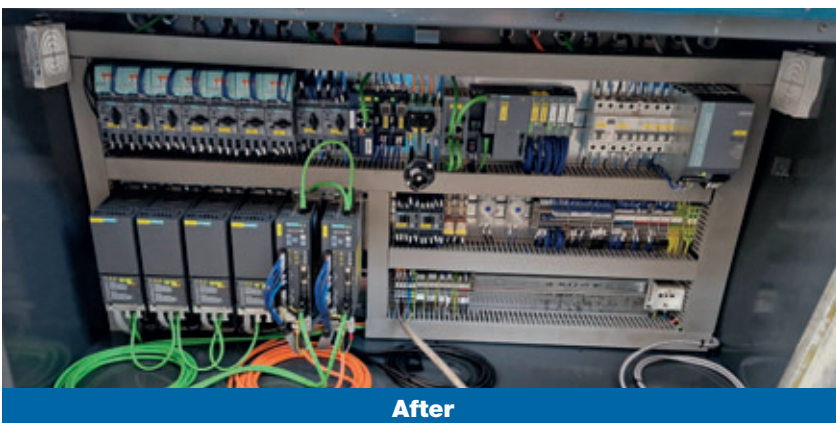
These reconditioned parts are also built to meet the stringent standards of 'original equipment specifications' - ensuring both reliability and performance. Luben's reconditioning process involves a thorough and precise approach which is handled within specialized production units. Each part undergoes a detailed series of steps to guarantee the highest quality outcome. This process includes:

- Disassembly and cleaning of all parts
- Comprehensive cleaning of every component
- Inspection and reconditioning of recoverable electronic parts
- Replacement of non-recoverable parts with newly manufactured equivalents
- Reassembly of the product
- Final inspection of all overhauled parts

With sustainability and efficiency at its core, Luben continues to play a pivotal role in reducing the environmental footprint of the glass industry - all while delivering cost-effective, high-performance solutions through the regeneration and overhaul of essential machinery and equipment. ■



Before



After



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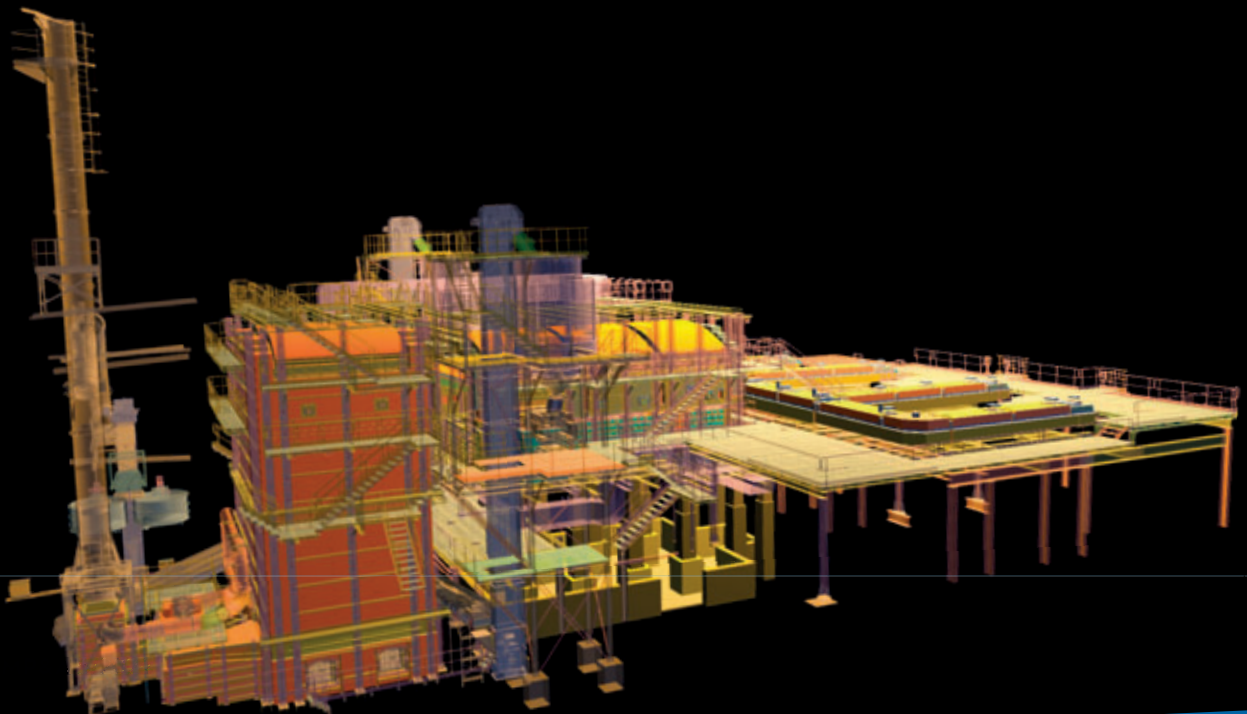
Container machine feeder channels supported by **TECSIGGLASS** digital twin

Ongoing innovation within the glass industry continues to set new standards for efficiency and sustainability. Today a joint initiative between TECSIGGLASS, the University of Genoa, SIRELAB and STG now marks a significant step forward in optimizing glass container production processes. TECSIGGLASS has set the ambitious goal of developing a digital twin (DT) dedicated to the feeder channels of

glass container machines. The project, based upon available expertise and industry-specific modeling experiences already developed, aims to revolutionize the industrial approach through the implementation of advanced simulation and monitoring technologies. The project is currently underway with the support of glass manufacturers who have agreed to share some operating parameters.

PRODUCTION OPTIMISATION

The proposed digital twin is designed to simulate real-time operating conditions, thereby allowing for the prediction of changes, optimizing thermal management to reduce waste and energy costs and quickly adapting to production changes. The channels are currently managed primarily through operational experience. The



In a winning collaboration with the University of Genoa, SIRELAB and STG, TECSIGLASS is currently developing a groundbreaking digital twin for glass container machine feeder channels. This innovative technology aims to optimize production by using advanced simulations, AI and data integration, thereby enhancing efficiency, sustainability and training within the glass industry.

project implements advanced CFD (Computational Fluid Dynamics) simulations at various levels of complexity, as well as data mining and machine learning techniques to predict and optimize operating conditions. Field-monitored data, appropriately processed, gets integrated with information from AI algorithms and numerical models.

In this way, the DT ensures the following benefits, all typical of an advanced digitalisation process:

- Knowledge Standardization
Digitalization allows for detailed documentation of every phase of the production process, making critical information and best practices accessible to all employees.
- Ease of Access
Information can be easily consulted through centralized platforms, ensuring that all employees have access to data, procedures, and technical manuals when needed.
- Continuous Training
The Digital Twin can be used to develop or integrate training programs that allow employees

to learn new skills and operational methodologies.

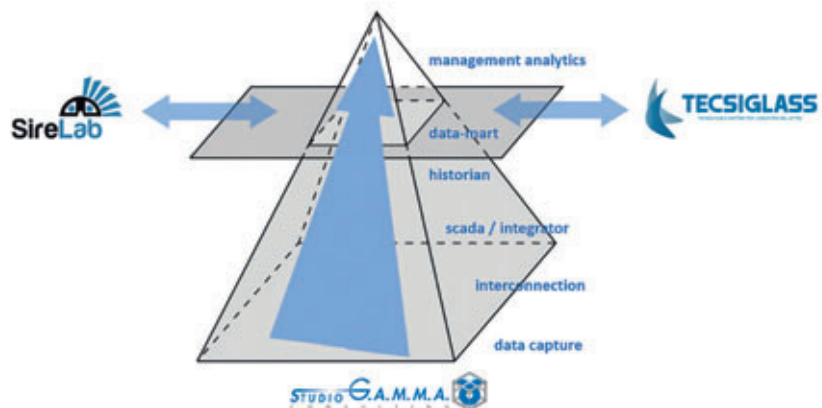
- Simulative Training
Through digital simulations and virtual reality, employees can practice and improve their skills without risk to actual production.
- Knowledge Sharing
Digitalization facilitates knowledge sharing among employees, reducing the risk of key skills being concentrated in a few individuals.
- Information Backup
Digitalised information is easier to store and retrieve, preventing knowledge loss in the event of staff turnover.

- Reduced Dependence on Specific Skills

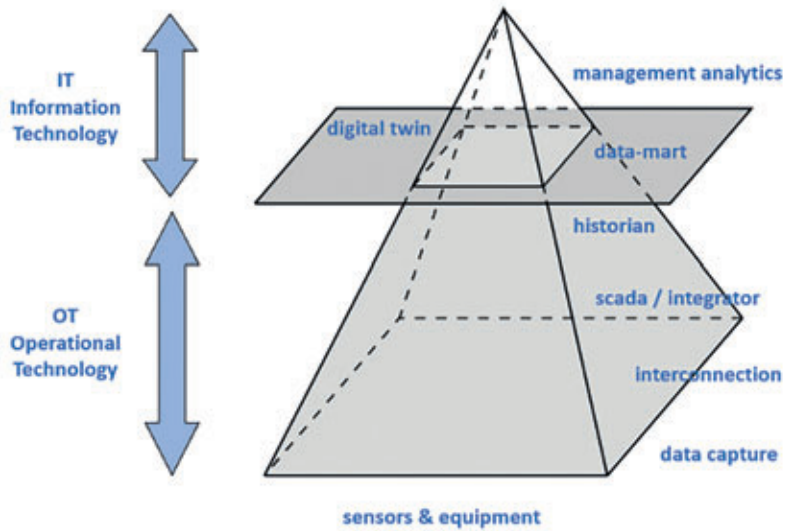
The company reduces its reliance on manual and specific skills of individual employees, making the process more robust and less vulnerable.

INVESTING IN EXCELLENCE

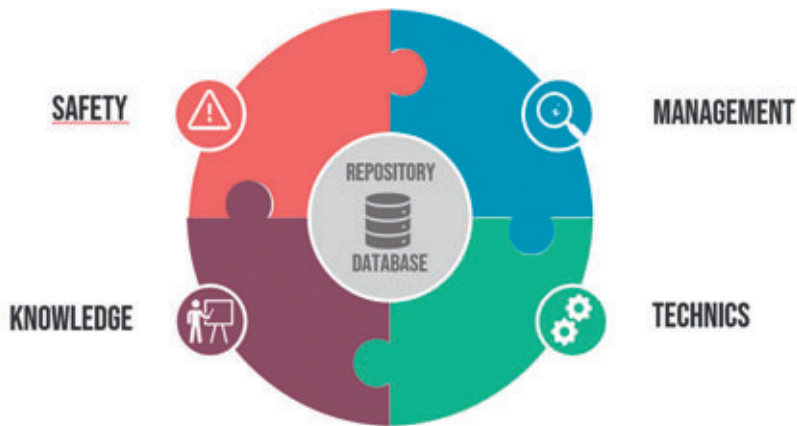
The digital twin, as an application, is implemented in a client-server logic based on a centralized database architecture, which characterizes the new paradigm that Tecsiglass, along with its partners, is developing to provide decision support tools, monitoring and the analysis of process and furnace system engineering.



MACHINE LEARNING



DATABASE CENTRIC PARADIGM



THE DIFFERENT APPLICATIONS DEVELOPED FOR SPECIFIC TASKS SHARE THE SAME DATABASE IN ORDER TO SUPPORT CROSS-ANALYSIS OF DATA

Here Tecsiglass trusts that the investment in digitalization is strategic - strongly believing that the glass industry will continue to benefit from technological innovation, with the integration of artificial intelligence and machine learning in the digital twins of various systems and components. This will enable even more precise and predictive management of production processes - further consolidating the glass industry's position as a leader in sustainable and high-quality production. In addition to its well-established furnace and feeder system engineering and construction services, Tecsiglass can extend its technological offering with innovative applications and services associated with simulation and data management. ■



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ABOUT TECSIGLASS

Founded in 2018, Tecsiglass has had a very rapid development thanks to the presence of professionals operating in the design and supply of furnaces for glass production. In just a few years, it has gained the position of leading company on the Italian market. Most of the projects have been assigned to Tecsiglass. Here, during July and August 2024, Bormioli Luigi Altare and Abbiategrasso emerge as twin notables. The Vetrobalsamo Furnace 2 and Technoglas Voitsberg furnace 2 are set to be completed by the end of this year. The company's business approach is very dynamic, with skilled professionals supporting customers from engineering works to hot repair maintenance - including the supply of plant and equipment for the furnace, refractories, demolition and cold works.





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IS machines field service: FAMA's commitment to excellence

With a rich expertise that positions it as a leading service centre across the Americas, FAMA continues to be driven by its unwavering focus upon quality, efficiency and customer satisfaction. Renowned for its highly-skilled technicians, the team offers years of experience in both company technologies and third-party systems.



With an extensive reach that spans the Americas, FAMA delivers top-tier services in countries such as Chile, Guatemala, Costa Rica, Bolivia, Mexico and the United States. Since 2018, the company has partnered with some of the most prominent companies in the glass industry, including ABInBev, Crown Cork, Anchor Glass, Cristal Chile, Vitro Cosmos, VICAL, Owens Illinois, Ardagh, Gallo Glass and more.



SPECIALIZED SERVICES

FAMA offers a comprehensive range of specialized field services - all tailored to the unique needs of its clients. These include:

- Installation of machines and peripherals: From planning to commissioning.
- IS machine repair and maintenance: Providing both minor and major maintenance services as well as general repairs, to extend the lifespan of IS machines.
- Modular section installation: Premium service for the disassembly and installation of modular sections for IS machines.
- Machine upgrade: Upgrade your IS machine for enhanced performance and efficiency. The company's solutions boost precision, reduce downtime and extend equipment lifespan with the latest technology. They also maximize productivity and stay competitive with a tailored upgrade plan.
- Process Conversion: Blow-Blow, Press-Blow and Neck-narrow-Press-Blow,

Specialized conversions to boost machine production capacity and flexibility.

- System Conversion: FAMA provides conversions for single, double, triple, and quadruple drop configurations as well as process changes to Blow-Blow, Press-Blow and Press-Blow-Narrow Neck.
- Mechanism repair: Repair of mechanisms from various technologies according to customer preferences.
- IS machine commissioning: Ensuring each IS machine is fully-operational and optimized for superior performance from day one.
- Strategic Inventory of High-Turnover Parts: FAMA offers its customers the advantage of having a strategic inventory of high-turnover parts directly at our facilities.
- Training: The company offers training programmes to enhance skills and knowledge about IS machines, thereby optimizing their performance and extending their lifespan.

A STRATEGIC PARTNER THAT'S ALWAYS AVAILABLE

As a number one service centre in the Americas, FAMA is more than just a technical solutions provider. It's also a strategic partner that's available 24/7 to assist clients in times of emergency. Indeed the company understands that unexpected situations can arise at any moment, which is why it's always ready to deliver quick and effective solutions. Recognizing that clients' success relies upon the quality and reliability of its equipment, FAMA is committed to providing cutting-edge technical services that exceed expectations. From IS machine installation and maintenance to full optimization, the company stands as a trusted partner - ensuring a high level of performance and reliability, whenever needed. ■



FAMA

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VERALLIA GROUP: stable and growing despite uncertain markets

A financial statement from the Group highlights the successes, problems and stabilities as well as potential sectors for growth amidst a constantly evolving packaging market

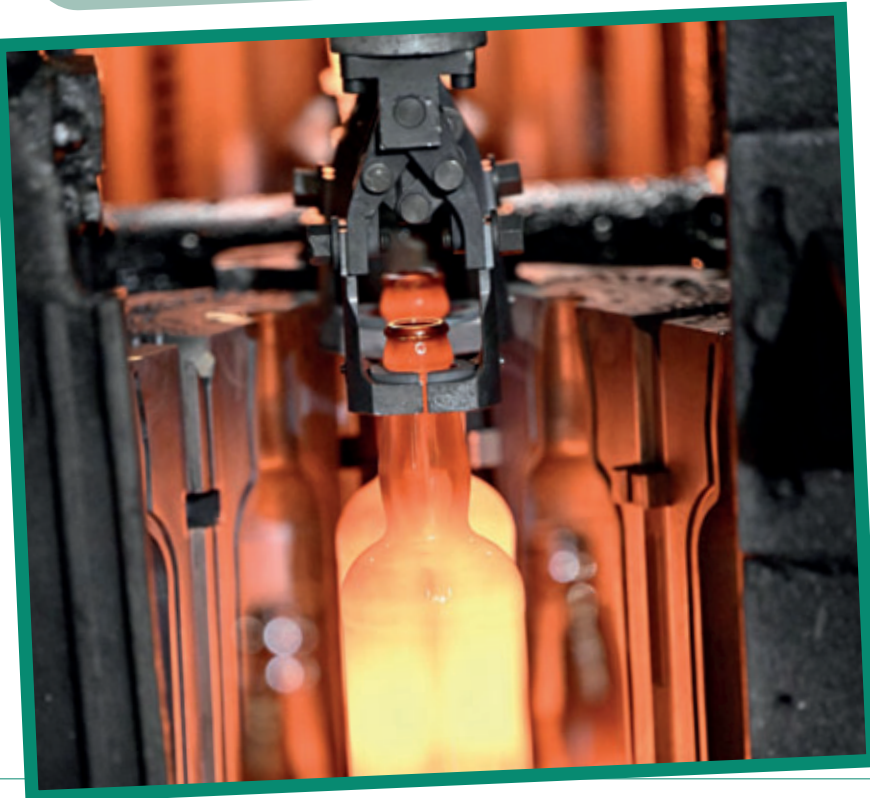
Verallia Group has issued its Universal Regulation Document covering their global operations across every sector of the glass packaging market. The report's projections for the future remain positive while also acknowledging the many challenges facing the Group in the months ahead.

