

Glass-Technology International

THE LEADING MAGAZINE FOR THE INTERNATIONAL FLAT GLASS INDUSTRY

September/October • Year 32 • No. 5/2021

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ART. TA

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VITRUM
PREVIEW **2021** MILAN

VITRUM
5-8 October 2021
Milan, Italy

HEGLA: FASTER
CUTTING, MORE
INFORMATION AND
PERFECT TEMPERING

TUOMAS: NEW 18m
CUTTING LINE
FOR CRICCURSA

IOCCO FURTHER
INCREASES ITS
CAPABILITY WITH
ADDITIONAL
PRODUCTION
UNIT AND OFFICES

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AND KNITTEL
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AT VITRUM 2021

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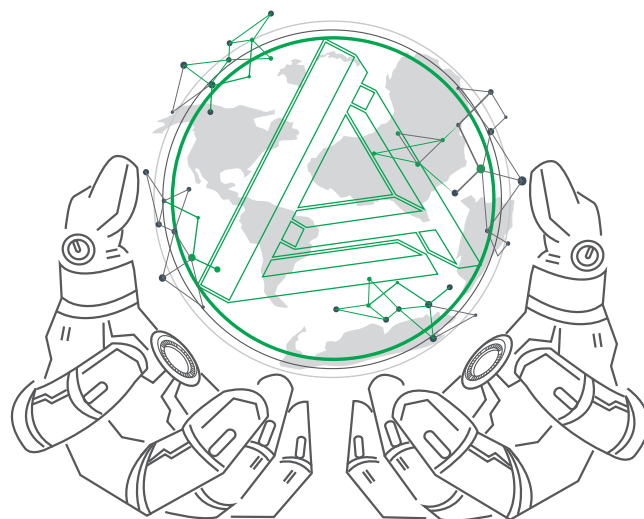
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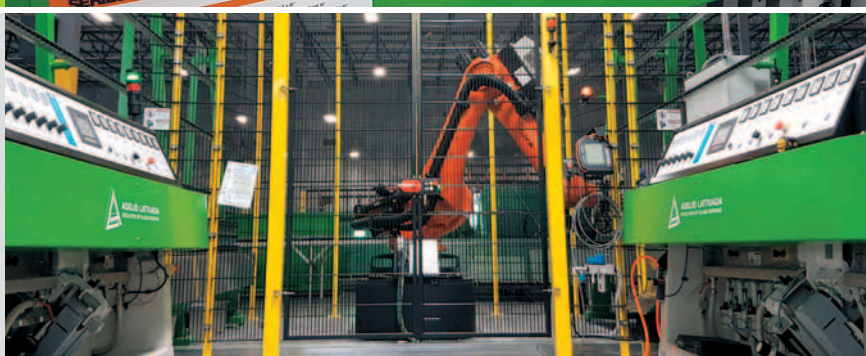
AUTOMATIC MACHINES

SOLUTIONS FOR AUTOMATING
ACTIVITIES AND INCREASING
PRODUCTION FLEXIBILITY



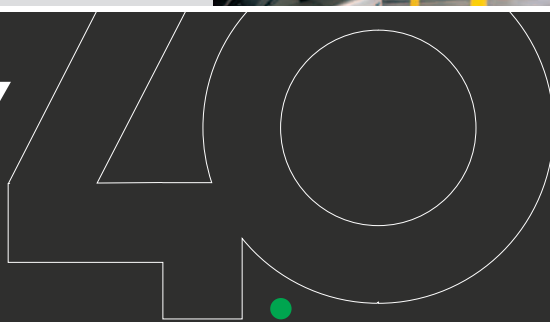
ROBOTS

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FLEXIBLE AND
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INDUSTRY

SOLUTIONS FOR
TRANSFORMING
PRODUCTION
AND BECOMING
A SMART FACTORY



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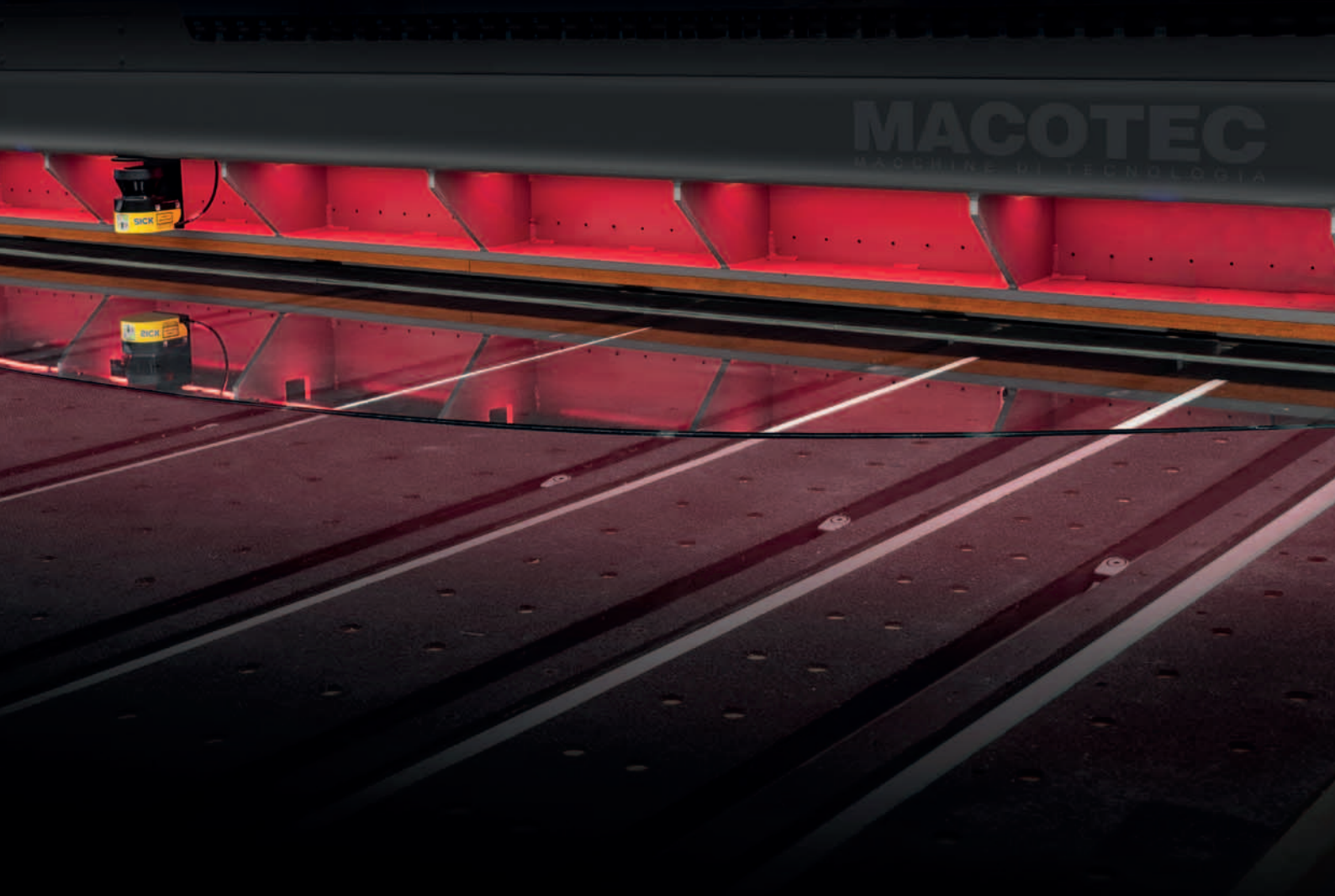
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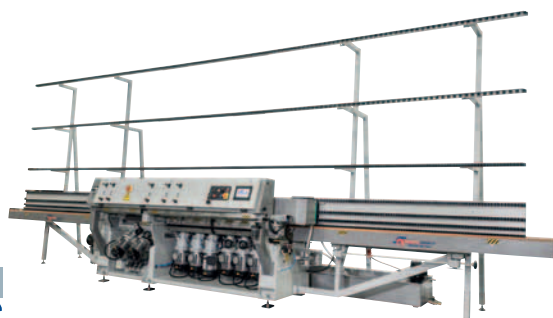
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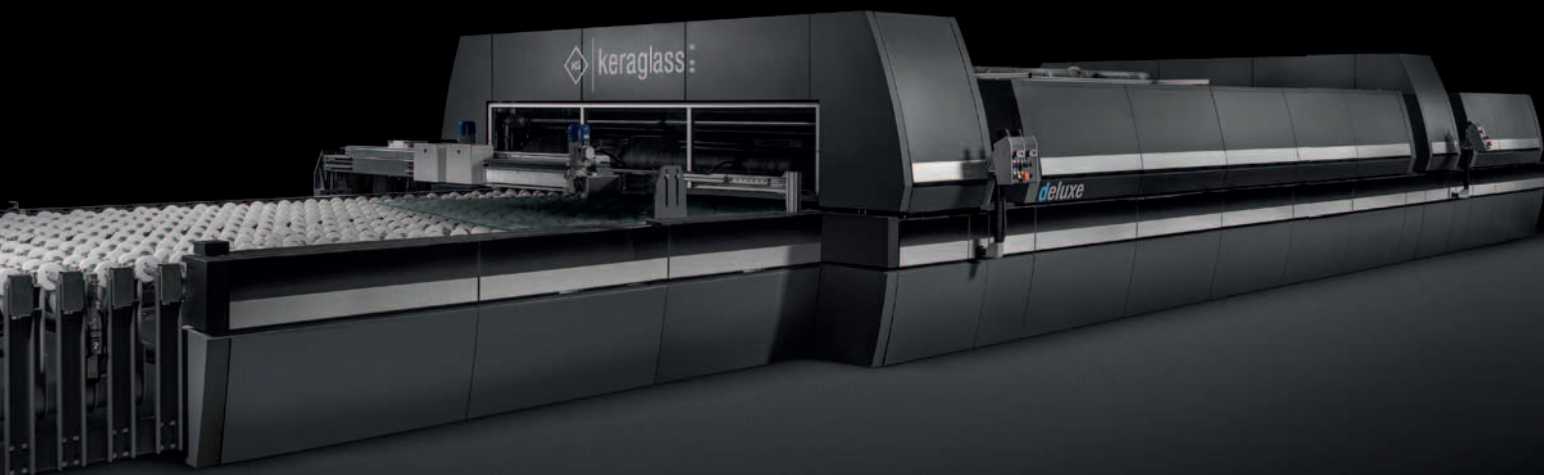


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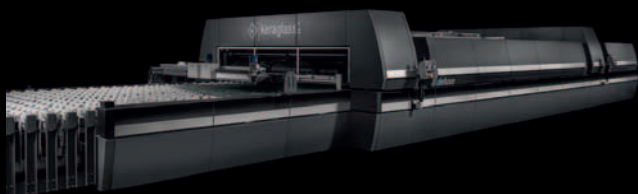
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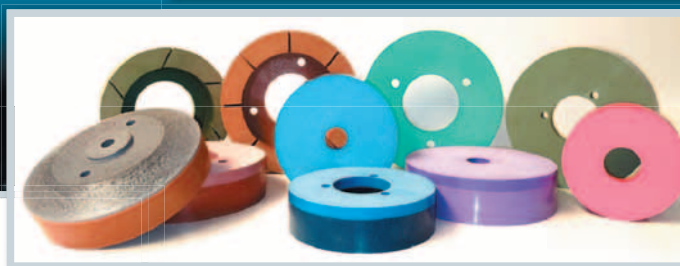
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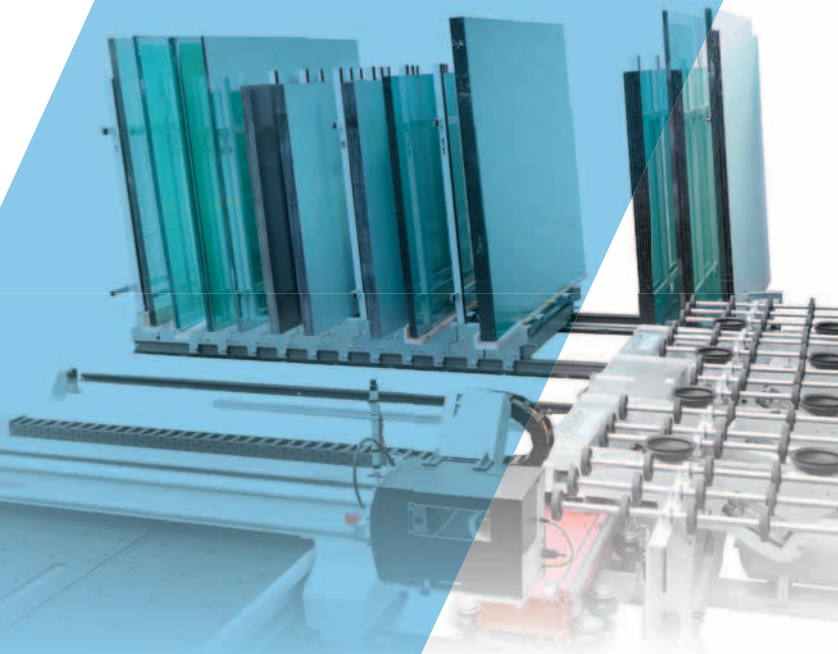
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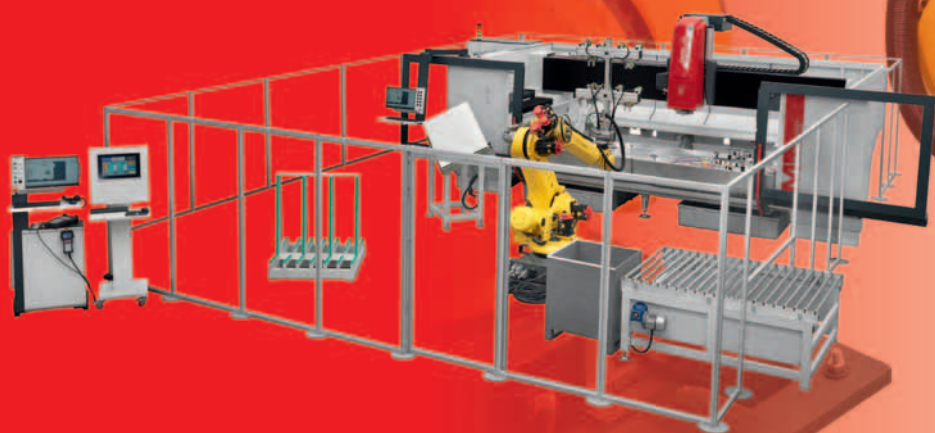
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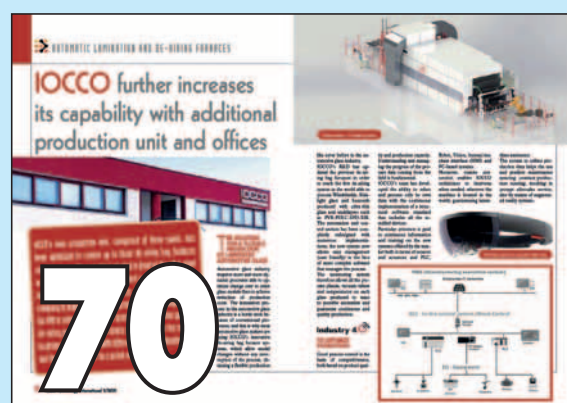
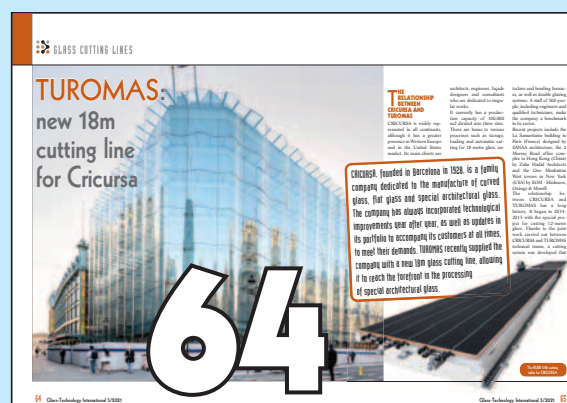
Master Series with ROS

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VITRUM 2021

5 - 8 OCTOBER
MILAN, ITALY
HALL 24

- 54** **HEGLA:** FASTER CUTTING, MORE INFORMATION AND PERFECT TEMPERING
- 58** PERIMETER VARNISHING OF FLAT GLASS SHEETS WITH GLASSLINE FROM **ROLLMAC**
- 60** **TEXPACK:** A COMPLETE RANGE OF SEALING SYSTEMS AND PRODUCTS FOR HIGH TEMPERATURES
- 64** **TUOMAS:** NEW 18M CUTTING LINE FOR CRICURSA
- 70** **IOCCO** FURTHER INCREASES ITS CAPABILITY WITH ADDITIONAL PRODUCTION UNIT AND OFFICES
- 76** **CUGHER GLASS** PRESENTS THE ARCHITECTURAL LAB
- 79** COMPETENT ADVICE AND THE BEST SOLUTIONS FROM ROLLPAST THANKS TO **LISEC** TECHNOLOGY
- 84** FLEXIBLE AND RELIABLE SOLUTIONS FOR THE MOST DEMANDING CUSTOMERS FROM **B SOLUTION**
- 86** TWO NEW PRODUCTS TO BROADEN THE STRATO[®] INTERLAYER RANGE AT **SATINAL**
- 90** **FOREL** 45 YEARS OF PASSION AND INNOVATION
- 97** NEW AUTOMATIC LAMINATED GLASS CUTTING LINES BY **MACOTEC**



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regular features

- 18** ADVERTISERS INDEX & COMPANIES MENTIONED
- 22** BUSINESS NEWS
- 134** SUPPLIERS GUIDE - Yellow Pages
- 145** VITRUM PREVIEW
- 190** SUBSCRIPTION SERVICE
- 192** FAIR CALENDAR 2021-22

cover advertiser

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The know-how that recognizes Cugher as a customer-oriented plants and machines producer in the Automotive sector has been applied for the Building/Interior Design division. New solutions have been developed to guarantee efficiency and precision and these products will be presented at Fairs 2021.

ARCHITECTURAL LAB
Architectural Technology

76

GLASS PROCESSING MACHINERY

Flexible and reliable solutions for the most demanding customers from B SOLUTION

With over 50 years of experience in glass processing machinery, B Solution provides an up-to-date overview of its product range in this article. Machinery that meets customer needs, the most common requests, but also requests for specialized processing and precision.

84

NEW INTERLAYERS FOR SAFETY GLASS

Two new products to broaden the Strato® interlayer range at SATINAL

86

GLASS PROCESSING OVERVIEW

FOREL 45 years of passion and innovation

45 years of passion, ideas, successes, discoveries and relationships. This is the milestone reached this year by Forel, a highly recognized brand of glass machinery business, famous for its innovative technology and for a philosophy based on listening to the customer and on responsiveness.

90

LASER TECHNOLOGY

LASERMEK, the new laser by Glass Company

The new range of LASERMEK intelligent lasers are the innovation and the result of the continuous research by Glass Company. The goal is to offer to customers the most cutting-edge and unique machines.

102

WINDOWS, DOORS AND ACCESSORIES

Competent advice and the best solutions from Rollpast thanks to LISC technology

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79

FLAT GLASS CUTTING/STORAGE AND LOADING

New automatic laminated glass cutting lines by MACOTEC

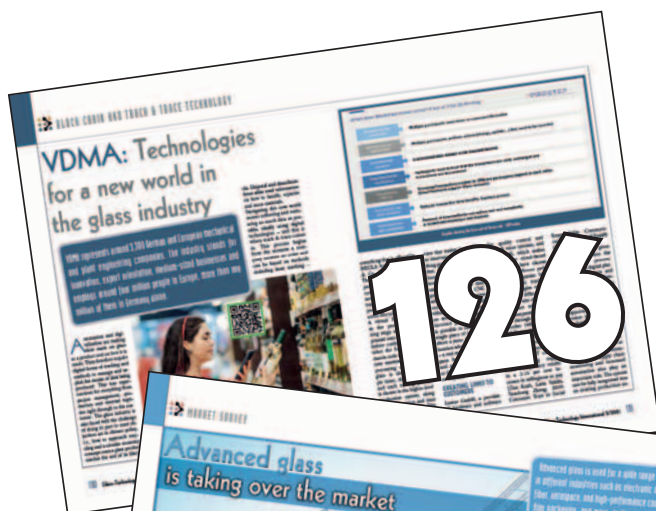
Since 1987 MACOTEC has been developing, building and installing automatic machines and systems for the glass cutting, storage and loading for float, tempered and laminated glass. MACOTEC is now a solid reference in the glass industry, with its extensive international range of products and services, and its experienced technical staff, able to solve any problem in the glass industry with the most current and tested components and technology.

97

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THERMOPLASTIC SPACER APPLICATOR ART. TA

192

- 102** LASERMEK, THE NEW LASER
BY **GLASS COMPANY**
- 106** **ADELIO LATTUADA** AND **KNITTEL GLASS**
OFFER NEW ROBOTIC LINE AT **VITRUM 2021**
- 110** **ADI** AND **RBM ITALIA** AT **VITRUM** WITH
THE BEST TECHNOLOGIES IN TERMS OF
MACHINERY AND ACCESSORIES
- 114** **EVALAM** FROM **PUJOL** FOR FUNCTIONAL
AND DECORATIVE HOTEL ELEMENTS IN CROATIA
- 120** **ROCK**, THE HEAVY DUTY EDGER PACKED WITH
TECHNOLOGY FROM **NEPTUN**
- 122** **VULCAN INTELLIGENT TEMPERING LINE:**
THE LATEST SMART FURNACE FROM **JINGLASS**
- 126** **VDMA:** TECHNOLOGIES FOR A NEW
WORLD IN THE GLASS INDUSTRY
- 130** **ADVANCED GLASS** IS TAKING OVER
THE MARKET



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18M

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COMPANY NAME

PAGE No.

A

A+W.....	24, 29, 126-128, 134-143
A. Lattuada.....	Front Inside Cover, 106-108, 134-143, 146
ADI.....	44-45, 110-112, 134-143, 147
AGC Glass Europe.....	46
Allied Market.....	130-132
Armor Solar Power.....	29

B

B Solution.....	83, 84-85, 134-143, 148
Bando Kiko.....	2, 134-143
Bavelloni.....	37, 134-143
Best Makina.....	133, 134-143
Bottero.....	23, 134-143
Bovone Elettromeccanica.....	10, 134-143, 149
Burkle Robert.....	19, 134-143

C

CMS.....	51, 134-143, 150
COMSS.....	109, 134-143, 151
Cricursa.....	64-67
Cugher Glass.....	75, 76-77, 134-143, 152

D

Deltamax.....	100, 134-143, 153
DFI - Diamond Fusion International.....	50
Diamut.....	12, 134-143, 154

E

Edgetech.....	31, 134-143, 155
Evalam.....	114-116, 117, 134-143
Eurasia Glass.....	170

F

Fenetech.....	38
Filtraglass.....	53, 134-143, 156
Forel.....	Front Cover, 90-95, 134-143, 157
Forvet.....	27, 134-143, 158
Fratelli Pezza.....	68, 134-143, 159

G

Glas-Pro.....	50
Glass Company.....	101, 102-105, 134-143, 160
Glass Group.....	26
Glaston.....	3, 31, 134-143, 161
GPD - Glass Performance Days.....	36
Guardian Glass.....	48, 49

COMPANY NAME

PAGE No.

H

Hegla.....	First Page, 28, 54-56, 134-143, 162
Hegla-Boraident.....	126-128
Hegla-Hanic.....	54-56
Helios Group.....	Back Inside Cover, 22, 134-143, 163

I

Idrotecnica.....	39, 134-143, 164
Intermac.....	13, 134-143, 165
Iocco Group.....	21, 70-73, 134-143
Isra Vision.....	42
Italcarrelli.....	47, 134-143, 166
Italmole.....	8, 134-143, 167

J

Jinglass.....	122-124, 125, 134-143
---------------	-----------------------

K

Keraglass.....	7, 134-143, 168
Kezzler.....	126-128
Knittel Glass.....	106-108
Kuraray - Trosifol.....	36

L

Lanzetta.....	118, 134-143, 169
Leatus.....	126-128
Lisec.....	79-81

M

Macotec.....	5, 97-99, 134-143
Mappi.....	Back Cover, 134-143, 171
Marrose Abrasives.....	96, 134-143
Mazzaroppi.....	43, 134-143, 172
Mole Moreschi.....	52, 134-143, 173
Movetro.....	12, 134-143, 174

N

Nel Hydrogen.....	49, 134-143
Neptun.....	119, 120-121, 134-143, 175
NorthGlass.....	20, 32, 134-143
NSG Group.....	24, 49

O

Optima.....	4, 134-143, 176
-------------	-----------------

P

Polaris Windowa and Doors.....	38
Press Glass Europe.....	46
Prodim.....	78, 134-143, 177

...in this issue of *Glass-Technology International*. Advertisers are indicated in bold.

COMPANY NAME	PAGE No.
Pujol Hornos Industriales.....	114-116, 117, 134-143
R	
RBM Italia	44-45, 110-112, 134-143, 178
RCN Solutions	25, 134-143, 179
Rollmac	57, 58-59, 134-143, 180
Rollpast.....	79-81
S	
Satinal - TK - Strato	86-88, 89, 134-143, 181
Schiatti	6, 134-143, 182
Schiavo.....	134-143, 144
Schott.....	22
Skill Glass.....	34, 35, 134-143, 183
Sparklike	25, 134-143, 184
Stefani.....	40, 41, 134-143
System Digital / System Ceramics	9, 134-143, 185

COMPANY NAME	PAGE No.
T	
Talamoni	82, 134-143, 186
Texpack.....	60-62, 63, 134-143
Turkie Sisecam	11, 39, 134-143
Triulzi	74, 134-143, 187
Tuomas.....	17, 64-67, 134-143, 188
V	
VDMA	126-128
Vincent.....	69, 134-143, 189
Vitro.....	30
Vitrocelos Vidraria.....	25
Vitrum	145-189
Z	
ZAK Glass Technology.....	113
Zippe	49

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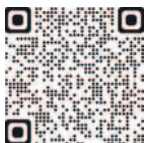
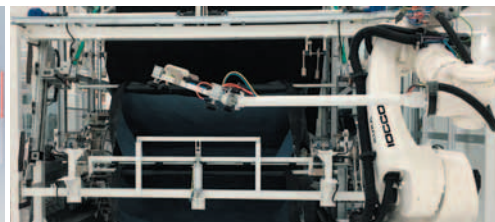
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- ✓ **Glass of complex shapes**

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- Reduce operating costs
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PRODUCTION PLANTS & MACHINES



Automotive glass



Architectural & Appliance glass



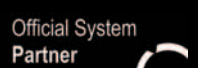
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SCHOTT

Groundbreaking for flat glass processing plant in Turkey

Specialty glass manufacturer **SCHOTT** is investing EUR 9 million in a state-of-the-art production technology and highly digital infrastructure in its Flat Glass plant at SCHOTT Orim in Bolu, Turkey. The groundbreaking ceremony for the new building took place in July 2021, with production planned to begin in early 2022.

"The investment will increase the production capacity in Bolu by 50% and underlines the importance of the home appliance business to SCHOTT. The home appliance industry is an important pillar for us, reinforced by mega-trends such as cocooning or urbanization, which result in people upgrading their home and living," said Dr. Heinz Kaiser, member of the SCHOTT Management Board. "Our commitment makes us an innovation partner that enables customers to turn product ideas into reality," continued Kaiser.



SCHOTT has continuously invested in its home appliance manufacturing – almost EUR 15 million in Turkey alone in the past five years. Alongside increased production capacity, the new infrastructure will create new employment, adding up a double-digit number of jobs per year to the current 700 employees.

The engagement in Turkey is part of SCHOTT's global growth strategy: for the second year in a row, the SCHOTT technology group is running a record investment program, with EUR 350 million being invested this financial year. All projects are on time despite the pandemic.

WWW.SCHOTT.COM/EN-GB



Join us to our Open Weeks!

There is a land, at the foot of the Alps, rich in culture and industrial tradition where the production of machinery for the flat glass manufacture and processing has become art.

Bottero S.p.A., world excellence in glass technology since 1957, is pleased to invite you to the Open Weeks that will be held in October 2021 at its plant in Cuneo.

During the event, you will have the opportunity to meet our engineers in order to learn more about the latest flat glass processing technologies available on our machines and the many business and start-up incentives available.

Should you need any further details, please contact your local Sales Area Manager.

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NSG GROUP

Support from IFC in manufacturing capacity in Argentina

The International Finance Corporation (IFC), a member of the World Bank Group, announced an investment of USD 40 million in NSG UK Enterprises Limited (NSG UK), a long-standing IFC client and a member of the **NSG Group** – one of the world's largest manufacturers of glass and glazing products for architectural, automotive, and technical applications. The corporate loan will finance the completion and start of operations of the group's greenfield glass production plant in Argentina, with an estimated production of 900 tons per day, and help address the macro challenges facing the South American country.

Located in an industrial site in Cardales, approximately 70 kilometres north-west of Buenos Aires, the plant will utilize the latest NSG worldwide technology supporting the achievement of industry and sustainability targets. This includes aspects such as application of Industry 4.0 standards and technologies that support the decarbonization ambition of NSG Group.

In addition, IFC's loan to NSG UK, through the company's subsidiary in Argentina, *Vidriería Argentina S.A. (VASA)*, will posi-



tively impact the local economy by supporting FDI, substituting imports and generating exports, adding value to domestic raw materials, and enhancing value chains. Furthermore, IFC will provide an advisory service to VASA to help identify energy efficiency opportunities.

"We are pleased to finance the completion of this project and to strengthen our relationship with NSG UK, a repeat global IFC client with a firm commitment to corporate governance practice and green standards," said David Tinel, IFC's Regional Manager for the Southern Cone. "In the context of the pandemic, IFC has stepped up to continue supporting the private sector in emerging economies."

"Since first partnering in 1992, we have built a strong long-term relationship with IFC and are excited about this new opportunity to work together so that we can contribute to the region's economy and the greener environment," said Leopoldo Carlos M. Garces Castiella, Head of Architectural Glass South America. "The NSG Group is aiming to be a global glass supplier contributing to the world with high value-added glass products and services."