GENERAL TRENDS

The Group's report suggests that glass packaging has benefited from favourable trends, led by increasing appreciation of glass by consumers. It highlights a shift away from alternative materials, in particular plastic. Glass is also preferred for upmarket products, making it better suited for sparkling wines, spirits and still wines, products in which Verallia Group has a strong presence. Specialty beers are also turning to glass to emphasise their premium positioning.

According to the document, 2023 brought a drop in demand due to a decline in end-user consumption in an uncertain economic environment, and a destocking phenomenon throughout the downstream value chain. However, the Group feels this slowdown doesn't alter the fundamental demand for glass.

Volumes sold by the Group



in 2023 fell back in line with the global trend, with a sharper contraction in beer and more resilient activity in food jars, soft drinks and sparkling wines. The impact – on an annual basis – of the price increases implemented in 2022 to pass on the sharp rise in costs to its customers enabled the Group to record organic growth of 21.4 percent (14.3 percent excluding Argentina) in 2023.

The acquisition of Allied Glass (since renamed Verallia UK), the UK’s leading producer of premium bottles for spirits, enabled the Group to strengthen its exposure to the premium segment and to the fast-growing high-end gin and whisky markets.

The Group’s revenue for the year ended 31 December 2023 was as follows:

countries, and by new consumers in the United States, the United Kingdom and emerging markets (mainly Brazil and China). These trends impact exports from historical producing countries like France, Spain and Italy as well as from the producers of the “New Winemaking World,” such as Argentina, Chile, Australia and South Africa.

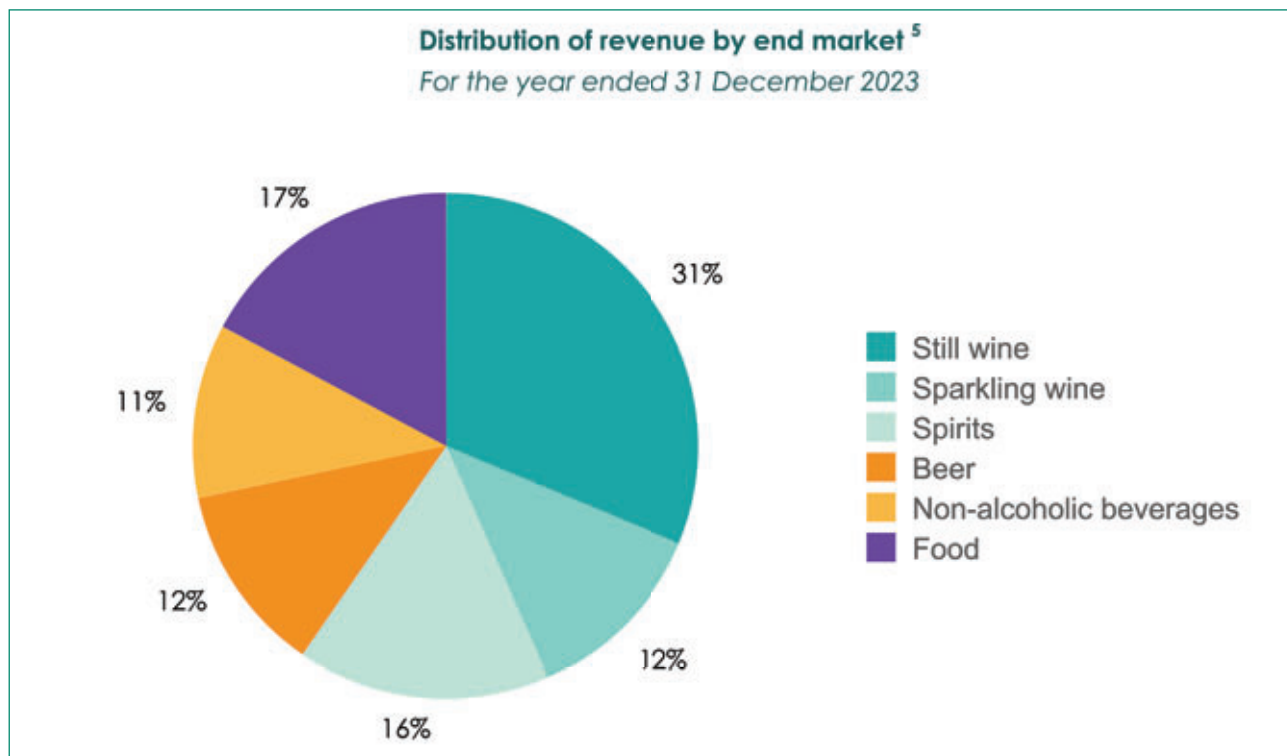
The three most significant countries for the Group in terms of revenue, France, Spain and Italy, are the main exporters of still and sparkling wines in the world. The impact of strong inflation and a difficult geopolitical environment affected business for everyone in 2023, particularly in still wines.

Glass is the preferred material for packaging still wines and

ing, such as the bag-in-box in still wines, brick pack containers and bottles made from polyethylene terephthalate (PET).

CONTAINERS FOR SPIRITS

Containers for spirits represented 16 percent of the Group’s consolidated revenue. Growth in the spirits market is mostly driven by exports intended primarily for the United States and Asia. Cognac, brandies and gin have found valuable export niches (in neat form and in cocktails). This market is characterised by a sharp increase in upscale packaging, similar to that seen in the perfume market. The sector is highly consolidated, with the major global trademarks in spirits owned by a limited number of companies. In each region, however, a large



STILL AND SPARKLING WINES

The still and sparkling wine bottle market is the Group’s largest market, which represented 43 percent of its consolidated revenue. It is driven by consumer habits in traditional wine consuming

even more so for sparkling wines, because of the product’s image, wine-making processes, requirements for pressure resistance and its exceptional organoleptic qualities. Still, the Group’s report acknowledged competing with alternative types of packag-

number of local spirit trademarks remain independent and active.

In 2023, after a fairly resilient first half, a decline in volumes was observed in the second half under the combined effect of lower demand and strong destocking downstream in the value chain.

GLASS PACKAGING

The risk of packaging other than glass being used is very limited in the spirits segment, mostly because of producers' desire to use glass bottles (often customised) to maintain the image and recognition of their trademarks. Here again, the report noted that certain containers might be packaged in PET, marginally and in low-end segments, and predominantly in the United States.

BEER

Beer bottles represented 12 percent of the Group's consolidated revenue. The highly concentrated beer market, considered a "mass market," is growing, particularly in emerging markets. Glass packaging is particularly favoured by certain brewers to provide up-market appeal, especially in developed countries, to create value in a market that has historically had little differentiation.

The report noted that certain customers may periodically or permanently substitute traditional glass packaging for packaging in metal cans. In the beer packaging market, glass remains the preferred packaging for brewers in the premium beer segment seeking to make their products stand

out from the competition. This is especially true for local or craft brewers, a market that faces competition from other modes of consumption, including mini-barrels and draught beer.

The report highlighted Latin America, where the traditional returnable beer bottle is progressively being replaced with single-use aluminium or glass packaging. The trend is expected to continue in the future, particularly in Brazil, and should contribute to more demand for glass packaging.

BOTTLES FOR SOFT DRINKS

Bottles for soft drinks represented 11 percent of the Group's consolidated revenue. In the sector, alternative packaging materials have largely replaced glass packaging. Glass packaging can still be found in the fruit juice segment, in small containers intended for use in restaurants and cafés as well as up-market products. High value-added niches have also developed in recent years, such as table waters, energy drinks and sodas. The reported activity in this end market has become one of the Group's most resilient markets in 2023.

JARS AND BOTTLES FOR FOOD

Jars and bottles for food represented 17 percent of the Group's consolidated revenue. Overall, glass occupies relatively stable positions compared with other materials. The growth of this market is primarily driven by that of household consumption.

But the report did point out that substitution of jars and bottles for condiments, sauces and dairy products was more prevalent because consumers are indifferent to the use of PET with such products. It countered that the favourable positioning of glass for small containers, the unsuitability of plastic for certain techniques in the food industry, and the development of niche markets where the use of glass is associated with the perceived qualities of the product or when it is the preferred medium for innovation, allow glass to maintain, and even increase, its market share. In featured or premium segments, glass is often used as a substitute for other types of packaging. Consolidation of the customer base in this market is moderate.

The Group's operations in the food jars and bottles segment took a positive turn in 2022 and went on to show great resilience in 2023. Nevertheless, the Group believes operations in this segment continue to benefit from a trend that is favourable to glass compared to other forms of packaging.

OVERVIEW OF THE GEOGRAPHIC MARKETS

In terms of revenue, the Verallia Group is the third largest producer in the world and the leading producer in Europe of glass packaging. In addition, in terms of volumes sold, it is the second largest producer in Latin America.

The Group conducts its operations in the following geographic markets, which make up its three



operating segments: Southern and Western Europe, consisting of the production sites located in France, Italy, Spain and Portugal, which represented 65 percent of the Group's consolidated revenue; Northern and Eastern Europe, consisting of the production sites located in Germany, Russia, Ukraine, Poland and now the UK, which represented 25 percent of the Group's consolidated revenue; and Latin America, consisting of the production sites located in Brazil, Argentina and Chile, which represented 10 percent of the Group's consolidated revenue.

Southern and Western Europe in terms of bottled volumes were still and sparkling wine bottles and containers for spirits.

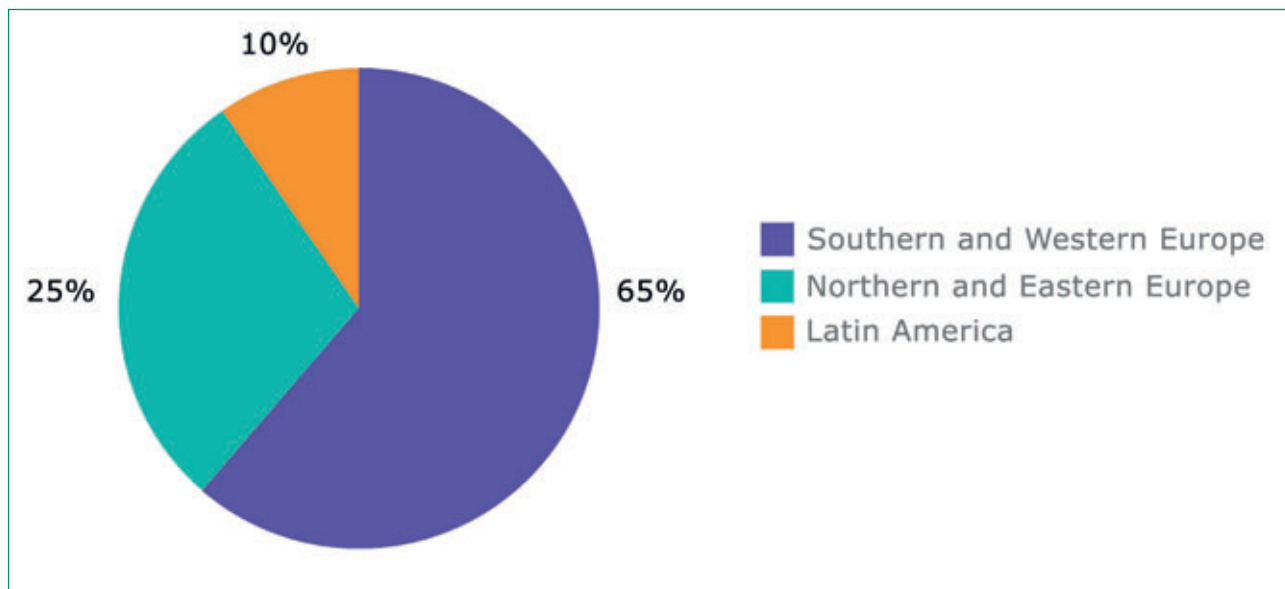
In 2023, sales in this region rose above the previous year thanks to the impact of the price increases effected in 2022, and despite lower overall volumes than in 2022. In terms of demand, a decline has been observed in all the Group's end markets, with beer being the sector most affected.

NORTHERN AND EASTERN EUROPE

Northern and Eastern Europe

consolidated revenue. Bottled beer became the largest end market in Latin America, notably in Brazil. This market is enjoying sustained growth that is believed to continue, driven by craft and premium beers, as well as the development of single-use bottles in Brazil.

Bottles for still wines are the second largest end market in Latin America, particularly in Argentina and Chile. Volumes were impacted in 2023 by the loss of certain export volumes with the Group's Chilean customers, as well as by the delicate political and economic context in Argentina (presiden-



Due to the local nature of the markets, companies in this sector establish their production sites near food and beverage production and packaging sites (such as in wine-making regions or near large breweries).

These geographic markets reflect the general trends common to the entire glass packaging market as well as their own specific trends.

SOUTHERN AND WESTERN EUROPE

Southern and Western Europe accounted for 65 percent of the Group's consolidated revenue. In 2023, the main end markets in

accounted for 25 percent of the Group's consolidated revenue. Jars and bottles for food products was the largest end market in Northern and Eastern Europe in 2023. The share of spirits has also increased significantly with the full-year consolidation of Verallia UK, for which spirits represent the main market.

In 2023, volumes rose thanks to the consolidation of Verallia UK and the resumption of business in Ukraine (reopening of the second furnace at the Zorya plant).

LATIN AMERICA

Latin America accounted for 10 percent of the Group's con-

solidated revenue. Bottled beer became the largest end market in Latin America, notably in Brazil. This market is enjoying sustained growth that is believed to continue, driven by craft and premium beers, as well as the development of single-use bottles in Brazil.



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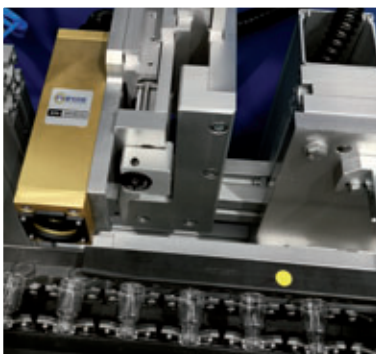
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Product development has **BORMIOLI LUIGI** partnering with **PENN STATE**

COLLECTIVE INTELLIGENCE

LionGlass, a new family of glass engineered by researchers at Penn State, has secured its first corporate partner, a move toward bringing the eco-friendly alternative to standard soda lime silicate glass to market. Bormioli Luigi,

an Italian glassmaker that specializes in producing high-end packaging for fragrance, cosmetics and tableware, is the first company to enter an official partnership with Penn State to perform research and development with the goal of scaling up, manufacturing and ultimately commercializing LionGlass.

“This is an enormous opportunity to work with this material and create a more sustainable glass with far less carbon dioxide (CO₂) emissions and energy consumption than standard glass,” said Elisa Biavardi, the chemical laboratory manager for Bormioli Luigi. “I see it also as



BORMIOLI LUIGI has partnered with PENN STATE to develop LionGlass, an eco-friendly alternative to soda lime silicate glass. Reducing carbon emissions and energy use by half, this collaboration aims to scale up production. LionGlass offers improved durability – all with potential applications in luxury packaging while advancing sustainable glass manufacturing.

an opportunity to learn from one another as we explore the possibilities for this major innovation in glassmaking.”

A WINNING ALTERNATIVE TO SODA LIME SILICATE GLASS

As Biavardi explains, the partnership will focus on scaling up LionGlass to create bottles for luxury beauty products like cosmetics and perfume. By focusing on a smaller, high-end market, the company can fine tune the glass and determine the feasibility of scaling it up further for other uses. Here LionGlass is an entirely new type of glass that offers the first alternative to soda lime silicate glass, which has been used for thousands of years for everything from windows to bottles to microscope slides. Soda lime silicate glass is made by melting quartz sand with carbon-based ingredients -soda ash and limestone- at high melting temperatures of about 1,450 degrees Celsius (C). The high energy requirements for melting glass account for 70 to 80 percent of its carbon footprint. The

remaining 20 to 30 percent comes from decomposition of its carbonate batch materials, which release CO₂ into the atmosphere.

CARBON FOOTPRINT REDUCTION

Says John Mauro, the Dorothy Pate Enright Professor of Materials Science and Engineering at Penn State and co-inventor of LionGlass: “Worldwide, glass manufacturing produces over 86 million tons of carbon dioxide every year. LionGlass, which eliminates the use of carbonate batch materials and has a melting temperature roughly 400° C lower than other everyday glass products, has the potential to cut the carbon footprint of glass manufacturing in half.” Mauro adds that LionGlass also offers improved damage resistance compared to soda lime silicate glass. It’s roughly ten times more crack-resistant, which could enable lightweighting of glass products, further reducing the carbon footprint of glass production by lowering the carbon emissions used to transport the glass. He explains that last year,

Penn State filed a patent application for the composition of the first generation of LionGlass, which holds the potential to usher in a new era of sustainable glass manufacturing. The university recently filed a second provisional patent application for the next generation of LionGlass with further improved properties. Says Mauro: “We’re thrilled to have this close partnership with Bormioli to realize the full potential of LionGlass to reshape the industry. Indeed Bormioli is building upon a long history of innovation in glass manufacturing by moving towards methods that are more environmentally sustainable. We have very close alignment of our goals and look forward to partnering with them to bridge the gap towards commercialization.”

ADVANCING CUTTING-EDGE MOULDING TECHNIQUES

Until now, LionGlass has been made in a lab setting using a crucible, a small, pot-shaped container used to melt glass at high furnace temperatures. To produce LionGlass at an industrial scale, it will need to be melted in large batches inside massive furnaces and formed using moulds, something that has not yet been tested with the new family of glass. The first year of the partnership will be dedicated in part to testing the feasibility of using the moulding technique with LionGlass in Bormioli’s existing manufacturing infrastructure. “This

ABOUT BORMIOLI LUIGI

Bormioli Luigi is a specialized glass company based in Parma, Italy, with a world-class reputation of excellence in the manufacturing of high-quality perfume containers, spirit bottles, tableware and wine glasses.

ECO-FRIENDLY GLASS



all started as just an idea in our lab, and now we're partnering with companies to bring it out into the world," said Nicholas Clark, a post-doctoral fellow at Penn State and one of the inventors of LionGlass. "We're translating what we're learning from the laboratory-scale, crucible melting that we're doing here at Penn State to a much larger scale of continuous glass production that's being done at Bormioli. It's exciting for our work to be this close to a major industrial innovation."

PARTNERING FOR INNOVATION

Biavardi went on to describe Bormioli Luigi as a family-owned company based in Parma, Italy, since 1946. It is one of the world's leading glass manufacturers and a recognized pioneer in the use of electric furnaces. Indeed the Parma plant has been using electric furnaces since 1986, and today the Bormioli Luigi Group uses electricity for 65 percent of its production and is moving toward full green energy. This positioning illustrates a long-standing strategy of constant optimization. Said Andrew Read, senior vice president for research, Penn State: "This part-

nership is a testament to the ability of Penn State's research enterprise to address needs within the global marketplace. By marrying the creative spirit of discovery and innovation that Penn State is known for with the product development expertise of a highly respected cor-

porate partner, we can create a consumer product that is not only superior in durability but also lowers carbon emissions to help protect our planet from the effects of climate change. We are proud to partner with Bormioli and look forward to breaking new ground through this unique collaboration." ■

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Revolutionary negative pressure moulding tributes **FASIN REFRACTORY** distinction

Among its many products and services as global leader in refractories manufacturing, FASIN REFRACTORY offers advanced negative pressure moulding technology that enhances product quality - all while improving both density and resistance to glass erosion. With state-of-the-art production facilities and a solid commitment to R&D, the company delivers forward-looking solutions for the glass industry.



A pioneer in refractories manufacturing, Fasin Refractory develops and produces high-end electric fused cast refractories, including AZS and zirconium corundum. The company's latest patented negative pressure moulding technology for zirconium corundum refractories accounts for its unparalleled quality. This unique negative pressure moulding process overcomes the defects that have historically plagued traditional methods



- significantly enhancing the density and surface smoothness of products. The optimal annealing curve ensures that the product achieves an optimal structure - effectively improving its resistance to melted glass erosion. Fasin employs the new negative pressure forming process to develop and produce a new generation of AZS zirconium corundum series products, cast alumina series products, and high-end cast materials like high-brick bricks. These products are widely used in advanced melting furnaces for ceramic glass, high borosilicate glass, electronic glass, photovoltaic glass, oxy-combustion, and super-large float glass tanks.

SUPER-EQUIPPED FOR OUTSTANDING SERVICE

The company has established a comprehensive quality supervi-

sion, testing, tracking and guarantee system. It uses internationally advanced X-ray fluorescence testing equipment and collaborates with the National Building Materials Research Institute to operate a testing centre equipped with world-class laboratory facilities. Fasin's 40,000 m² production workshops feature modern industrial plants with a well-organized process layout, a high-end automatic batching system, state-of-the-art energy-saving and environmentally friendly electric furnaces with oxidation methods, a continuous melting and casting process and fully automatic negative pressure moulding technology. The Fasin cold processing and pre-assembly workshop is equipped with advanced CNC cutting and grinding equipment, sophisticat-

ed control systems, and a high-precision assembly platform to ensure the overall accuracy of refractories during pre-assembly.

PRODUCTS AND SERVICES

Fasin provides full range of electric fuse cast refractories and related materials such as:

- alumina zirconia silica (AZS 30#, 33#, 36#, 41# 95#)
- zirconium corundum
- high alumina (α , β , β corundum)
- high zirconia
- mortar
- insulation
- ramming mix
- sealing patch

The company also provides related services including:

- consultancy engineering
- installation supervision
- heat up profiles

REFRACTORIES

Refractories



- hot repair solutions
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TECHNOLOGIES DEVELOPMENT

Senior researchers in Fasin's R&D department continue to develop new process technolo-

gies and automation equipment. Currently, the company has four pending invention patents in progress. Ensuring customer confidence has always been a core value at Fasin - which also boasts a professional technical and management team. Fasin independently

developed the MES system for the fused cast refractory industry, which implements planning management, enables continuous production scheduling, effectively monitors the production process, ensures product traceability, and provides a full product lifecycle. Indeed it is continually advancing towards higher management standards.

Meet Fasin at Glasstec, in Hall 12, Stand B62. ■



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Overview of SOUTH AFRICA beer container glass industry

Rajeev Jetley

THE BEER MARKET IN SOUTH AFRICA

A country with a population of nearly 61 million, South Africa ranks as the most exciting container glass market for the glass industry on the African continent. With beer drinking already an integral part of South African culture for hundreds of years, it's no wonder that the country is both the largest beer producer and beer consumer throughout Africa. Indeed the beer volume increased by 12 percent in 2022 as compared to Covid 19 in 2021. South Africa is twelfth largest global consumer

of beer - representing 1.8 percent of the world's beer consumption. The country's beer market accounts for approximately 31 percent of the African commercial beer market. Of the total population of nearly 61 million, nearly 31 percent of age 15-plus consume alcohol regularly. Beer is the most popular alcoholic beverage at 56 percent, followed by wine and spirits at 18 percent each. The South African beer market is one of the largest in the world and an important one to watch with a number of interesting trends. Beer consumption is increasing year on year with the exception of 2020, where it

decreased due to the Covid19 restrictions. Much like the global beer industry, there is an increasing demand for non-alcoholic, low-alcohol and craft beers - in addition to the traditional beers.

SOUTH AFRICAN BREWERIES

The beer industry is dominated by South African Breweries (SAB) and Heineken South Africa, with the former accounting for the lion's share of the country's beer market. The South African beer industry has had two main influences on its development. Firstly, European settlers who colonised the coun-



Rebounding post-COVID with a 12 percent increase in beer volume in 2022, SOUTH AFRICA's container glass market is booming - particularly for the beer industry. Dominated by major players like Consol Glass and Isanti Glass, the market currently highlights a growing demand for traditional, low-alcohol and craft beers - making it a key area for investment and innovation.

try brought expertise and know-how as the country was populated. Dutch immigrants from the 1650s onwards and British immigrants during the 19th and 20th centuries both contributed in different ways to the knowledge of alcohol production. For more than a century, beer-making in South Africa has been dominated by South African Breweries. Established in 1895, South African Breweries (SAB) is

South Africa's largest brewer and one of the nation's most admired companies. A subsidiary of world's largest brewer AB InBev since 2016, it operates seven breweries and 42 depots in South Africa with an annual brewing capacity of 3.1 billion litres.

AB INBEV

AB InBev, the world's largest beer producer, became the domi-

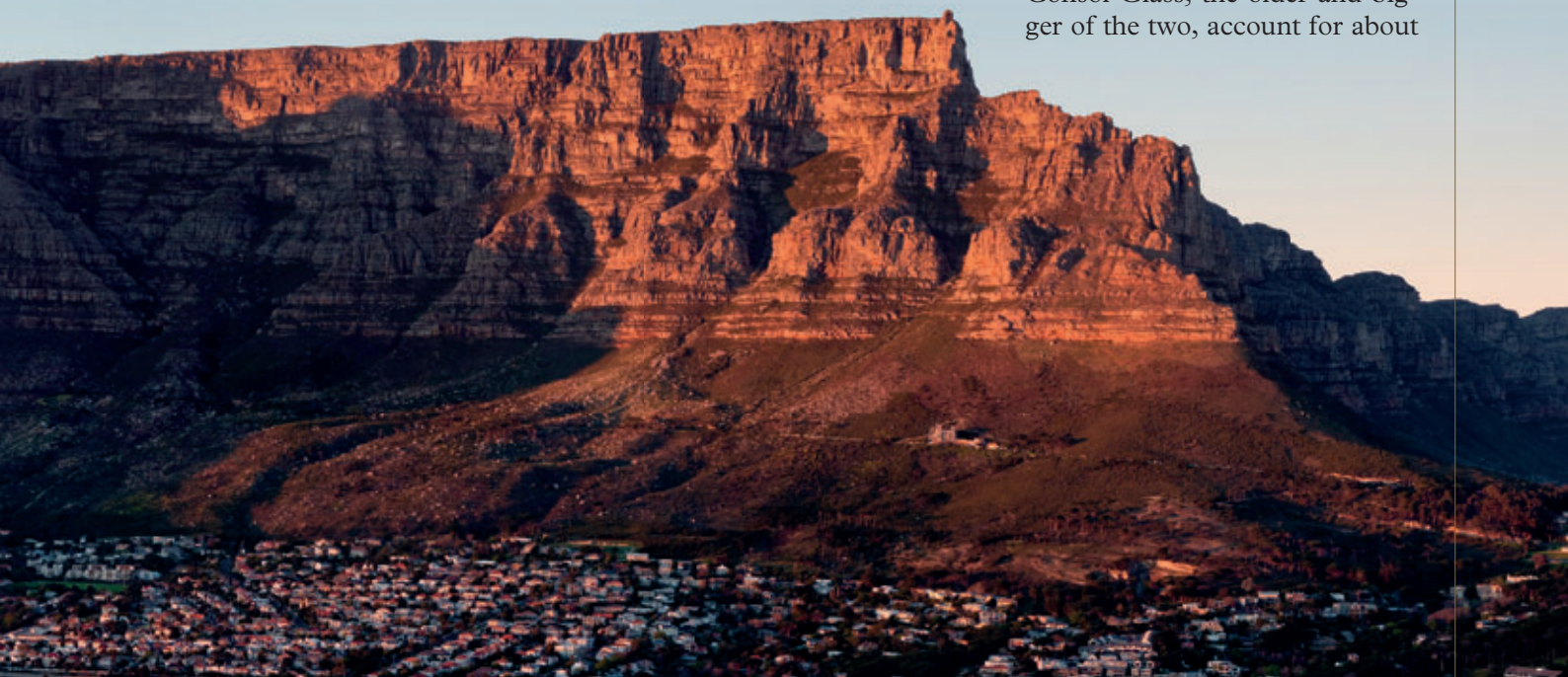
nant brewer in South Africa when it purchased SABMiller back in 2016 in one of the largest mergers of the beer industry. Since the takeover, AB InBev has overhauled its portfolio and increased distribution of non-SAB brands, such as Budweiser and Corona. Lion Lager and Castle Lager, both produced by SAB, are the most popular mass-produced beer brands in the country.

HEINEKEN

Dutch brewer Heineken is the second largest brewer in the country. Heineken's flagship brewery in the region is located in Sedibeng - just outside of Johannesburg. Sedibeng's capacity was increased in 2020 from 5 million hectolitres (hl) to 8.5 million hl. The site not only supplies South Africa. It also exports to neighbouring markets. Sedibeng brewery produces a range of beers - including, amongst others, Heineken, Amstel and Windhoek.

CONTAINER GLASS MANUFACTURERS

Two leading container glass producers dominate the South African container glass industry. Consol Glass, the older and bigger of the two, account for about



COUNTRY STUDY

75- 80 percent of the domestic container glass market. Isanti Glass accounts for the remaining 20- 25 percent of the container glass demand in the country.

CONSOL GLASS

Consol Glass (now part of Ardagh Group since the second quarter of 2022) has always been the largest glass-packaging manufacturer in South Africa. The company has over half a century of glass-manufacturing experience. Consol Glass operates four container glass plants in South Africa. The company has operations in Clayville (Midrand), Wadeville (Germiston), Nigel (Johannesburg) and Bellville (Cape Town), with a total production capacity of 855, 000 tonnes of glass per annum. It provides glass-packaging solutions for a number of industries - including beer, wine, food and spirits and packaging for pharmaceutical and cosmetic products to a range of local and international customers. Consol Glass also

operates container glass plants in Kenya, Nigeria and Ethiopia. These three plants have installed capacities of 37,000, 40,000 and 40,000 tons per annum of container glass products, respectively. The Ethiopia container glass plant was commenced in the last quarter of 2018. Designed to produce 60,000 tons of container glass per annum, this plant has commenced production with a capacity of 40,000 tons per annum. The production could be increased to 60,000 tons per annum depending upon the market conditions. "We're using South Africa as a springboard to get into the rest of Africa, starting with acquiring a glass-making business in Kenya and another in Nigeria," says Johan du Plessis, Senior Executive at Consol Glass. Consol's Wadeville production facility commenced operations in 1946. This plant has two furnaces with an installed capacity of 155,000 tons per annum of container glass products. What started as a single glass plant

supplying the beer and beverage industries has evolved into the company that supplies 80 percent of South Africa's glass container products. The company inaugurated its second container glass plant in 1956 at Bellville. This plant has four furnaces with an installed capacity of 282,000 tons per annum of container glass. Consol Glass's third production plant commenced operations in 1982 at Clayville. With four furnaces this plant has an installed capacity of 302,000 tons of container glass products. Fourth and last plant in South Africa commenced operations in 2011 at Nigel. With one furnace, this plant has an installed capacity of 116,000 tons per annum. Consol's major customers include leading beverage and food companies operating in Africa, such as Anheuser-Busch InBev, Diageo, Distell, East African Breweries, Namibia Breweries, Heineken and Tiger Brands.

ISANTI GLASS

Isanti Glass (formerly Nampak Glass) is one of two container glass manufacturers in South Africa and has a market share of approximately 20 percent of the domestic market. The company operates three furnaces and nine production lines at its site southeast of Johannesburg and has an installed capacity to produce 285,000 tonnes of glass containers for the beer, wine and spirits industries. The company has a 20 percent share in the beer market, a 25 percent share in flavoured alcoholic beverages, a 21 percent share in the wine market and a 65 percent share in the spirits market. To meet the growing demand from wine makers, Nampak Glass (using its old name of that time) invested ZAR 1.2 billion in setting up the company's third furnace in 2014 at its manufacturing facil-





ity in Roodekop, Gauteng. This increased the plant's capacity from 195 000 to 285, 000 tons a year. When the Nampak Glass factory was officially opened in 1984 it had a single-furnace capable of producing enough glass for 11 percent of the South African market. During construction, provision was made for a second furnace, which was added in a year. The addition of a third furnace was a significant investment for Nampak as it enabled the company to increase its capacity by 56 percent, thus strengthening its position in the South African container glass market. With the addition of the third furnace, Nampak Glass introduced a range of wine bottles that replaces 750-ml wine bottles that weigh 450 g or more with the latest standard of 410 g and some weighing as little as 380 g. This provides customers with more environmentally-friendly options in which to export their wine. The first and second furnaces were built by Metal Box (MB) Glass Works in 1983 and 1986 respectively. Nampak took over MB in 2003 and entered a joint venture

agreement with Germany-based Wiegand Glas in 2005. The agreement was entered with the objective of boosting the existing Nampak facility by upgrading and enhancing the production facilities and expanding the capacity. Between 2005 and 2008 the company made investments of ZAR 320M, towards the rebuilding of the first furnace and implementing narrow neck press and blow technology.