WWW.NSG.COM/EN

A+W

Clarity and iCut: enter orders, optimize cutting, manage storage

A+W iCut is used by glass processors to enter orders and optimize glass cutting. This software manages glass storage and uses automatic synchronization with optimization – after cutting, A+W iCut automatically updates the inventory.

A+W iCut is used to create customers and products easily and quickly and use a clear interface to enter insulated glass, TG, LAMI, and other glass types, as well as any required edge processing. Then calculate the total price for the order based on the item prices entered. With the integrated Production Manager, orders entered can be transferred to the optimization with a simple mouse-click. Another crucial feature of A+W iCut is a system for managing residual plates, thus ensuring that in addition to stocked plates, optimization also considers valuable residual plates in order to achieve the best yield.

WWW.A-W.COM/UK/PRODUCTS/A-W-CLARITY/A-W-ICUT



R.C.N. SOLUTIONS

Guest at Vitrocelos Vidraria, Portugal

During a recent trip to Portugal, R.C.N. SOLUTIONS visited one of its important customers: **Vitrocelos Vidraria**. A young but dynamic company, Vitrocelos is growing in space and equipment, increasing its offers for specialised end products.

With this in mind, Vitrocelos has been working on relevant projects for laminated glass installed exteriors, exposed to weathering and oxidizing agents, especially to chlorine as in the case of a swimming-pool, under construction in a private building.

With a composition of six glass sheets of 15mm each, for a total thickness of 93mm, which includes 2.28mm of REVA BF for each panel, the project was accepted over other proposals and validated by an engineer upon several tests, among which the perpendicular compression test.

This important job was carried out with a full RCN laminating system, namely one Lammy System 2, one chamber, 2 shelves, active size 5000x2500mm, and taking six hours to process, with the utmost transparency and adhesion results. Significant is also the weight of each glass block to be laminated and the certainty each shelf and the lifting platform of the kiln can load such a weight while keeping the flatness of the glass sheets.

That is evidence of RCN's philosophy for complete quality supply is a winning point, the company strongly believes this added value confirms that its choices in building machines are the right ones to enable customers to work in total confidence, relying on a combination studied and tested for long time.

WWW.RCNSOLUTIONS.IT/EN/HOME-ENGLISH/



Sparklike non-destructive gas analysers for insulating glass



Sparklike devices are based on the company's proprietary and patented technology, which allows the insulating glass manufacturers to measure the insulating gas concentration without having to break the insulating glass unit.

Non-destructivity allows customers to deliver tested IG units, test already installed units or perform long term automated testing of their production.



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GLASS GROUP

Assovetro market trends and two new acquisitions

Changing approach to the glass supply chain, planning more in the long term, creating partnerships rather than supply relationships with reliable companies, generating continuity and guaranteeing orders with timelines and better management.

Glass Group, the first independent group of flat glass manufacturers, draws the guidelines for the coming months, in the face of a scenario in which the flat glass converting industry has absorbed well the 2020 crisis and is recovering rapidly, forecasting in the 2021 a growth of 8.9% compared to the previous year. Demand is driven by the restart of investments in the construction sector, while the furniture sector is struggling to restart. However, prices and availability of raw materials could slow down the recovery and negatively affect the profitability of companies in 2021, according to market research on the flat glass sector in Italy. The flat glass market in Italy (to industrial and final customers resident in Italy) was worth around EUR 790 million in 2020, slightly down compared to 2019 when it reached EUR 838 million.

Daniele Predari, President of Glass Group, said, "The particular economic period we are experiencing sees, on the one hand a boom in demand and, on the other hand, scarcity of raw materials with consequent skyrocketing prices. The current situation of availability of glass provides for a change in the approach to the supply chain, planning for the long term, creating partnerships with reliable companies to give continuity and guarantee orders through more managerial management. This is why purchasing management with Glass Group has come into operation, with long-term strategic planning for both production and consumption. In 2020 we managed the purchases for this year, asking for guarantees on the supply of materials, even if availability of materials will be lower because such significant growth was not expected."

Also in this perspective, the number of Glass Group affiliates rises to 20: the first completely independent Italian group that brings together leading glass companies with decades of ex-

perience in the transformation of high quality insulating glass around its brand. New entries, at the end of the second quarter of 2021, are the OmniDecor glassworks in Sant'Angelo (TE) and Vetreria Pistillo in Barletta (BT).

"Glass Group's goal is to 'create a system', through strategic synergies and partnerships such as those activated with our Main Partners Pellini, Fenzi and Technoform, with Business Partners Alu vetro, AIGO, glassAdvisor, Sapiens and with the glass factories, effectively designing a large supply chain hub," explained Predari "We are pleased to welcome the new affiliates OmniDecor and Pistillo to the group, hoping that joining the group will be an opportunity for growth for them and enrichment in terms of know-how for all of us."

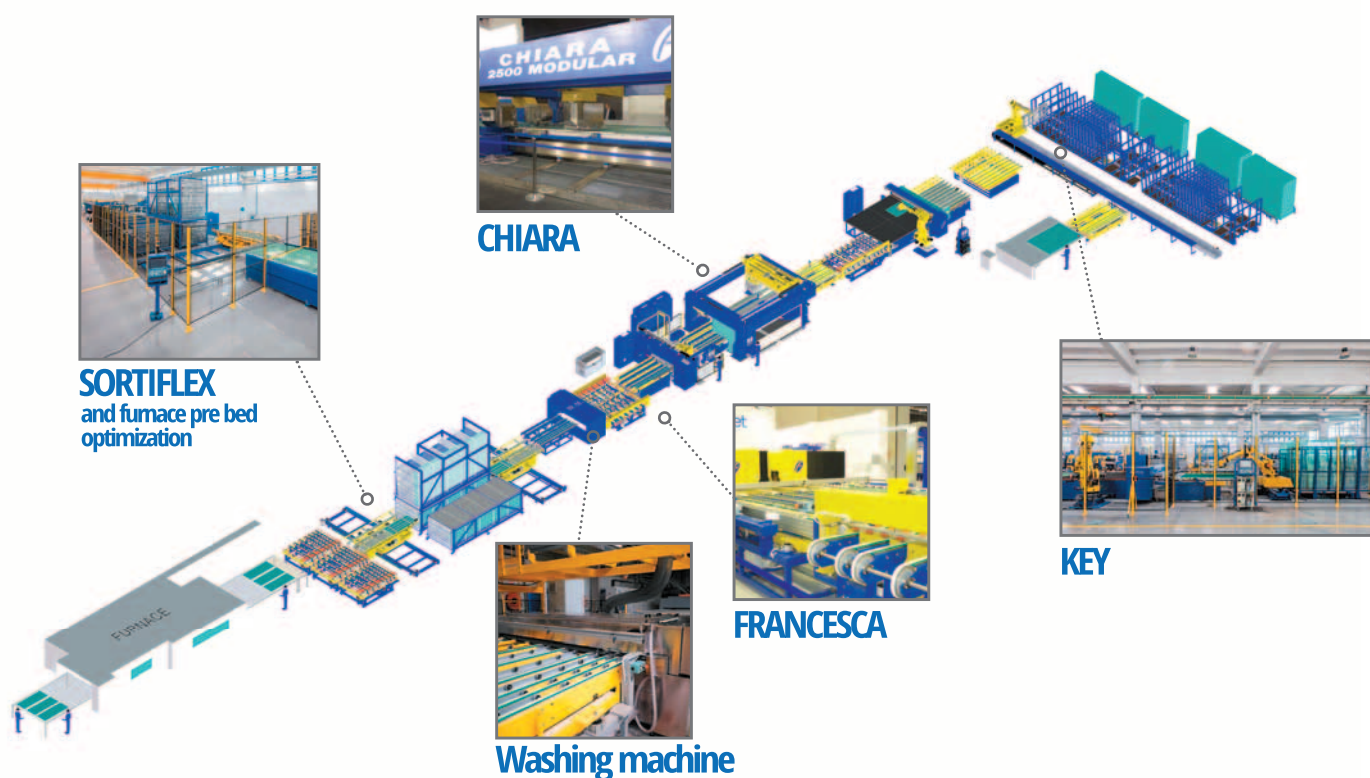
In this perspective of innovation and development, the group was established thanks to the aggregation of five founders (Mornagoglass Srl, Predari Vetri Spa, Vetraria Pescini Srl, Vetreria Romagna Srl, Vetreria Valfon Srl) and today boasts 15 affiliates (Alu vetro, Vetreria Lucana of Vetromat Srl, Vetreria Deserto Srl, Vetreria Biava, Podda Vetri Srl, Termovetro Sud Srl, Vitrum & Glass Srl, Vetreria Tacca Srl, Vetropadana Srl, Guidi Glass Srl, Cappelletti & Roleri, Glastebo, Quidam and - precisely - OmniDecor and Pistillo).

WWW.GLASSGROUP.IT/EN/



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HEGLA

Strengthening of service and sales network for Eastern Europe

HEGLA Group will open a subsidiary in Poland on 1 October 2021 to maximize proximity to customers and to continue to meet the requirements of the rapidly growing eastern European market. The sales and technology team at the new location will provide direct support for all projects, enquiries and service cases in the region and offer fast local assistance when spare parts are required.

The expanded team in Wrocław supplements the HEGLA Group's global sales and service locations. The Group is also setting up a software centre in the subsidiary that will provide customers with programming services for both HEGLA and HEGLA-HANIC.

"In Michał Siergiejewicz, we are pleased to have found a managing director who has many years of experience in the glass industry and an outstanding network that stretches well beyond Poland," emphasised HEGLA GROUP COO Bernhard Hötger. "Along with his co-managing director, Thomas Wellendorf, we are extremely well positioned for the region in future." Michał Siergiejewicz (38) has been a recognised dialogue partner in all areas of the glass industry since 2011 and is considered a professional consultant. Thomas Wellendorf (51) has worked at the HEGLA Group since 2003. As head of sales for northern and eastern Europe and Russia/CIS, he has worked closely with our customers for many years. "Thomas Wellendorf is one of the colleagues at HEGLA who both experienced the transformation of glass processing operations and left a mark on it with networked and automated line solutions," added Hötger.

In future, the new subsidiary will also bring HEGLA-HANIC, HEGLA boraident and HEGLA-TaiFin even closer to customers. HEGLA Group, headquartered in Beverungen, Germany, has locations worldwide providing system solutions for the storage, cutting, processing, and sorting of flat, automotive,

and functional glass. With its subsidiaries HEGLA boraident, HEGLA-HANIC and HEGLA-TaiFin, the Group also offers solutions for digitalisation, glass finishing via laser, and tempering and bending architectural and automotive glass from a single source. Most recently, the Group expanded with locations in the MENA region and Singapore.

WWW.HEGLA.COM



ARMOR

Generating solar power with glass façades

ARMOR solar power films GmbH from Kitzingen, Germany, known under the brand name ASCA®, has developed a new technology that allows organic photovoltaic (OPV) cells to be integrated quickly, easily and flexibly into any glass format and facade. Flat glass processor BGT Bischoff Glastechnik GmbH – based in Bretten near Karlsruhe, Germany – is now offering the transparent, energy-generating glass modules to the global construction industry. In addition to manufacturing the OPV components, ARMOR ASCA also plans the system integration, from cable routing and connection technology to the inverter. The solar power is fed into the public grid or consumed directly.

While the balustrades are transparent from the inside, they are translucent from the outside, thereby guaranteeing privacy from the outside. The solar power is produced by carbon-based organic solar cells, which ARMOR ASCA applies in very thin layers to fine films using a special printing process.

“With the glass balustrades, ARMOR ASCA closes a gap in facade construction. For the first time, safety glass for high-rise buildings can also generate energy,” said a delighted Martin Sulzer, who heads technical sales at BGT. He added, “The modules are ideally suited for facades because they are attractive, and there is also no complete loss of power even when partial shading occurs thanks to their technical properties.”

Unlike conventional crystalline solar cells, the organic solar films are not only flexible and transparent, but can also be bent and shaped as desired. The solar film can be produced in blue, green, grey and red. There are also no limits in terms of shape, length, size and design. “We can produce any shape of solar cell, which thus becomes part of the architecture and design,” explained Hermann Issa, senior vice president in charge of Business Development & Project Management at ARMOR ASCA.

Once the design has been completed, the system can be planned within about ten days. The first glass balustrades with integrated solar films went into operation in May at condominiums in Stuttgart Möhringen. “We are pleased to demonstrate how well our balustrades perform in this project. This proves that our technology also works excellently in commercial housing,” added Issa.

WWW.BGT.GLASS/EN - WWW.ASCA.COM



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VITRO

Solarban® 67 adds sustainability, views to Portland civic centre

As Oregon's first project to pursue LEED® certification at the Platinum level, the Meyer Memorial Trust in the heart of Portland's, USA, urban community combines investments in social equity and sustainability through building elements that include a saw-toothed photovoltaic (PV) roof, textured metal cladding and large, inviting windows fabricated with Solarban® 67 glass by **Vitro Architectural Glass**.

Portland-based Lever Architecture specified the advanced solar control, low-emissivity (low-E) glass to support daylighting goals and to create a transparent barrier between the indoor and outdoor spaces of the new centre.

"We typically use Solarban® 60 glass, but for this building we needed a glass coating with a lower SHGC (solar heat gain coefficient), especially with large façade exposures on the west, south and east," said George-Michael Rusch, RA NCARB, an associate with Lever.

With a SHGC of 0.29 in a standard one-inch insulating glass unit (IGU), Solarban® 67 glass not only met the project's performance goals, but it also helped achieve the specific aesthetic Lever was seeking for the project. The glass "has a nice greyish hue without much green tint," Rusch explained. "On the top floor, the glass reflects the sky while still allowing inviting views to the interior on the ground floor when under a canopy or overhang."

The building is deliberately set back from the property line to create a welcoming "front porch" with plants, seating and views of the centre's large conference room, which is called the "Center for Great Purposes," a phrase from Meyer's will.

The ground-floor curtain-walls on the east and south facades feature large glazing bays that emphasize the transparency of



the Trust's public programs and showcase the beautiful timber interior and large blue-grey display wall in the lobby and function space. Mounting the curtain-wall system directly to the load-bearing mass plywood columns enhanced this effect.

On the second and third stories of the 19,800-square-foot facility, Lever specified tall, punched windows, which, according to Rusch, "create a simple rhythm that does not take away from the massing and allows the texture of the metal panels to accentuate the form with shadow and light play."

The openings are intentionally staggered, with each window group corresponding to a specific program area. To maximize daylighting and views, each grouping contains at least three windows across the width of a 12-foot office area. "That gave us around a 40-inch width when allowing for structure between the punches," Rusch added.

For consistency on the elevations, all the window punches appear to be the same full floor-to-ceiling height, except for offices with furniture on the perimeter where, for contrast, Lever added a dark aluminium composite panel below the windowsill. Reflecting the organization's equity goals, all workspaces are afforded the same natural light and views, with the prime corner spaces reserved for conference rooms, a dining space and a library.

In addition to turning its benefactor's former tow-truck storage lot into a community anchor, the Meyer Memorial Trust building is enrolled in the Path to Net Zero with Energy Trust of Oregon. Beyond the high-performance glazing and solar roof, the structure incorporates multiple other sustainability features, including an energy-efficient building enclosure and heating, ventilation and air-conditioning (HVAC) system, on-site storm water management, regional materials and native plantings.

WWW.VITROGLAZINGS.COM

GLASTON AMERICAS

Senior VP Sales and Service appointed

As of the beginning of September 2021, Joe Butler has been appointed as Glaston's Senior Vice President, Sales and Service for the Americas. Joe has over 20 years of sales experience occupying various leadership roles with top tier manufacturing companies focused on the fenestration industry. Most recently, he led the North American sales team at *Guardian Industries* where he was responsible for their flat glass products in all key market segments, including their value-added low-E portfolio for commercial and residential customers. He has a broad range of experience and application knowledge in the

glass industry, in addition to a diverse background in structural sealants and adhesives.

"With his extensive experience and excellent industry know-how, Joe will be a tremendous addition not only to our team in the Americas region, but also to the entire Glaston business," said Sasu Koivumäki, CSO and Deputy CEO at Glaston.

"North America is an extremely important market for Glaston. The market demand for high-quality glass is strong in the region. We expect to see an increased demand for high-quality heat treated glass and insulating glass units as well as automotive glass, where we've also seen an increased activity," continued Sasu Koivumäki.

"Automation is becoming increasingly more prevalent in the everyday life at a glass factory which will enable all of us to further develop the glass processing industry. I'm looking forward to working together with all our customers to improve their businesses and to meet their growing demands for quality and productivity. Glaston's versatile product portfolio supports our customers' needs for new machines and upgrades, which are backed by the best service team in the business," said Joe Butler.

Joe Butler is a man with short, reddish-brown hair, smiling at the camera. He is wearing a dark suit jacket over a white shirt. The background is a solid blue color.

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NORTHGLASS

Collaboration in phase II of National Convention Center

NorthGlass is continuing to innovate and move forward exploring. The company's most recent work regards Phase II of the Beijing National Convention Centre, located in the central area of the Olympic Park in Chaoyang District, Beijing, close to Beijing National Stadium (Bird's Nest/Olympic Stadium) and National Swimming Center.

Consisting of main and supporting buildings, the total construction area of the centre is 780,000 square metres, and the main construction area of the conference centre is 270,000 square metres. The length of its main part of the building is 460 metres from north to south, width is 150 metres from east to west and height is 45 metres. There are three floors at ground level and two floors underground. In the future, it will be used mainly to hold state affairs, government affairs and high-end business exhibition activities.

The project was designed by Portzamparc, a famous French architect and the winner of the Pritzker Architecture Prize, and consultant of Afa Architectural Design Consulting Ltd (RFR). The whole building boasts a concave curved façade, and above the building is a huge reception canopy. The consistent curvature unifies the whole façade, while the overall shape gives this great building a sense of elegance and solemnity.

The architectural shape suggests calm, and the facade is simple and full of changes. The large eaves of the east facade convey the charm of traditional Chinese architecture, while the facades of the east, south and north of the main building consist of 'bird windows', or special curtain wall units. The 2,376 curtain wall units are connected into surfaces, just like a group of light birds. The first curtain wall of the second phase of the National Convention Center is six metres high ribbed glass curtain wall, five layers of 12mm ultra-white tempered laminated low-E insulating glass unit. The curtain wall of the east facade is installed with nearly 6-metre glass transverse framed curtain wall, and the inner curtain wall uses curved laminated glass with a height of arc of 10 metres in height.

RFR specially formulates the whole process from materials to production process including cutting, grinding, tempering, homogenization, laminating and insulating, and finished product inspection, quality control plan and evaluation standards; Tianjin NorthGlass implements the standard requirements of the owner and management company, and proposes its own higher standards in each process to ensure the smooth implementation of the project.

A craftsman who wishes to do good work must first sharpen his tools. The technical reserve in recent years and the top series of tempering equipment developed by the parent company ensure smooth production and high quality on the project, which complement the visual effect of large glass after its horizontal installation and the supply cycle.

WWW.NORTHGLASS.GLOBAL/INDEX/INDEX.HTML



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SKILL GLASS

High-tech NC machines

SKILL GLASS is an Italian company specialized in the manufacture and design of high technology numerical control machines for the processing of flat sheet glass, which, combined with special software with dedicated functions and modern and functional design, are simple and quick to use.

E-D 101 is a vertical CNC centre for grinding, milling, drilling and polishing rectangular and shaped flat sheet glass. The machine can process both rectilinear and shaped flat sheet glass and combines all the technology for vertical drilling and milling with the features of a vertical grinding machine. Its main feature is its versatility, which allows different types of processes at high speeds and optimal precision.

E-D 101 works with 150mm diamond-tipped grinders on rectilinear and shaped sheet glass even if they have been layered or treated. Polishing can be performed on large surfaces with 150mm grinders as well as on small inserts with diameters of 30 or 50 mm. Oppositely placed heads ensure drilling is at maximum speed with top quality and precision, and countersinking can be performed with individual diamond tipped tools or with accessories mounted on the drill bits. The power and precision of the machine guarantee rapid and simple milling and multiple tools produce milled and ground inserts in a few seconds.

The main advantages of E-D 101:

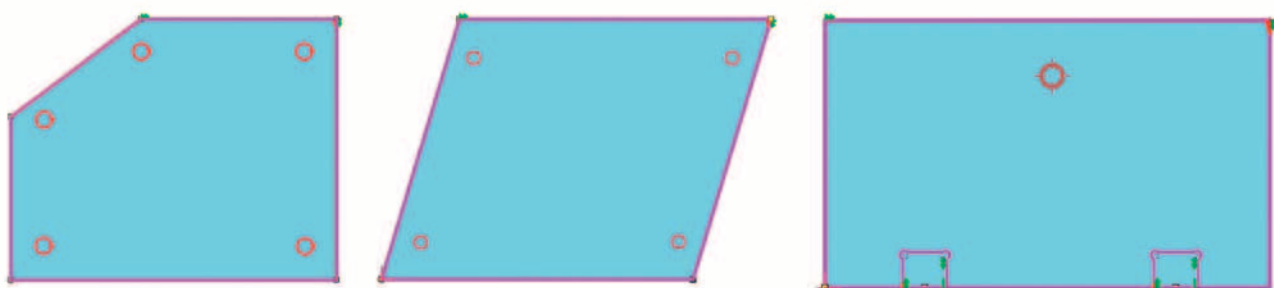
- Faster grinding and polishing using two heads at the same time (with SKILL GLASS' 2-head system, processing times are reduced by up to 45%)
- Processing from 3 to 22mm (with no limits on the weight of the piece)
- No limits for drilling and milling (no encumbrance of the suction cups)
- Spindles with more power
- Faster tool changers
- Less maintenance than competitors' systems

DRILL 1600FF is a 5-axis drilling CNC machine designed for producing holes and countersinks on rectangular flat glass sheet with a thickness of 3-20mm. The machine is made up of five axes, X Y V Z W, and two electro-spindles positioned opposite one another creating a dead centre system that drills perfect holes.

This vertical drilling CNC is able to operate with extreme speed and precision thanks to the management of all the processes by numerical control and also thanks to the support of the double tool change.

Milling on this machine is a simple and quick operation, and by using multiple tools milling and grinding of inserts take just a few seconds.

WWW.SKILLGLASS.IT



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ARRISSING, GRINDING & POLISHING

- ✓ Automatic reading and processing of workpieces
- ✓ Faster grinding and polishing with 2 simultaneous heads
- ✓ Automatic tool changer 20 positions
- ✓ Automatic tool preset and dressing
- ✓ Vibration-free and long service life
- ✓ Minimal maintenance
- ✓ Maximum precision and speed



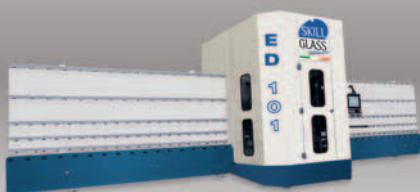
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Drilling and Milling



DRILL 101

Vertical CNC center



E-D 101

CNC Drilling



DRILL 1600

GPD FINLAND 2021

Winter edition dates released

The new dates for GPD 2021 have been released, and the hybrid event will be taking place 16-18 February 2022. Workshops will be held on 15 and 16 February, followed by the conference sessions and networking activities on 17 and 18 February.

The dates being in the first quarter of the year means that it is winter time in Finland, with a completely different weather situation compared to the usual summer editions, when evening networking activities are held outdoors. The dates



of the conference will give attendees the chance to experience winter 'Finnish nature and sky' first-hand.

The event details are taking shape and will be communicated shortly.

KURARAY

SentryGlas® ionoplast interlayer branding clarified

In recent years, manufacturers have produced and sold interlayers that do not have the same properties as SentryGlas®, but they are using the name 'SGP' to refer to those interlayers in order to benefit from the long-standing quality and reputation associated with the SentryGlas® brand. Kuraray feels it is important for the glass industry to understand that authentic SentryGlas® products are not associated with SGP, and one should not expect SGP products to perform at SentryGlas® product levels.

Kuraray has now consolidated reference for SentryGlas® products as "SG™" and has recently obtained a US trademark registration for SG™. While the acronym SGP was used when the product "SentryGlas® Plus" was first introduced by DuPont in 1998, the 'Plus' was dropped from the name over 10 years ago.

Unfortunately, the SGP moniker has persisted in the industry, and its use is now causing confusion with authentic SentryGlas® products. In order to avoid confusion, the proper designation SG™ should be used when requesting or referencing authentic SentryGlas® interlayers. In addition to SentryGlas®, Kuraray also produces the next generation in the product line, SentryGlas® Xtra™ (SGX™).

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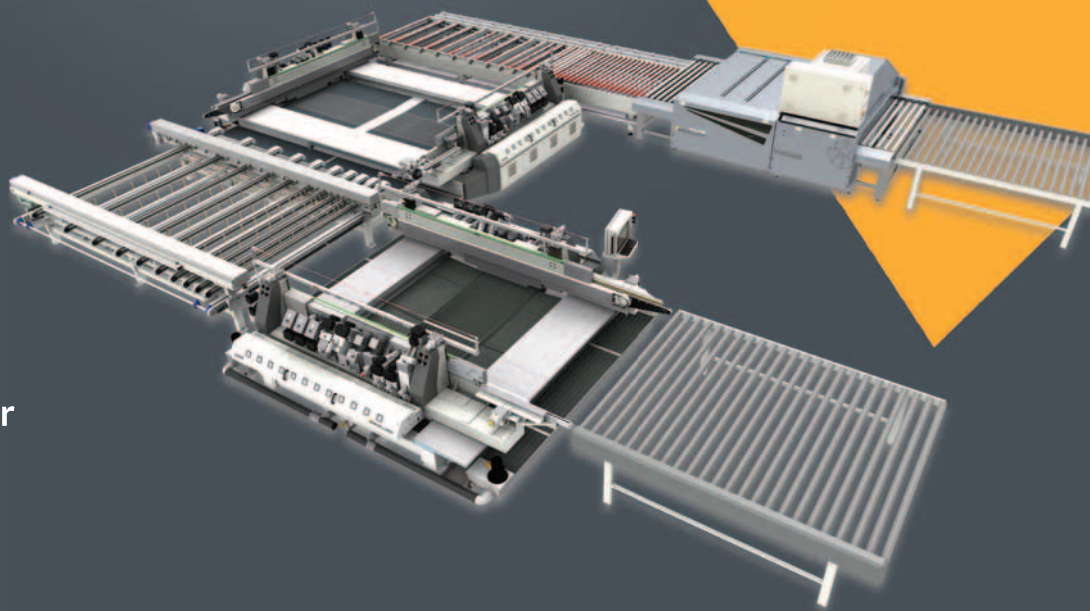
Double-edging machines with cup-wheels

Conveyor with new double drive system

Automatic intermediate bar

New control panel

New electronic corner cutting spindle



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MORE

FENETECH

Partnership with Polaris Windows & Doors

Polaris Windows and Doors was a growing success in the late 1990s. The company had significantly grown its sales, customer base and product lines since it began making aluminum storm doors and windows in 1979 in Youngstown, Ohio.

But by 1999, order entry errors were common and costly. Plant floor equipment was not connected or integrated. Staff configured doors in spreadsheets. The company needed a better way to run.

"We had a legacy system for order entry, shipping and accounting," said Dave Cicozi, who has been at Polaris for 38 years and is now systems coordinator. "We had a stale, outdated window manufacturing software solution."

To solve the issues, Polaris did something nearly everyone advises against: it became the first customer for an unknown new fenestration ERP system. In this case, **FeneTech's** FeneVision.

"With FeneVision, we first began with BOM setup, and with new technology, we were able to tie together our cutting and welding equipment," Cicozi continued. "What I liked most was that we were able to integrate it into the middle of our current system."

FeneVision has been essential for Polaris during the last 20 years as the company continued to add new lines and customers and grow.

"We wouldn't have been able to handle our increased production without FeneVision," Cicozi said. "The ascent of the software has kept pace with the advancements in our industry. It's just been phenomenal."

Information Systems Manager Jamie Mallery said, "The software is so flexible with the availability of validation conditions, visibility expressions and production groups. The system is easy to use and easy to manage."

"Once we configure FeneVision, it's a seamless process from order entry through shipping and delivery," Mallery continued. "My FeneVision experience is FeneVision is fenestration manufacturing solved. It's so customizable and flexible. It's a complete solution."

Cicozi added, "Even with that flexibility, we can maintain consistency with, for example, those built-in validation rules and grouped production."

"From the beginning, FeneTech has listened to our needs and acted upon them," Cicozi said. "FeneTech staff discusses with us what we need, then comes up with ways to not only meet our needs but make whatever it is make it more efficient."

"They do a phenomenal job supporting us." This includes continually improving FeneVision.

Cicozi said FeneVision gives Polaris the tools they need to conquer production complexity. "And if something's not there? A couple of emails or phone calls, and we work through it."

"FeneVision is the total package," Software Project Coordinator Eric Davignon said. "From the front end at quote and order entry to the back end with production and then on to shipping—FeneVision does it all."

Mallery added, "We've never worked with a company that's as interested in our problems as we are."

And those previously too-frequent order entry errors? Cicozi said, "Today with FeneVision it's unheard of. FeneVision allows us to order in any configuration, and we know that when we place an order, it's placed correctly."

[HTTPS://FENETECH.COM](https://fenetech.com)



ŞİŞECAM

New coated glass product launched

Şişecam has launched a new product, Şişecam Solar Control Low-E Glass Neutral 50/33, which creates comfortable living areas by providing optimum light transmittance, efficient solar and heat control.

Şişecam contributes effectively to the fight against climate change

by minimizing energy consumption, its new Şişecam Solar Control Low-E Glass Neutral 50/33 provides solutions for projects such as residences, schools and small/medium sized commercial buildings where optimum daylight transmittance, neutral appearance and efficient solar control are necessary.

Thanks to its efficient solar control and thermal insulation properties, Şişecam Solar Control Low-E Glass Neutral 50/33 reduces heat loss by 50% compared to ordinary IGU. Therefore, effective heat insulation in winter is provided and heating expenses are reduced. It also decreases solar energy transmission by 45.5% compared to ordinary IGU. Neutral 50/33 provides extremely high levels of protection against UV radiation, over 70%, helping to reduce fading and ageing effects. Neutral 50/33 has also same colour and performance in temperable form which can be used in the same project.

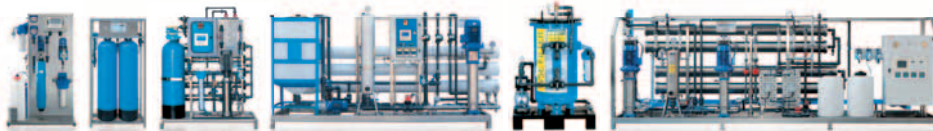
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STEFANI

Butyl machines with innovative technology



The history of the **Stefani** family began at the beginning of the 20th century when Giovanni Stefani and his sons Annibale and Domenico, produced various types of tools for lumberjacks in the Aplis workshop in the Municipality of Ovaro.

Starting in 1980, Annibale and his son Leandro gave continuity and new impetus to the business with differentiated production ranging from metal carpentry to precision mechanical machining.

Company know-how, resulting from the experience gained over the years working for a multi-sectoral clientele, along with the use of modern technologies, allowed Stefani to design and build the first butyl machine in 1990.

As in the past, the primary objective of the company is still customer satisfaction, listening to their needs, always offering maximum collaboration.

Stefani has, since 1990, produced over 800 machines, with the K700 Hi-Tech version being the most equipped at present. This machine, in fact, has automatic positioning of the extrusion heads, as well as a proportional hydraulic valve that allows to always extrude the same amount of butyl with extreme precision, also by varying the speed of the conveyor belt.

The profile holders, pneumatic gripper and butylating phases are synchronized with the working speed. The operator can set the amount of extruded butyl, and modify the start and end of the butylation process simply by acting on the touch screen.

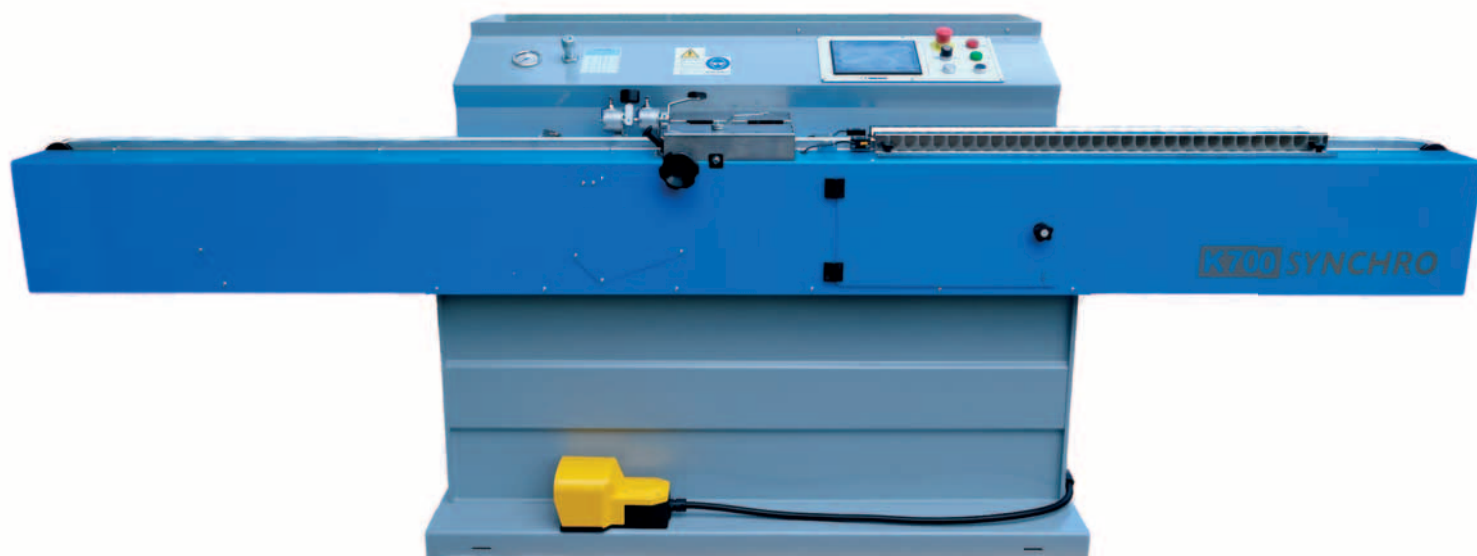
The Omron touch screen terminals that have been used by Stefani for several years are simple, intuitive and very resistant. Thanks to the IP65 degree of protection they are perfectly suitable for use in industrial environments.

The K700 Synchro Butyling Machine is currently the best-selling item. The opening of the extruders is manual and is displayed with decimal precision on the touch screen. The amount of extruded butyl can be adjusted manually by means of a hydraulic pressure valve.

The pneumatic gripper, now standard also on this model, is also synchronized with the working speed. The operator can change the start and end of the butylation process directly from the touch screen.

The company has been selling high quality sealants from HB Fuller/Kommerling in Italy and throughout Europe: butyl, thiokol, hot melt etc., for about 12 years.

WWW.STEFANIGLASS.COM

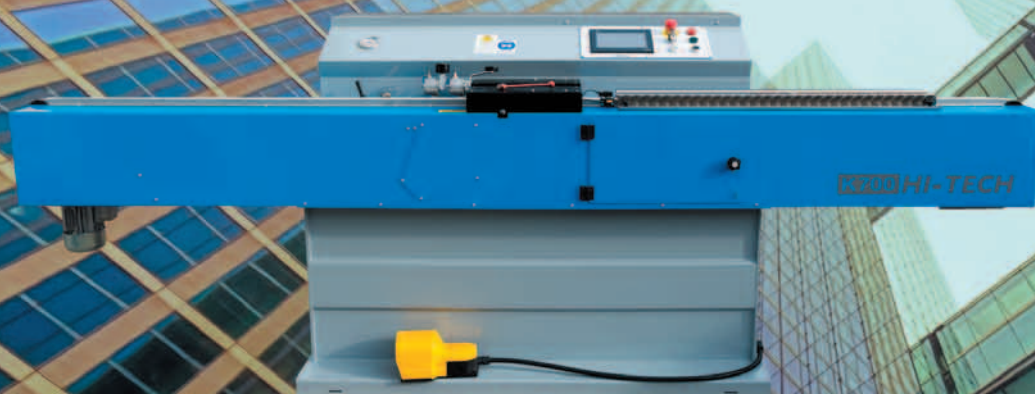




STEFANI

GLASS WORKING MACHINES

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BUTYL MACHINE K700 HI-TECH

- Automatic adjustment of extruders
- Constant butyl extrusion synchronized with the belt speed
- Hardened extruders with opening from 4 to 32 mm
- Self centering pneumatic plier + two actuators
- 7" high resolution color touch screen
- Energy saving function



BUTYL MACHINE K700 SYNCHRO

- Manual adjustment of the extruders
- Hardened extruders with opening from 4 to 33 mm
- Self centering pneumatic plier + two actuators
- 7" high resolution color touch screen
- Energy saving function

STEFANI S.r.l.

Via 2 Novembre n°3 Ovaro 33025 (UD) Italy

Web: www.stefaniglass.com Email: stefanigwm@libero.it

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ISRA VISION

Ground-breaking ceremony for new headquarters

Isra Vision is marking the dawn of a new era of growth with a traditional groundbreaking ceremony to mark the start of construction of its new headquarters building in Darmstadt, Germany.

The new headquarters is located on a property measuring around 15,000 square meters in the city's 'Knell' development district with its historic water tower at Frankfurter Straße. Set to be constructed in two stages, it will consist of three connected buildings housing offices and development laboratories, as well as demonstration and assembly halls.

The project was designed by the local architecture firm fs Architekten. It will give Isra Vision the space it needs for future development and a constantly growing workforce. Designed to the latest energy standards, the building will grow over time and will offer space for around 960 employees once fully constructed.

As construction begins, the company owes special thanks to the mayor of Darmstadt Jochen Partsch and the City of Darmstadt, who provided excellent support in the search for a suitable location. The plans for the new headquarters were put in place several years ago by company founder Enis Ersü, who recently retired from active professional life.

In 2020, the globally active Atlas Copco group joined forces with Isra Vision as a strategic partner, while also remaining committed to the plans for the new headquarters. The preliminary work was done with the help of Felix Schneider from Gerhard.Architekten in Darmstadt and Horst Ulrich Werb on behalf of Schindler & Werb AG, allowing the foundation stone of the new building to be placed together with the planners and tradespeople involved in the project.

Isra Vision's new Chairman of the Executive Management Team, Tomas Lundin, was joined for the ceremony by company founder Enis Ersü, Chief Financial Officer Martin Heinrich and Mayor of Darmstadt Jochen Partsch. The start of construction of the new headquarters represents not only the beginning of a new chapter in the company's history, but is also a sign of its dedication to

the city and the local area. Isra Vision was formed in 1985 as a spin-off of the Technical University of Darmstadt.

Together with its subsidiaries, Isra Vision has grown to become the world leader in surface inspection of web materials. It is also one of the world's leading providers of image processing (machine vision), specializing in 3D machine vision, especially for 3D robot vision. With its new strategic partner Atlas Copco, the ambitious company has big plans. The groundbreaking ceremony is therefore also the start of a promising and successful future.

Despite its status as a global player, Isra Vision feels right at home in Darmstadt. The company has maintained close relations with the Technical University and the Darmstadt University of Applied Sciences, along with other research institutions like the Fraunhofer Institute. The start of construction also helps Isra Vision position itself as an employer with an exciting future in the region, creating the best conditions to promote young talent.

The new site is set to create countless new jobs, with the company looking for both fully trained specialists and talented youngsters in particular. Alongside this, consideration is also being given to providing a home and space to develop for start-ups that represent a good technological match for Isra Vision at the premises.

For staff, the building will provide an inspiring work environment that is in harmony with the company's values and responds to ecological challenges. Designed with environmental protection in mind, the headquarters will be built in line with the Effizienzhaus 55 standards (an energy standard for buildings, introduced by KfW). It will also feature a high proportion of green spaces and charging facilities for electric vehicles and bicycles, and will be constructed using clean, low-noise methods. The completion of the first construction section and moving in to the new headquarters are planned for the turn of the year 2022 / 2023.

WWW.ISRAVISION.COM/EN/



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AGC GLASS EUROPE

Supporting the restart of Soltech

Together with a number of other partners, **AGC Glass Europe** is helping to give **Soltech** a new lease of life. The imec spin-off, specialising in tailor-made building-integrated photovoltaics (BIPV), collapsed in March 2021 as there were insufficient funds for the innovation and automation needed.

Metal processor Hegge B.V., Limburg investment company LRM, environmental holding company Nuhma, RSQ Investors and AGC Glass Europe have faith in Soltech, led by entrepreneur Bas van de Kreeke, as a promising business and have therefore decided to infuse new life into it by means of a joint capital injection of EUR 1.9 million. It will process tailor-made solar panels for applications in roofing, canopies, glazing or acoustic screens, but also solar modules for vehicles. From the existing production site in Tienen (Belgium) the highly specialised team stands ready to resume intensive collaboration with renowned knowledge institutions such as Energyville, imec, IMMOMEC and UHasselt. Bas van de Kreeke, the new CEO of Soltech, believes firmly in the future of the business and said, "The market of solar panels or photovoltaic cells is still growing strongly. Innovation in materials and processes remains necessary for greater and stable profitability, new applications and lower production costs. The



traditional solar panels are mostly produced in China and sold at prices that European producers can no longer match. Thus, Soltech is switching approach and will focus on building-integrated PV panels that require very considerable know-how and flexible, fast, customised production. And this we can produce in Belgium and even make a reasonable margin on it."

What appeals particularly to AGC Glass Europe in this respect is the presence of a local value chain and the fact that the development of solar panels is being driven strongly by increasing moves towards sustainability and circularity. Patrick Van Bortel, Vice President Industrial & New Business at AGC Glass Europe said, "As the European leader in flat glass with its headquarters in Belgium we're stepping into this initiative fully convinced. The BIPV market is in full development, and – in line with the EU Green Deal – AGC Glass Europe is determined to play a leading role in making the construction sector sustainable."

Existing customers will continue to be served from the production facilities in Tienen and there will also be investments in innovation and product development. There are plans on the drawing board for a completely new production facility in the Thor Park in Genk. Delivery of this high-tech business campus, which is being developed by LRM, the City of Genk and KU Leuven, is planned for the end of 2022.

WWW.AGC-GLASS.EU/EN

PRESS GLASS

Planning of two production plants – in Lithuania and in the UK

Press Glass Group has obtained approximately PLN 1.2 billion bank financing to refinance its current debt and finance further investments, including the construction of two new production plants – in Lithuania and in the UK.

The consortium participating in the financing consists of four commercial banks: PKO BP S.A., BNP Paribas Bank Polska S.A., ING Bank Śląski S.A. and Santander Bank S.A. It is one of the largest transactions of this type on the market recently.

The new financing, obtained in large part for the further foreign development of the Group, will enable the creation of new, most modern, and automated plants of this type in Europe. The dynamic investment plan will allow the Group to maintain the title of the leader on the European market of window and façade glass.

WWW.PRESSGLASS.COM/



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Because Italcarrelli® machines are tailor-made for every customer, machines can be adapted to meet customer needs

GUARDIAN GLASS

New jumbo laminated glass line at Ryazan plant

To support the increasing demand for laminated glass in Russia and the Commonwealth of Independent States, **Guardian Glass** is adding a new jumbo laminated glass production line at its Ryazan, Russia, plant.

As one of the world's largest manufacturers of float, coated and fabricated glass products, with 26 float lines around the globe, Guardian is taking a natural step forward in its strong, long-standing laminating capability. As a result, Guardian Glass Russia will offer the region an improved product mix including SunGuard® and ClimaGuard® coatings on laminated substrates for various applications.

Rising global demand for laminated glass is driven in part by architects and building owners demanding:

- Safety: When laminated glass breaks, it tends to stay within its frame because of the clear PVB interlayers, lessening the chance of injury.

- Maximum natural light: Larger insulating glass units, that combine Guardian high performance coatings and laminated glass, deliver expansive views as well as safety and security while managing light transmission and solar heat gain.
- Noise reduction: Acoustic laminated glass helps to reduce noise to create a more peaceful ambiance.

"This investment illustrates our continued optimism and excitement about Guardian Glass' expansion in Russia and the CIS," said Guus Boekhoudt, Executive Vice President, Guardian Glass. "This project underwrites our vision to be a preferred partner to our customers, suppliers, employees and communities based on a foundation of mutual benefit."

"We appreciate our customers' support and are happy to keep evolving our relationship by offering them additional product options," added Elena Rassudimova, General Manager, Guardian Glass Russia. "We are very proud of what our team and our partners are accomplishing in a challenging environment."

WWW.GUARDIANGLASS.COM/

ZIPPE

New batch house commissioned for Guardian Czestochowa, Poland

In September 2020 **ZIPPE** put into operation a new batch plant with batch transport and cullet return system in Czestochowa, Poland, for **Guardian Glass Industries**. In addition, nine high performing float glass batch chargers, type EO 1622 TH – one batch charger as a substitute in case of need – were also supplied via a separate order.

This is the second float furnace on this site, with this new installation the production capacity of the plant has more than doubled.

ZIPPE's scope of work included the design, manufacturing and installation of the steel structure, the process equipment and the control system. The order was placed on a turn-key basis. Limited space on site and as well as Covid-19-measures affected the installation work on site, but in the end – thanks to the excellent cooperation between all teams – ZIPPE fulfilled Guardian's expectations according to what both parties agreed.

WWW.ZIPPE.DE/EN/



NSG Group

Augmented Reality Head Up Display technology showcased

The NSG Group has been selected by Mercedes-Benz AG to showcase their Augmented Reality Head Up Display technology on the all-new Mercedes-Benz S-Class model.

The NSG Group was able to introduce the pinnacle of automotive glass technology with the world's first Head Up Display powered by Augmented Reality (AR).

Through its trusted development-partner relationship, NSG was selected to help make this advanced technology a reality. The complex AR-HUD utilizes an enhanced version of NSG's proprietary Advanced Press Bending technology that provides world-class display image quality.



As an additional innovation, solar reflecting technology that de-ices the windscreen using invisible heating was developed to work in tandem with the Augmented Reality display. This will allow a high content of solar reflecting technology to extend through to the rear of the vehicle providing ultimate passenger comfort.

NSG's continuous investment in advanced glass technologies have positioned the group to respond to expanding customer needs generated by the rapidly advancing technology for driving assistance systems. The launch of the all-new Mercedes-Benz S-Class model is just one example of NSG Group's global effort to meet current and future customer demands in the automotive glass market.

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DFI

GlasPro adds Diamon-Fusion® Protective Coating to glass products

Diamon-Fusion International (DFI) announced that GlasPro, has chosen Diamon-Fusion® protective coating to bring additional value on their commercial glass offerings. The Company went with DFI's patented protective coating to offer a superior product to their customers, which also comes with an industry-leading warranty, unparalleled customer service and can be applied to a wide range of glass surfaces including acid-etched glass, sandblasted glass, textured glass and much more – satisfying a diverse set of clients. Located in Santa Fe Springs, California, GlasPro's 75,000 square-foot facility houses complete tempering, lamination, and fabrication operations all under one roof. They will offer Diamon-Fusion® on commercial glass railings, canopies, interior glass, IGU's, and storefronts. For more than 25 years, the company has worked within the commercial market, and adding Diamon-Fusion® to their product line will continue the Company's mission of offering quality products backed by a trusted name.

Ed Lemley, VP of Manufacturing at GlasPro, said, "Our company is focused on overall quality, on-time delivery, and customer service. When looking at a new product offering, we wanted to go with a company that could help differentiate our business and partner with us to bring something new to our customers. Going with Diamon-Fusion® was an easy decision since many of the largest glass fabricators trust Diamon-Fusion® for their protective coating needs."

Syndi Sim, VP of Marketing and Business Development at DFI, said, "We thank Joe, Ed, and their team for partnering with DFI and trusting in Diamon-Fusion® protective coating. As excited as we are, our job here is just starting. Their success is our new initiative, and we plan on helping them get there."

Diamon-Fusion is an ultra-thin, UV resistant, protective glass coating that transforms ordinary glass into a high-performing, water-repellent surface that helps prevent staining.

Similar to how a non-stick cooking pan works, surfaces treated with Diamon-Fusion become easier to clean and require less care to maintain. The invisible barrier created in the Diamon-Fusion process is also extremely smooth, which helps prevent environmental pollutants, mineral contaminants, and soap scum from damaging the glass.

[HTTPS://DFISOLUTIONS.COM/](https://dfisolutions.com/) - [WWW.GLAS-PRO.COM/](http://www.glas-pro.com/)



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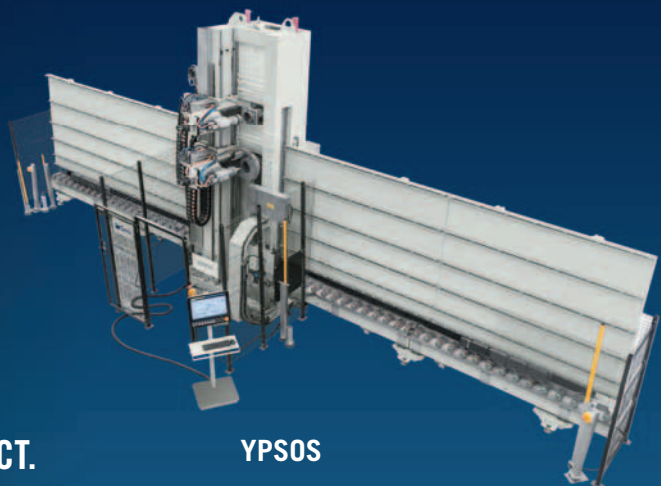
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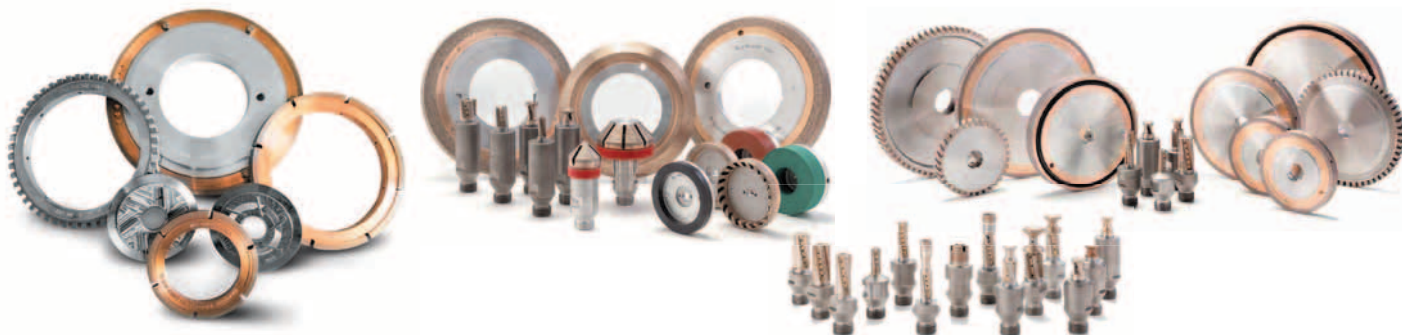


HALL 24 STAND H11 - H19

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MORESCHI is, and has been, one of the leading companies in the production of diamond wheels for glass processing machines for 100 years. The company can offer a complete range of diamond and polishing wheels for all types of glass processing, with different bond and grit to be used for float glass and laminated glass. The wheels are made for high production and long life, the best partners for processing of all types of glass.

Our wheels have greater process stability than the wheels on the market, improving efficiency and reducing cost of glass processing. Moreschi can offer sets of wheels for all types of grinding and polishing: polished edge, ground edge, industrial edge and polishing with cerium oxide. Depending on the quality of the edges, the wheels can be combined with or without polishing.

The routers are available in different types with diameters, and each type is available with different bonds for the best quality.

Moreschi give its customers the possibility to have the best technology and the best tools.

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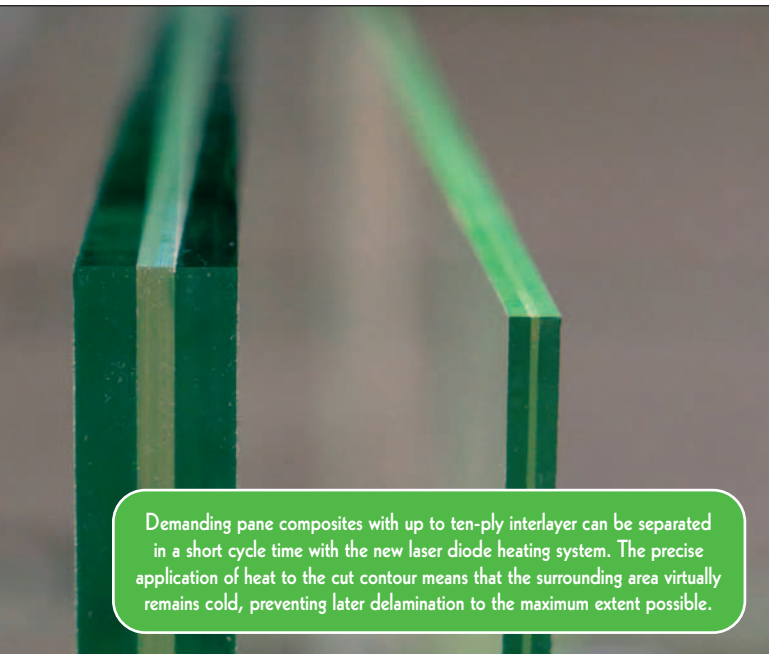
LASER DIODE HEATING INCREASES PRODUCTIVITY IN LSG CUTTING

HEGLA is showing the ProLam LSR, a newly developed cutting system for laminated safety glass equipped for the first time with the time-saving laser diode heating system as a machine in series production. "Productivity in LSG cutting can be increased by 20 per cent or more with the new heating process," said HEGLA Managing Director Bernhard Hötger, emphasising one of the advantages of the new technology. The laser applies the bundled heating energy precisely to the cutting contour, reaching the PVB interlayer's transformation temperature much more quickly than the usual heating tubes. The laser beam weakens only slightly as it passes through the interlayer, so that even demanding glass laminates of up to ten-ply interlayer can be separated with shorter processing times. The new process

The HEGLA Group's range of topics at Vitrum could scarcely be wider, but it is an example of just how diversely the glass industry has developed in recent years. On the one hand, the focus is on glass cutting, its automation and performance increase. Visitors gain insight into HEGLA's mechanical engineering. On the other hand, the opportunities of networking, digitalisation and integrated processes will also be showcased, making it clear how important these issues currently are from the Group's point of view.

HEGLA is showing the ProLam LSR, a newly developed cutting system for LSG equipped for the first time with the time-saving laser diode heating technology as a system in series production. Up to 20 per cent and more productivity can be achieved with the new technology.





Demanding pane composites with up to ten-ply interlayer can be separated in a short cycle time with the new laser diode heating system. The precise application of heat to the cut contour means that the surrounding area virtually remains cold, preventing later delamination to the maximum extent possible.

also has a positive effect on edge quality: the interlayer remains cold outside the cutting area, thus preventing later delamination and enabling additional cuts without cooling times. The system reduces energy costs as well. "The laser diode strip has a divided design, automatically adjusts to the cutting length, and requires only a short boot-up time," Bernhard Hötger added.

UNIQUE GLASS MARKING FOR DIGITAL ADDED VALUE

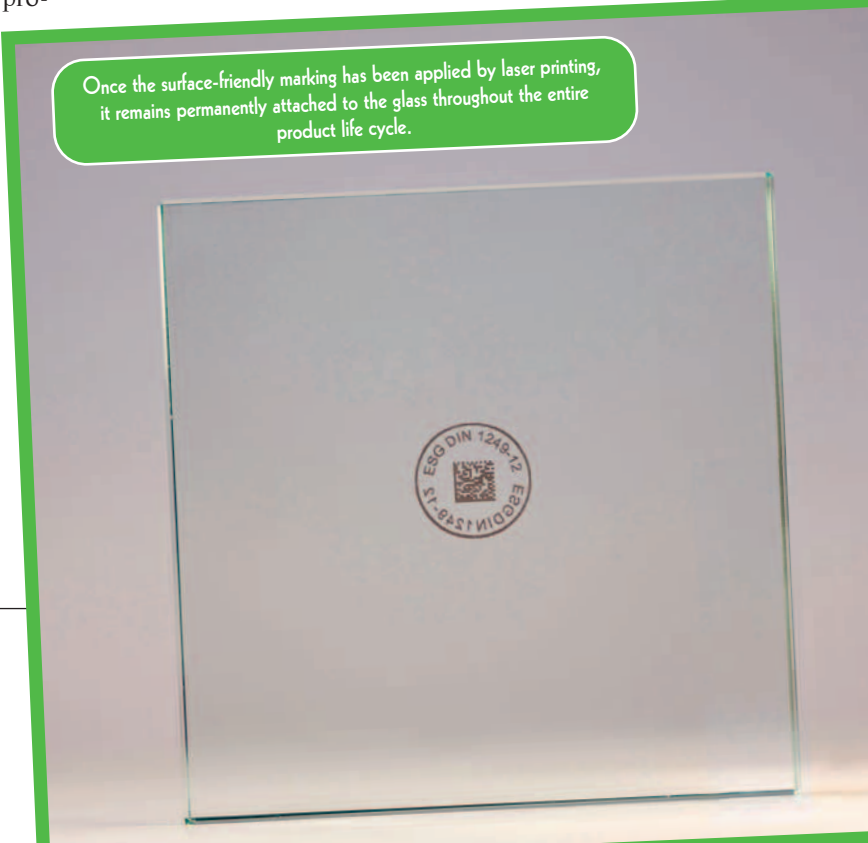
Individual glass marking, data capture and storage, and product tracking are the main focus at HEGLA boraident. In line with this, the mobile laser printing solution ESGuardM will be shown together with the UniColor laser printing process. Compared to CO2 laser marking, this technology leaves the surface completely undamaged. Once

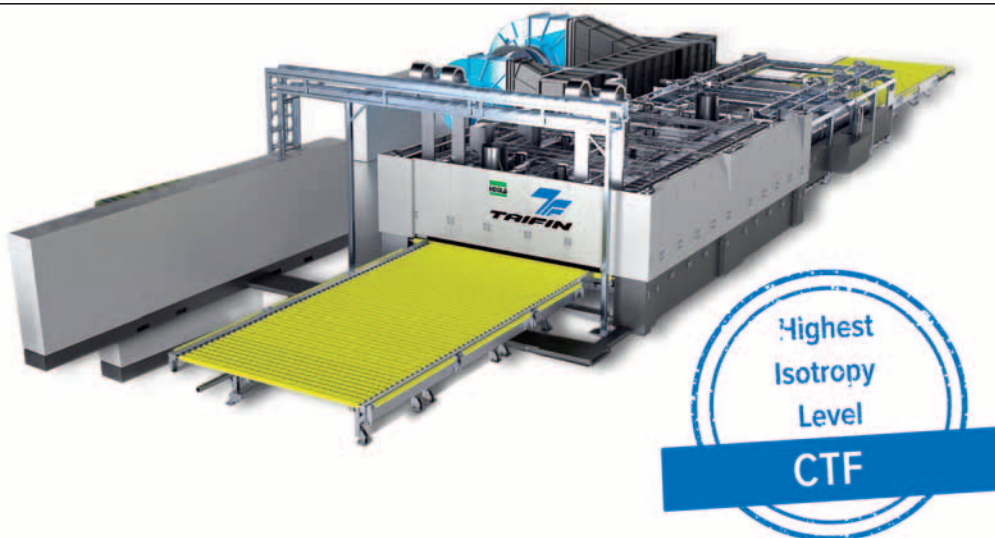
the scratch-, smudge- and weather-resistant marking consisting of a logo, QR code or alphanumeric characters has been applied, it remains firmly attached to the glass. "Depending on the integration, the captured data on the product can be stored either in the ERP or another system. All it takes is one scan to retrieve the information, call up a fire protection certificate or reorder an identical product," explained Head of Development Dr Thomas Rainer. As a rule, laser marking is integrated into operations step by step with the aims of triggering production steps through automatic scanning, simplifying shipping processes or tracing process steps from production and shipping to the construction site. "With

Track & trace is put into practice at HEGLA boraident. Via automatic scan or manually with an app, production progress can be recorded and tracked even years later.