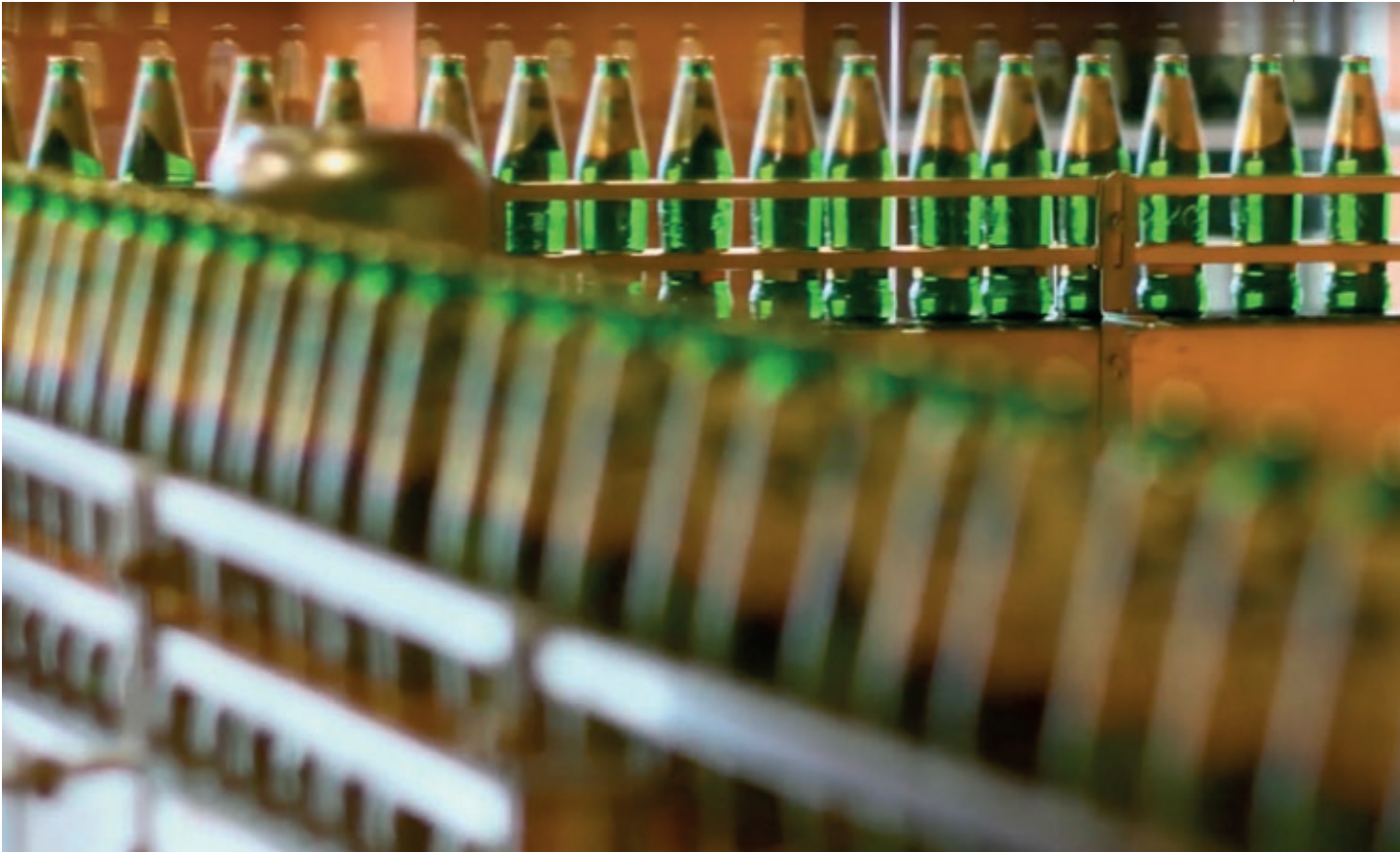
In 2011 Isanti Glass (then Nampak Glass) acquired the 50 percent share from German glass manufacturer Wiegand-Glas for ZAR 938M. In 2018, Nampak's management took a decision to dispose of Nampak Glass as its financial returns have failed to meet required levels due to inadequate skills, high capital expenditure and high fixed costs.

GLAMOSA GLASS

Established in 1958 in a small factory in Elandsfontein near Germiston, Gauteng, Glamosa Glass is a small tableware and container glass producer. In 1970 a new factory was built in the town of Estcourt Kwazulu Natal from where the company operates at pre-

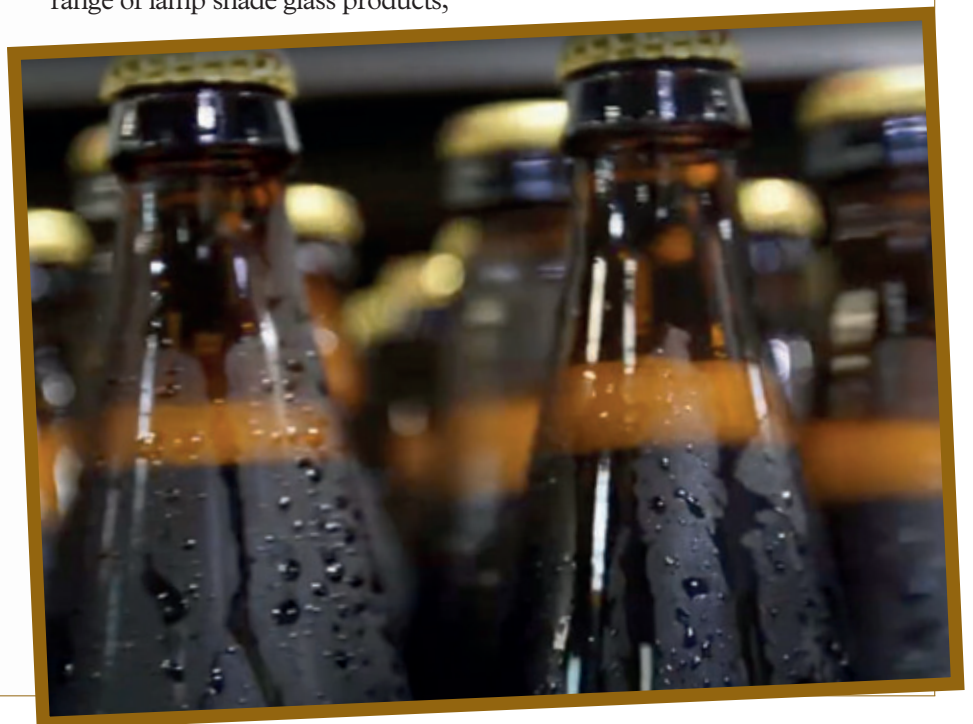
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sent. Initially Glamosa (Short for Glass Mosaic) produced vitreous glass mosaics in a wide range of colours. Today glass mosaic is no longer produced. In 1980 Glamosa Glass started manufacturing a new range of lamp shade glass products,

including many blown, pressed and spun glass ware products. In 2009 Glamosa Glass identified the need in the glass container market for niche customised short run glass containers. ■





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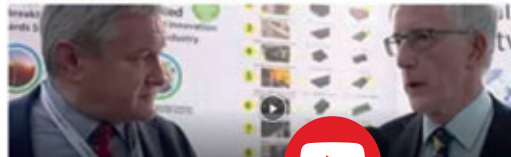


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Marco Palma - Director of Sales & Service • Karan Marcellus - Marketing Director

COMPANY PROFILE

All-new, high-precision sampling dimensional and thickness measurement system to be featured by Agr International at glasstec 2024. Agr will be displaying several product developments in quality management equipment for glass containers at glasstec, **Stand 14/C40**. The **DSG500® dimensional and thickness measurement system for glass containers** will be the focal point of Agr's display this October. The DSG500 is the latest in Agr's DSG product line. A new high-precision sampling system, it offers a complete approach to efficiently capture measurements of critical container attributes while providing rapid feedback that is essential for effective process management. The sampling system comes complete with highly accurate and repeatable thickness measurement; hands-free, all-in-one dimensional measurement; continuous operator feedback on the intuitive user interface as well as the patented AutoJob® feature – all allowing for quick, automated job creation. Also featured at glasstec will be the **Gawis4Glass®** which is designed to streamline laboratory measurement operations. The system provides operators with the ability to perform multiple measurements on a wide range of glass containers - all with unmatched accuracy, repeatability and operational throughput. The Gawis4Glass streamlines laboratory measurement operations by performing a multitude of critical dimensional measurements in one simple operation. The Gawis4Glass features Agr's patent pending AutoJob® that can create complicated job setups in a matter of seconds. In addition, Agr will demonstrate the latest **ThicknessPen®** measuring device. This compact, rugged, and easy-to-use instrument offers an innovative approach to portable thickness measurement. Developed to address the multiple and diverse thickness measurement applications of the

production environment, the dual-mode design of the ThicknessPen can be operational with or without a target ball. This unique versatility is unprecedented in any product in this marketplace, while providing the precision necessary for the laboratory as well as portability, ruggedness and the safety necessitated for use on the production floor. Agr staff members will be available to discuss these products and the rest of the complete line of Agr quality management equipment and services for the glass container industry. An industry leader for over 95 years, Agr is committed to providing the glass container industry with the most technologically-advanced products - available for quality control and productivity improvement, as well as a complete portfolio of services that include analytical testing, training programs, design and testing. Agr products and services are designed to assist container producers and fillers to remain competitive - all while meeting the increased quality demands of today's changing world. Additional details can be found on the Agr website at www.agrintl.com.



AGR INTERNATIONAL, INC.

Karan Marcellus,
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www.agrintl.com



➔ **ANTONINI S.r.l.**

**HALL 13
STAND D13**

PRODUCT RANGE

- Annealing lehrs
- Toughening lehrs
- Decorating lehrs
- Mould preheating ovens
- Annealing lehr
- Decorating lehr
- Tempering Lehrs
- Nis Lehr
- Thermal shock lehr
- Mould preheating kiln
- Cold end spray and dosing unit
- Scraper
- Upgrading and overhauling



ANTONINI S.R.L.

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PEOPLE TO CONTACT AT OUR STAND

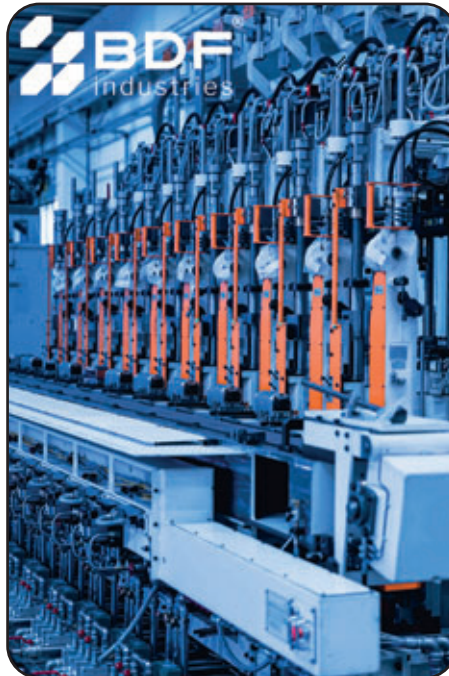
Barbara Antonini, Francesca Antonini, Giacomo Orselli

BDF INDUSTRIES S.p.A.

HALL 13
STAND D47

PRODUCT RANGE

- **FORMING:** Gob Forming, Delivery, Gob Distributor IS Machines, Servo Mechanisms (feeder, invert, take out) Ware Handling (AP pusher, conveyor, transfer wheel, cross conveyor, stacker, ancillaries), Variable Equipment, Forming Process (blow-blow, press and blow, NNPB), Control Systems, & Process Control, Ancillaries.
- **MELTING:** Engineering and feasibility studies, Furnaces, Working-Ends & Forehearths, Regenerative End-Fired & Cross-Fired, Recuperative, Stirrers, Batch Chargers, Glass Level 3.1.
- **AUTOMATION:** Batch Plant Control, Furnace Control, Working End & Forehearths Control, Energy Monitoring, Emission Monitoring via PLC and SCADA Systems, Utilities.
- **ENERGY:** Filtering and Energy Recovery Systems, Cogeneration and Trigeneration Systems. Waste Gases Treatment, Compressor Line Control System, Smart Glass Factory.
- **SERVICES:** Assistance for installation and overhauling, Gob Forming and Delivery, IS Machines, Servo Mechanisms, Ware Handling, Variable Equipment, Forming Process, Control Systems, & Process Control, Ancillaries, IS Machine overhauling, Melting minor repair
- **ENGINEERING:** Turnkey plants and plant co-management.



BDF INDUSTRIES S.P.A.

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PEOPLE TO CONTACT AT
OUR STAND

Our sales and technical staff
will be glad to meet you.

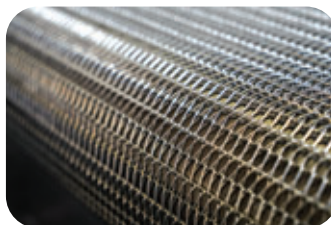
PIETRO BONAITI SRL

HALL 13
STAND F69

COMPANY PROFILE

At **Pietro Bonaiti Srl**, we do not only produce conveyor belts for the glass industry, in particular for annealing furnaces and hollow glass decoration: we also have a large archive of over 74 years of production. And as the international market expands, now touching every continent, new plants are being designed to reduce production time and increase quality: product and material knowledge, customised processing, quick and competent response and adherence to delivery times and specifications are what has always distinguished the company since its inception.

This is why many of our customers are still customers after several decades, because of our ability to work with seriousness and passion, our high level of craftsmanship that is now supported by increasingly advanced technological equipment, and our propensity to become not just suppliers, but true consultants for those who turn to us.



PIETRO BONAITI SRL

Metal Conveyor Belts since 1950
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www.pietrobonaiti.com

PRODUCTS BEING PROMOTED

Pietro Bonaiti Srl specialises in the production of conveyor belts for the glass industry, with particular reference to belts for annealing furnace and those for decorating hollow glass, two sectors in which it has a very high level of know-how.

Certified for the ISO 9001:2015 Quality Management System, it offers in its catalogue various types of belts: wire link belts, triple spiral wire link belts, loose mesh belts, wire link belts with reinforced edges, double spiral wire link belts with U-shaped wire ends, wire link belts with lateral chain. Its real strengths, however, lie in its ability to make customised conveyor belts for special applications and in the dimensions it has achieved: today the company is able to produce belts up to 5 metres wide by several tens of metres long.

BOTTERO S.P.A.

HALL 14
STAND F23/24



BOTTERO S.P.A.

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PEOPLE TO CONTACT AT OUR STAND

Giovanni Bensa - SALES DIRECTOR Hollow Glass

BOTTERO GROUP CONTINUES TO GROW AND PRESENTS ITSELF AT GLASSTEC 2024 WITH IMPORTANT INNOVATIONS

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

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

With this acquisition, Bottero now has a total of four locations in Italy: the main headquarters in Cuneo, along with operations in **Montecchio Maggiore** (Vicenza) and **Rovereto** (Trento). The company employs around **800 people** globally and generates a turnover of over **360 million euros**, with 85% of its revenue coming from exports.

Bottero Hollow Glass will be showcasing **QFORM** at Glasstec 2024, an

advanced platform designed to enhance production processes in the hollow glass sector. QFORM offers increased flexibility and efficiency during forming, along with cost-effective operation due to reduced energy consumption. The display will feature a QFORM single section equipped with a 95mm quadruple drop, capable of working in TG 5" and DG 6-1/4" as center distance. Additionally, a new delivery system will be presented, simplifying conversion procedures as the structure baffle support does not require any modification during conversion.

Bottero will have a dedicated **360 square meter** exhibition space at Glasstec 2024 where customers can discuss with product experts about the technologies available to meet their current and future production needs.



BUCHER EMHART GLASS

HALL 13
STAND C45

BUCHER
emhart glass

BUCHER EMHART GLASS

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PEOPLE TO CONTACT AT OUR STAND

Matthias Kümmerle - President
Andreas Schaal - VP Sales & Marketing

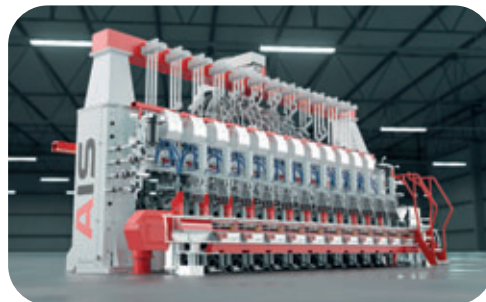
PRODUCT RANGE

Products on display at the Bucher Emhart Glass booth will include a single-section NIS forming machine equipped with a Blankside lifting device and the brand-new FlexRobot Blowside Swabbing Robot. Also available will be a single-section AIS-M complete with QG accessories, mold transition, and delivery equipment.



On the inspection side, visitors will be able to see a range of the latest inline inspection equipment, including the FlexInspect T gen. III, FlexInspect C gen. III, and FlexInspect B gen. III, as well as the latest automation solutions, including Master Track.

Additionally, Bucher Emhart Glass' stand will feature all the latest



automation technologies in their End to End journey, including SectionRadar, the SMARTFEEDER, and the QCOR quick-change orifice ring.

Emhart's newly relaunched service offering, Support+, will also feature prominently. Visitors can explore the variety of support offered, including training, automation support, maintenance, project management, health audits, original parts, and much more.

CAR-MET Srl

HALL 13
STAND C14

PEOPLE TO CONTACT AT OUR STAND

Mario Zanin - President
Tiziana Poles, Lara Mallardi - Sales Manager
International CAR-MET Agents

PRODUCT RANGE

- Annealing and decorating lehrs
- Tempering lines
- Lehrs for special use
- Mould pre-heating ovens
- Stackers
- Cross conveyors
- Hot glass scrapers

COMPANY PROFILE

CAR-MET has been dedicating its activities to the hollow glass and decorating industry for 53 years. It has developed its own technology aiming to improve the performance of its machines, always assuring lower consumption. Strategic choices have been made to offer customers the highest technology available on the market. CAR-MET has complete control of the construction of its machines: design, structure, mechanical components, combustion installation, burners and electrical installation, which are carried out inside the Italian plant. This system enables to control and assure quality standards, enabling to respect delivery terms, to have spare parts always available and to be always in the condition to satisfy customers' requests.



CAR-MET SRL

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COMMERSALD IMPIANTI S.r.l.