Once the surface-friendly marking has been applied by laser printing, it remains permanently attached to the glass throughout the entire product life cycle.





Glass that's as perfect as it gets – HEGLA-TaiFin's claim regarding the performance of CTF furnaces could not be more passionate. This is why perfect flatness and optical quality are the hallmarks of these tempered panes. Simply glass or, better yet, a perfect pane: Equipped with full convection, the CTF furnace produces tempered glass of the highest quality and leaves nothing to be desired, even in the demanding area of facades

marking and unique identification, it's also possible to fully digitise and track production," said Dr Rainer.

REAL-TIME TRACKING FOR THE OPTIMISATION OF INTEGRATED PROCESSES

"Capturing processes in real time is also advantageous for higher-level software such as ERP, MES, waste optimisation and capacity planning," said Dr Jan Schäpers, Managing Director of HEGLA-HANIC, the software specialists. The large amount of data collected by scanning and sensor technology can be used

to analyse and optimise processes in depth. The display of information in a HEGLA-HANIC Cockpit helps to improve the employees' overview and gives production managers an improved basis for decision-making. With appropriate integration into ERP and production planning software, many of these interventions take place automatically. For example, the continuous optimisation system continuously adjusts the cutting plans or rearranges the sequence of units at the processing steps according to current demand. For visitors who want to get a personal impression

of HEGLA-HANIC's solutions on site, the company will show demo views and test systems at Vitrum – systems featuring even better performance and usability on a new platform with inclusive updates.

PERFECT FLATNESS AND GLASS QUALITY

Tempered glass in perfect optical quality and flatness is the passion of HEGLA-TaiFin, the HEGLA Group subsidiary that will also be represented at the joint stand. With the CTFe, the company offers a unique tempering furnace in which the thermal heat is transferred by air circulation from closed convec-

tion boxes. The glass surface is never exposed to the direct radiation of the radiant heaters, so that both coated and uncoated glass can be finished with the highest optical properties. "The Viprotron and LiteSentry scanners, for example, consistently confirm the premium quality of the tempered glass with isotropy values above 95 per cent," said Jarno Nieminen from HEGLA-TaiFin. While the CTFe is ideally suited for demanding facade glazing, the Finnish company is now introducing three new furnaces that have been specially designed to meet the requirements of insulating, interior or sanitary glass.



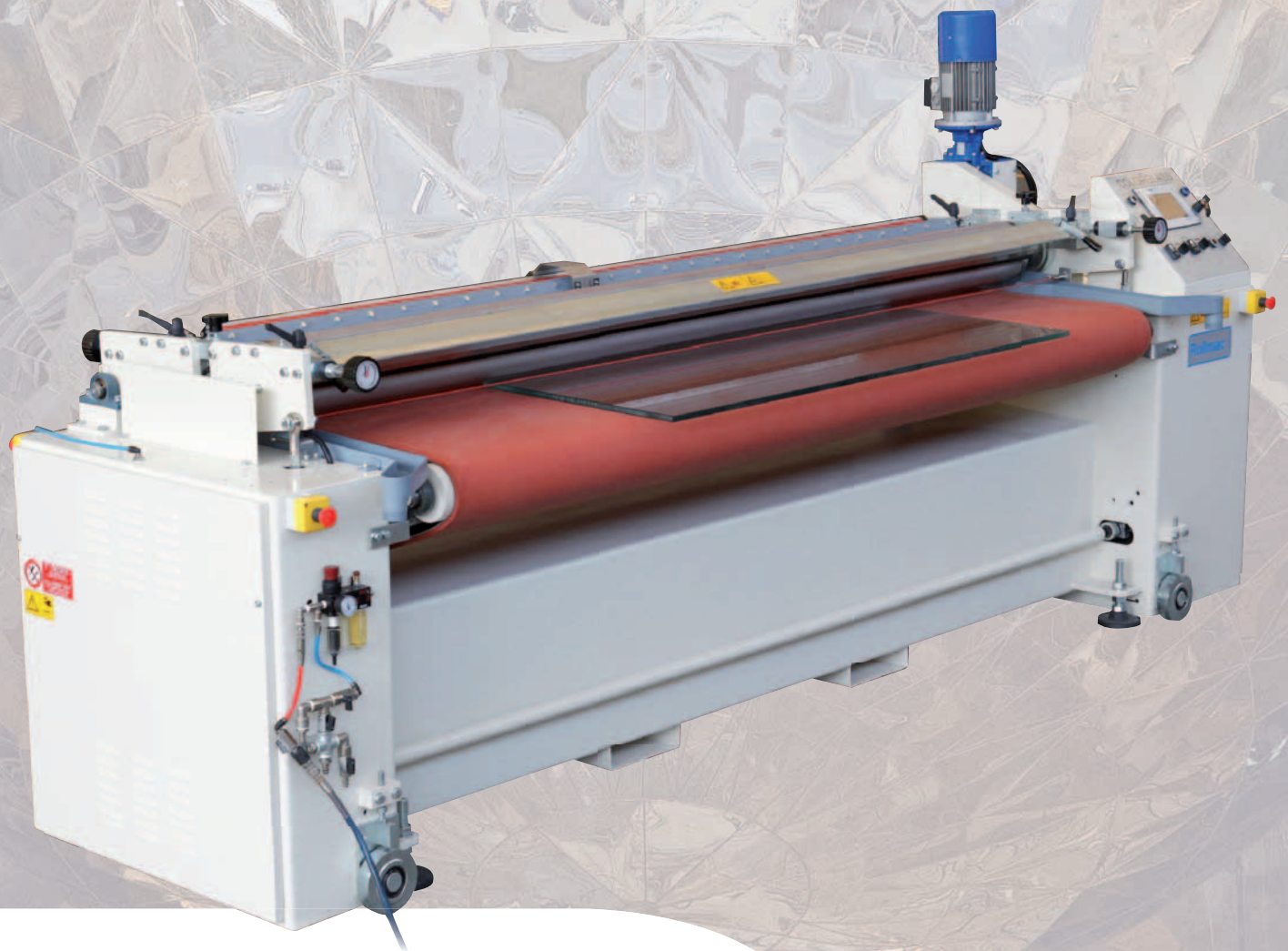
With the HEGLA-HANIC Cockpit, performance-relevant information can be displayed and tracked. It gives employees more information and makes it easier for production managers to make decisions.

Hegla GmbH & Co. KG



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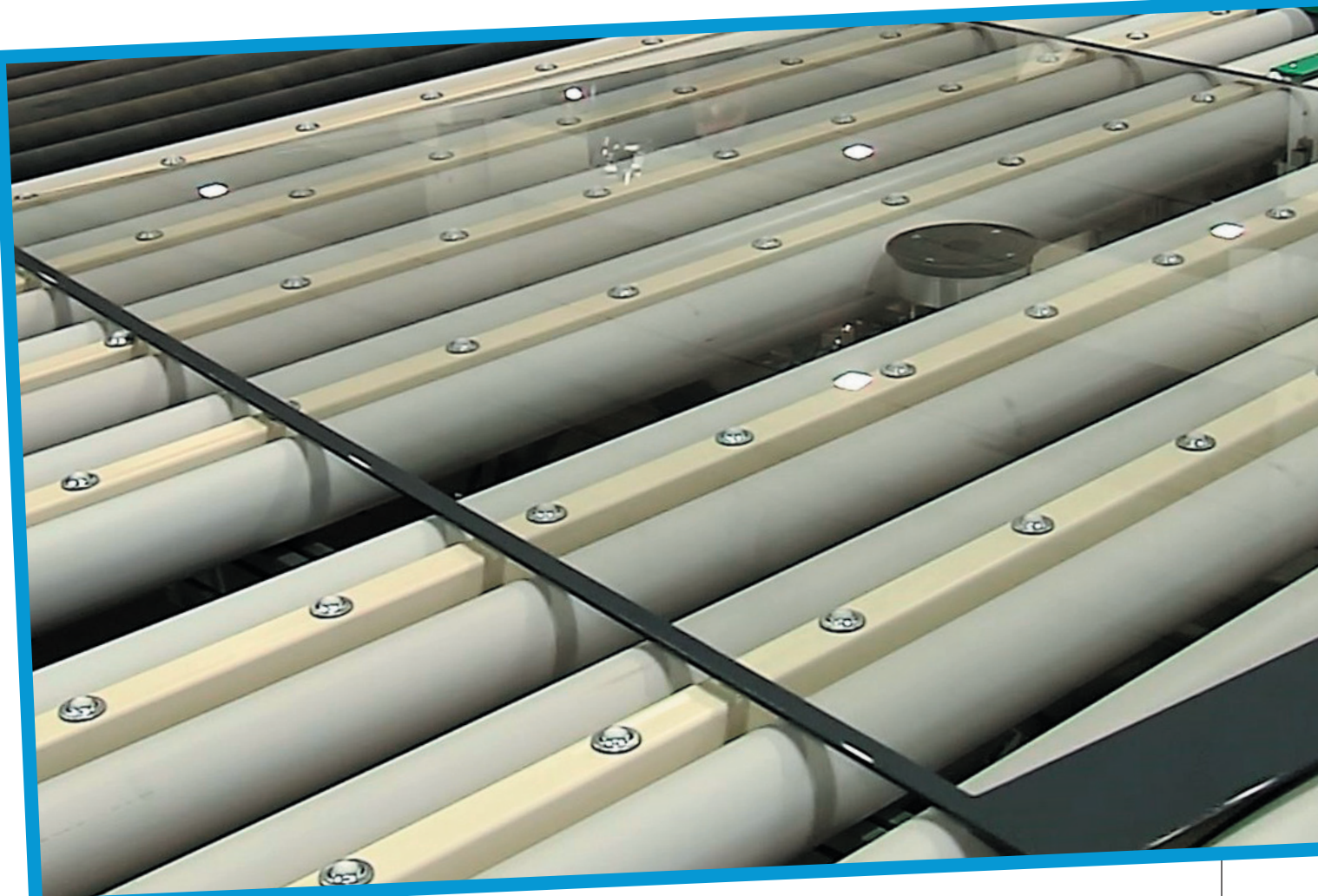
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Perimeter varnishing of flat glass sheets with GLASSLINE from ROLLMAC

The whole range of Rollmac systems aims at innovative, functional and customized solutions based on the customers' needs. The popular Rollmac machines are COLORGLASS and MULTIGLASS, used for the varnishing of glass sheets with thickness up to 25 mm and with width up to 2600 mm, and the roller machine GLASSLINE for flat glass edge enamelling.





GLASSLINE is Rollmac's machine made to varnish the four edges of flat glass sheets by means of a steel engraved cylinder, both with ceramic glazes or cold varnish; it responds to the demands of construction and furniture companies that need specific processing techniques on the edges of glass flat sheets.

The engraved roller quickly applies a uniform quantity of enamel, up to 250 g/sq.m. on any type of flat glass, with thickness from 2 to 25 mm and scopes up to 2600 mm. The width section can range from a minimum of 5 to a maximum of 300 mm and the machine is easy to use thanks to the electronic user panel.

This solution allows to produce frames with four per-

fect edges: each band can have a different width, perfectly parallel to the edge, assuring no waves, gradients or overflows. The machine is specifically designed to eliminate any drop, overflow or excess of application on the entering edge of the sheet.

THE GLASSLINE SYSTEM

The system is made up of three main components: the entry roller conveyor, the coating module with the engraved roller and the exit roller conveyor. To guarantee straight enamelling on the bands, the machine provides a modular system and a removable side roller conveyor for the finishing of particularly long sheets. This operation is performed in four steps, with

the return and 90° rotation of the sheet between a paint application and the next. Finally, the sheet is sent to the oven to dry. The reverse roller enamelling guarantees a perfect distribution of enamels and paints.

ASR - AUTOMATIC SHEET ROTATION

A further option for GLASSLINE is the ASR device (Automatic Sheet Rotation). This can be added to the entry roller conveyor and it is useful for the complete automation of the glass sheet rotation and positioning operations.

The operation is performed in four fully automatic steps:

1. detecting the centre of sheet to be printed
2. positioning the sheet

in contact with the side guiding list (lining-up)

3. waiting for the sheet to return
4. locking the sheet, rotating it by 90° and repositioning the sheet in contact with the side guiding list (lining-up).

After all four sides have been painted, the sheet is then sent to the oven to dry.

Rollmac - GEMATA SpA

Rollmac®

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TEXPACK: a complete range of sealing systems and products for high temperatures

Texpack was founded in 1993 as a result of the business experience of Giorgio Lanza and Simonetta Ghisi, who began specialising in the manufacture of textile products in glass, silica, Texil, Biotex, Thermaltex, Pyrotex, Tenack and Aramtex® for thermal insulation at temperatures from 200°C up to 1,200°C.

Since 1993 Texpack has continued along the line of constant and continuous investment, following the direction of technological research and using cutting-edge production methods. Texpack has always looked towards the future, using specialised technical staff for each individual process. This strategy has led to its



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

transformation from utilising a small initial space to occupying its current production and commercial headquarters of over 10,000 square metres, selling products in Italy and the world.

Since its foundation the company has changed continuously with the market

to meet the needs of the customers, becoming an established reality.

The company is deeply rooted in the local area, where, since its foundation, it has always maintained its corporate headquarters.

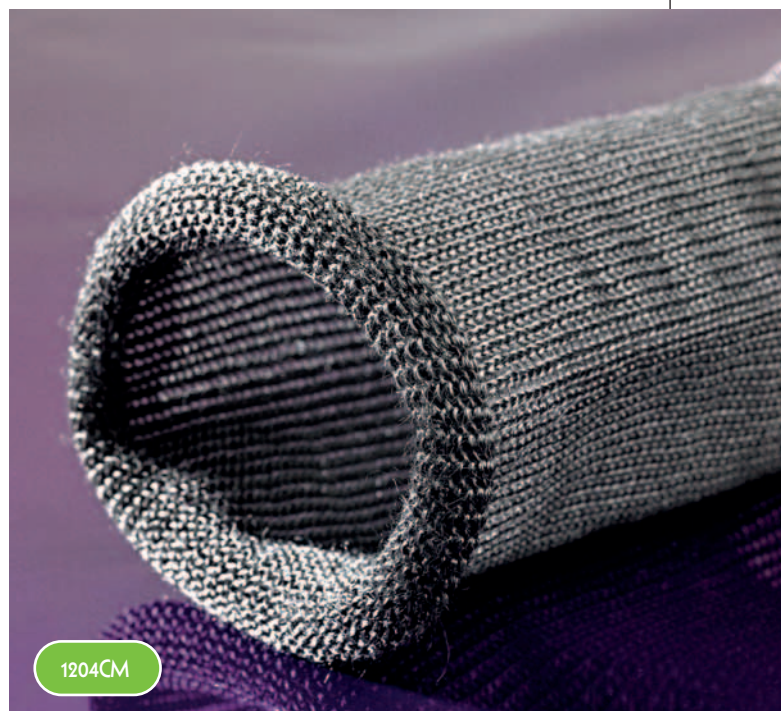
PRODUCTS

Texpack supplies specific products for the glass industry. These items are used in the production lines of glass bottles, flat glass and tempered curved glass mold coating.

The Tenack products are ideal for covering stacker rods in the hollow glass industry and for lining moulds for the production of car windows, for covering rollers and pipes in hardening furnaces and in lamination furnaces for flat glass. The packings can be used to cover gripping and handling equipment, is machine and stacker bar.

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

For this specific use, the sleeves prevent the glass from coming into contact with the rollers. Covering of flexible hoses used under



hot temperatures. Expansion joints.

COD. 1204T TENACK SQUARE PACKING

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

tex products when temperatures exceed 350°C.

COD. 1204CM TENACK KNITTED SLEEVES

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





1203N



12010N

COD. 1203N PBI TAPES

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

COD. 12010N ARAMTEX DISCONTINUOUS FILAMENT TAPES

Aramtex tapes are produced using 100 per cent pure paraaramidic yarns with continuous filaments, that are usually woven in several layers, using particularly fine yarns that render the positioning surface extremely homogeneous and smooth and thus preventing

the still hot sheets of glass from being scratched. Aramtex tapes have excellent mechanical characteristics (excellent resistance to cutting, abrasion, tearing and compression) while their heat resistance characteristics remain unaltered.

Aramtex products are used for the protective covering of slide rollers in hardening furnaces in the flat glass industry, conveyor belts.

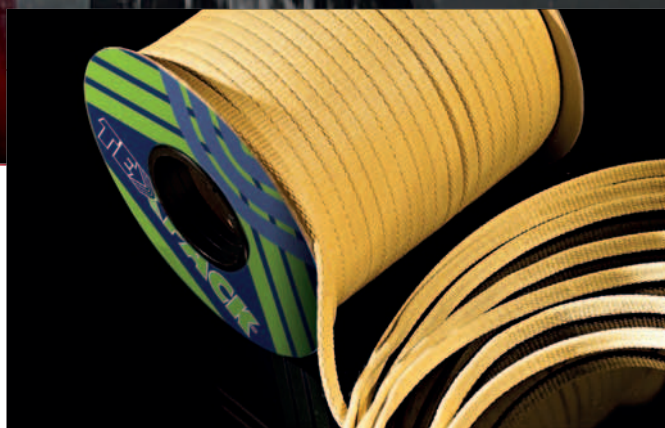
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Textiles for the glass industry

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



1210N Aramtex® discontinuous filament tapes

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



1204CM Tenack knitted sleeve

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

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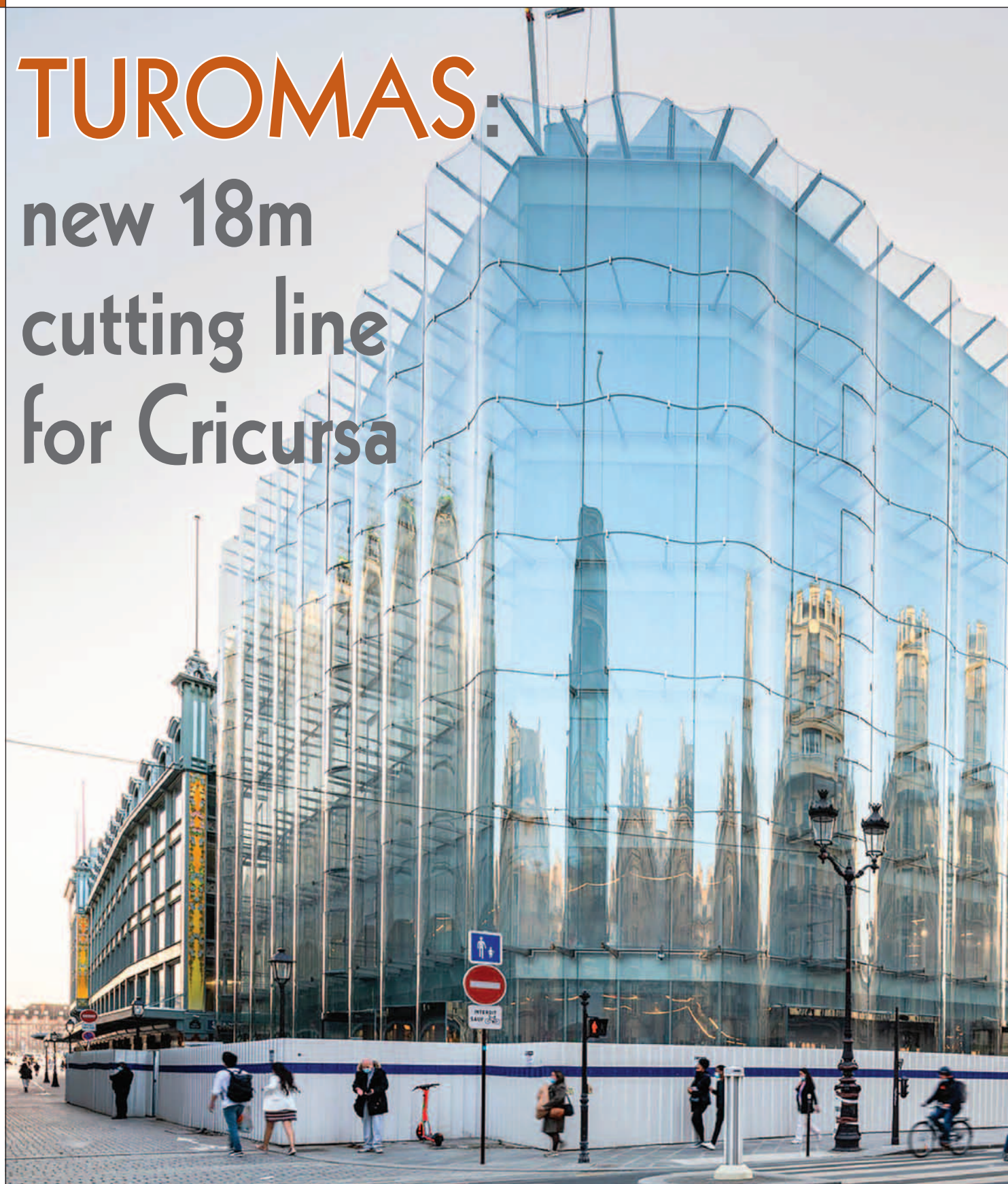
ESA European
Sealing
Association e.V.



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TUROMAS:

new 18m
cutting line
for Cricursa



THE RELATIONSHIP BETWEEN CRICURSA AND TUROMAS

CRICURSA is widely represented in all continents, although it has a greater presence in Western Europe and in the United States market. Its main clients are

architects, engineers, façade designers and consultants who are dedicated to singular works.

It currently has a production capacity of 100,000 m² divided into three sites. These are home to various processes such as storage, loading and automatic cutting for 18-metre glass, au-

toclave and bending furnaces, as well as double glazing systems. A staff of 300 people, including engineers and qualified technicians, make the company a benchmark in its sector.

Recent projects include the La Samaritaine building in Paris (France) designed by SANAA architecture, the 2 Murray Road office complex in Hong Kong (China) by Zaha Hadid Architects and the One Manhattan West towers in New York (USA) by SOM - Skidmore, Owings & Merrill.

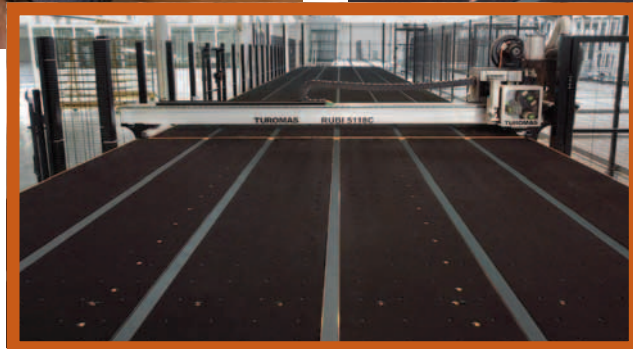
The relationship between CRICURSA and TUROMAS has a long history. It began in 2014-2015 with the special project for cutting 12-metre glass. Thanks to the joint work carried out between CRICURSA and TUROMAS technical teams, a cutting system was developed that

CRICURSA, founded in Barcelona in 1928, is a family company dedicated to the manufacture of curved glass, flat glass and special architectural glass. The company has always incorporated technological improvements year after year, as well as updates in its portfolio to accompany its customers at all times, to meet their demands. TUROMAS recently supplied the company with a new 18m glass cutting line, allowing it to reach the forefront in the processing of special architectural glass.

The RUBI 5118 cutting
table for CRICURSA



“When we had the opportunity to grow and move into 18-metre glass processing, it was clear to us. The first company we informed about this new adventure was our partners TUROMAS” Favio Ribero, Chief Operating Officer of Cricursa.



complied 100 per cent with all the quality requirements and tolerances necessary for its customers. When the Spanish company was given the opportunity to grow and evolve from 12 metres to 18 metres, CRICURSA was sure about what company it wanted to collaborate with.

“The first company we informed about this new adventure were our partners, TUROMAS,” says Favio Ribero. With the acquisition of the new 18m glass cutting line, CRICURSA is at the forefront in the processing of special architectural glass. It is one of the few

companies in the world capable of reaching this size maintaining the necessary quality.

NEW RUBI 5118

The new cutting line makes it possible to process glass up to 18.10m x 3.30m. It has an innovative de-coating system capable of

removing a wide range of low-E, TPF, Easypro coatings, as well as managing the waste derived from the process.

The grinding wheel incorporates an advanced cooling system that prevents significant temperature rise at the edges of the wheel. In addition, this air flow cleans



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the residues adhering to the surface, greatly reducing the number of grinding wheel sharpening operations.

"This new system allows you to obtain very good quality even when multi-stripping. The surface is left very clean, avoiding later problems with the adhesion of the silicone."

Another of the most important aspects of the RUBI

5118 table is the 4-tool cutting system. This eliminates the need for manual cutting wheel changes by automatically detecting the thickness of the glass and adapting the specific tool for each type of sheet.

The 4TOOL integrates four individual, self-selecting cutting tools, each with its own cutting wheel, lubrication system and pres-

sure cylinder specifically dimensioned for its cutting range.

The first tool is intended for cutting glass from 0.55 millimetres to 2 millimetres thick. The second and third tools are used for glass from 2 millimetres to 12 millimetres, which are the most common thicknesses. The fourth tool uses a larger diameter

cutting wheel to cut glass from 12 millimetres, 15 millimetres, 19 millimetres and 25 millimetres.

"It achieves a very clean cut that virtually eliminates the polishing area," says Favio Ribero.

This solution makes TUOMAS the only machinery manufacturer for the flat glass industry capable of achieving a high quality cut in any thickness, considerably reducing the subsequent processing of the glass, saving costs and reducing production times.

SOMETIMES TRANSPARENCY IS NOT THE BEST OPTION



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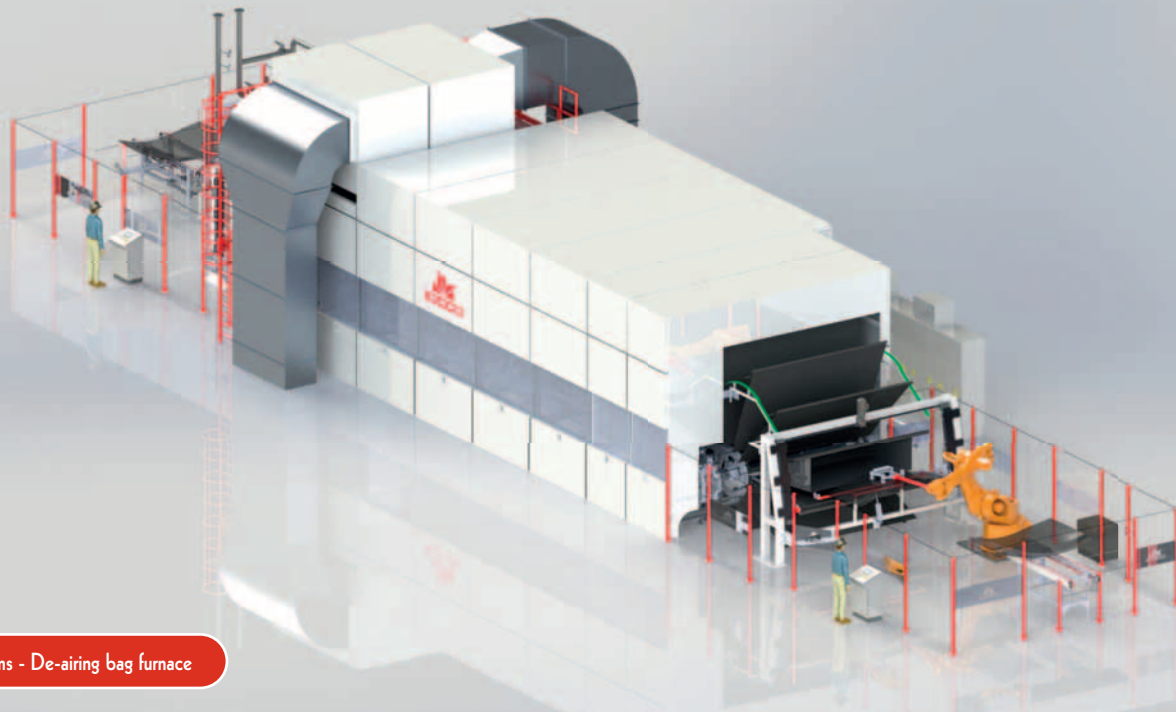
IOCCO further increases its capability with additional production unit and offices



IOCCO's new production unit, composed of three spans, has been optimized to realize up to three de-airing bag furnaces simultaneously. The new plant, located in front of the other plant in Cupello, along with the plant located in Vasto, gives IOCCO a total production area of 17,000 sq.m. This growth enables the company to manage different big projects, such as complete lines for AVO or automatic lamination process for automotive glass and de-airing bag furnaces. The space available inside the separate locations allows to work with different customers simultaneously and for each project to be carried out individually.

THE SOLUTION FOR A FLEXIBLE PRODUCTION OF LAMINATED AUTOMOTIVE GLASS

Automotive glass industry requires more and more dynamic processes able to optimize change over to other glass models then to achieve reduction of production costs. The lamination process in the automotive glass industry is a bottle neck because of conventional processes; and this is why most automotive glass makers are using IOCCO's innovative de-airing bag furnace systems, which allow model changes without any interruption of the process, obtaining a flexible production



Deairing systiems - De-airing bag furnace

like never before in the automotive glass industry. IOCCO's R&D has updated the previous de-airing bag furnaces in order to reach the first de-airing system in the world able to process Windshields, Side-light glass and Sunroofs produced with ultra-thin glass and multilayers such as PVB-PDLC-SPD-XIR. The automation and control section has been completely redesigned with numerous implementations; the new system now allows easy management (user friendly) in the face of more complex software that manages the process. The monitoring system therefore allows all the process phases, vacuum values and temperatures on each glass produced to react to possible anomalies and guarantee continuous and quality production.

Industry 4.0

TO OPTIMIZE PRODUCTION

Good process control is the basis of competitiveness, both based on product qual-

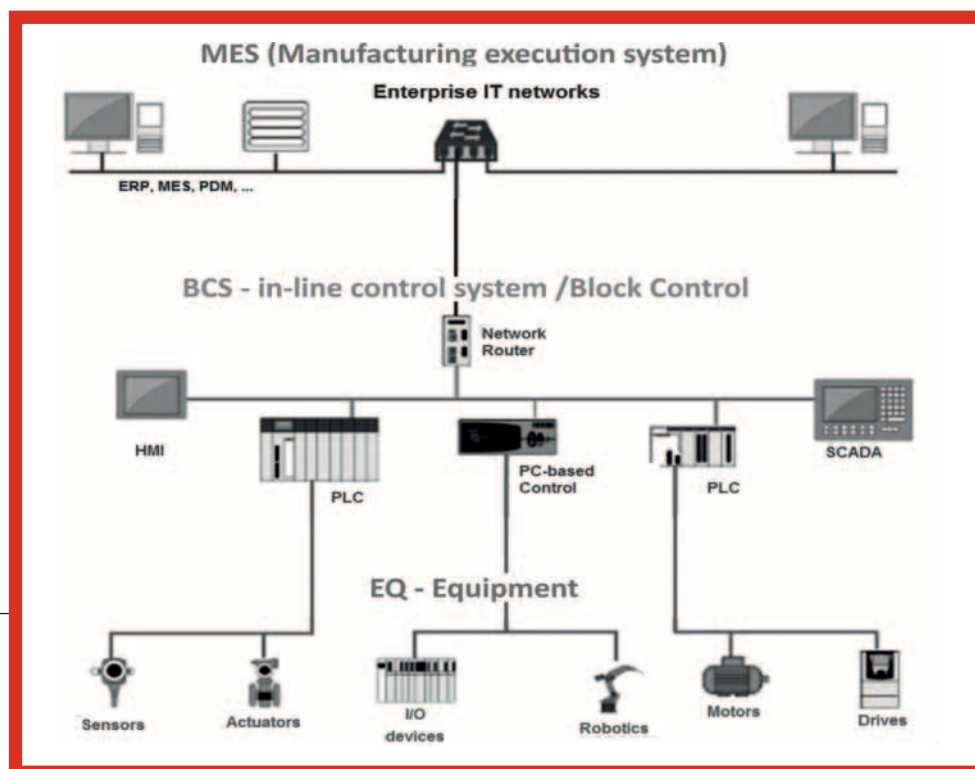
ity and production capacity. Understanding and managing the progress of the process data coming from the field is fundamental. IOCCO's team has developed the ability to select and process only its own data with the continuous implementation of a structural software standard that includes all the installed devices. Particular attention is paid to continuous information and training on the new systems offered by the market both in terms of sensors and actuators and PLC,

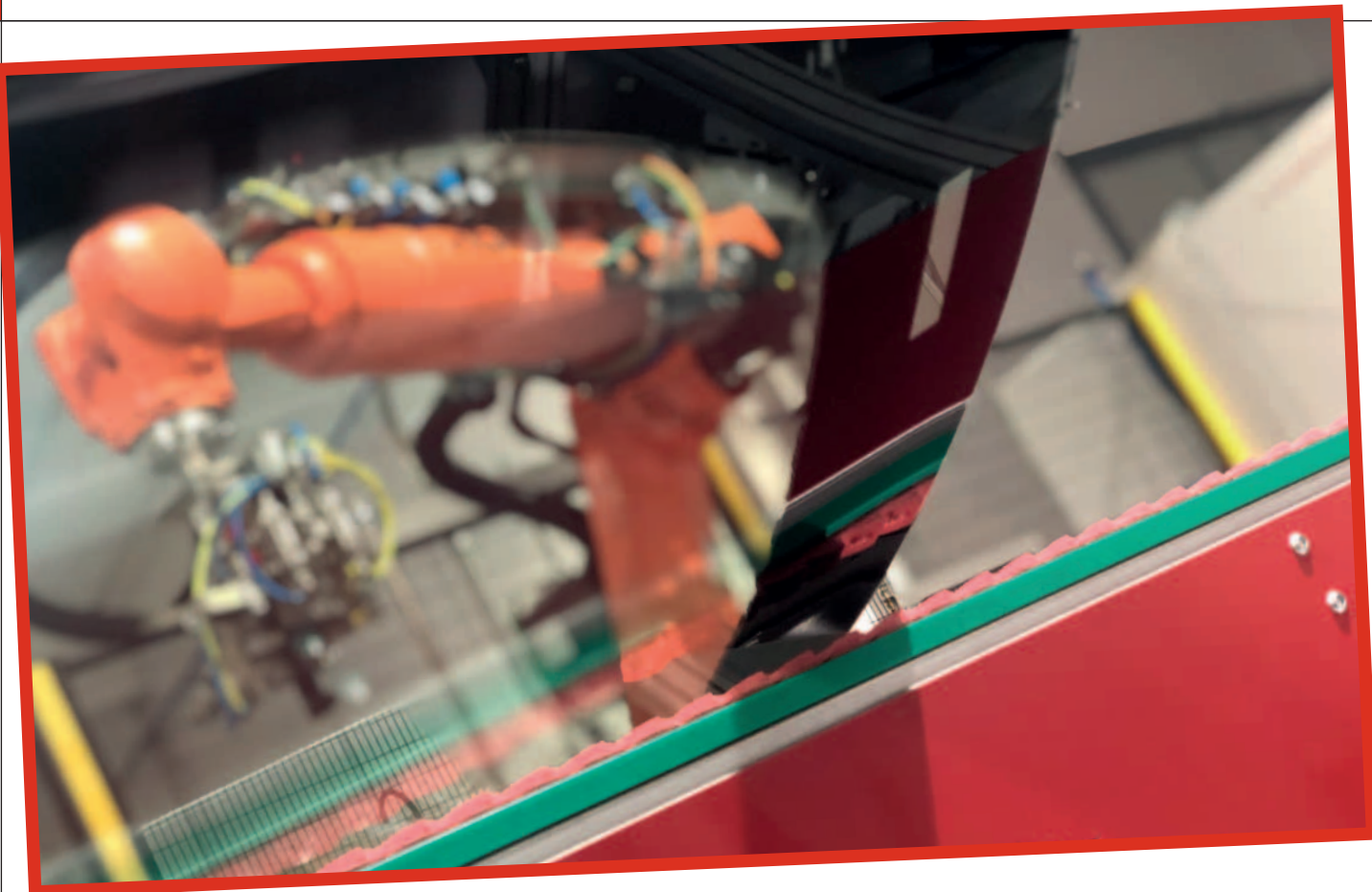
Robot, Vision, human/machine interface (HMI) and PC-based systems. Moreover, remote connection enables IOCCO technicians to intervene when needed, wherever the machine is located in the world, guaranteeing imme-

diante assistance. The system to collect production data helps the use and predicts maintenance assuring constant production running, resulting in prompt aftersales service, also by means of augmented reality systems.



Maintenance support via augmented reality system





ADDED-VALUE OPERATIONS LINES AND MACHINES FOR THE AUTOMOTIVE GLASS SECTOR

All operations performed on naked glass to get glass ready to be assembled on cars requires state-of-the-art solutions made by expert engineering used to realize such complex lines. IOCCO adopts the latest technologies available on the market to enable customers to monitor production in real time, reduce failures and downtime, optimize plant availability and production, and plan maintenance.

Sometimes, more than one of the processes listed below can be combined in the same line:

- Bright finisher assembly
- Centring pin and spacer assembly
- Long life primer application
- Polyurethane extrusion on periphery areas
- Seal, bond on lace and finisher assembly
- Alarm, fax, antenna, heating circuit connector assembly
- Grommet assembly
- Assembly and gluing of various accessories (bars, centring pins, spacers,...)
- Polyurethane extrusion on glass periphery
- Bracket/pin application supporting various devices
- Seal, bond on lace and finisher assembly
- Long life primer application
- Mirror boss assembly



- Centring pin and spacer assembly
- Holder application
- Spacer application
- Encapsulation (PU, TPE, PVC)

IOCCO's engineering team is involved with customers directly during feasibility studies to obtain suitable solutions for the complete set of auto glass.

ENGINEERING OFFICES IN PESCARA

For very complex projects, IOCCO also collaborates with research centres and leading Italian universities. For this reason, additional technical offices and meeting rooms have been inaugurated near Pescara airport. The company also has an-

other engineering office in Pescara, which has a strategic location to arrange meetings with customers arriving from abroad because of its closeness to Abruzzo airport.

VIRTUAL COMMISSIONING TO PREVIEW CRITICAL PATHS

Virtual commissioning is a fundamental tool for sharing and analyzing systems before their implementation. Virtual commissioning provides a solution for the movement of a significant portion of commissioning tasks to an earlier phase of the project, and therefore no longer near the critical path. In virtual commissioning, a simula-

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

NEW TECHNOLOGY IMPLEMENTATION IN PRE-ACCEPTANCE TESTS

The covid period pushed IOCCO to use new technologies to allow the virtual presence of customers during the pre-acceptance test phase. Various video systems have been adopted, such as 360° and Drones, technologies with the aim

to guarantee full operation and reliability.

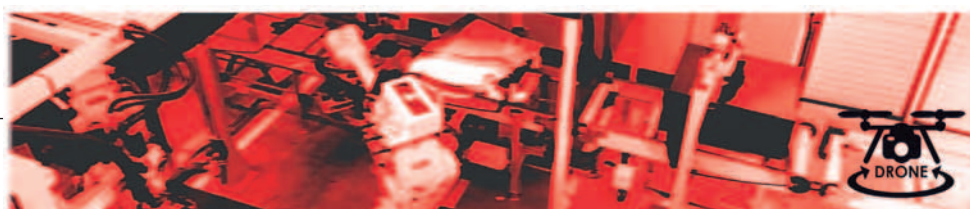
Checks proved to be more effective and in-depth, and all technological areas – not normally reachable in physical presence – are acquired by the video systems in complete safety.

In addition, and thanks to these methods, all operating parameters, in terms of flow rate, quality and safety, can be better checked in detail. This advanced procedure to carry out the validation phases of project is currently a IOCCO standard procedure.



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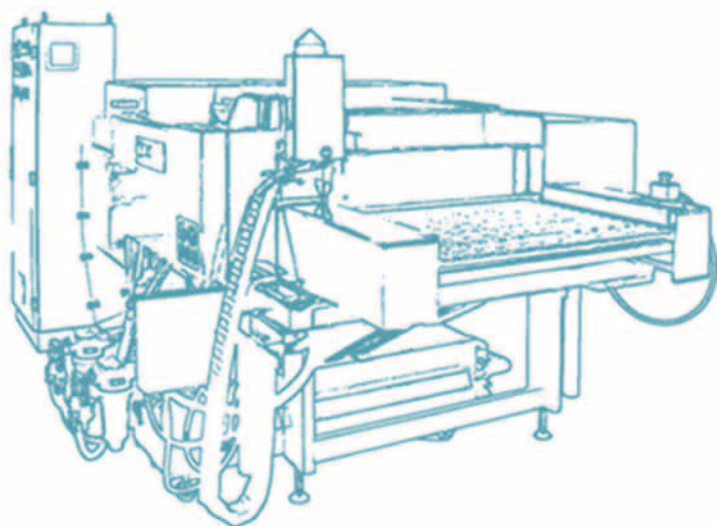
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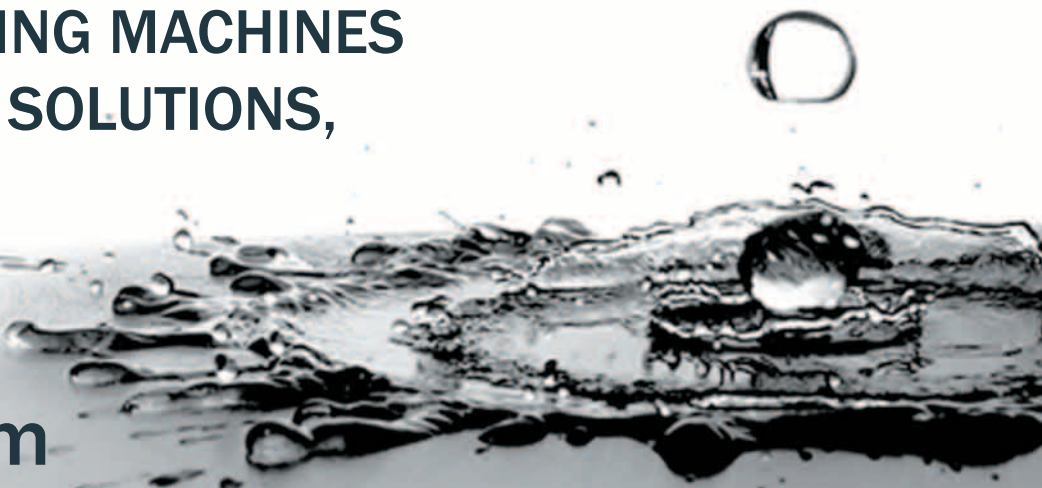


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The **Architectural LAB** is the new Cugher's research center highly specialized in the creation of specific solutions for the **Building & Interior** design sector.

The engineering approach is integrated with the specific knowledge of civil and industrial applications, from windows to balconies, up to furnishing elements and shower enclosures, creating latest generation **machinery and plants for flat glass**.

The **Architectural LAB** provides **tailor-made solutions** according to each customer's needs, guarantying **durability, ease of use and very high precision**.

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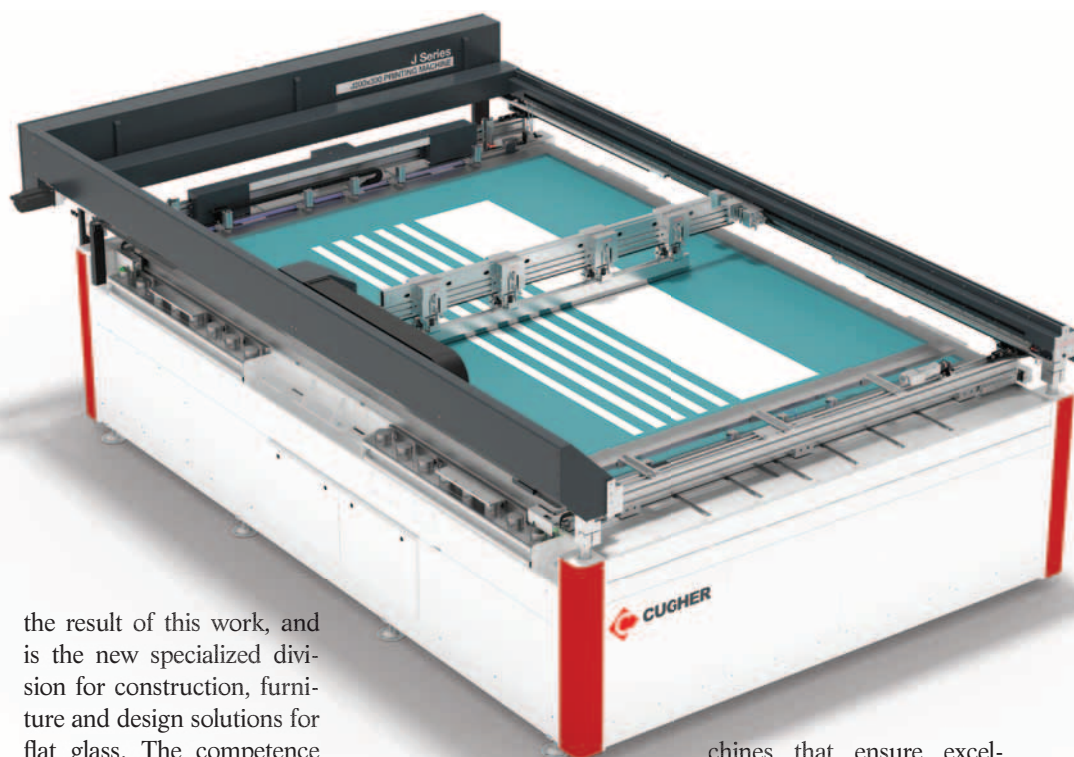
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CUGHER GLASS presents the Architectural LAB

A RCHITECTURAL LAB, THE NEW SPECIALIZED DIVISION FOR BUILDING&INTERIOR DESIGN

Cugher Glass, Italian company founded in 1967, is one of the first to automate the process of silk-screen printing on flat glass and is recognized as a par excellence player at global level in the Automotive sector. This role has been conferred thanks to a flexible engineering approach and to the maximum attention for customization, that made the company innovative and always in step with times and market demands. Today, the same approach that positioned Cugher at the forefront of the Automotive sector is at the basis of the Building&Interior Design division, which makes tailor-made solutions for silk-screen printing, drying and handling on float, tempered, laminated glasses, with civil and industrial applications, like windows and balconies, or furnishing elements and shower enclosures. The Architectural LAB is



the result of this work, and is the new specialized division for construction, furniture and design solutions for flat glass. The competence developed by the company through important projects with prestigious clients over the years is now available in a highly specialized research centre for the creation of specific solutions, perfectly matched with the customer's needs.

Cugher's goal is to create customized solutions at very high precision, reliable and long-term durability in the Building&Interior Design sector. Each project comes from a careful analysis of the customer's needs. Through the Opportunity Check the customer receives a free

study, so that the technicians can elaborate the most advantageous solution in terms of opportunity and costs.

CUGHER MACHINERY

Each Cugher machine or plant for Building&Interior Design guarantees minimum maintenance, ease of use, precision and efficiency, as well as a system for customer information and a fast after-sales assistance through a specialized help Desk team. Applications for the reference sector include:

- Silk-screen Printing Ma-

chines that ensure excellent image definition, print repeatability and uniformity of the ink over the entire surface of the glass. The Sketch Series (glass dimensions: min 660x550mm – 25.98"x21.65", max 2700x1600mm – 106.29"x62.99") is ideal for the printing of shower enclosures, allowing to use the frame for different glass types. The J Series (glass dimensions, depending on model type: from min 400x300mm -15.74"x11.81", to max 2500x4000mm - 98.42"x157.48") key ma-

The know-how that recognizes Cugher as a customer-oriented plants and machinery producer in the Automotive sector has been applied for the Building&Interior Design division. New solutions have been developed to guarantee efficiency and precision and those products will be presented at Vitrum 2021.



ARCHITECTURAL LAB
Performing Glass Technology

chine also for the Automotive sector, is optimal for large glass formats and guarantees a high productivity.

- The Automated Harps Rack System allows the insertion of glasses in the insulating glass line, eliminating the manual loading activity.
- Conveyors with belts or rollers, for loading and unloading, for any glass dimension, that can be integrated with all line components inside the plant, ensuring minimum contact surface and, at the same time, maximum grip.
- Modular IR and UV Dryers according to customer's needs, ideal both for silk-

screen printing (ink thickness 20-30 micron) and digital printing (ink thickness 60-100 micron).

- Vision systems for quality control and broken screen detection guarantee precise final results, without smears, missing part of the design or excess ink.
- Order Manager 4.0, which is the interface between machinery and customers' operating systems, perfectly consistent with Industry 4.0, allows greater flexibility, higher productivity, better quality and minor wastes. The results of the research carried out by the Architectural LAB with its products



and services will be presented at Vitrum 2021, the international glass exhibition that will take place in Milan from 5 to 8 October and that will also include, for the first time, Milan Vision Glassweek, a series of

events related to the glass theme. Cugher will welcome visitors with news and exclusive activities, entering the Building&Interior Design sector with technologically developed and highly performing solutions.



Cugher Glass Srl

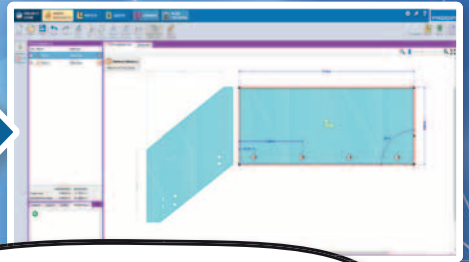
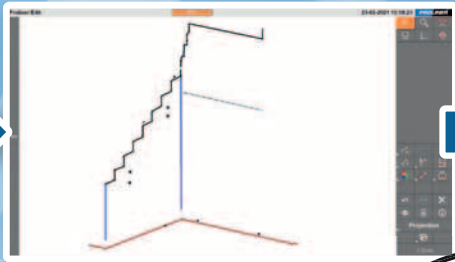
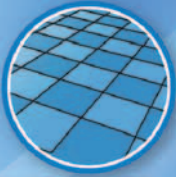


CUGHER
Plants for glass screen printing

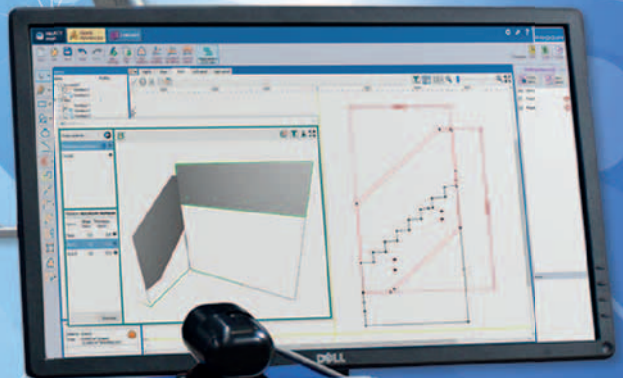
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Competent advice and the best solutions from Rollplast thanks to **LiSEC** technology

Rollplast is one of the main companies in Bulgaria to offer an extensive range of different products: windows, doors, accessories, blinds and insect protection, entry, indoor and garage doors. Shower cabinets, railings, glass canopies, glass partitions for offices, roof structures, glass furniture, glazing of balconies, all possible thanks to LiSEC.

THE ROAD TO SUCCESS

Rollplast was founded in 2000 by Svetlin Nikolchev with the goal of producing and installing indoor and outdoor blinds. Since then, the Bulgarian company has been on the road to success and looks forward to constant growth. This doesn't just show in the make-up of their product portfolio, but also in large investments in organizational infrastructure and technical expansion.

Twenty-one years after its founding, the company has grown to 500 employees worldwide and has a 40,000 m² production base in Kostinbrod, Bulgaria (about 20 km north-west of Sofia). In 2020, Rollplast had total revenue of BGN 63,464,179 (about EUR 32 million), more than half of which was generated by PVC windows.



WINDOWS, DOORS AND BLINDS WITH NEW STANDARDS FOR QUALITY AND INNOVATION

Rollplast's first investment in a machine for making PVC windows and doors was followed in 2005 by construction of an administration building and a new factory in Sofia. The latter produces windows and doors from PVC and aluminium, along with suspended façades, external roll shutters, garage doors, indoor blinds, insect screens and metal structures. In 2008, the company invested a total of BGN 72 million (about EUR 36.8 million) in a new production site in Kostinbrod, which meant that Rollplast was also granted a

Class A investor certificate. As of 2021, the total construction of production space in Kostinbrod reached a total of 40,000 m² and is the basis for implementing Rollplast's mission: to offer its customers premium, energy-efficient, eco-friendly solutions that combine comfort, style and elegance.

ROLLPLAST IS AN INNOVATOR

In addition to the existing comprehensive product range, Rollplast's newest product is quadruple glazing with TPA spacers. Three coated glass sheets are used, making production of thicknesses up to 80 mm feasible. The heat insulation coefficient reaches 0.31 W/m²K.



THE PATH TO MARKET LEADER, ACCOMPANIED BY LISEC

The company has become a market leader — not only in Bulgaria, but also on the Balkan Peninsula — through continuous development, trend watching and introduction of new

products based on them, along with investments in necessary equipment.

LiSEC has accompanied Rollplast since 2008, when the latter invested in its first cutting and insulation production line. Since then, the Bulgarian company has continuously increased its fleet of LiSEC machines. The LiSEC machine portfo-

lio at Rollplast includes the following: Insulation line for glass units – LISEC 50/27, insulation line for glass units – LISEC – 25/20, insulation line for TPA units – LISEC - TPA-Line, LISEC BASE cutting table, LISEC ESL 60/30 cutting table, laminated glass cutting table VB/ GFB-60 / 30RE-S, automatic and manual butyl extruder LISEC LBH-25ARS / LBH-25V, two spacer benders – BSV 30 / K / BSV 45NK, automatic pick-up – PKL 60/30 / SBL 60/30 and other auxiliary machines.

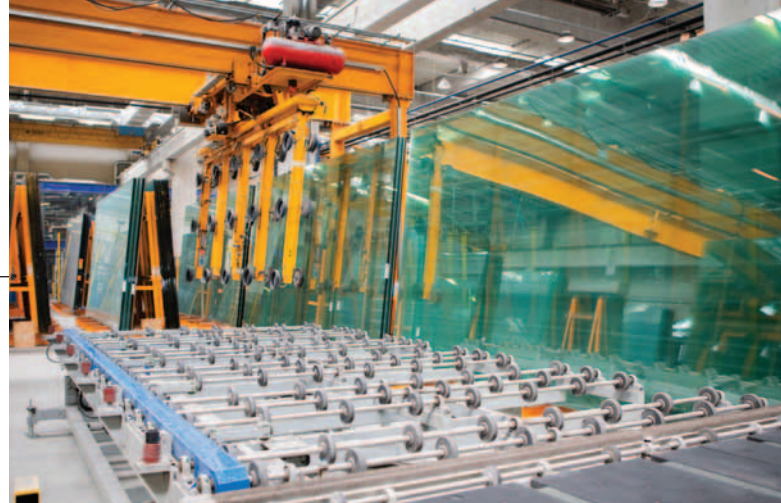
A decisive competitive advantage for Rollplast came last year with installation of the LiSEC TPA line for glass units. Production was increased by about 800 square metres per day, and this reduced operation costs, human intervention and production errors.

To optimally use these LiSEC

machines, Rollplast uses a broad spectrum of LiSEC software, such as GPS.prod, GPS.order, GPS.opt, GPS.hand, GPS.lineserver, GPS.perfectscan, GPS.ident step, GPS.ident IG, GPS.ident delivery, along with many add-on modules for the LiSEC software programs.

COMPANY VALUES

Rollplast has clear values not only toward customers, but also toward suppliers: correctness, professionalism, striving for continuous improvement and innovation, along with speed and punctuality. Most of all, collaboration with LiSEC's Bulgarian field representative, Mario Bodakov, has been simple and satisfying since the first meeting. This is based on reciprocity: "First, and extremely important is maintaining the mutual trust built over years. That means fast,



simple reaction when solving problems in after-sales service, service parts delivery and software issues. Then nothing stands in the way of conversations about new project collaborations," says Mario Bodakov, LiSEC Sales and After-Sales Service since 1994. In addition to competent on-site support, Rollplast finds LiSEC's offerings and continuous development of software for complete production crucial, along with innovations in the design and development of LiSEC machines. All this makes LiSEC a strong partner.

THE FUTURE OF ROLLPLAST

Rollplast is investing on the future. Besides goals such as significant export growth and a rise in annual production, the Bulgarian company strives to increase

its annual profits by 10 per cent. There are also investment-related projects, such as completion of the production base.

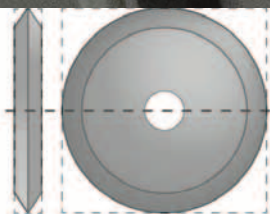
Rollplast is betting on future trends, such as increased automation and Industry 4.0 and is focusing its strategic planning on these two pillars. All of it accompanied by a goal of increased energy efficiency.

LiSEC Group

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Speed||Arris *Innovation*

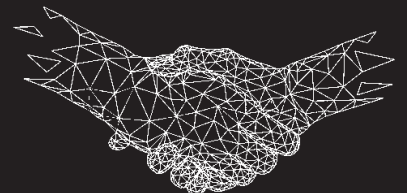
RAPID EVACUATION SYSTEM

Z-AXIS CONTROLLED

INNOVATIVE TECHNOLOGY BY BONFIGLIOLI



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**TOGETHER FOR
INNOVATION**

B solution SRL.COM
ON THE PLUS SIDE ●●●

Flexible and reliable solutions for the most demanding customers from **B SOLUTION**

With over 30 years of experience in glass processing machinery, B Solution gives us an up-to-date overview of its product range in this article. Machinery that not only satisfies the most complex requests, but also ensures increased productivity and precision.



EXPERIENCE IN ANTICIPATING MARKET REQUESTS

Thirty years of experience in the glass industry, designing and manufacturing high-tech machines – this is how B Solution defines itself. And these years of experience enable the company, based in northern Italy, to have a wide range of products that includes: vertical and horizontal grinding and drilling lines, NC corner grinders and

rounding machines, loading, unloading and transfer manipulators, and much more. Moreover, all products can be installed in both new- and existing lines.

The company follows its range of products from design to construction, and right up to installation and maintenance.

B Solution also carries out reconditioning of used plants that are carefully inspected before being serviced, taking into account any adaptations to modern technologies and new safety standards.

SPECIALISATION

B Solution has developed a complete range of products suitable for both small- and large glassworks, satisfying the most modern production requirements.

Grinding lines from the company include:

- Vertical NC Speed Edge
- Vertical Speed Arris
- Bilateral grinding flat edges
- Bilateral grinding round edges
- Shape rounding



• Shape radius
B Solution drilling and milling lines cover:

- Vertical NC Speed drilling and milling
 - Multi-head vertical drills
 - Vertical drill templates
 - Horizontal modular drills
- Equipment for automation and manipulation include:
- Loading manipulator
 - Unloading manipulator
 - Rotating platform
 - Shuttle
 - Turning device
 - Transfer
 - Horizontal diverter 0-90°

B Solution's product range also includes the creation of customised lines for diverse industry sectors such as home appliance, automotive, structural, furniture, and a range of small sizes.

DRILLING

Speed Drill

Speed Drill is a vertical, compact, high productivity machine, suitable for holes, notches, milling and countersinking on rectangular and shaped plates. It is ideal for series and to be matched with grinding or stand-alone lines.

Speed Drill is equipped with spindle and ISO30 tool exchange, as well as two magazines for 16 positions.

This machine also has the

possibility of importing dxf format shapes or to program shapes also directly on board.

GRINDING AND ARRISING

Speed Arris

Speed Arris is B Solution's high productivity vertical arising machine specialized in rough grinding/arrising, carried out in continuous cycle by means of a two-spindle follow-system.

This machine can arris/grind two rectangular glass with different size and thickness, this guaranteeing high productivity for double-glazing lines.

Glass transport and handling is carried out with suction cups, especially important for today's high-performance glass types.

Regular arrising is ensured thanks to the oscillating spindle, which ensure the regular execution of threading.

Further important features include:

- automatic assessment of glass sizes and thickness;
- high-productivity guaranteed for double-glazing and tempering lines;
- possibility of stand-alone installation or integration with existing lines;
- software for shaped glass available on request;
- available in different sizes: 2.0.3 – 2.6.4 – 2.8.5.