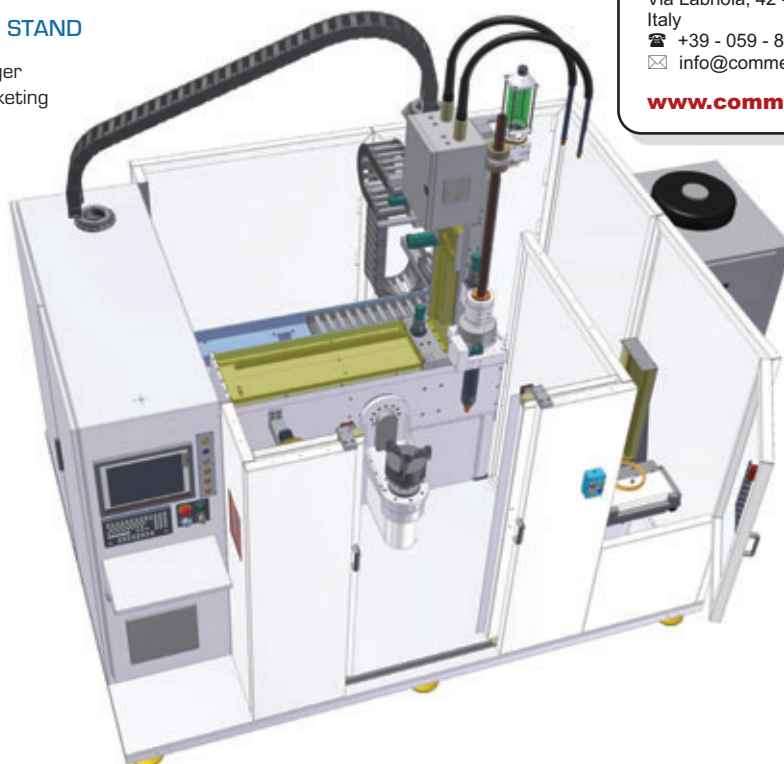
HALL 13
STAND A03

PEOPLE TO CONTACT AT OUR STAND

Massimo Trigari - General Manager
Luca Forghieri - Sales and Marketing
Anna Loschi - Sales Division

PRODUCT RANGE

- P.T.A. with powder welding machines
- Robot plants for P.T.A. welding complete with:
 - P.T.A. welding machine;
 - Cartesian motion system;
 - NC machines
- Programming console
- P.T.A. welding powders
- HEAT - Induction pre-heating systems



COMMERSALD IMPIANTI

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www.commersald.com



**HALL 15
STAND C44**



PEOPLE TO CONTACT AT OUR STAND

Michael Sorg – Managing Partner
 Jens Rosenthal – Managing Director
 Grant Bailey – Technical Director
 Dr. Sebastian Woltz – Sales
 Thorsten Christ – Sales Director

PRODUCTS BEING PROMOTED

- Cullethandling / Glass Recycling – Systems
- Batch Treatment – Systems
- Cullet Preheating
- Equipment

EME

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 ✉ contact@eme.de

www.eme.de



COMPANY PROFILE

EME has a proven track record in designing and commissioning plants at over 250 glassworks in more than 80 countries. Part of the SORG Group, we access next-generation technology to gain unrivalled knowledge in sustainable conditioning and melting. We are dedicated to supporting customers wherever in the world they are. Our multi-talented team of designers, engineers and project managers enhance raw material processing with engineered solutions built for endurance. What sets EME apart is our proven capability to upgrade a plant while it is live and operating, with no loss of production. Offering a complete turnkey project, from raw material and perfectly mixed batch delivery to supporting you in engineering design, our tailored approach makes EME the future partner of choice, whatever your needs.



Wherever your facility is located, EME will be with you throughout the entire process and beyond. We strive to be a leader in our field and place sustainability and partnership at the heart of every decision. It is our promise to work honestly and transparently with customers, to provide batch treatment and processing technology that outperforms and outlasts any other.

FALORNI TECH GLASS MELTING TECHNOLOGY

**HALL 13
STAND E45**

falornitech
glass melting technology



COMPANY PROFILE

Falorni Tech operates as a Main Contractor in EPC projects. Starting from concept engineering proposal, Falorni Tech undertakes projects in the glass fields from its early definition stage up to post-commissioning assistance. One unified flow of work from initial concept through completion together with teamwork, innovation and problem-solving. Knowhow and expertise in glass melting technology as well as in the production process of glass (hollow glass, fibre glass, float glass, special glass) are the key advantages of choosing Falorni Tech. Falorni Tech supplies melting furnaces, glass conditioning technology and all services related

PEOPLE TO CONTACT AT OUR STAND

Riccardo Scarselli - General Manager
 Simone Scarselli - Deputy General Manager
 Andrea Zucconi - Commercial Director
 Francesco Prosperi } Technical Office
 Gabriele Campani }
 Biagio Bifano }
 Eleonora Bogatti - Commercial Office

FALORNI TECH GLASS MELTING TECHNOLOGY

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www.falorniglass.com

PRODUCT RANGE

- TURNKEY SOLUTIONS:
 - EPC • EPCM
- ENGINEERING:
 - Basic and detailed engineering
 - Process engineering
 - Utility engineering
- MELTING FURNACES:
 - Regenerative • Recuperative
 - Oxy-fuel • Hybrid oxy-fuel + electric
- CONDITIONING SYSTEMS:
 - Distributors • Forehearths
 - Colouring forehearths
 - ANCILLARY EQUIPMENT:
 - Combustion systems
 - Furnace automation and control
 - Process supervision
 - Waste gas managements systems
 - Metallic recuperators
 - Batch chargers
 - Automatic glass level systems
 - Bubbling systems
 - Electric boosters

PRODUCT RANGE

- ON / OFF-SITE SERVICES
 - Auditing
 - Maintenance and repairs
 - Training on-site
 - Technical consultancy
 - Modernizations
- Remote assistance
 - Batching/raw material analysis
 - Supervision during construction
 - Startup and commissioning



FAMOR ENGINEERING

**HALL 13
STAND F46**



COMPANY PROFILE

Thanks to the acquisition last February, for a total of 100% today Famor Engineering, founded in 1977, has become part of the Falorni Gianfranco Srl group. Famor Engineering develops and supplies machines, handling systems and feeders for the hot forming area of the hollow glass production process and is better known for its intense technical support to glassworks. Since its inception, Famor Engineering has specialized in the prototyping and overhaul of glass forming machines, an activity it still carries out today, thus contributing to industrial sustainability and ensuring cost efficiency for numerous glassworks. Thanks to the group synergy, Famor Engineering has recently signed an important contract in North Africa to supply Tableware Pressing Line.

**PEOPLE TO CONTACT
AT OUR STAND**

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Alessio Bini
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PRODUCT RANGE

- 4 or 6 axes Ball Gatherer Robots
- Feeder Mechanisms
- Platinum Feeders
- Billet casting machines
- Semi-automatic press machines
- Injection press machines
- Automatic turntable press machines
- Semi-automatic blowing machines
- Individual Section blowing machines
- Automatic turntable blowing machines
- Smart forming press & blow machines
- Automatic turntable press & blow machines
- Automatic turntable spinning machines
- Fire polishing machines and gas-oxy burners
- Rotary transfers, conveyors, handling and stackers, lehrs

FERMAC S.r.l.

**HALL 12
STAND A19**

PRODUCT RANGE

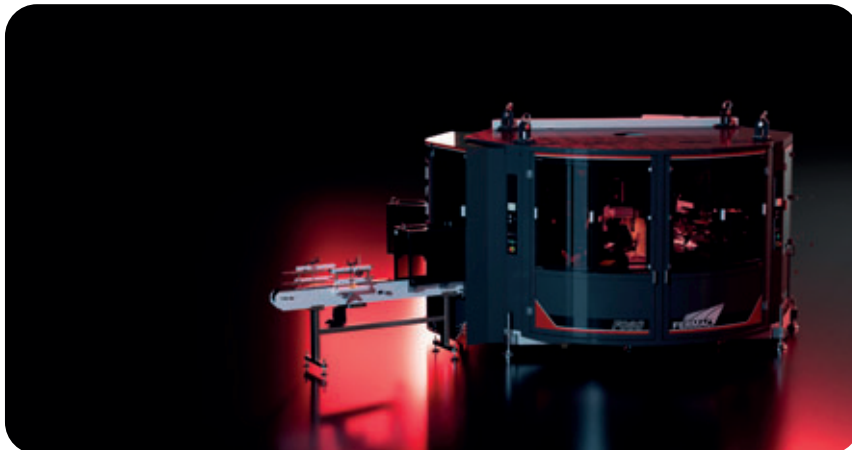
It is our pleasure to meet you at Hall 12 / Stand No A19 to uncover our latest innovations in silk-screen printing technology: a new ecosystem of machines, platform-free equipped with full UV LED curing system for reliable and eco sustainable printing solutions; a new rotary machine able to decorate 2 different artwork on 2 items at the same time with double item holder; double gripper all on a single machine to double your production up to 190+ pcs/min. Espy Fermac avantgarde technology.

**PEOPLE TO CONTACT
AT OUR STAND**

Stefano Painsi - President
Alessandro Ghirardini,
Leonardo Pirazzoli,
Thomas Molfese,
Annamaria Kovacs
Sales Department



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FIMA-OLIMPIA FONDERIE

**HALL 13
STAND A44**

PEOPLE TO CONTACT AT OUR STAND

Alessandro Fontanelli - President & CEO • Andrea Vienni - Production Manager
Simona Grazioli - Export Sales



FIMA-OLIMPIA FONDERIE

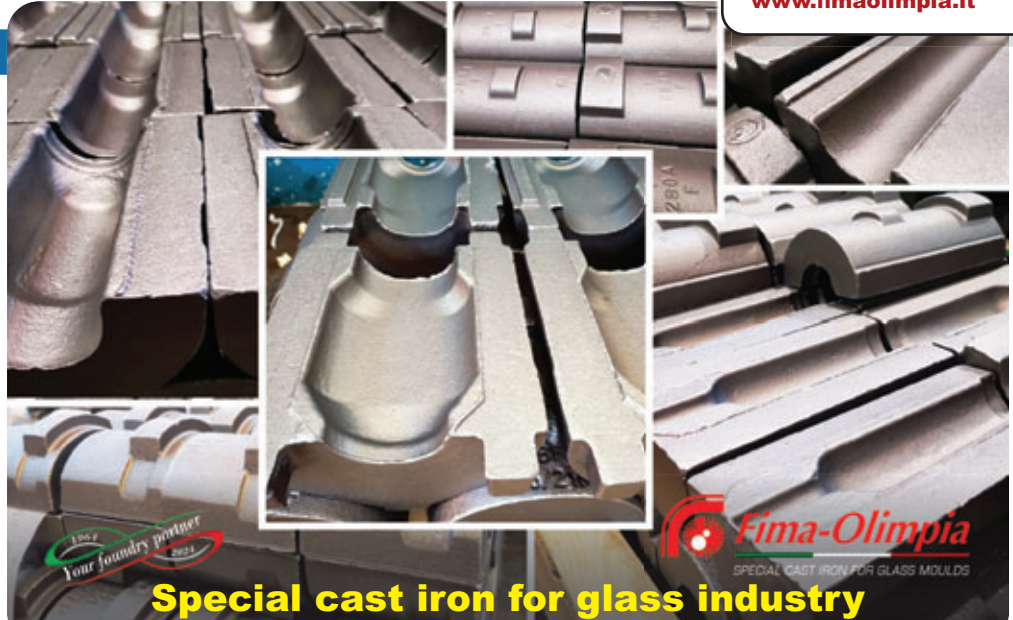
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☎ +39 - 055 - 8073048
✉ info@fimaolimpia.it

www.fimaolimpia.it

PRODUCT RANGE

Special cast iron for glass industry:

- castings for moulds
- neck rings
- baffles
- bottom plates
- engineering castings for glass plants



Special cast iron for glass industry

The world's leading glass publications!



SINCE 1988



SINCE 1989



SINCE 1990



SINCE 2013



WEB PUBLICATIONS

WWW.GLASSONLINE.COM

FIVES GROUP

HALL 13
STAND B90

PEOPLE TO CONTACT AT OUR STAND

Alexandre Brusset - Vice President Glass

COMPANY PROFILE

Fives engineers and supplies glass process equipment for a variety of applications, including automotive, architectural, container, perfume, fibre, crystal and more. Our technologies strive to achieve low energy consumption and reduced emissions, while optimizing investment cost to deliver glass quality requirements.

Fives is a recognized leader in **glass melting technology** for reduced emissions and increased efficiency:

- **Prium® E-Melt** is an all-electric furnace that delivers energy-efficient melting with lower emissions and can provide a step change in decarbonization. Fives recently installed the world's largest all-electric furnace for the glass packaging industry.
- **Prium® Eco-Flex** is a gas-electric hybrid furnace capable of adapting to a broad range of fuel ratios with up to 80% electrical energy input potentially powered from renewable energy.
- **Prium® Float-Melt** is designed to produce architectural,



Prium® E-Melt

solar and automotive glass over a wide spectrum of glass colours and thicknesses.

Our **fuel-efficient glass conditioning systems** optimize heat transfer techniques while reducing energy consumption and emissions:

- **BHF Working End** ensures stable performance and flexibility, providing optimal glass entry conditions to each forehearth.
- **BHF Forehearth** optimizes thermal homogeneity to deliver

high-quality glass with consistent properties and viscosity. Additional ancillary packaged equipment is also offered.

Our **forming & annealing technologies** achieve high quality and optimized OPEX:

- **Tin bath** - tailor-made tin bath solutions for standard, ultra-thin glass and automotive glass
- **Annealing Lehr** - patented hot air continuous annealing lehrs allows for a total control over the residual stress, bow, dish and waviness.



fives
Industry can do it

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FONDERIE BARTALESI S.r.l.

HALL 13
STAND A13

PEOPLE TO CONTACT AT OUR STAND

Fabio Petri - Sales Manager
Stella Maria D'Ascola - Import-Export Department



INNOVATION

"The future of bronze moulds lies in the new B02 S1 alloy"

The new B02 S1 alloy was developed in response to the needs of metalworking foundries and the demands of glassworks and mould manufacturers.

- This new alloy features:
- excellent anti- hot corrosion;
 - excellent weldability for a combination of elements that improve the welding process;
 - simplified metallization;
 - higher thermal diffusivity/conductibility;
 - increased market performance;
 - no loss of hardness during welding or glass forming as with other alloys;

- lower thermal expansion coefficient compared to other alloys, guaranteeing higher mould stability on the machines. The characteristics of this new B02 S1 alloy guarantee an important increase in the working life of moulds. Laboratory tests, confirmed in glassworks, show that the working life of bronze moulds often ends due to 'over capacity', as when the moulds undergo maintenance and consequent removal of material caused by polishing, the moulds become bigger and have larger capacity. The B02 S1 alloy, on the other hand, has lower abrasion, thus increasing the working life of moulds.

PRODUCT RANGE

- Special bronze alloys for moulds
- Neck rings with or without Ni-Insert
- Bottom plates
- Baffles
- Accessories
- Cast iron for moulds and accessories



Fb FONDERIE BARTALESI

FONDERIE BARTALESI S.R.L.

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FONDERIE VALDELSANE S.p.A.

HALL 13
STAND B03

COMPANY PROFILE

The Company is a leader manufacturer of cast irons and alloys for glass moulds, generally considered as a quality reference in the international market.

Their success owes to the glass manufacturers, as well as themselves benefited from the presence of a pioneer company devoted to the production and development of special alloys, to give higher and higher performances to the glass moulds.

Selection of K 250 cast irons and special copper alloys produced by Fonderie Valdelsane is no more than a simple guarantee that moulds will comply with their important job at the best of their possibilities. A guarantee that is interna-



tionally acknowledged.

Nowadays, the Company serves its direct customers in 36 Countries across the world and is considered a reliable partner which actively contributes to the constant challenge of better efficiency in glass production.

Fast delivery time, quality and repeatability are strictly bound to advanced technologies and automation in each process phase. Fonderie Valdelsane have always been allocating significant resources in this direction and the multiannual investment plan includes the ambitious goal to constantly reduce the CO2 emissions in the next years.

In 2024, a new photovoltaic system on a total area of about 12,000 m2 has been installed and sustainability balance sheet certificate ESG will be issued.

Fonderie Valdelsane. Easy to Choose.



Fonderie Valdelsane S.p.A.

FONDERIE VALDELSANE S.P.A.

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PEOPLE TO CONTACT AT OUR STAND

Roberto Gerbi
President

Claudio Anniballi
CEO

Stefano Gerbi
Sales Director

Manuel Papi
Export Manager

GCG - 40TH ANNIVERSARY 1984-2024

GLASS CONSULTING GROUP SRL

HALL 13
STAND A31

PEOPLE TO CONTACT AT OUR STAND

Raffaele Scaglioni - Managing Director

PRODUCT RANGE

- feeder coloration
- glass frits
- batch plants
- combustion equipment
- furnace forehearths
- thermometry
- thermocouples
- fibroptic

COMPANY PROFILE

The company was created in 1984 by glass technicians highly experienced in the glass sector of containers, tableware, perfumery glass and special glass.

Through continued focus on research and close cooperation with glassmakers, **GLASS CONSULTING GROUP** can quickly develop and supply special colouring frits which are adapted to the glass composition and forehearth processing parameters of each customer.



GLASS CONSULTING GROUP S.r.l.

GCG GLASS CONSULTING GROUP SRL

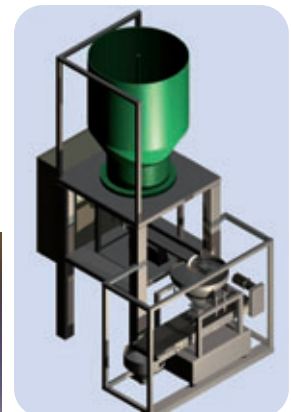
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r.scaglioni@glassconsultinggroup.it

www.glassconsultinggroup.it
www.glassfrits.eu



➔ **GLASS SERVICE S.r.l.**



PRODUCT RANGE

- Oxy-Gas Combustion Furnaces
- Electric boosters • Hybrid Melting Furnaces
- Batch plants • Melting furnaces
- Refiner and forehearths
- Combustion plants • Ancillary equipments



GLASS SERVICE S.r.l.

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PEOPLE TO CONTACT AT OUR STAND

Fulvio Puccioni - Technical Office
Giulio Isernia - Commercial Director
Emanuele Donati - Sales Manager
Andrea Bassi - Sales Manager
Roman Kotzelko, Anne Dorazio, Commercial Manager
Oliver Bellina - Chemical Expert



COMPANY PROFILE

Glass Service provides the highest standards of technology applied to the hollow glass industry. The Italian company designs, produces and maintains a wide and complete range of equipment.