Speed Arris

EDGE GRINDING AND POLISHING

Speed Edge

BSolution's Speed Edge is a vertical compact grinder with the innovative patented follow-glass system, which carries out both rough and polished machining, flat and round edging, arising and milling.

This high-production vertical grinding machine for rough or polished grinding, round or flat edges, low-E glass, also has the possibility of processing shaped glass with a straight horizontal support side and a maximum vertical angle of 90°.

The innovative suction cup system guarantees the locking of the entire sheet to be machined, allowing higher processing of squaring and respect of the size of the glass being machined.

Ideal for series and to be combined with drilling lines

or as stand-alone machines. The machine's compact dimensions include an integrated loading and unloading solution, thus reducing floorspace taken up, while the suction cups have a locking system that involves the entire glass sheet.

Other features include:

- maximum precision machining;
- best tool efficiency;
- loading of new glass sheets during the production cycle;
- available in different sizes: 2.0.3 – 2.5.4 – 3.2.5 – 3.2.6 – 3.2.9.

B Solution Srl

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Speed Drill



Speed Edge

Two new products to broaden the Strato[®] interlayer range at SATINAL

The Made in Italy production of EVA interlayers for safety glass from Satinal now expands with two new products. Developed in-house by the S-LAB research and development laboratory team, the two new-born lines expand the range of the quality interlayer branded STRATO[®] and consolidate Satinal innovative vocation in the glass market.



STRATO® COLOUR

STRATO® Colour is an innovative line of transparent coloured EVA films designed for high-end applications in indoor and outdoor environments: four transparent colours that provide designers and architects worldwide new colours and aesthetic solutions, in line with global trends, maintain-

ing intact Satinal EVA inter-layer's mechanical performance – from UV resistance to anti-burglary.

STRATO® Colour introduces the following colours in the laminated glass sector:

- Bronzo Sicilia, to express comfort, kindness, human care, to finally gain the trust of customers.
- Grigio Dolomiti, to ex-

press a shift from global efficiency to local resilience, the disruption of global supply chains and decoupling economies. To express a new balance between daily working hours and time for oneself, in this new world where past habits have been disrupted.

- Azzurro Mediterraneo, to express pride in supporting local brands and a renewed

localism: purchases are produced locally. Support to human-to-human relations, a new human dimension of the post-pandemic world.

- Verde Toscana: to respond to the new trends of sustainability, green, proximity to nature and changes in our habits: a revolution of what we do and how we do it. It expresses a new





concept of home-office, integrated with nature.

The quality standards of EVA films designed and produced by Satinal guarantee colour durability: the colour remains stable and grants light and charm to every architectural project.

The new colours can also be added to the STRATO® Decorative range by Satinal according to the customer specific needs.

STRATO® RIGIDO

STRATO® RIGIDO is Satinal first structural lami-

nating interlayer to laminate safety glass. Being compliant with EN 16613 certification, this innovative film has certified structural characteristics that ensure it is suitable to withstand large loadings without losing its rigidity.

STRATO® RIGIDO, more-

over, provides maximum protection against strong impacts, since the breakage of the glass component does not affect the whole laminated structure.

This film, compatible with Satinal interlayers for safety glass such as STRATO® CLEAR and COLOUR System, not only grants structural and rigidity characteristics to the glass, but also provides other properties, such as colour, transparency, UV protection, sound insulation, solar control and bird safety.

The main characteristics of STRATO® RIGIDO are:

- Structural post-breakage resistance across a wide range of low and high temperatures
- Excellent open-edge stability, not subject to moisture infiltrations
- Compatibility with STRATO® CLEAR and STRATO® COLOUR systems
- Possibility to use thinner glass, reducing costs and carbon footprint
- Developed for hurricane glazing, ballistic resistance, facades, balustrades, stairs and partitions.



SATINAL SPA
TH - STRATO

SATINAL

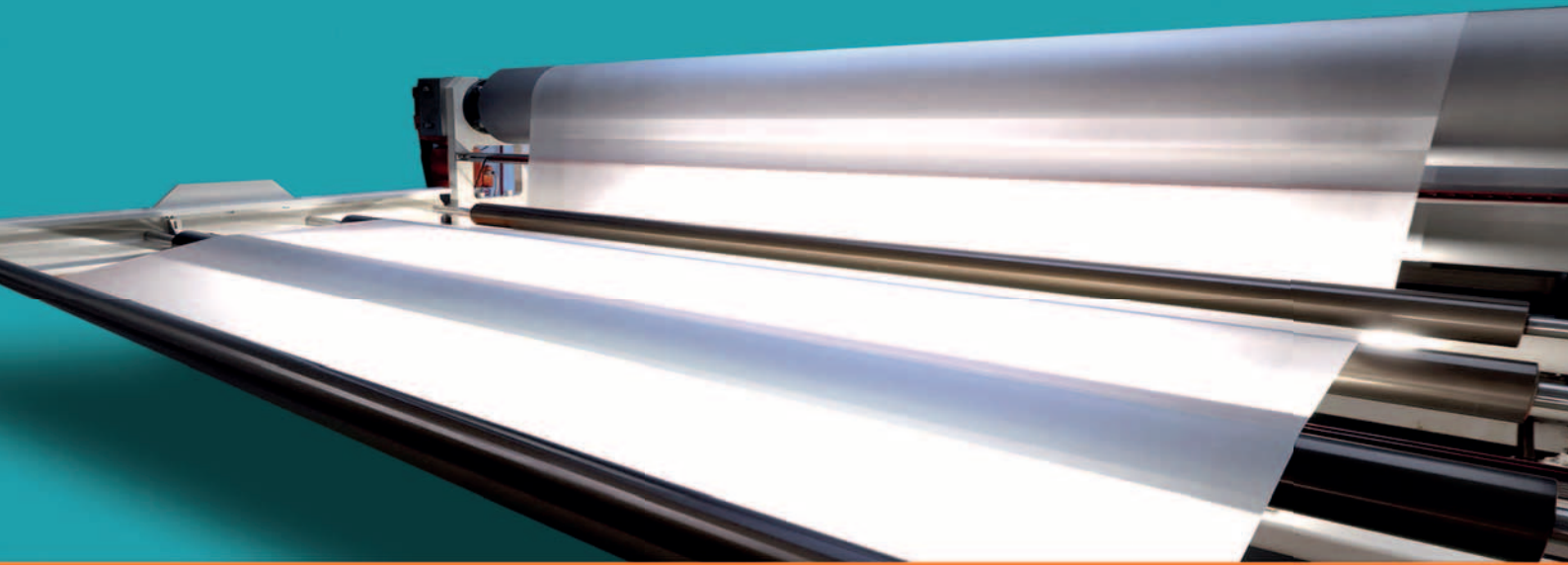


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EVA film



SATINAL



Glass Machinery



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SATINAL



Glass Machinery & EVA Film Manufacturer

FOREL 45 years of passion and innovation

45 years of passion, ideas, successes, discoveries and relationships. This is the milestone reached this year by Forel, a brand worldwide known brand of glass machinery business, famous for its innovative technology and for a philosophy based on listening to the customer and on resourcefulness.

Forel was established in 1976 and is specialized in the manufacturing of flat glass and IG processing machinery. The company has two production plants in the of Treviso and Venice areas of north-east Italy, covering more than 30,000 square meters, and employing a total of approximately 250 people.

Continuous and important investments in R&D, a direct consequence of Forel's attention to customers, make the brand a 'supplier of competitiveness', for its ability to carry out highly innovative projects, anticipating market trends. This same attention to customers can also be seen in the company's after-sales service, entrusted to a Service Department capable of pro-



Vertical cutting line for laminated glass



ON DISPLAY
AT VITRUM '21



Sorting System

and along its entire length. After cutting and breakout, a special infrared lamp and blade are used to separate the glasses. Between the two cutting bridges a patented rotating section allows the rotation of the glass sheets from landscape to portrait and vice versa. Both bridges can be equipped with a device for low-E coating removal. The fully automated cutting line can be managed by a single operator.

Other machineries

The Art. VC cutting table can be combined with:

- automatic stock selector unit Art. ST, for a quick and safe handling of the sheets from the storage stations to the line by means of a shuttle;
- automatic loader Art. AL;
- tilting table Art. TT at the end of the line, to turn the glass into horizontal position.

SORTING SYSTEM

The Sorting System, an intelligent logistics solution by Forel, is all of this and more. It is, in fact, an automated glass pane management system working within the production flow and capable of linking different production departments, creating a 'buffer stock' of semi-finished items managed automatically in relation to the production program.

The Art. SS Sorting System consists of highly customizable handling modules and sorting buffers, and its modularity allows it to adapt to the specific needs of the glass factory.

viding quick and effective responses to the need for technical assistance, both directly (on site) and remotely (online).

Forel's product range is organized in five machinery categories.

VERTICAL STORAGE AND CUTTING

Vertical cutting line for laminated glass – Art. VC

The main philosophy of this machine can be summarized in two words: automation and ease of use. The cutting line can be supplied with automatic glass storage with multiple racks. Each rack has a loading capacity of 12 T which allows a massive glass storage volume. The line is equipped with two cutting bridges, capable of processing laminated glass sheets with thickness up to 8 mm + 4.56 mm PVB + 8 mm, with a maximum cutting length of up to 6,000 mm. The bridges have two opposite cutting heads and two breakout bars (front and rear), to allow the opening of the cuts uniformly





The work list is loaded into the management software of the system: regardless of the order in which material reaches the sorting system, the self-acquisition function identifies and attributes a unique ID to each individual item, and associates it with the order it belongs to. The position of the single sheet can therefore be monitored at any time from a PC station, and the progress of each single order is therefore always known.

When the system receives the instruction to proceed with a specific work list, it recalls all the items associated with the list and sends them to the next processing line. In case of a change in program while processing is in progress, the current order may be put on hold and a different order started by simply entering a different order.

The advantages of the Sorting System are clear: no bottlenecks, no mistakes, and no slow downs or indecision, and clear improvements in productivity, order, flexibility and safety.

VERTICAL PROCESSING

Arrissing machine Art. EG

The vertical arrissing machines series Art. EG remove the sharp edges of the glass sheets by eliminating irregularities, assuring safe and smooth finishes.

The Art. EG significantly increase the productivity of the arrissing operations as is equipped with two

operating heads capable of working simultaneously on two different sheets of glass or by synchronizing both operating heads onto one sheet of glass.

The 'self-learning' mode automatically acquires the dimensions for the square shapes, while a separate device measures the thickness of the glass being processed. During the arrissing process the double suction cups carriages secure the sheets of glass and move them forward. Depending on the sizes of the glass sheets being processed, the suction cup carriages automatically move to the correct position.

The presence of the two independent suction cup carriages allows the Art. EG to reduce processing cycle time, guaranteeing high productivity.

The Art. EG can also process different shape of glass sheets.

The arrissing machine is able to process glass thickness between 3 and 20 mm with a processing speed up to 300 mm/sec.

Edging machine Art. EM

The edging machine Art. EM, one of the most appreciated of the Forel range, is for the edge processing of monolithic and laminated glass sheets.

The machine can perform three different processing operations: arrissing, grinding, polishing. Thanks to the different technological measures

used, Art. EM guarantees total stability and high processing speed during the different processes. It can also process low-E glass, without damaging the coating.

The operating head of the Art. EM edging machine is equipped with a patented system for the localized hold of the sheet.

The device consists of two self-adjusting glass-pressing wheels that rest on the glass sheet and hold it in place. The system guarantees a perfect hold, centring with respect to the tool and the absence of vibrations during processing.

Thanks to this device, Art.

EM offers precise processing even when the glass sheet is not perfectly flat.

The Art.EM vertical edge processing machine is equipped with an exclusive feeler that controls the edge of the sheet locally during processing, 'guiding' the grinding wheel.

It can therefore operate in dynamic self-learning for rectangular glass, guaranteeing consistently uniform result in both arrissing and edging.

To ensure continuous a uniform result, the edging machine is equipped with a pre-setting system that controls the consumption and the approach of the tool.





Vertical Processing Line Art. EM-DM

Drilling and milling machine Art. DM

Enriched with specific features to guarantee precision and stability, the vertical drilling and milling machine Art. DM represents an irreplaceable resource, both for stand-alone use and in line with an Art. EM edging machine. The quality of processing of the glass panes depends mostly on the stability of the glass while the various tools are being used. For this reason, the Art. DM is equipped with two opposite operating heads (which are independent and equipped with an automatic tool change system, with 6+8 posi-

tions) and two exclusive suction cup systems, both patented. The first group of fixed suction cups offers a strong grip on the glass sheet, while a second group of smaller adjustable suction cups offers greater stability close to the processing tools. These suction cups can be positioned differently depending on production needs.

An additional system of suction cups can be applied directly on the rear spindle. In addition to ensuring greater stability during drilling and milling, the rear suction cup group holds the cuts and releases them into the bottom tank. Alternatively, a buffer

can be set in contrast to the tool for the execution of particular processing operations. This tool can be applied both on the rear spindle and on the front spindle.

Combination EM-DM

The Art. DM vertical drilling and milling machine can work together with the Art. EM vertical edging machine (above). This configuration, by far one of Forel's most popular solutions, combines the arrissing, rough or polished edging, drilling and milling processes in a single line. As well as demonstrably improving the quality of the finished product, spreading the workload of edge pro-

cessing over more machineries also over offers significantly better productivity than other solutions: indeed, while a glass sheet is being ground or polished, another one is already being drilled and another one is being washed. The line can be completed with an Art. VW vertical washing machine.

PVB LAMINATION LINE

The lamination line Art. LL has been designed and engineered specifically for the laminating of flat and tempered glass with PVB interlayers. The line is made up of the following operating zones:



- Loading area
- Washing: The washing zone features a six brushes washing machine (brushes diameter Ø 200 mm) equipped with a self-learning device for measuring the glass thickness. Low emissivity (low-E) glass is detected automatically. An antistatic bar can be fitted to the washer out-feed conveyor to prevent dust contamination of the glass surface.
- Transferring area: equipped with a suction cups system to pick up the glass sheets, with variable arrangements and glass sheets detection sensor.
- Interlayer positioning: a

multiple PVB reels holder is located in a dedicated mezzanine within the clean room and is connected to line management software. The positioning station is equipped with an automatic sheet centring system that guarantees the perfect alignment of the glass in the pressing rollers.

- Heating and pressing: the pressing rollers are coned shaped in design to allows the exhaust of air from the centre of the glass out through the sides. The management of the rollers is independent of the glass thickness and is accurate in both dimension and pres-

sure. The heating and pressing areas are made up of two temperature controlled zones and two sets of pressing rollers. Both ovens are equipped with thermo-regulated electronic resistors which work in conjunction with a forced air convection system.

- Unloading: The lamination line is equipped with a tilting table with lateral drive, with a capacity of 3,500 Kg.
- The lamination line can be supplied with an external rotary 8-station PVB magazine, with a table and semi-automatic cutter. The line is equipped with a self-

diagnostic system that identifies faults with codes, descriptions and images with an additional system that allows remote assistance.

INSULATING GLASS LINES

The extensive choice of solutions of insulating glass is the pride of the Forel range. Versatile and configurable to cater for a wide variety of needs, these machines are the result of over 40 years of research and development in this sector. Boasting a host of exclusive, patented technological solutions, Forel products are a strategic choice, helping businesses



High Tech IG line with Thermoplastic Applicator

attain the highest possible productivity and process quality. Forel offers four different series of solutions for insulating glass production: Residential, High Tech, No Limits and High Speed.

Residential IG Line

The Residential IG line is mainly designed for the production of double- and triple insulating glass units, with sizes, thicknesses and conveying weight capacity suited to residential architecture. This range consists of Forel's classic offering of machines for the industrial production of insulating glass. Designed to offer Forel quality in a version focused on a specific goal: IG units in commonly-used sizes, with rigid or flexible spacer. Compact, but still with outstanding performance, this is the ideal solution for standardised production. The line is capable of working with individual glass sheets of up to 4,000 mm length and 2500 mm height, weighing up to 200 kg/linear meter. It can also process up to two chambers using up to two different sealing products.

High Tech IG line

The cornerstone of the range of Forel products for insulating glass. The result of Forel's decades of experience in this field, the High Tech range is complemented by a choice of exclusive devices and systems for working with offset panes, shaped panes and for dou-

ble-, triple- and quadruple IG units. This line can process assembled glass units up to 6.000 x 3.300 mm in size, weighing up to 400 kg per linear metre (assembled panel), and up to 100 mm in thickness. Equipped with a flat plate coupling press with gas filling function (argon/krypton) and sealing machines, the High Tech line can process rigid, flexible or thermoplastic spacers and can use up to three different sealing products. Special technology allows also the management of possible curvatures of the glass sheets.

No Limits IG line

The No Limits IG line meets all requisites for the ultra large size and facade markets: capable of managing the sheet curvatures, weights and stepped units required by the extra-jumbo format, No Limits IG line goes beyond the restrictions of commercial architecture: it can process extra-Jumbo units up to 12 meters in length and 3.3 meters height, with

a capacity per linear meter of up to 350 kg for single panes and 550 kg for assembled panes, with thicknesses up to 40 mm (single) and 100 mm (unit). No Limits IG Line can also assemble units with up to three chambers and is able to handle offsets up to 250 mm on the upper and lower edge and 1,000 mm on the leading and trailing side, thanks to the dynamic support of the coupled panes. Each machine that makes up the line is equipped with devices developed specifically to handle large dimensions, substantial weights and any non-planarity throughout every phase. The line can process both rigid and flexible spacer and the sealing robot can use up to three different sealing products in a continuous sealing mode, offering an astonishing productivity.

High Speed IG line

The High Speed IG line represents the speed in the insulating glass units production and allows astonishing productivity. Designed to offer

extremely reduced production cycle times, the High Speed line offers its best performance in dual mode. The line indeed is equipped with a double flexible spacer applicators, with a tandem coupling press with gas filling and with two sealing robots: so High Speed IG line can process two IG unit at the same time up to 1,200 x 1,200 mm size, of double and triple glazing. This line can sustain up to 200 kg for linear meter and, if necessary, can be used also in 'single mode', processing pane up to 3,200 mm x 2,000 mm size.



Residential IG Line

Forel SpA

FOREL

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- **Easy to use on straight line and double edge grinding machines.**
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- **Works over a wide range of wheel pressure settings.**
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VITRUM 5 - 8 OCTOBER 2021

To arrange an appointment with Marrose at Vitrum 2021 please contact Sales Manager, Mark Day: mark.day@marrose.com or call: +44 7769 717564



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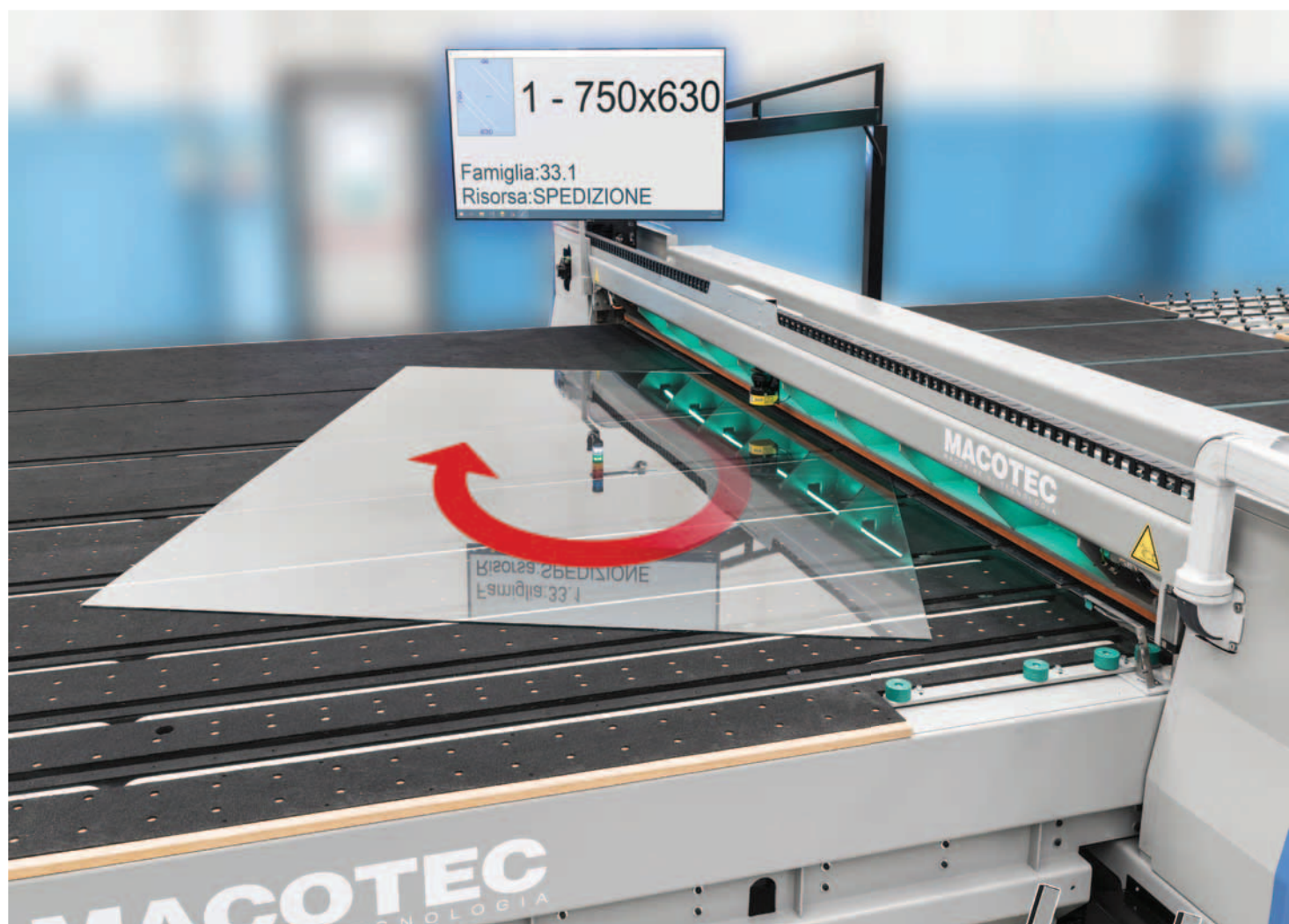
New automatic laminated shape glass cutting lines by **MACOTEC**

Since 1997 MACOTEC has been designing, building and installing automatic machines and systems for flat glass cutting/storage and loading for small-, medium- and large processors. MACOTEC is now a solid and appreciated international reality that has always stood out for its product specialization, guaranteeing a supply of machinery equipped with the most current and modern components and technology.



THE COMPANY

MACOTEC's operational headquarters is located in Northern Italy, in Rogolo, in the province of Sondrio, covering an area of approximately 10,000 m² where there are technical and commercial offices, Show Room, the design, construction and painting departments, mechanical, electrical and mechanical assembly structures and finally the assembly and testing areas.



STRATO ACTIVE HP, THE NEW AUTOMATIC LAMINATED GLASS CUTTING LINES

The laminated glass cutting lines of the Strato Active HP series are highly automated and productive thanks to the exclusive 0-360° automatic workpiece turner, automatic transport of the cut glass at the end of the line by motorised belts positioned vertically on the tilt table and automatic unloading of trimmings into a special collection box, which

can be lifted by a crane or forklift for emptying and cleaning.

Further distinguishing features of these lines include the option to cut and separate curved shapes and to have an extremely fast cutting cycle, even on thicker glass, thanks to sheet clamps driven by brushless motors and controlled by the CNC machine.

INNOVATIVE FEATURES

The production capacity of these lines is further

increased by the option of sequential engraving of Z cuts before rotating the crossbeam. This innovative feature, in combination with an additional resistor at the end of the line, enables Strato Active HP laminated glass cutting tables to achieve unparalleled productivity, especially with complex cutting patterns. All Strato Active HP models have a unique automatic separation control of the laminated glass that activates the PVB cutting blade only when the glass has



been correctly separated. This control allows self-adjustment of the heating time, which no longer needs to be adjusted by the operator.

SEPARATION OF THE LAMINATED GLASS

Separation of the laminated glass is done by a controlled axis driven by a brushless motor, which gives extreme precision when separating, thus avoiding any risk of delamination by the PVB. Automatic minimum trim is up to 2 cm from the

sheet edge. The table can be equipped with a flat grinding wheel for low-emissivity glass for excellent machining quality. Working pressures are adjusted fully automatically and the positioning of the control console above the work table means that there is no external obstructions to the cutting machine perimeter, thus allowing the operator to move and walk easily along the front of the machine without having to dodge around any protrusions.



TOTAL VISIBILITY OF THE WORK CYCLE

Total visibility of the work cycle is ensured by transparent housing that can easily be lifted to allow the operator easy access to the working tools for routine maintenance. Protection of the working area

by modern laser scanners which monitor the various areas of the laminated glass cutting machine without any external obstacles or obstructions on the ground.



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REAL QUALITY IS INVISIBLE

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KILLERIDEA

At Deltamax our vision is clear: continually optimized production processes and advanced quality control technology make sure Deltamax quality standards are always 100% transparent. Thanks to the latest in high-resolution camera tech and a dedicated software system, we can detect even the tiniest qualitative or dimensional defects in flat glass, including superficial residues, so that you don't.



DELTAMAX
we see it

GLASSCOMPANY

GLASS TEMPERING FURNACE

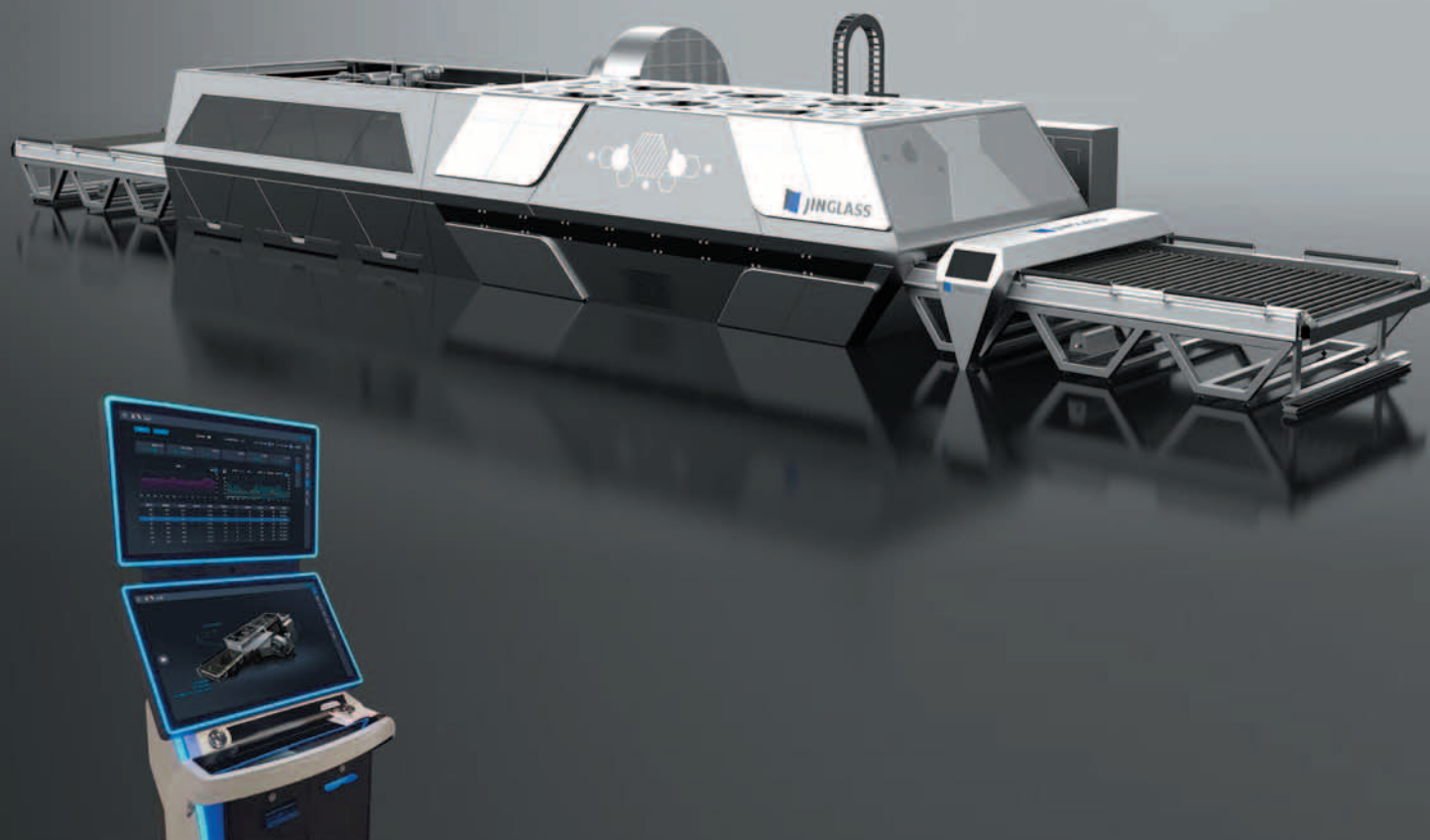
VULCAN

FLAT AND BENT GLASS TEMPERING FURNACE

Patent Convection System **MATRIX PLUS**
for Low-E glass triple silver

iTemper highly advanced 4.0 management software

High efficiency with minimum power consumption
for glass tempering in thickness from **2.5 to 25 mm**



Glass Company Srl
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www.glasscompany.com
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FLAT AND BENT

LASERMEK, the new laser by Glass Company

THE LASERMEK LINE

The already well-known and appreciated LASERMEK line, is now enriched with new functionalities and application sectors:

- paint removal leaving glass and mirror surfaces completely transparent
- vitrified paint removal on tempered glass, leaving
- the glass transparent
- coating removal from reflective glass, including glass with dielectric coating (spy mirror), leaving the glass completely transparent
- metal coating micro ablation of most low-E glasses (hard and soft coating)
- low-E coating ablation
- internal engraving to the

thickness of the glass

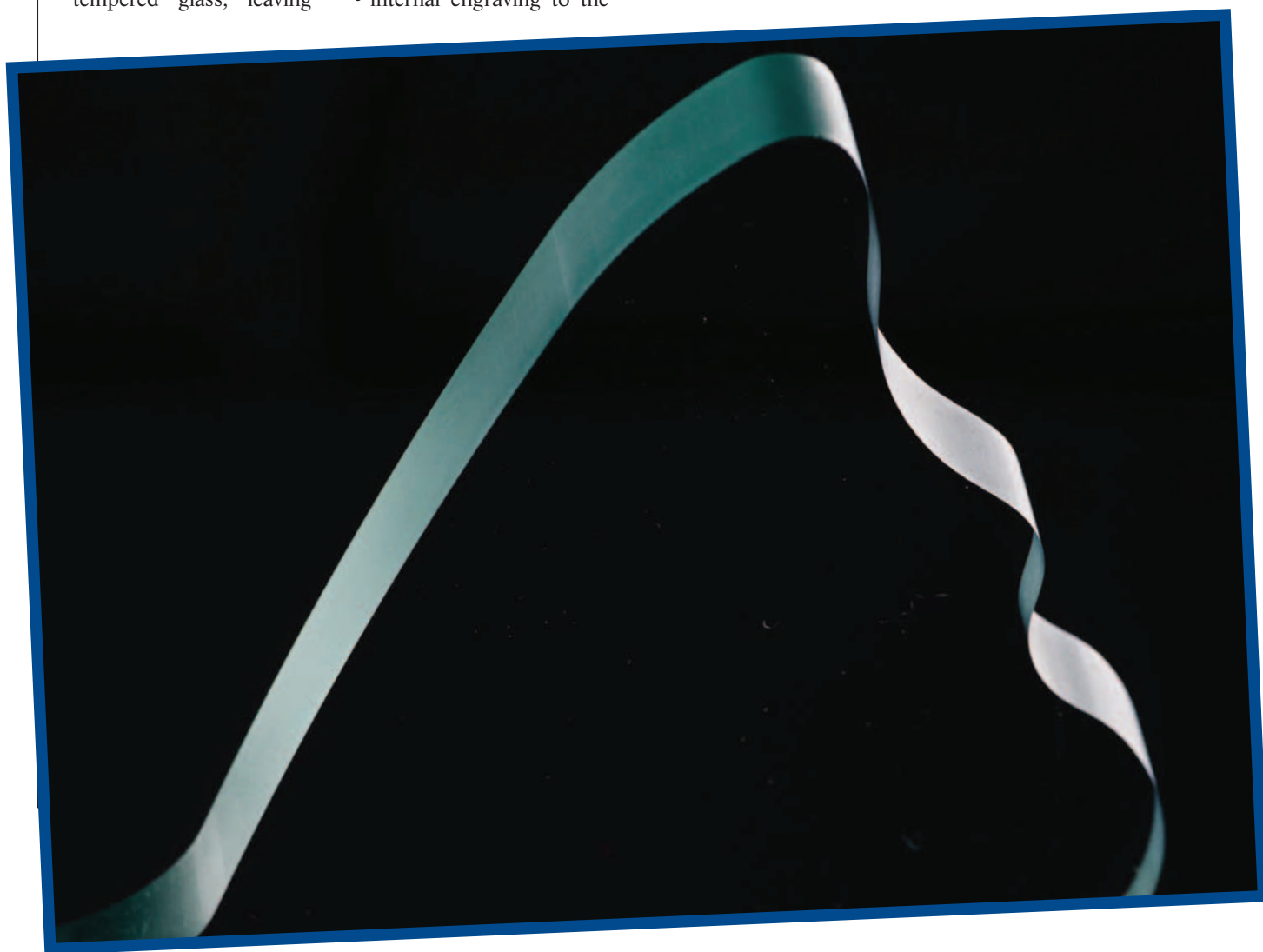
- micro incision of the transparent glass surface
- glass cutting and drilling up to a maximum thickness of 12mm

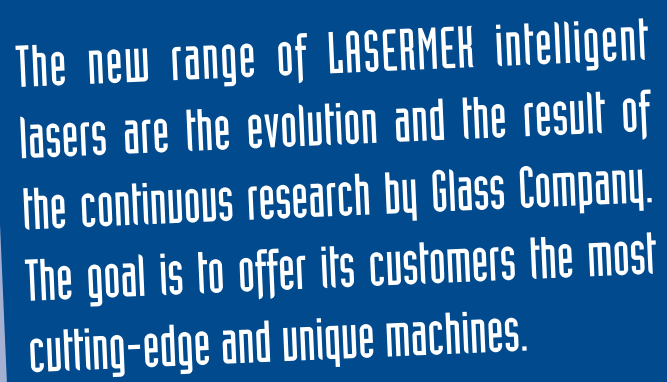
LASERMEK SCANNER

Glass Company's latest-generation LASERMEK SCANNER, designed for

the glass sector, is specific for the incision and ablation of electro-conductive coatings. It is capable of processing large glass sheets, with less than 1 KW/hour electricity consumption.

SCANNER laser technology is extremely fast and accurate and can quickly process large glass surfaces. Moreover,





The new range of LASERMEK intelligent lasers are the evolution and the result of the continuous research by Glass Company. The goal is to offer its customers the most cutting-edge and unique machines.

ver, it has no consumable parts and is equipped with a source with several thousand hours of battery life.

The SCANNER laser machine is able to remove parts of low-E, hard and soft coatings, from 0.05mm to several millimetres in a single pass, without engraving or altering the transparency of the glass, a particularly popular feature for the production of anti-fog glass. It is also used to make heated glass (heated towel rails) and to micro-engrave metal coatings for various uses including special anti-collision patterns for birds.

By generating shapes and/or lines at high speed, barely visible to the human eye, the machine interrupts the electrical conductivity on glass with electro-conductive coating. Glass Company's laser SCANNER machine is highly appreciated by manufacturers of refrigerator doors and by glass manufacturers for the refrigeration sector.

THE SOFTWARE

Simple and intuitive software gives indications on how to micro-engrave the electro-conductive coating to have the correct temper-



ature, the correct electrical absorption and the correct resistance of the glass. The incision of the electro-conductive coating allows the client to design a mandatory electrical path, guaranteeing uniformity of heating and keeping the temperature constant in every part of the glass.

LASERMEK SCANNER is also able to engrave (cut) the silver-based vitrified paint used on heating glass, interrupting its electrical conductivity. LASERMEK SCANNER is an essential machine for all companies that produce glass for the refrigeration and heating sectors, in-

cluding manufacturers of glass radiant panels (such as heated towel rails) obtained with laser SCANNER technology, through the engraving of heating coils in the electro-conductive coating. These heating glass panels offer functionality and comfort, generating heat often considered therapeutic, with

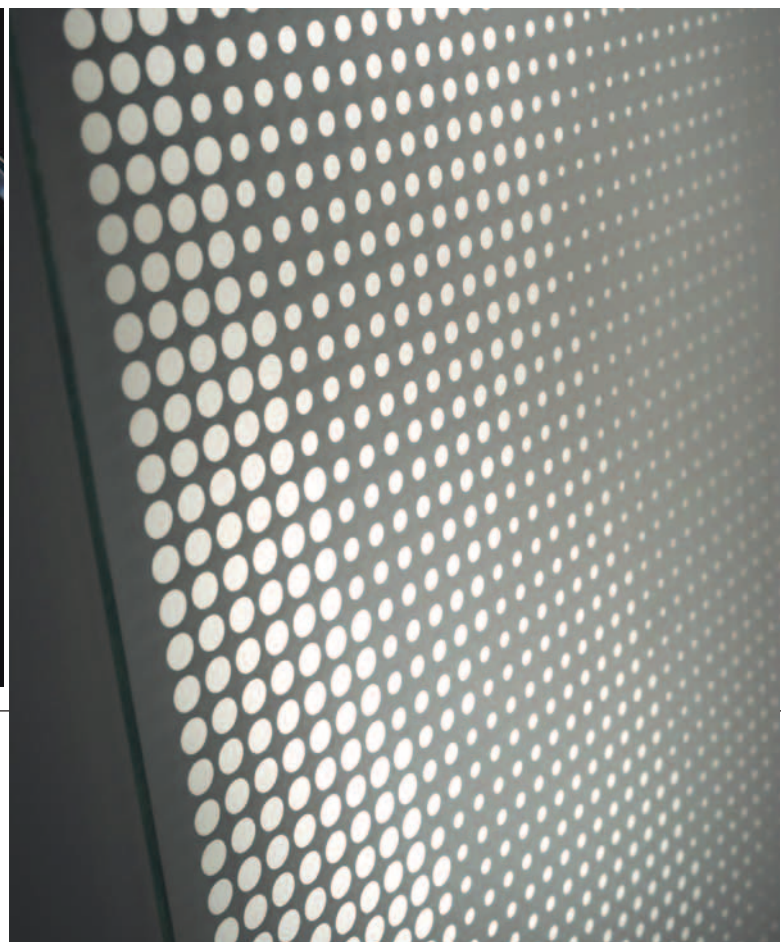
the possibility of diversifying areas with higher or lower temperatures in the same panel.

Heating glass can be considered an extreme goal of anti-condensation glass which, thanks to the use of electro-conductive glass and the control of its potential, can become a real source of heat. The same technology can, however, also be adopted for various other sectors, for example:

- Transport – Processing of WI-FI wave grids for passengers' personal devices.
- Nautical – Anti-fog heating glasses.
- Permeability to electro-magnetic waves.

Functional glass is another area with a lot of potential for the future.

Thanks to laser processing, it is now possible to



produce glass with greater permeability to radio waves for mobile communications. This is ideal for external use, in areas such as conference rooms and offices.

- Anti-collision glass for bird protection

LASERMEK SCANNER technology can create special geometric shapes on the glass, which can be used on external facades of buildings. This is invisible to the human eye, whilst showing a framework to birds. The invisible design allows birds to change their flight path without accidentally hitting the windows.

The range of glass surface processing lasers that the company offers embraces different technologies and sizes, in order to cover almost all market demand,

including, for example, worktops such as:
1,000x2,100mm
1,500x3,000mm
2,000x4,000mm, etc.
variable according to customer needs.

FURTHER LASERMEK EVOLUTION

The evolution of **LASERMEK** goes beyond the surface treatment of glass. The close collaboration with important producers of the latest generation laser sources allows the company to propose lasers suitable for drilling and cutting glass, up to a thickness of 12mm.

New solutions have been developed for the cutting of float glass up to a maximum of 12mm, circumscribed in an optimal area of about 200x200mm, expandable according to the needs of customers.

Glass cutting using laser technology is particularly useful when making shaped cuts with variable geometry, as well as for hinges, square and oval holes, grooves and similar processes. The cut is neat, without shards, and is suitable for glass tempering.

The laser source has a very low energy consumption and is suitable for multiple applicable processes, such as drilling operations on the edges of large glass sheets, internal and external cutting of small glass sheets, technical drilling where extreme precision is required. The laser beam does not have a customary mechanical tool consumption and therefore its tolerance is higher.

The machine is produced as per specific customer requests, to adapt to spe-

cific needs. The range of drilling and cutting lasers that Glass Company offers includes different technologies and sizes, in order to cover almost all of the market demand, including worktops such as:

500x500mm

1,000x2,000mm

1,500x3,000mm, etc.

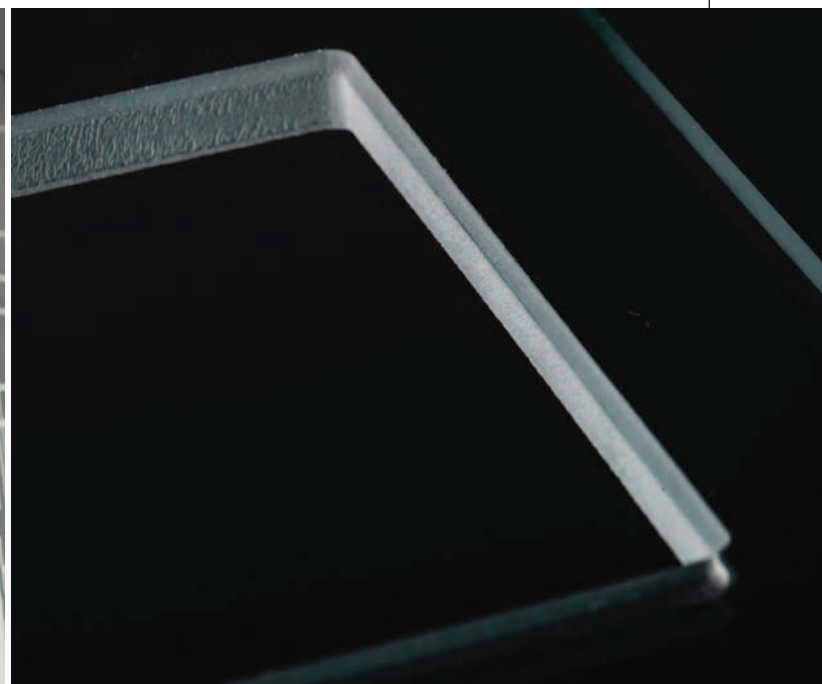
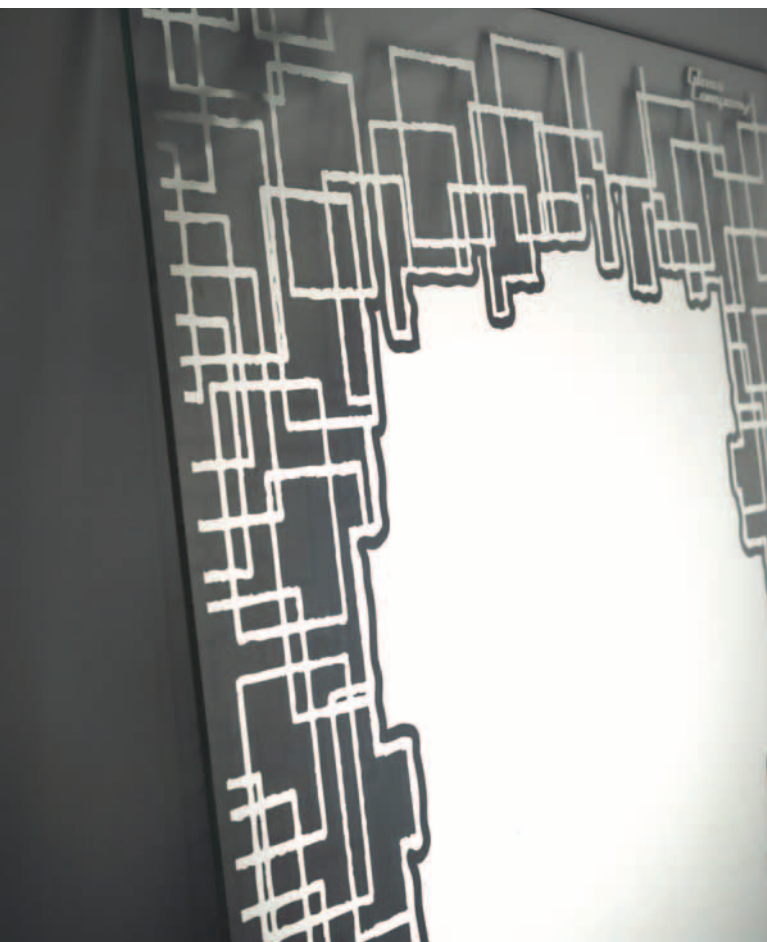
variable according to customer needs.




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ADELIO LATTUADA and Knittel Glass offer new robotic line at Vitrum 2021

Lattuada will be at Vitrum with Knittel Glass with robotic solutions for any type of need and application related to the glass industry (CNCs, double-edgers, cutting, tempering or IG lines, etc.). As for the edging area, many different configurations can be offered.



VITRUM 2021

At Lattuada's booth at Vitrum 2021, visitors will have the chance to see a robotic line consisting of two 13-wheels edgers, an in-line vertical washing machine and a robot.

The advantages of Lattuada-Knittel solutions are many:

- The quickest solutions available on the market; the following are real examples from customers:

- 44 pieces/hour (1000 x 2000 mm)

- 375 m/hour (1000 x 2000 mm) including dubbed corners

- speed up to 5 m/min

- The most sold and installed (more than 150 projects already installed by Knittel).

- The widest experience in this field (since 2000 Knittel has been supplying robotic applications for the glass industry since 2000).

- Easy use and reduced maintenance. What happens if the line stops? Lattuada-

Knittel lines can, in most situations, continue from the point they have been stopped or resume and empty the line automatically.

- Integration with third party software and many different ways to receive or read glass dimensions to be processed.

THE A-WR AND I-AL PACKAGES FOR EDGING MACHINES

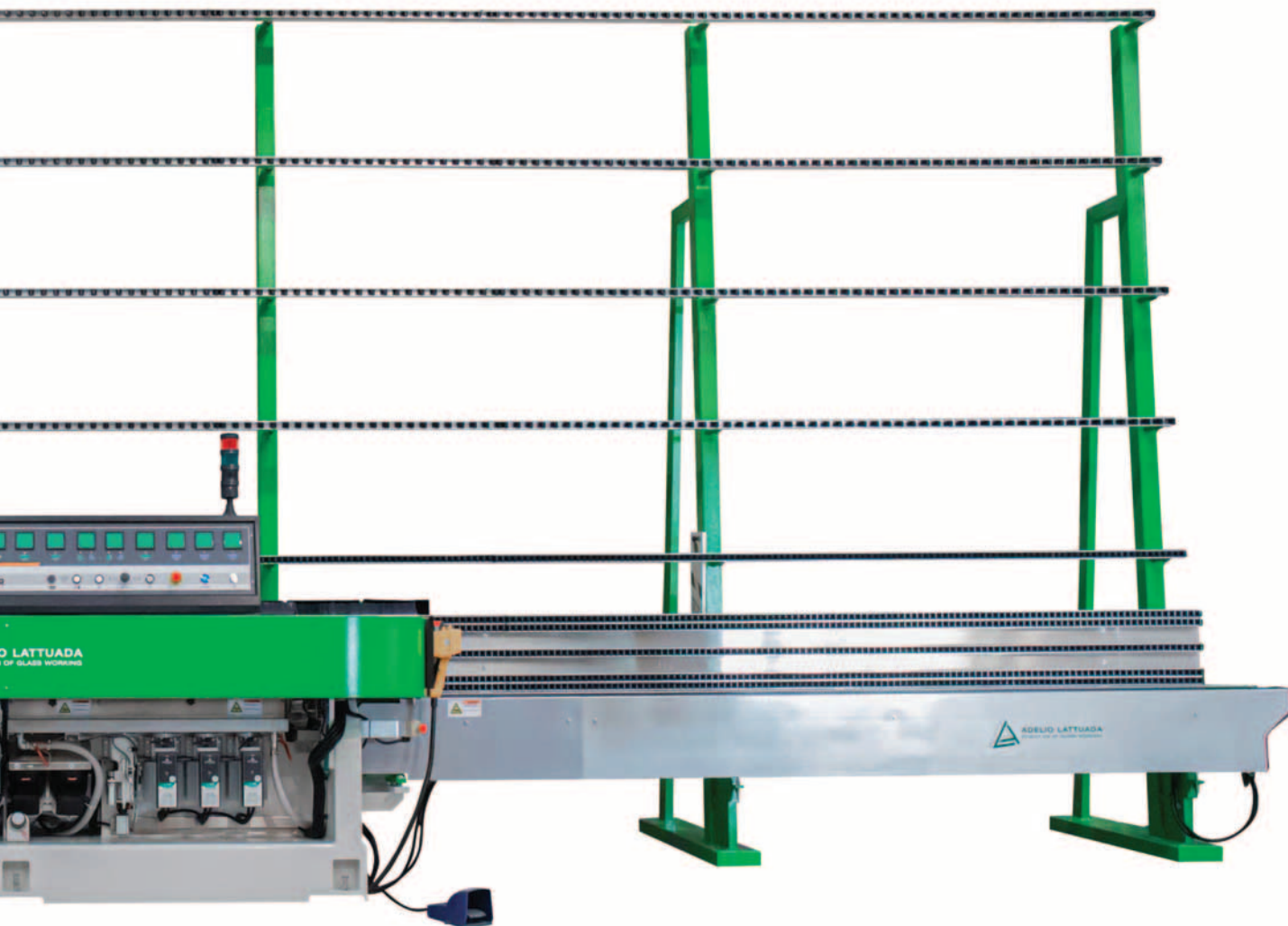
LRS (Lattuada Robotic Solution) is part of Lattuada's cyberAL project, which in-

cludes also A-WR and i-AL packages to increase edging machines automation to the top level.

Both packages will be installed on the two edgers at the exhibition.

The exclusive A-WR System introduces a completely automatic wheels setting management, which includes:

- Automatic pre-setting "ZERO" procedure of diamond and resin wheels, without glass in less than one minute.





- Automatic recovery of polishing wheels wear.
- Automatic positioning for wheel replacement.
- Jog increase/decrease of the spindle position (accuracy 0.01 mm).
- Automatic positioning on setpoint.
- Automatic backlash recovery.
- Automatic spindle cleaning procedure.
- Wheel wear warning.
- Spindle problem warning.
- Manual unlocking for any situation.
- Motorized adjustable inlet conveyor.

- Digital ammeters and automatic alert system for polishing wheel wear.
 - Automatic detecting and compensating procedure of the inlet conveyor belt wear.
- Advantages of the Lattuada A-WR system:
- Wheel setting in less than 1 minute, instead of an average 20/30 minutes for manual setting.
 - Homogeneous wheel setting regardless of the work shift and the operator using the machine.
 - Extremely simple to use, no sample glass needed.
 - Homogeneous wheel wear and consistent

processing quality.

- Increased spindle cleaning thanks to the automatic cleaning function.
- Reduced exit conveyor belt wear or damaging due to incorrect wheel "zero" setting.
- Early warning regarding potential maintenance issues.
- More quality, more productivity, less maintenance, fewer errors... more marginality.

I-AL

i-AL is a comprehensive pack of mechanical, electronic and software systems especially designed to deliver the maximum possible automation in glass processing and complete integration with entire production systems.

The i-AL pack includes:

- Digital ammeters displayed on the touch-screen panel.
- Motorized glass removal setting with portable push-button panel.
- Automatic management

of wheel pressure, glass removal and speed according to the thickness.

- Proportional valves for pressure regulation of the polishing spindles.
- Glass length measurement.
- Remote assistance.

The main advantages of i-AL are:

- Reduced machine set-up time.
- Constant quality and productivity throughout the shift or day, regardless of operator skills.
- Early warning regarding potential maintenance stops.
- Remote management.
- More quality, more productivity, less maintenance, fewer errors... more marginality.

Lattuada's machines are mainly characterised by great technological flexibility, ease of use and limited maintenance required. The functional planning and manufacturing standards used avoid long and expensive machine stops. After-sales technical assistance by a qualified staff of technicians both from our and associated companies is guaranteed.



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45 years, our history, our business card

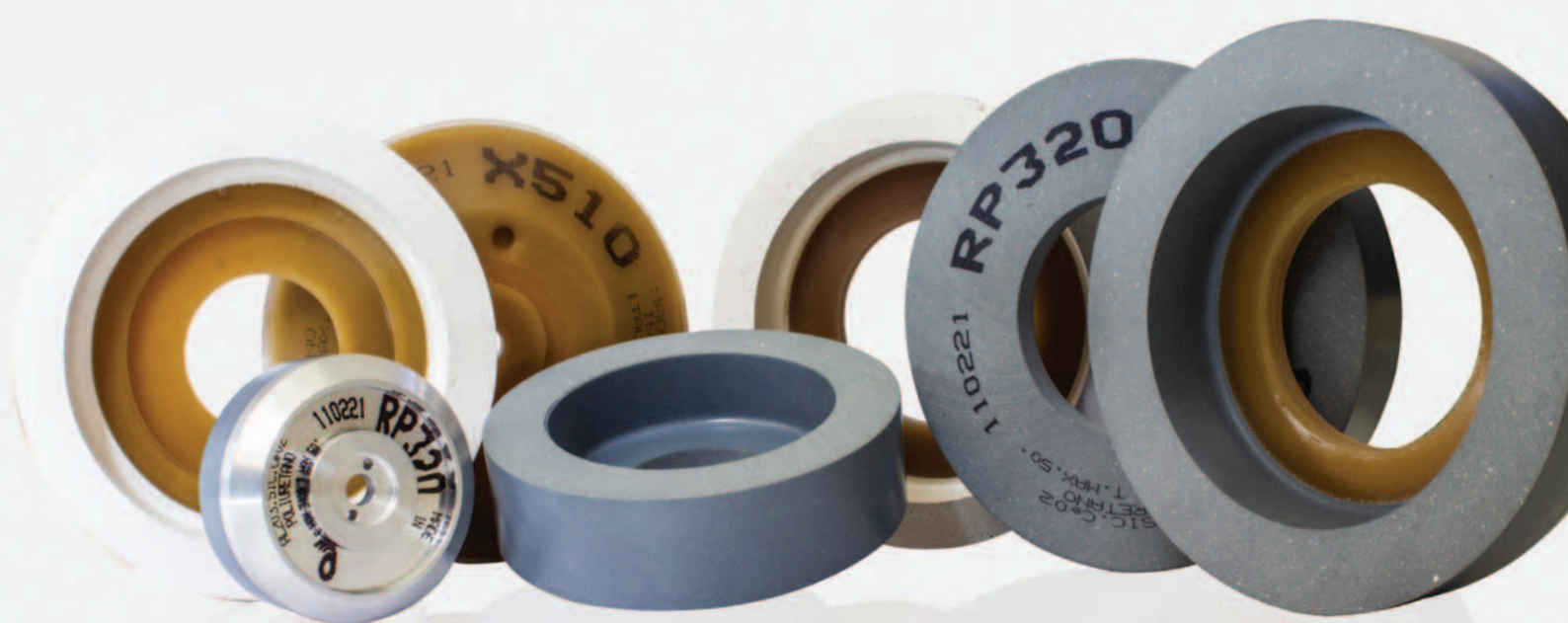


DESIGN AND FURNISHING HOUSEHOLD APPLIANCES AUTOMOTIVE MARINE REFRIGERATION



VITRUM 2021
Hall: 24P
Stand: A07

ADI and RBM Italia at Vitrum with their best technologies on show



The Surfaces Group will be at Vitrum 2021 in Milan at the beginning of October. This next edition of the trade show, after the forced absence from events and fairs which, of course, greatly affected the business sector, is the first European event in the glass industry in a long time.

IMPORTANT RESULTS ACHIEVED OVER THE PAST TWO YEARS

"We have always strongly believed that our participation in Vitrum is fundamental. It is the only fair focused only on glass processing," says Lorenza Dal Maso, Glass Business Unit Manager of Surfaces Group. "The best technologies in terms of machinery and accessories will be present at this twenty-second edition."

"During these two years of forced absence from events, the companies of the group have continued to operate and, above all, to carry out research."

Surfaces, which, in the glass sector, is represented by ADI and RBM, has taken advantage of their extensive resources and internal synergies to develop new products, which have passed the testing phase with flying colours. ADI and RBM will finally be able to meet, in person and in safety, visitors, buyers and professionals, at their Italian stands at the event.

UHS® WHEELS FOR VERTICAL AND HORIZONTAL CNC SYSTEMS

ADI will present its wide range of diamond

wheels, with a particular focus on the range of UHS® wheels for vertical and horizontal CNC systems. These tools ensure high removal capacity and constant top quality, consist-

ency and precision, even at high speed and under heavy stress.

RBM X510 AND RP320 POLISHING WHEELS

At the RBM Italia stand, the new RBM X510 and RP320 will take pride of place among the company's well-known polishing wheels. The X-510 and RP-320 cerium arris wheels have been formulated with specific hybrid bonds and combine the characteris-





POLISHING AND REMOVAL WHEELS

tics of different wheels in a single tool. This ensures a versatility unmatched by any other wheel: maximum transparency and brilliance of results, very high process speeds, and the absence of marks during processing. These wheels guarantee standard constancy, as well as reduced consumption and processing waste.

Versatility and adaptability to the sheet typical of softer wheels are combined with the guarantee of perfect uniformity and defined profile, along with an increased life-span of the tools, typical of the most rigid wheels.

VITRUM 2021 - A FUNDAMENTAL OPPORTUNITY FOR THE GLASS INDUSTRY

For the Surfaces Group, this very special XXII edition of Vitrum represents a fundamental opportunity

for the glass industry.

"We would like to underline the important characteristics of this event that brings together the entire industrial world that revolves around glass, both flat and hollow," says Lorenza Dal Maso, "This event is not only a tangible symbol of the recovery of the industry, which of course has never stopped, but will also showcase all the new technological applications that companies have developed in the last

two years, and which they have not had the opportunity to present to the market until now. For our part, we want to demonstrate to visitors the advantages of our latest solutions, which are highly customizable, and can allow them to develop a strong competitive advantage, in terms of high quality, increasing process performance and a notable reduction of TCO (Total Cost of Ownership) in the long run."



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GLANCE INTO A WORLD OF INNOVATION

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EVALAM from **PUJOL** for functional and decorative hotel elements in Croatia

EVALAM is a brand belonging to Pujol Group, a 4th generation company located in Barcelona. Passion, responsibility, commitment, and the capacity to adapt to a changing world and transformation are the company's main hallmarks.



SPECIAL ATTENTION TO STYLE

Grand Park Hotel Rovinj, located directly on the coast, gives its guests views of beautiful sea sunsets on Rovinj, St. Euphemia, the island of St. Catherine. The different levels of the hotel adapt to the slope of the terrain and form large terraces, Mediterranean gardens and swimming pools. The wellness area includes a spa, a sunbathing area and three swimming pools, and the main pool is partially located in a glass pavilion that opens in summer, intertwining the interior with the park and the sea.

The common spaces of the hotel are characterized by a multitude of details, including the use of laminated glasses in the interior of the hotel as a functional and decorative element.

EVALAM VISUAL

EVALAM VISUAL is not comparable with any other

EVA on the market, for its excellent transparency as well as its great acoustic insulation. These were decisive factors for the choice as a lamination solution for glass for railings, partitions and other decorative and functional elements of hotel glass. For this work, the highly innovative company Staklorenz Buric ac-

cepted the glass lamination challenge, with a high level of professionalism. EVALAM VISUAL is the EVA developed for expert laminators who are looking for a product with high added value and is the ideal lamination solution in all those places where optics and durability are essential requirements.