GLASS MELTING TECHNOLOGY DIVISION

- automatic and semi-automatic batch plants and cullet recycling plants
- recuperative and regenerative continuous melting furnaces
- boosting systems
- forehearths
- colouring forehearths with frit dosing systems
- batch chargers

- heat recuperators
- automatic control level machines
- stirrers and stirring machines
- proces control board
- combustion systems for any kind of fuel
- burners for any kind of fuel
- special machinery for the glass industry
- Oxy-gas combustion for furnace
- Oxy-gas combustion for distributor&Forehearth
- Hydrogen-Oxy combustion

Moreover, the company provides complete assistance service for customers, assembling and maintaining all the supplied plants. Start-up and training are also provided.

➔ **HEYE INTERNATIONAL GMBH**

**HALL 14
STAND C18**

COMPANY PROFILE

Your partner on the smart road to Industry 4.0

Our smart plant portfolio is based on:

- HiPERFORM - Smart Forming Solutions
- HiSHIELD - Smart Inspection Solutions
- HiTRUST - Passion and Experience

We are Glass People - join us on the road to a smart glass plant!

PRODUCT RANGE

- Heye SpeedLine IS-Machines
- NNPB Lightweight Technology
- Heye Process Control
- Innovative Swabbing Robot
- High performance coolings
- Heye Smart Plant concept
- Smart closed-loop solutions
- SmartLine 2 inspection machines



HEYE INTERNATIONAL GMBH

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IRIS INSPECTION MACHINES

**HALL 14
STAND C24**

**PEOPLE TO CONTACT
AT OUR STAND**

Sonia Debets, Hung Han,
Armando Brusamolino, Altay Capanoglu
Area Sales Managers

COMPANY PROFILE

IRIS Inspection machines has been designing, developing and manufacturing intelligent inspection solutions for glass containers since 2002. With a team of passionate engineers, IRIS masters the entire production of machines from idea to concept, to CPU board production and on-site installation.

The Evolution NEO range is the latest generation of glass container defect detection technology based on artificial intelligence. NEO introduces an innovative approach to defect detection: automatic defect identification, trend analyses and valuable inspection features help glass container producers to save time and increase the productivity during the manufacturing process.

PRODUCTS BEING PROMOTED

EVOLUTION NEO Range: Intelligent Inspection machine

- Evolution NEO 16: Sidewall and Sidewall stress
- Evolution NEO 5: Base, Finish and MNR
- Evolution NEO Ultimate: Perfumes and Cosmetics Inspection
- Evolution NEO Dim: Dimension measurements



IRIS Inspection machines

IRIS INSPECTION MACHINES

Parc du Chêne
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✉ contact@iris-im.fr

www.iris-im.com

**KOENIG & BAUER
KAMMANN GmbH**

**HALL 12
STAND B35**



COMPANY PROFILE

Headquartered in Löhne, Germany, **Koenig & Bauer Kammann GmbH** is the **Koenig & Bauer** group specialist for finishing hollow objects made of glass, plastic, metal and various other substrates - all by way of screen printing, digital printing, hot stamping and labeling. The **Koenig & Bauer** group is the world's longest established manufacturer of printing systems and has the widest product range in the industry. For over 200 years, the company has provided customers with innovative technology, tailored processes and diversified

PEOPLE TO CONTACT AT OUR STAND

Matthias Graf - Managing Director
Dr Christian Maas - Managing Director
Daniel Gildehaus, Axel Bohlmeier, Andre Tiesmeier,
Holger Tiemann, Nicolas Meyer, Tim Schnelle,
Bilgin Aptoulach
Area Sales Manager
Jay Chang (General Manager Koenig & Bauer Kammann Shanghai)
Paul Bolduc (President Koenig & Bauer Kammann US)
Mike Thompson, Mike Peccorini - Area Sales Manager US

services. Its portfolio includes solutions for banknotes, cardboard, foil, sheet-metal and glass packaging, as well as for books, displays, labels, decor, magazines, advertising materials and newspapers. Koenig & Bauer is both a proven expert and often the market leader in nearly all printing processes - offset and flexographic printing on sheets and rolls, waterless off-set printing, steel engraving, plus simultaneous, screen and digital inkjet printing. In the 2023 fiscal year its 5,500 highly-skilled employees across the globe generated revenues of EUR 1.300 billion. Close on the heels of its HS 300 high-speed, screen-printing machine, the K4 DP is now Kammann's latest advancement in digital printing technology. As the company's first ma-

chine that's fully-dedicated to direct-to-shape digital printing, the K4 DP is engineered for maximum flexibility and has the capability of printing on glass, plastic or metal in different shapes and sizes. Designed with a compact footprint, the K4 DP is built to seamlessly integrate into production environments, handling small to medium batch runs with ease. Its automatic transport solutions further enhance usability - ensuring simple operation while optimizing productivity. This innovation underscores Kammann's commitment to the advancement of digital printing technology as it offers more versatile, efficient and adaptable solutions - all tailored to modern production needs.

KOENIG & BAUER

**KOENIG & BAUER
KAMMANN GmbH**

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kammann.koenig-bauer.com

LAHTI GLASS TECHNOLOGY

HALL 15
STAND E31



LAHTI GLASS TECHNOLOGY

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www.lahti-glass.fi



PEOPLE TO CONTACT
AT OUR STAND

Jarmo Sopanen - Ceo
Jamshid Shifrad - Sales Manager
Leo Raatikainen - Sales Manager
Annukka Broman - Sales Manager
and many other experts!

PRODUCT RANGE

- Batch plants
- Factory cullet recycling
- Glass recycling plants
- Engineering
- Automation
- Modernization
- Lifetime care & spare parts

COMPANY PROFILE

Lahti Glass Technology is the leading Nordic specialist in the demanding field of supplying batch plants for the glass melting industry. With an experience that spans decades and almost 300 batch plants, Lahti Glass Technology is one of the most internationally significant suppliers in this industry.

As one among the few full-service providers out there, our know-how and expertise cover all service areas within plant construction. Our Solutions Clinic experts first map the challenge and then suggest how to solve it. Tools and equipment are all tailored to meet your needs and are part of the turnkey solution. We take care of your challenges while providing you with solutions that are engineered with extensive Nordic expertise, a humble attitude and a sustainable mindset.



LINCO BAXO GROUP

HALL 13
STAND F64



refractories expertise,
together
since 1949

LINCO BAXO GROUP
Second to none
in customer service

Via C. Boncompagni 51/8
20139 Milano (MI) - Italy
☎ +39-02-5520041
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www.lincobaxo.com

PEOPLE TO CONTACT AT OUR STAND

Dr.Maurizio Nicolardi - President / Company Ceo
Mrs.Alessandra Nicolardi - Bu Director
Mr.Osvaldo Baldelli - Export Director
Mrs.Cristina Gambino - Sales Manager

PRODUCT RANGE

- Channel & superstructures
- Blocks for working-ends and forehearth
- Expendables for feeder
- Refractory & insulating bottom blocks for furnace
- Alumina, sillimanite, zircon and zircon-mullite bricks and itemized shapes
- Castables, ramming mixes, patches and mortars

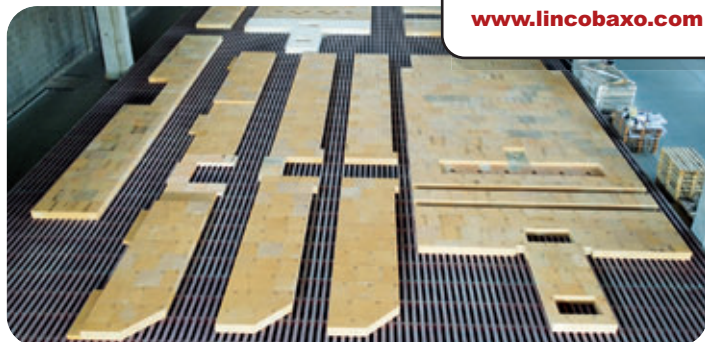
COMPANY PROFILE

Linco Baxo production is located in four modern integrated plants which are able to produce a large volume of high quality products at an affordable price.

Overall production of the group is in excess of 100.000 tons per year and the whole organization employs more than 250 people.

Linco Baxo has also built up a comprehensive sale and technical organization based on a worldwide network of subsidiaries, distributors, dealers and agents.

Our experience covers supply contracts of refractories and engineering to a large number of glass customers we cooperate regularly with.



➔ **LUBEN GLASS Srl**

**HALL 13
STAND C03**



LUBEN GLASS Srl

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26010 Offanengo (CR)
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☎ +39 - 0373 - 244396
✉ info@lubenglass.it

www.lubenglass.eu

COMPANY PROFILE

The mission of **Luben Glass** is to satisfy the needs of its clients, offering innovative products based on the creation of components for different types of forming machines and plants, in response to the many functional needs of both the hot and cold-end of glassworks.

Thanks to the work carried out by our skilled technicians, we are able to provide standard products as well as those responding to the specific needs of our clients, guaranteeing the maximum reliability of our products, designed according to Industry 4.0, manufactured to offer a rigorous and attentive response to the concept of smart industry and energy saving.

PRODUCT RANGE

- Spare parts and accessories for forming machine
- Plants and machines
- Integrated software for energy saving and process control

PEOPLE TO CONTACT AT OUR STAND

Our skilled and qualified personnel will be at our stand to discuss and present our products, providing all the details regarding our product range.



➔ **MSK COVERTECH GROUP**

**HALL 13
STAND C30**



**MSK VERPACKUNGSSYSTEME GMBH
MSK COVERTECH GROUP**

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www.mskcovertech.com

PEOPLE TO CONTACT AT OUR STAND

Michael Bouwmann - Key Account Manager Glass
Hidde Nijland - Key Account Manager Glass

PRODUCTS BEING PROMOTED

Multi-job technology requires high efficiency, flexibility, and expertise at the Cold End from the Lehr onwards: more frequent, fast job changes, dynamic line management, and flexible palletizing systems. Since almost 50 years, **MSK** is your reliable partner for sustainable Cold End equipment and designs customized complete solutions, from planning, production, and commissioning to after-sales service. MSK delivers everything from right after the Lehr up to the warehouse: bottle conveyors, palletizers, shrink wrapping machines, pallet conveying, controlling and monitoring HMI software EMSY. Regardless of glass container forms or required machine performance, MSK can provide you with a tailor-made solution. As an innovative and reliable family-run company, MSK is constantly working on further developments for its machines and digital products.

In the field of packaging technology, the MSK shrink technology, combined with the MSK undershrink process, is still the basis for millions of tons of CO2 savings today. With high pallet loads your product is protected by lowest film and energy consumption. The use of films with PCR content in MSK systems is also possible and established.

The EMSY software developed by MSK ensures automated, dynamic line guidance with recognition and sorting of a wide variety of glass containers. The uniform software provides the basis for efficient networking of all machines at the Cold End and standardized interfaces to MES or ERP systems.

With subsidiaries in five different locations (Germany, Hungary, France, USA and

China), the MSK Covertech Group is located near to its customers. MSK remote support and digital software products also ensure high efficiency in service.



NIROX SRL

HALL 14
STAND A03



NIROX SRL

Optical measurement and control systems
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25080 Mazzano (BS) - Italy
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✉ info@nirox.it

www.nirox.it

COMPANY PROFILE

NIROX is an Italian company that designs and manufactures optoelectronic measuring and control sensors and systems.

Glass is our main market, particularly **Pharmaceutical, Electronic, Scientific and Automotive Glass**.

We build sensors for glass measurements:

- **ODK sensors** are optical micrometers which allow measuring **outer diameter and ovality**.
- **m-Thick sensors** measure **thickness of glass** panels, tubes, and objects in general, such as **PVB** in the stretching lines.
- **multi-Thick sensors** analyze **complex structures** by measuring the **thickness of each layer**, including coating.



OTS optical sensors are used to measure **thickness** of electronic displays during the **chemical etching process**.

Our measuring systems for glass are:

- **NCSline** is a family of systems for dimensional inspection of pharmaceutical **glass tubes in production lines**.
- **NCSlab** is an automatic **offline measuring system** for glass tubes and preforms for **production control or incoming inspections**.
- **VISline** is a family of devices designed for the **pharmaceutical primary packaging**, to be installed on the **glass tube converting machines**.
Main controls are:
 - **VISline.B:** bottom features
 - **VISline.D:** dimensional measurements
 - **VISline.C:** cosmetic inspections after the annealing oven
- **EVline systems** inspect pharmaceutical glass tubes **after the cutting and glazing machine**.
- **CMSline** systems provide the inline cross-sectional measurements of glass **capillaries in the drawing process**.

“YOU MAKE, WE MEASURE”

NOVAXION SAS

HALL 13
STAND C31



NOVAXION SAS

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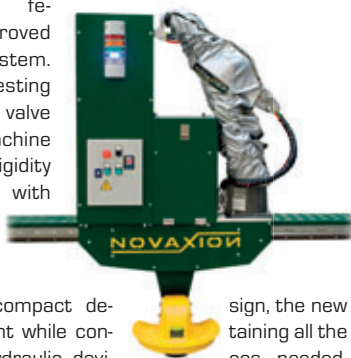
ERGONOMICS & INTEGRATION

The **NX-VR-300** features an improved mounting rail system. The new rail is resting on the blank side valve block of the IS machine and offers: High rigidity provided to cope with the demands

of on-the-fly, high speed swabbing.

Incorporating a compact design, the new NX-VR-300 is light while containing all the pneumatic and hydraulic devices needed.

Safety Features: No hydraulic lines across the IS machine, thereby reducing any fire hazard.



RETROFIT & CONVERSION

Novaxion offers a smart and automatic solution to blank mould swabbing, offering gains in both efficiency and time saving. Usually run by the machine operator, the mould swabbing is now repeatedly accomplished by a robot. With quicker, more reliable and efficient service to the machine, the **NOVAXION Swabbing Robot** provides dual wins in both efficiency and time saving.



ERGONOMICS & INTEGRATION

NX-BR-300 features a new fixation method with a suspended version of Novaxion's best selling swabbing robot for IS Machines. The suspended version matches the structure of the existing IS machine* and offers: enhanced rigidity to cope with high-speed swabbing. Available for new IS machines* or for conversion of those that already exist.

Incorporating a compact design, the new **NX-BR-300** is light while containing all the necessary pneumatic and hydraulic devices. Safety Features: No hydraulic lines across the IS machine, thus providing a reduced risk of fire.

For both efficiency gains and time saving, Novaxion offers a smart, automatic solution for blow mould swabbing.

Being usually machine operator run, mould swabbing is now repeatedly accomplished robotically. Offering quicker, more reliable and efficient service to the machine, the **NOVAXION Swabbing Robot** brings both efficiency gains and time saving.

OCMI-OTG S.p.A.

HALL 13
STAND A24

PRODUCT RANGE

"OCMI is leading supplier of complete production lines to manufacture tubular glass containers for pharmaceutical and cosmetic use (ampoules, vials, droppers, cartridges) with four production plants located in Milan - Italy (OCMI headquarters), Chelles - France (Moderne Mecanique), Madrid - Spain (KYP) and Ahmedabad - India (OCMI India), as well as a commercial office in Shanghai - China. OCMI is also dedicated to the supply of glass processing machines for tableware articles such as sealing/stretching machines for stemware, presses and press-blow machines.

Thanks to the partnership with Italian company MT Forni Industriali, OCMI can also supply turnkey factories for the production of technical glass items such as high voltage insulators and glass bricks. MT Forni Industriali has been operating since 1968 in the field of industrial furnaces for the glass industry, specially used for the preparation of glass raw materials, melting, thermal treatment, annealing and bending."

OCMI

- Ampoule, vial, dropper, cartridge forming machines
- Vial after-forming lines
- Hot-end camera inspection systems
- Automatic glass tube loaders
- Automatic ampoule/vial packing machines
- Sealing/stretching machines for stemware
- Pressing, press-blow machines
- Glass blocks production lines
- Glass insulators production lines

MODERNE MECANIQUE

- Ampoules, vials, dropper, cartridges after-forming lines
- Ampoule forming machines
- Ampoule and vial printing lines

OCMI INDIA

- Vial index forming machines
- Vial cooling conveyors
- Droppers, cartridges forming machines

KYP ACCESSORIES

- Ampoule forming machines
- Ampoule after-forming lines
- Automatic ampoule packing machines
- Automatic glass tube loaders

- Cold-end camera inspection systems

INNOVATIONS

- Complete vial production line developed for new index rotation forming machine FLA1B.
- Complete cartridge lines production index or continuous motion option
- OCMI lines with full connectivity to SCADA & MES, batch report, OEE
- Mass flow meter integrated technology option for GAS & O2 SAVINGS



OCMI-OTG SPA

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KYP ACCESSORIES S.L.U.

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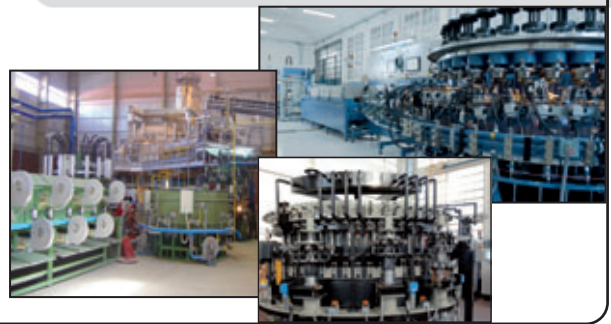
OCMI INDIA

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OLIVOTTO GLASS TECHNOLOGIES S.P.A.

HALL 13
STAND C47



PEOPLE TO CONTACT AT OUR STAND

- Sergio Sarvia - President & CEO
- Massimo Pucci - Sales Director (BU Hollow Glass)
- Elia Rizzi - Senior Area Manager (BU Hollow Glass)
- Salvatore Rizzo - Sales Engineer (BU Hollow Glass)
- Andrea Valle - Sales Director (BU Pharma Packaging), BU Manager (BU Mineral Wools)
- Pierluigi Terzuolo - BU Manager (BU Solar)
- Marco Giraud - Sales Director (BU Engineering)
- Massimiliano Iuli - After Sales Manager
- Gianluca Corrias - Spare Parts Service
- Giorgio Peracchiotti - Spare Parts Service

PRODUCT RANGE

- Feeders
- Press & Blow Machines
- Blowing Lines
- Multifunction Machines for Stemware Production
- Stretching Machines
- Burn-Off Machines
- Welding/Sealing Machines
- Fire Polishing Machines
- Press Machines
- Spinning Machines
- Container Glass Machines
- Automatic Packaging Line
- Tubing Lines For Pharma-Packaging
- Glass Wool And Rook Wool Manufacturing Lines
- Rook Wool Sandwich Panels Production Lines
- Production lines for float and patterned glass.
- Processing lines for solar, architectural and automotive glass.
- Handling equipment for flat glass



OLIVOTTO GLASS TECHNOLOGIES S.P.A.

Headquarters:
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OMS GROUP PACKAGING SOLUTIONS. SINCE 1949

HALL 13
STAND 72

As global leader, **OMS Group** specialises in the design and production of **end-of-line packaging solutions** and **complete packaging lines**. Established in Italy, **OMS Group** currently operates **12 branches worldwide** and provides **cutting-edge technologies** for every stage of the end-of-line process, including **strapping heads, strapping machines, hooding machines, thermoshrinking and wrapping machines**. Discover some of our solutions for the Glass Industry

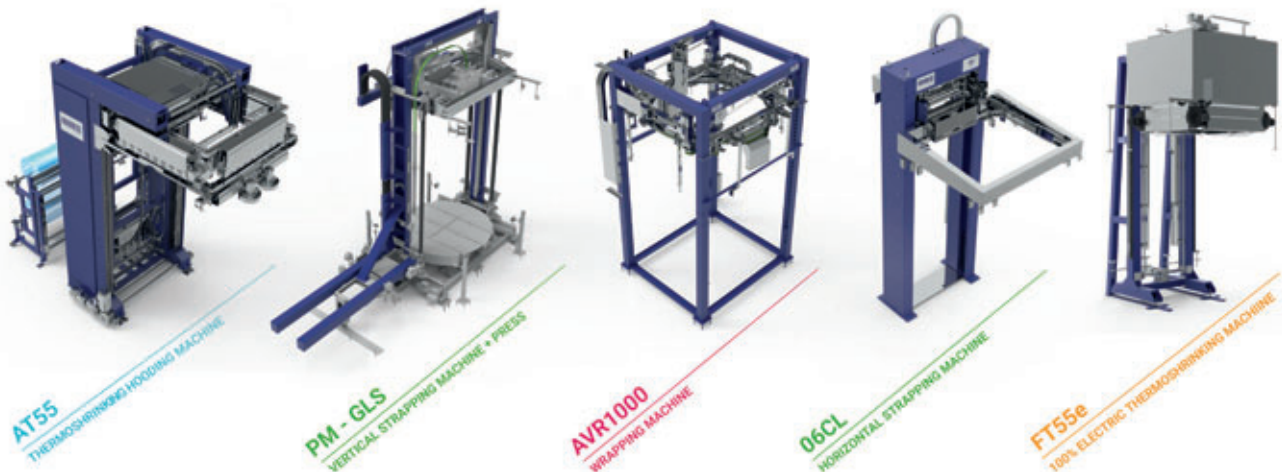
PEOPLE TO CONTACT AT OUR STAND
Claudio Cerutti
Sales Director



OMS GROUP PACKAGING SOLUTIONS. SINCE 1949

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www.oms-group.com



OMSO S.p.A.

HALL 12
STAND D06

COMPANY PROFILE

OMSO Spa, based in Reggio Emilia, is the leading Italian manufacturer of screen printing machines for printing on glass, plastic and aluminium containers. Since 1952, it has distinguished itself in the industry by combining tradition and innovation through constant investment in R&D. **OMSO** machines, designed and manufactured in Italy, are renowned for reliability, precision and ease of use.

In the glass industry, **SB021** is a state-of-the-art screen printing machine that combines precision and efficiency with a sustainable approach. Equipped with servo motors, it delivers controlled movement and superior print quality in up to 3 colours. Designed for fast changeovers, it features few tool-less elements and a simple, intuitive HMI interface. The use of UVLED lamps for ink drying reduces energy consumption and the emission of polluting gases, such as ozone. Maintenance is facilitated by advanced safety systems.

Servobottle leading machine in this context, represents a technological breakthrough, improving print quality and reducing waste with a precise positioning system for up to 10 colours and UVLED lamps for drying.

Both machines are compatible with ceramic inks.

PEOPLE TO CONTACT AT OUR STAND

Savazzi Fausto - General Manager
Danovaro Massimo - Sales Leader
Vezzani Corrado - Sales Manager
Manicardi Marica - Marketing



OMSO S.p.A.

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www.omso.it



GLASS DECORATING MACHINES

➔ **ERNST PENNEKAMP GMBH & CO. OHG**

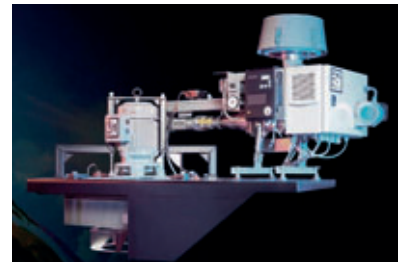
**HALL 14
STAND E18**

PEOPLE TO CONTACT AT OUR STAND

Mr. Peter Ashok Seidel - CEO / Owner
Mr. Ali Karimi - Intl. Sales & Marketing

COMPANY PROFILE

Pennekamp is a leading manufacturer of Annealing, Decorating & Tempering Lehrs, with an excellent reputation worldwide, referenced to more than 2.500 Lehrs which have been built and supplied since 1945. We continuously aim to assist our clients in all glass industry sectors such as Container, Tableware, Solar, Float and Automotive Glass with reliable, economical and energy efficient equipment on the highest technical level. Pennekamp's patented **BLEU Burner** will considerably reduce lehrs' energy consumption (Gas), as well as harmful emissions such as NOX, CO & CO2, while it optimizes the combustion process. This intelligent Burner system also improves the heat distribution inside the lehrs & around glass articles during the thermal treatment.



PRODUCT RANGE



ANNEALING, DECORATING & TEMPERING LEHRS with intelligent energy saving heating medias. Hot-End Handling equipment; **Multi Axis Servo Stackers, Cross Conveyors** and **Ware transfer. Cold-End Coating Systems;** Upper & Under Belt spray systems containing **Dosing unit.** Our preheating **Mould Ovens** and **Deflector Firing Kilns** bring reliability in to the clients' production, and our Automation techniques at the Cold End area provide our clients by the highest productivity, where the articles are supposed to be coated. Pennekamp equipment and services stand for the highest quality internationally. The higher quality of the machines, the longer time they last. The more user-friendly the technology, the less downtime in production.

pennekamp

**ERNST PENNEKAMP
GMBH & CO. OHG**

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✉ sales@pennekamp.de

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➔ **GIANCARLO PEREGO SpA**

**HALL 13
STAND D64**

PEOPLE TO CONTACT AT OUR STAND

Leonardo Perego - CEO
Gordan Spiljak - GM Croatian Plant
Michele Giordano - Group Sales Director
Andrea Galli - Group CTO

Umberto Bilotta - Sales Manager
Adriano Carrara - Sales Manager
Davor Ruzak - Sales Manager

COMPANY PROFILE

Giancarlo Perego Group has been manufacturing moulds for the glass industry since 1964. With 60 years of experience, and with continuous huge investments in new machinery and technology, the company is continuously consolidating its leading position in the global mould market every day. With its mould shop in Croatia, acquired in 2001 and completely renovated in 2012, Giancarlo Perego Group has a total covered area of 12,000 square meters. All these investments enable the Giancarlo Perego Group to significantly increase its production capacity; with

more than 4,000 cavities per month, the company is able to supply tools all around the world, exporting the 80% of production to South America, USA, Europe, North, Center and South Africa, developing day by day strong business relations with major international partners. Well aware of the difficulty of communicating the full scope of our activity in a few lines, Giancarlo Perego Group invites you all to visit our plants of Italy and Croatia.



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✉ gperego@gperego.it

www.gperego.it



1964 - 2024

PNEUMOFORE S.P.A.

HALL 13
STAND A64

COMPANY PROFILE

Pneumofore is a leading supplier of **centralized vacuum and compressed air systems** for glass manufacturing. Founded in 1923, the company manufactures vacuum pumps and air compressors for industrial applications worldwide and supplies the glass industry with a full range of product solutions designed for top performance and constant efficiency. The air compressors and vacuum pumps are built to last and are found worldwide, even in remote areas where customers require extraordinary reliability. Leader in **Rotary Vane Technology**, Pneumofore solutions focus on constant performance, long lasting operation, **minimal Life Cycle Cost and high environmental respect**.

PRODUCT RANGE

- Energy Savings Solutions for the Supply of Vacuum and Compressed Air in Glassworks
- Centralized Vacuum Systems
- Compressed Air Systems
- Rotary Vane Technology
- System Engineering



PEOPLE TO CONTACT AT OUR STAND

Our qualified personnel will be at our stand to present Pneumofore full range of products and solutions for the Glass Industry and their clear results: high energy savings, trouble-free operation over decades and the **lowest Total Cost of Ownership**.



PNEUMOFORE S.P.A.

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RAMSEY PRODUCTS

HALL 13
STAND C31

COMPANY PROFILE

SILENT CHAIN FOR CONVEYING AND POWER TRANSMISSION

With thousands of customers worldwide, **Ramsey** has become a dominant force in the chain industry. Currently, Ramsey provides customers with solutions for their conveying and power transmission applications. At Ramsey, the team believes that getting to know customers closely, visiting their plants, and seeing the challenges they must confront head-on is vital to success.

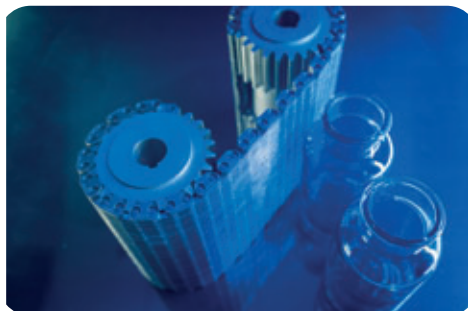
Ramsey today:

- Offers the world's widest range of top-quality inverted tooth chain products;
- Holds eight patents and numerous registered trademarks;

- Has representation in more than 70 countries;
- Offers the highest level of quality, excellent customer service and competitive prices;
- Provides conveyor chains that can run at extreme speeds with smooth bottle transfer and exceptional chain life;
- Supplies the world's most innovative glass manufacturers

New products:

Ramsey's Sentry 2-Pin Wear Protected Chain combines the best features of single pin and two-pin conveying chains. Features include guard links with fully-recessed pin heads, 100% hardened alloy steel construction - no sintered metal, two pin chain joints, extended pitch chain design, staked pin heads, and pre-stressing for reduced chain elongation.



Ramsey Products
CORPORATION

RAMSEY PRODUCTS

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www.ramseychain.com

REGINA CATENE CALIBRATE S.p.A.

HALL 13
STAND C84



REGINA CATENE CALIBRATE S.p.A.

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COMPANY PROFILE

Established in 1919, **Regina** is a world leading developer and manufacturer of high-quality conveyor chains, belts, roller chains, components, offering a complete cutting edge product portfolio of standard and special applications for glass, beverage, food, packaging and many other industries. Regina is recognized among the 'fathers' of high performance conveying and power transmission solutions for the Glass Industry at global level.

Our products are fully developed and manufactured at our premises by means of a wide range of top-tier engineered plastics and steel grades and available in metric and imperial standards.



We are strongly committed towards continuous innovation and development of our value proposition, process capabilities and human capital, with a continuous drive on sustainability. We are stable partners of the leading OEMs and producers at global level in the glass industry and across overall industry sectors in which we operate.

Highlights for the Glass Industry:

- Full range of dedicated high-quality chains, modular belts and components for top-tier cold-end lines
- State-of-the-art product design, engineering and materials
- Fully proofed low-dusting solutions
- Unique high-performing solutions for Lube-Free Bottle-Turner applications
- Innovative eco-sustainable product portfolio of POM solutions
- Complete in-house manufacturing and control of overall product portfolio
- More than 1.000 lines worldwide equipped with Regina products

PRODUCT RANGE

- New imperial standard heavy duty modular belts and dedicated widths chains, 1305 Series
- Range extension with 4 1/2" width also available for the new GS gripper chain for bottle-turner applications, top-tier solution for conveying unstable products
- Lube-Free Gripper Chains for bottle-turner applications
- Full-range of chains, modular belts and components for top-tier Cold-End lines
- State-of-the-art lube-free material (e-SLIDE and SUPREME-S) for guides and curves
- Innovative eco-sustainable product portfolio of POM solutions

SIGMA GROUP

HALL 13
STAND B57



COMPANY PROFILE

Sigma Group is a global leader in refractory solutions for the glass market selling more than 80% of our production abroad.

Our state-of-the-art manufacturing facilities in Italy and Bulgaria are equipped with advanced machinery and photovoltaic systems that generate a combined 900,000 kWh annually, reducing CO₂ emissions by 480 tons each year.

Our laboratory is one of the industry's most sophisticated laboratories. This allows us to maintain rigorous control over research, development, and quality assurance, ensuring our products consistently deliver exceptional durability, thermal resistance, and reliability—even in the most demanding environments.

With a lean and agile structure, we offer unparalleled flexibility and swift decision-making, enabling us to provide customized solutions tailored to each client's specific needs.



Research & Development team at Locate Varesino

PEOPLE TO CONTACT AT OUR STAND

Roberto Mari - CEO
Federico Mari - COO
Luigi Mandelli } Sales
Alberto Tedeschi }
Radostina Saenko }

Plovdiv facility



Locate Varesino facility



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PRODUCT RANGE

- Furnace refractories
- Working ends and forehearth
- Feeder expendables

SORG KERAMIK SERVICE GMBH (SKS)

HALL 15
STAND C44



PEOPLE TO CONTACT AT OUR STAND

- Alexander Sorg - Managing Partner SKS
- Herbert Lorz - Managing Director SFB
- Afonso Morna - Managing Director SKS Iberica
- Holger Mayer - Managing Director Fusetech
- Torsten Richter - Operation Manager Glasofenbau Leipzig
- Key group employees and Sales Team

PRODUCT RANGE

- Construction of glass melting furnaces
- After sales & Maintenance Services
- Furnace Audits and Inspection
- Special Hot Repairs

SORG KERAMIK SERVICE GMBH

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COMPANY PROFILE

SORG Keramik Service GmbH (SKS) brings together seven subdivisions which all share the same goal: Providing unparalleled service, performance and reliability to glassmakers worldwide. Together with Nikolaus SORG and EME we can deliver a single source solution from batch and cullet handling over engineering, equipment to construction and after sales.

With over 200 in-house experts, we support customers worldwide at every stage of their furnace life. Offering the complete services from construction over maintenance, furnace audits and special hot repairs – only SKS is capable to do.

To find out how SKS can support you, we look forward to seeing you at glasstec 2024.

NIKOLAUS SORG GMBH & CO. KG

HALL 15
STAND C44



PEOPLE TO CONTACT AT OUR STAND

- Alexander Sorg - Managing Partner
- Michael Sorg – Managing Partner
- Matthias Haas – Associated Sales Director
- Thomas Breitfelder - Technical Director
- Dirk Schnurpfeil – R&D Director
- Key group employees and Sales Team

PRODUCT RANGE

- Melting Technologies
- Conditioning Technologies
- Mathematical Modelling
- Engineering & Equipment
- Full-service Services
- Sustainable Solutions

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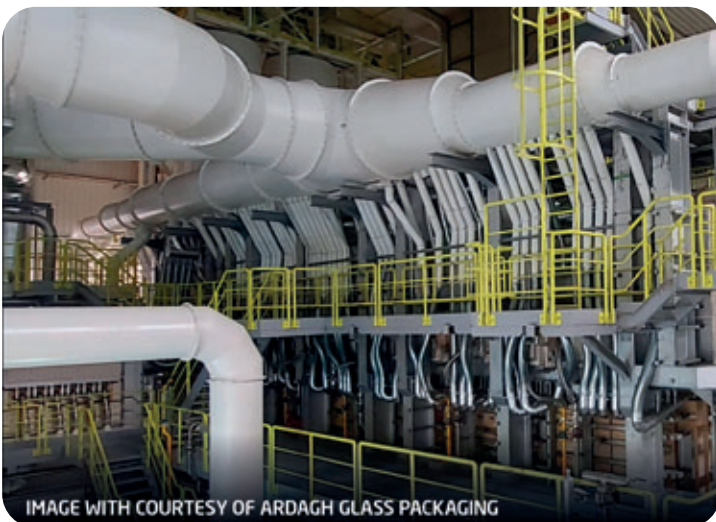


IMAGE WITH COURTESY OF ARDAGH GLASS PACKAGING

COMPANY PROFILE

As Nikolaus SORG celebrates 150 years at the forefront of glass melting and conditioning, we are proud to be one of three industry-leading specialists in the SORG Group. Responsible for designing the world's most advanced furnaces and related technologies, our tireless commitment to research and development supports glassmakers in improving the sustainable performance of their furnaces to maximise asset lifespan.

SORG has set a milestone in the decarbonisation of the glass industry with the CLEAN Melter®, which has successfully gone into operation. SORG is working intensively on further steps to offer the industry and customers solutions for the future.

STARA GLASS

HALL 13
STAND B46



PEOPLE TO CONTACT
AT OUR STAND

- Temistocle Fabbris - Sales Director
- Gabriele Bollani - Sales Manager
- Moreno Destro - Sales Manager
- Simone Ferraro - Technical Director
- Giorgio Ministrini - Project Manager
- Ernesto Cattaneo - R&D Director

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COMPANY PROFILE

Staraglass specializes in supplying state-of-the-art furnaces and forehearths, offering innovative solutions and global services to support the glass industry's transition towards decarbonization. The company's R&D department is also actively involved in research projects focused on reducing CO2 emissions and enhancing the sustainability of glass production, with initiatives such as Sugar, H2Glass, and CorEu. Staraglass can supply EPC projects for all types of melting furnaces, including hybrid solutions, working ends, and forehearths. These include sustainable solutions to reduce NOx emissions and lower energy consumption through patented technologies. Staraglass also offers maintenance & customer support services, such as hot works, repair services, start-up, and shutdown services. Please visit us to discover all our capabilities.

PRODUCT RANGE

- EPC
- MELTING FURNACE
- HYBRID FURNACE
- WORKING END AND FOREHEARTH ENGINEERING
- EQUIPMENT ENGINEERING AND SUPPLY
- BOOSTING SYSTEM
- SUPER BOOSTING SYSTEM
- TOP QUALITY REFRACTORY
- DEMOLITION
- CONSTRUCTION
- COMMISSIONING
- OPERATIVE SUPPORT
- HOT REPAIR
- SUSTAINABLE SOLUTIONS

This is our commitment: at Staraglass, we recognize the world's shift towards a renewed value chain, and we are ready to lead with unmatched engineering excellence.

Let's lead the change together.

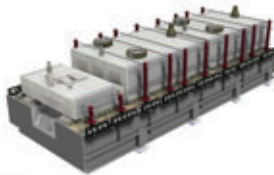
TECO GROUP

HALL 13
STAND B62



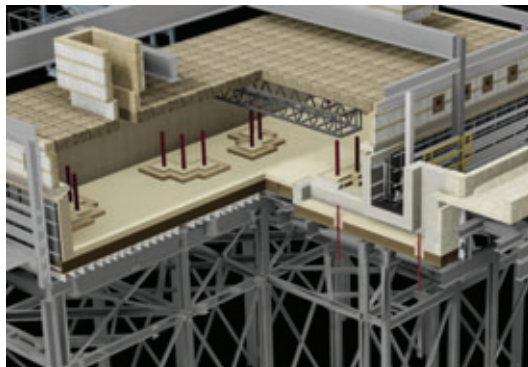
PROMOTED PRODUCTS

- Glass furnaces of all types
- Forehearths and working ends
- Glass plant equipment including the SX electrode holder and electric boosting



COMPANY PROFILE

As part of the TECO Group, Toledo Engineering, Tecoglas, and KTG Systems, can offer total furnace capabilities in glass furnaces of all types with KTG Engineering supporting this activity as glass plant equipment manufacturers. Zedtec are the TECO Group specialists in forehearth and working end technology. EAE Tech provide high quality industrial automation engineering services and custom control systems. The TECO Group has been designing, building and modernising for the world's primary glass manufacturing industry since 1927.



TECO GROUP

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✉ sales@teco.com

www.teco.com

TEKA MASCHINENBAU GmbH

**HALL 18
STAND E48**

PEOPLE TO CONTACT AT OUR STAND

Our staff will be at your service throughout the show.

PRODUCTS BEING PROMOTED

• MIXERS

COMPANY PROFILE

TEKA Maschinenbau GmbH, established in 1961, is the manufacturer of the internationally reputable TEKA glass batch mixer, and one of the leading glass mixing equipment specialists worldwide.

We specialize in the engineering and manufacturing of a complete range of glass batch mixers from 250 liters up to 7,500 liters capacity for the highest demands in all glass mixing applications. TEKA mixers have an outstanding reputation for mixing performance, reliability and ease of use in combination with an exceptional service life.

Decades of know-how and technological innovation guided by in-the-field experience under severest conditions and a strong customer commitment have made TEKA one of the leading manufacturers of glass batch mixers worldwide.

We have supplied glass batch mixers to the most reputable and advanced glass manufacturing companies worldwide into all glass batch mixing applications.

TEKA batch mixers can be installed in any new or existing glass manufacturing facility and due to its compact size are perfectly suitable for retrofitting into any

existing batch house.

Our after-sales service, which includes spare parts service and the TEKA technical service teams, provide customers with an extremely reliable and timely spare parts supply.

TEKA has a spare parts inventory that is second to none in the glass mixer business. Our spare parts and service teams consist of professionals with many years of experience. TEKA service technicians are highly skilled and very knowledgeable, often with decades of field experience. During site visits, they can instruct on maintenance and operation of the mixers.

TEKA has wholly-owned subsidiaries in North America, France, Spain, Poland and China and a worldwide distribution network provided by professional and long-standing partners.

TEKA Batch Mixer Advantages:

- outstanding homogeneity performance
- exceptional reliability and robustness
- tremendous life-cycle period
- perfect for retrofitting due to compact size
- intelligent mixer design simplifies maintenance and cleaning
- professional TEKA after-sales service teams

Teka

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TIAMA

**HALL 14
STAND E40**

PRODUCT RANGE

Tiama is a global provider of real-time data and quality controls for the glass packaging industry

The company's machines are filled with sensors installed both at the Hot End and Cold End of **the glass plant**. Today, Tiama can send high value data (unique bottle laser-engraved identification, container images and measurements) from all these sensors to ensure optimized productivity and strongly connect these two glass plant areas. To better prepare future Business Intelligence capabilities, Tiama has structured its unique offer around 6 product families:

- **Intelligent solutions:** IT intelligent tools for analysis and management of plant performances. All production and quality data are recorded and displayed in a single smart database that enables optimized production management and immediate actions.
- **Monitoring:** modular and affordable technological bricks at the Hot End provide process information at the earliest stage of the bottle's life while detecting early production drifts.
- **Traceability:** with the patented Total Tracer device, engraving an individual code on the bottle. All defects, information and events at the H-E and C-E will be correlated down to a single container, creating a unique identity card for each ware.
- **Inspection solutions:** Vision and carousel technologies such as MCAL4 AI, MULT4 AI and MX4 machines hosting all the latest innovations, such as SATURN, FKO, WEM (Wire-Edge Measurement), DSM (Dip & Saddle Measure-

ment), etc.

- **Sampling solutions:** either at the H-E, C-E or at the Laboratory, TIAMA develops new sampling Solutions such as Tiama Xlab - a revolutionary machine that leverages X-ray technology to create 3D mapping of the container.

- **Services:** with a panel of support programmes allowing for the use of all Tiama equipment at the highest performance rates - maximizing initial investments.

Tiama Support also includes predictive and preventive solutions to reduce ownership costs. This is exactly how the YOUiverse concept comes into play by offering our customers a comprehensive portfolio of Sensors, Services & Data solutions. With open-protocol software solutions, linking Hot and Cold End sensors to production machinery, glassmakers can make the most of the data in their plant. YOUiverse gives glassmakers more process control and helps to foresee problems early so the right decisions can be taken quickly.



tiama
INSPECTION WORLDWIDE

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▶ VERTECH'

HALL 14
STAND B32

PRODUCTS BEING PROMOTED

Vertech' at a glance

For more than 25 years, Vertech' has been the reference provider of software solutions for the glass industry. SIL is a Manufacturing Execution System (M.E.S.) developed for glassmakers producing hollowware, tubes and glass decoration. With a wide range of products, SIL provides glassmakers with very precise, real time KPIs on the performance of the whole plant. Thanks to all this shared data and the full traceability of products, production rates improve, losses decrease and customer risks are reduced.

Vertech' at an international scale

All over the world, more than 679 running production lines are equipped with SIL. SIL is currently installed in 35 countries, on 5 continents, and available in 23 languages.

A wide range of products

SILProd enables to oversee the production line. It ensures data acquisition from production or decoration lines with real-time display facilitating communication between hot end and cold end.

SIL4.0 is a customized solution that enables data acquisition throughout the plant starting at raw materials. This module guarantees the full digitalization of the glass manufacturing plant. KPIs are accessible and displayed on a customizable dashboard.

SILXQual is an indispensable tool across the glass manufacturing plant for managing quality control not only of raw materials or glass performance, but also articles - in the lab and on the lines - and pallets.

SILXMould guarantees the quality and specifications of the article enabling the traceability of each mold - units and series - independently.



PEOPLE TO CONTACT AT OUR STAND

Ulas Topal – Chief Executive Officer
Andrea Borgno – Area Sales Manager

SILXManager is a management interface for the SIL modules, designed for managers. It ensures the extraction of data for analysis purposes and the generation of daily reports.

SILXMaint improves the maintenance budget to secure the efficiency in the production. It optimizes the maintenance of the IS machine components allowing the production to meet its full capacity.

Trustworthy collaborations with partners and customers

Thanks to trustworthy collaborations with partners, SIL is an independent system that's capable of being connected to any production and inspection machine available on the market.

Besides being a very complete system, SIL includes an individualized follow-up, an annual maintenance contract, on-site installation and customer service.

Vertech' is there every step of the way from the first technical visit and to the installation process to full system implementation and on-site/off-side training. Vertech' customer support is available during office hours (GMT+1), with an optional subscription to the 24/7 hotline for technical support. For long-term system optimization, Vertech' offers expert maintenance service on-site with yearly updates.



VERTECH'

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Follow Vertech' on LinkedIn



▶ VETROMECCANICA SRL

HALL 13
STAND F30

PEOPLE TO CONTACT AT OUR STAND

Francesco Cavatorta - Glass Division Sales Manager
Filippo Mattioli - Area Sales Manager
Luca Bucci - Area Sales Manager



COMPANY PROFILE

Vetromeccanica, established in 1992 in the province of Parma, the heart of the Italian packaging area, has been an important industrial international player right from the very beginning.

With 30 years of expertise in containers handling, Vetromeccanica is a reliable partner during all the phases of the process: from feasibility studies, ex-

ecutive engineering, the choice of the best supplies, right up to the supply of innovative, patented and competitive handling and automation solutions to meet specific needs.

Vetromeccanica offers Cold End Lines from Lehr exit up to palletizing units for the handling of glass containers of different sizes and shapes.



PRODUCT RANGE

- Cold End Lines
- Stacker Units
- Columnar Palletizers / Depalletizers
- Beam Palletizers / Depalletizers
- Robotic Units
- Tray Formers
- Labelling Systems
- Empty Pallets Dressing Lines
- Shuttle Cars
- Sorting & Decorating



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VIDEO SYSTEMS SRL

**HALL 14
STAND D47**



PEOPLE TO CONTACT AT OUR STAND

Alessandro Liani - CEO
Jacopo Zoratti - Sales manager



VIDEO SYSTEMS SRL

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PRODUCT RANGE

- **Oculus** - The universal portable micro control
- **Linea** - Shoulder checks contactless control and checking of mouth defects
- **Vertigo** - Geometric contactless control
- **Omnia** - Multi-format total sidewall control
- **Extrema** - Advanced bottom control of containers
- **Arcus** - Continuous glass colour monitoring
- **SBI** - Checking mouth defects
- **Multi oculus** - Smart cut search
- **Versus** - Smart product selection
- **Kit finish** - Intelligent quality control of container Finish
- **Proximus** - Counting and check for hot bottles clogging
- **Libra A20** - Liquid level check, presence and conformity of the plug/cap position
- **Vip line** - Federal Mark codes tracking solution

COMPANY PROFILE



Video Systems is specialized in the design and construction of high-tech sensors, vision and quality control systems for the main industrial sectors, including the hollow glass market, where our company has developed a vertical competence deriving from a long term experience with important companies of this sector. Imago is the complete range of advanced solutions for inline quality control in low glass production - bottles, jars etc. - developed by Video Systems and based on its deep expertise in Artificial Intelligence, artificial vision and IIOT.

Imago solutions learn directly from the production line, with great advantages in terms of reliable results, cost reduction and great ease of use; moreover, they guarantee fault-finding of any kind of defect, while reducing false rejects to the minimum. Video Systems supplies customized solutions that matches the customer needs, starting from an accurate study of data and production line. A full tele-assistance service is part of Video Systems support to our customers.



VIDROMECHANICA

**HALL 13
STAND C52**



VIDROMECHANICA

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PRODUCT RANGE

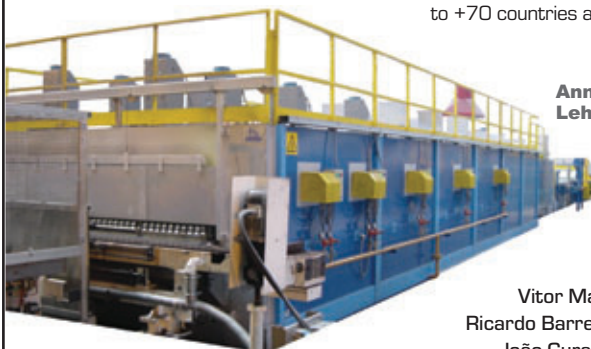
Vidromecanica - thermal equipment for the glass industry

Vidromecanica manufactures annealing, decorating and tempering equipment; equipment for hot- & cold-end coating; and internal cullet processing plants able to run on long-term production.

Vidromecanica's main equipment includes:

- Annealing and decorating lehrs
- Belt tempering lines for tableware
- Spindle toughening lines for stemware
- Thermal Shock Test Machine
- Mould pre-heating kilns
- Stackers + Cross Conveyors
- Hot end coating hoods
- Cold-end coating spraying systems
- Scraper conveyors and Cullet crushers

In close cooperation with its customers and glass industry, Vidromecanica has been a partner in this market for the last 40 years - since 1984. Vidromecanica has supplied equipment to +70 countries and +120 plants.



**Annealing
Lehrs**



Tempering Lines



**PEOPLE TO CONTACT
AT OUR STAND**

Vitor Maia - CTO - Chief Technical Officer
Ricardo Barreto - CEO - Chief Executive Officer
João Curado - CTIO - Chief Technology Innovation Officer

WALTEC MASCHINEN GmbH

HALL 13
STAND C71



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PEOPLE TO CONTACT AT OUR STAND

Britta Höfer – Managing Director & Partner
Rainer Wagner – Chief Operating Officer
Falk Höllwarth – Director Project Management
Klaus Kestel – Head of Sales



Double gob press



Press-blow machine W12



COMPANY PROFILE

FULLY AUTOMATIC PRODUCTION LINES for:

Tableware, spinning articles, stemware, press-blow articles, blow-blow articles, toughening/tempering, microwave and technical articles, washing machine glasses, glass insulators, glass blocks.

PRODUCTS BEING PROMOTED

- electronic gob feeders
- electronic shears system
- fully automatical glass presses
- press-blow machines
- blow-blow machines
- spinning machines
- fire polishing and rim glazing machines
- take-out and turning systems
- stackers
- handling systems
- conveyor belts
- transfer systems
- Quadro Gob lines
- Triple Gob lines
- Double Gob lines
- Single Gob lines
- Spinning lines
- Stemware lines
- Press-Blow lines
- Blow-Blow lines
- Toughening/Tempering lines

ZIPPE INDUSTRIEANLAGEN GMBH

HALL 13
STAND A31



ZIPPE INDUSTRIEANLAGEN GMBH

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PEOPLE TO CONTACT AT OUR STAND

Dr. Philipp Zippe - CEO
Dr. Andreas Emrich - CTO

COMPANY PROFILE

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 hollow ware, 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. Our 24-hour support service enables our customers to contact an expert around the clock, and now, thanks to the new Zippe smart@360 online service & maintenance tool, a live system for completed and ongoing service activities is available for your operating personnel 24/7!

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
- Automation
- Engineering
- Modernization
- Factory Cullet Recycling
- Glass Recycling
- Batch Charging
- Preheating
- Audits
- Maintenance & Service





The Glass Day

XXXVII ATIV Conference

PARMA—29 November 2024

*“Hollow glass and flat glass today and tomorrow,
technology production and application constantly
evolving”*

Main topics:

Industry 5.0

Artificial Intelligence

Energy efficiency and sustainability

Production problems

If you have any enquiries or would like to express an interest in attending,
please contact us at segreteria@ativ.eu Or call +393286851552

Associazione Tecnici Italiani del Vetro - Sede legale: Viale Basetti 14, 43121 Parma – Italy

Cod.Fisc.: 01881950347 mail: segreteria@ativ.eu web: www.ativ.eu



Made to perform

AUTONOMY

BEGINS WITH **E2E**



Our full-service, innovative End to End offering supports glassmakers in moving toward a more efficient, more sustainable and fully autonomous future.

Visit us at Hall 13, Stand C45 at [glasstec 2024](#).

emhartglass.com

BUCHER
emhart glass