The architects of the 3LHD studio, the Italian designer Piero Lissoni and EVALAM achieved the best possible results on this balcony overlooking the Adriatic Sea.

EVALAM'S PRIORITIES

Meeting the customers' real needs is a priority for EVALAM. The company's role is that of an accessible, proactive, and reliable partner; they are known for working closely with their customers, fully aligning with their strategy in order to offer customers sustained support in the long term. The policy at EVALAM is to establish a direct, personal and stable relationship over time with all vendors. This relationship is based on the principle of ongoing collaboration between companies, transparency, veracity, and reliability of the information provided.



EVALAM



Evalam

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E-mail: evalam@evalam.net
www.evalam.net



The only EVA with better properties than PVB

Evalam is the international reference brand of EVA for architectural use, our products are designed and manufactured in our factory in Europe from our formulation.

Evalam Visual offers unique characteristics that make it the only EVA on the market with better properties than PVB, representing perfection and the highest level of reliability in all projects.

Its excellent and incomparable transparency, high adhesion, great sound insulation, and cross-linking not comparable on the market, make it the perfect product. Evalam Visual is the ideal lamination solution in applications where optics and durability are essential requirements.

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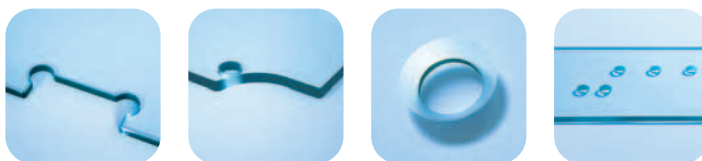
Drill & Mill

THE BEST OF BOTH



Quick 2 T8

INTEGRATED NC DRILLING AND MILLING PROCESSING



QUALITY AND SPEED LESS TOOL WEAR

Milling process
when glass
is stationary



HIGHEST PRECISION

Linear encoders grant
0,15 mm accuracy
all the time



TOP DRILLING PERFORMANCE

DCS technology
self adapts the drilling
parameters intelligently



LOWER MAINTENANCE COST

Optimised milling/drilling
functions make the machine
simple and reliable

VITRUM
5 • 8 October 2021
Fiera Milano Rho MILAN

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 **neptun**
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DISCOVER **Quick 2 T8**

Rock, the heavy duty edger packed with technology from NEPTUN

ESSENTIAL FEATURES

Robustness

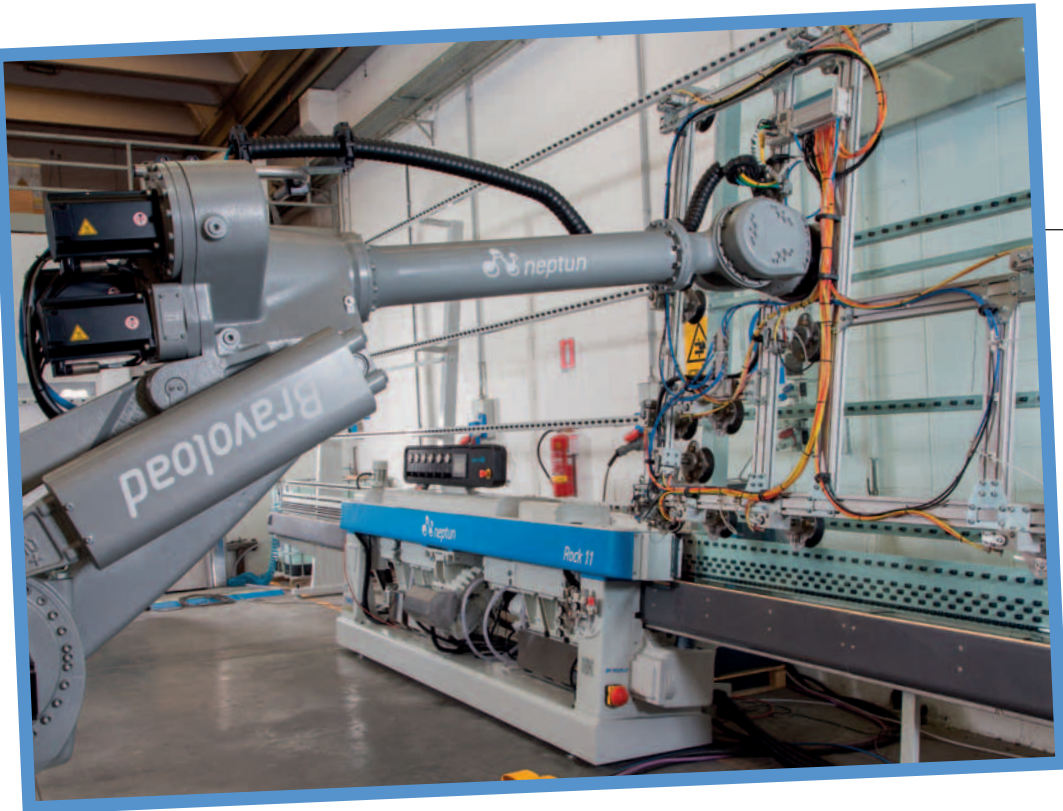
The essential elements for a good straight edging machine are robustness, to support workloads consistently over time, the absence of vibrations caused by the spindle and the conveyor carriage for better quality of the polished edge, protection from water and glass powder to reduce maintenance costs.

Neptun machines respond optimally to these construction and processing requirements.

Extensive use of cast iron and thick steel makes the Rock model one of the most robust and heavy on the market. The rigidity of the structure prevents the bending of the beams even after decades. The cast iron best absorbs the continuous vibrations transmitted by the grinding wheels.

Neptun's Rock edging machines are presented in this article, with information regarding their structure, patented parts, working life and ease-of-use, all features that are required by Industry 4.0.





Duration

The patented conveyor, with Kevlar inserts, slides on grounded steel guides that are automatically lubricated with oil film. Rock sets a new milestone in duration, allowing a useful life up to two million linear meters of processed glass.

The indirect transmission system spindle/motor connected by pulley and the spindle itself inserted in a cast iron box ensure the total absence of wheel vibrations to obtain a perfect polished edge for the entire life of the machine.

The electrical cabinet separated from the control panel offers better accessibility and safe distance of electrical and electronic components from the humid environment of the machine.

Automatic management

User-friendly PLC Touch screen control system allows the automatic management of all the machine functions. The software also assists the operator in

scheduled maintenance, and provides production data and consumption statistics of the tools.

The system is Industry 4.0 ready thanks to the integration into company automation for data exchange interfaces, remote assistance, quality control and traceability.

EXPERT GRINDING WITH AWA

Last but not least, the innovative and patented AWA system for the automatic management of the diamond and polishing wheels, thanks to the principle patented by Neptun, combines ease-of-use, pre-

cision and consequent reliability over time.

Its peculiarity is the hydraulic system for managing the spindles, without electrical and electronic components in the spindle area, thus ensuring high reliability.

After a number of meters processed that can be defined by the operator, Rock AWA automatically activates the presetting of the diamond tools, repositioning them with extreme precision on the desired removal values. The presetting cycle takes only 30 seconds, and no manual commands.

The polishing wheels have an automatic compensa-

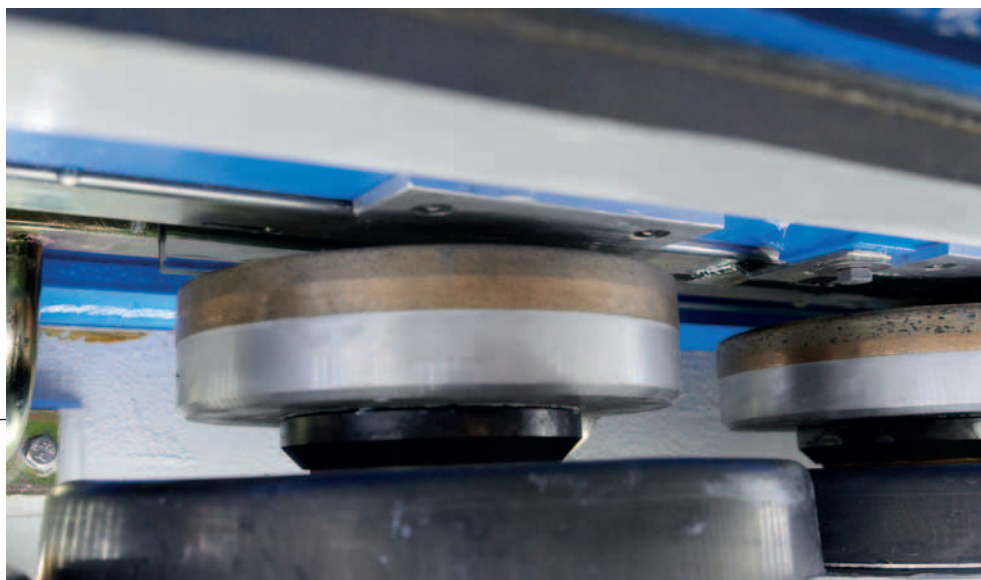
tion system that allows them to be used from a new wheel up to its complete wear without requiring any adjustment. The control panel signals the need to replace the tool before its complete wear.

Particularly appreciated by users is the safety system that prevents potential damage to wheels and spindles in the case of glass breakage, along with the possibility of working glass in the shape of a parallelogram and with notches.

Neptun Srl

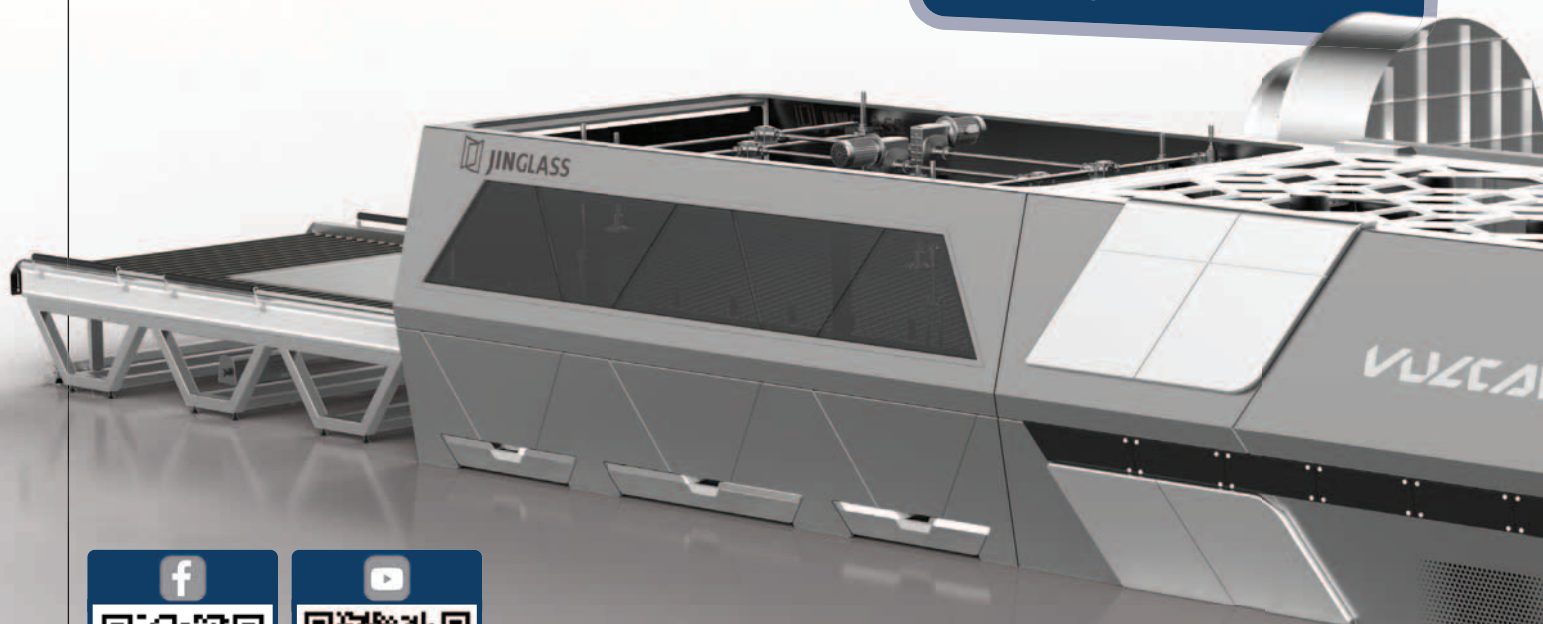


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Vulcan Intelligent Tempering Line: the latest smart furnace from JINGLASS

Hangzhou Jinglass Machinery Co. Ltd. is specialized in the development, manufacturing and marketing of glass tempering furnaces. With company philosophy based on innovation, quality and service, Jinglass continues to be committed to innovation.

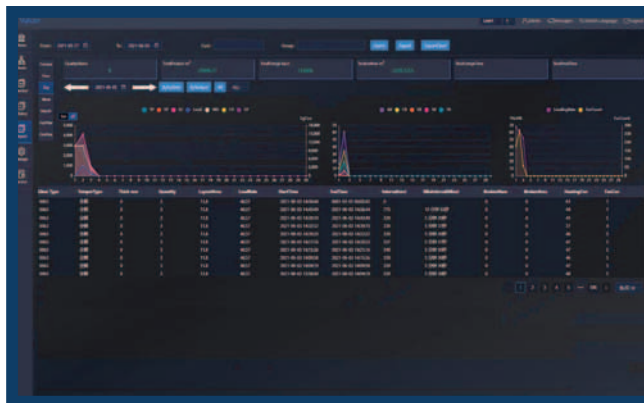
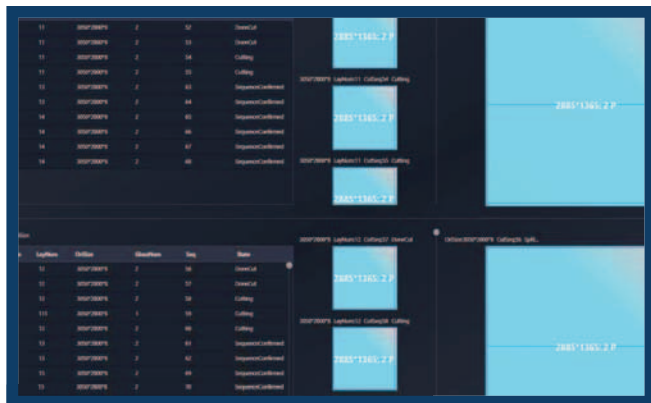


MAIN PRODUCT LINE

Jinglass' main products are Matrix Mid-Infrared Jet-Convection Tempering Furnaces (flat/flat and bending), Mid-Infrared Jet-Convection Conjoined Double Chamber Furnaces, Longitudinal Bending Furnaces, Horizontal Continuous Flat Glass Tempering Furnaces and much more. The new-generation Mid-infrared Jet-convection glass tempering furnace was promoted to the market in 2012, and this technology has rapidly become the best solution for high quality low-E glass tempering.

Jinglass tempering furnaces are widely used in China, and hundreds of Jinglass furnaces are now up and run-





ning in North and South America and Europe, the middle East, Asia and etc. In some areas, Jinglass furnaces are leading the market share.

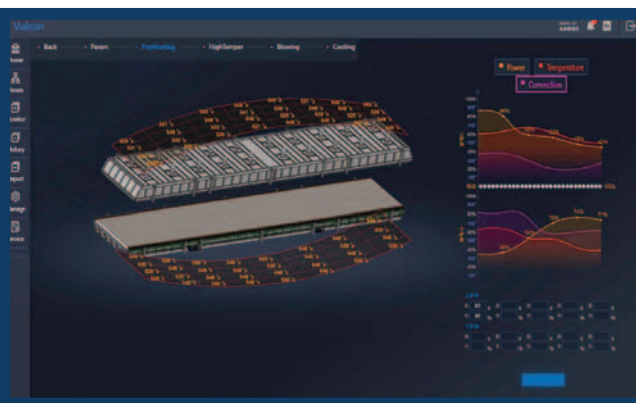
CONTINUOUS INNOVATION

Jinglass continues to work on innovation and new technologies to make glass tempering furnaces that respond to clients' needs and demands.

VULCAN INTELLIGENT TEMPERING LINE

Vulcan, developed in 2020, is an intelligent glass tempering furnace which improves the quality of tempered glass, especially in terms of flatness, stress evenness and optical quality.

The latest Vulcan Intelligent Tempering line, a Glass Industry 4.0 product, recognizes glass and layouts, matches processing settings from the cloud, processes the glass, and also traces the quality, power consumption and loss of production, elimi-



nating all human errors. The characteristics of the smart control system include:

- Huge database, automatic recipe setting, frees the operator.
- Recipe database continuously upgraded, providing higher tempering flatness, surface pressure evenness, and optical quality.
- All processing data saved in the cloud can be traced back even after glass is delivered.
- Detailed database; managing required diagrams becomes easy, and with the help of the iTemper app, clients can easily obtain on-line support from Jinglass' professional technical team.

- Can be upgraded for borosilicate, 4.0 glass and high pressure fire-resistant glass tempering.

Jinglass / Hangzhou
Jinggong Machinery Co. Ltd.



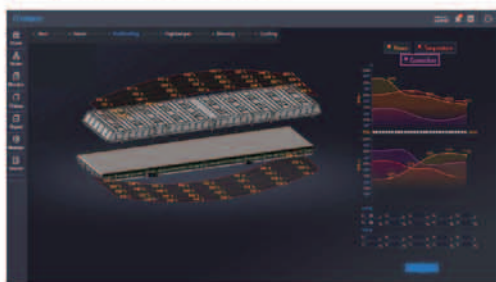
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THE BASE OF GLASS PROCESSING 4.0



iTemper
Enabled

SMART CONTROL SYSTEM



- HUGE DATA BASE, AUTOMATIC RECIPE SETTING, FREE THE OPERATOR
- RECIPE DATA BASE KEEP UPGRADING, HIGHER AND HIGHER TEMPERING FLATNESS, SURFACE PRESSURE EVENNESS, AND OPTICAL QUALITY
- ALL PROCESSING DATA SAVED IN CLOUD, CAN BE TRACED BACK EVEN AFTER GLASS DELIVERED
- DETAILED DATA BASE EASY THE MANAGING REQUIRED DIAGRAM
- WITH THE HELP OF ITEMPER APP, CLIENT CAN EASILY GET ONLINE SUPPORT FROM JINGGLASS PROFESSIONAL TECHNICAL TEAM
- CAN BE UPGRADED FOR BOROSILICATE 4.0 GLASS AND HIGH PRESSURE FIRE RESISTANT GLASS TEMPERING



FACEBOOK



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VDMA: Technologies for a new world in the glass industry

VDMA represents around 3,300 German and European mechanical and plant engineering companies. The industry stands for innovation, export orientation, medium-sized businesses and employs around four million people in Europe, more than one million of them in Germany alone.

Automation and digitalisation are making their mark on glass as a product and on how it is made. They therefore require digital forms of tracking and methods to manage and exploit the excess of data being produced. This has repercussions for everything from project management, production and internal logistics right through to the customer. The glass industry is also faced with the challenge of doing its part to meet objectives set in climate policy, i.e., how to approach recycling and a circular economy concept once a glass product reaches the end of its lifecycle.

Disposal and demolition firms alike need information on how to handle, separate and reuse materials.

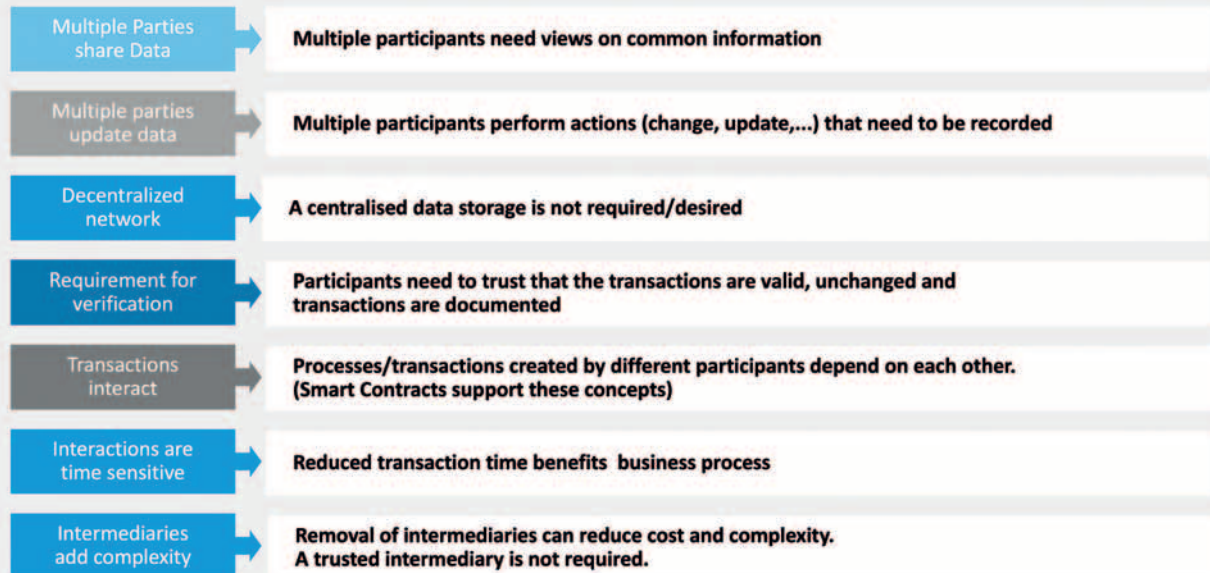
Navigating this new world means collecting and evaluating as much data as possible, ideally using digital technologies – and this is where track & trace comes in. This process begins from the moment a company receives an order and can be based on methods including laser marking –



QR codes as a tool to engage with consumers and to provide useful product information - © Adobe Stock

When does Blockchain makes sense? 4 out of 7 for 3D Printing

PROSTEP
Integrate the Future



Graphic showing the Four-out-of-Seven rule - @Prostep

something that is offered by HEGLA boraident GmbH & Co. KG, for example. These methods make it possible to organise and optimize the internal steps involved in production and track both products and processes throughout the entire lifecycle.

A virtual ID is created in the production planning stage and then laser-printed onto the glass pane before cutting it. This ID takes the form of a data matrix code that is 99.9 per cent machine-readable. As processing continues, the glass is identified multiple times, the code is read and each reading process is shown in the higher-level production system, along with the location and time at which it occurred. This provides a seamless over-

view that makes it possible to intervene quickly if anything goes wrong. Not only that, but it prevents glass from going missing and allows damaged panes to be remade quickly. The data programmed into CNC milling and drilling centres can be linked to each individual pane, cutting down on error rates caused by incorrect programming. It is possible to record every single piece of information about a pane, including the location where it is installed – a real asset later on if the pane has been damaged and needs to be replaced, or if it is going to be reused or recycled.

CREATING LINKS TO CUSTOMERS

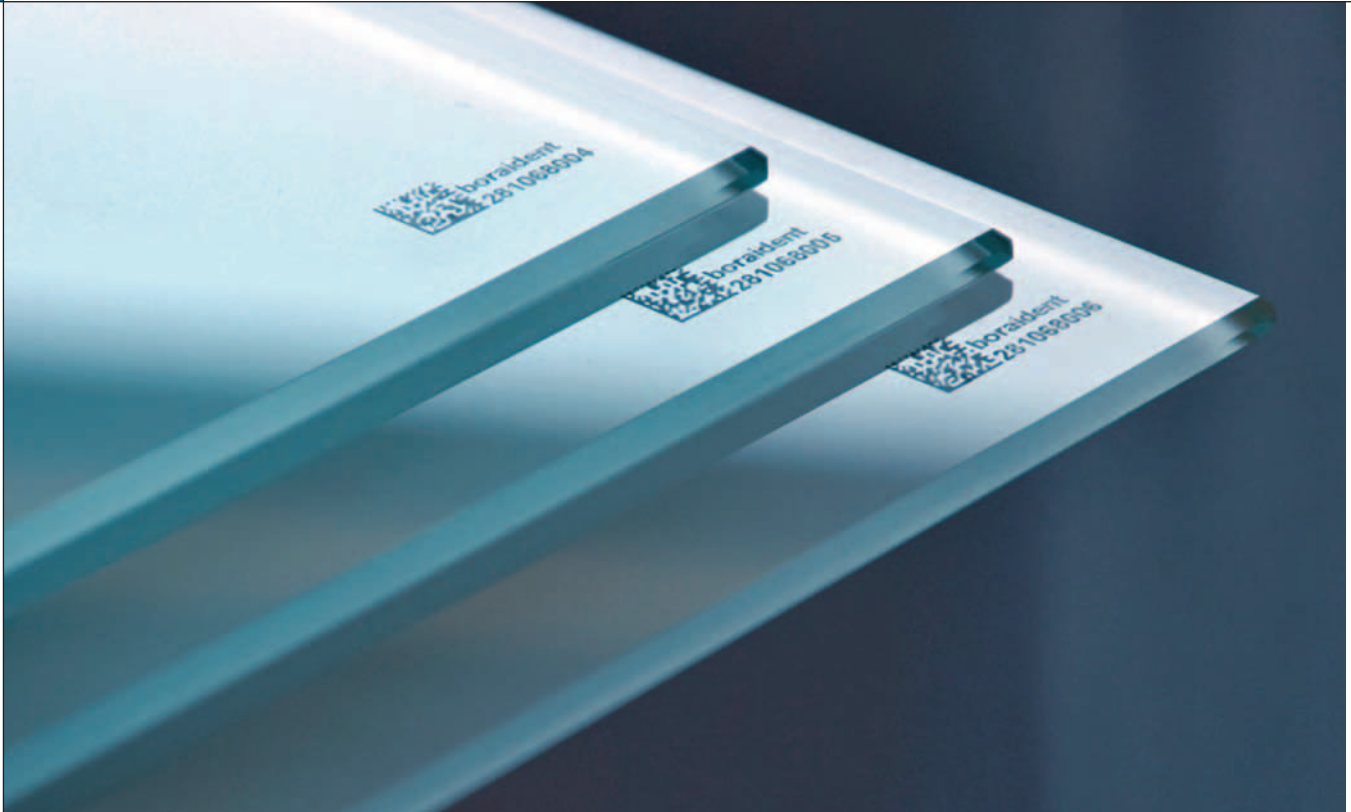
Laetus GmbH, a provider of hardware and software

for quality control and track & trace systems, and Kezzler AS, which makes software for cloud-based applications, have chosen to follow a different path. The two companies have combined their track & trace technologies over as many as five different levels, with the aim of making end product information more transparent on the market through the use of QR codes (which act as digital fingerprints).

This approach creates an added value for consumers, which in turn boosts sales: a study by MIT revealed that improving supply chain transparency results in a 2-10 per cent increase in willingness to pay [Tim Kraft, León Valdés, Yanchong Zheng, 2019: Consumer Trust in Social

Responsibility Communications: The Role of Supply Chain Visibility]*.

The end customer is given a better insight into the manufacturing process, and/or can use digital platforms such as apps and websites to gain added benefits along with the product itself. This approach aims to foster more trust. For companies it also provides an opportunity to establish customer loyalty, enhance the reliability of the brand and quality standards, and prepare for developing products in the future. Production aspects such as recycling, the environmental footprint, supply chain monitoring and increased automation also play an important role. The system can be fully integrated into an existing production en-



vironment, even extending beyond the factory itself. It can end either in an interface with the customer's production management system or in a cloud application that end consumers can use.

BLOCKCHAIN TECHNOLOGY – FOR MORE THAN JUST CRYPTOCURRENCIES

As digitalisation becomes more widespread, data security is steadily gaining importance for companies. Originally used for cryptocurrencies, blockchain technology is now increasingly being considered for applications in product lifecycle management (PLM) and becoming more attractive for industrial applications. Instead of storing transaction data on just

one server, this technology duplicates it for multiple parties worldwide known as miners. This concept is why blockchain is also referred to as distributed ledger technology in many cases. A chain of consecutive data blocks is created whose stored information cannot be altered as soon as it is digitally sealed. As the block size is limited, the technology cannot be used to transport large quantities of data. In cases where an extensive data file needs to be secured, the hash value associated with the file is used: this is stored in the blockchain and creates a unique relation to the original file. The blocks are linked to one another using a cryptographic method. Each miner stores a copy of the entire blockchain,

which prevents attackers from changing or erasing the blockchain unless they were able to gain control over more than 50 per cent of the miners.

Smart contracts have made it possible to automate business processes in the blockchain by storing executable program codes. The principle is based on the "if-then" rule: when a customer makes his or her most recent leasing payment for a machine, for example, the machine is automatically released for the period that follows this. A benefit of this method is that business partners can interact directly with one another, without the involvement of intermediaries. Oracles come into play in cases where data from external sources contain-

ing third-party information needs to be incorporated into the blockchain so that a smart contract can be reviewed or executed. In this context, an oracle is a kind of translator or interface that verifies information using real-world facts and events, then transfers the data to the blockchain and makes it available for smart contracts to use. This means that oracles can act as a trigger for smart contracts, setting in motion certain processes.

Companies always have to start with deciding whether the blockchain method is appropriate for their needs. The example of Prostap AG, an expert in PLM processes and solutions, shows the application of blockchain for managing the right to manufacture certain com-

ponents using 3D printing. The project known as SAMPL - Secure Additive Manufacturing Platform, which is being funded by the German Federal Ministry for Economic Affairs and Energy, considers copyright and product liability law as a means of distinguishing original copies from counterfeit ones, issuing licences, safeguarding printing rights and paving the way for new value-creation models and business models.

A consortium led by Prostep and consisting of ten companies and institutions has produced the following results:

- The development of a trustworthy supply chain from the rights holder to the printing service provider and right through to the end customer (chain of trust)
- The development of a reference platform with blockchain and printer integration
- Blockchain technology for licensing, documenting printing process data and tracking components
- Component tracking by means of RFID chips, QR codes or other methods

This platform is based on a data exchange solution called OpenDXM GlobalX, which makes it possible to execute 3D printing orders worldwide on demand (for spare parts, as an example), license printing processes and process documentation, and use

blockchain technology to ensure traceability and provide evidence of authenticity. It provides users with access to processes that use much less energy than bitcoin blockchains.

"In addition to this application, there are numerous other ways in which blockchain technology could be exploited. To assess whether it would be suitable for an application, it's useful to apply the golden rule of four out of seven: in other words, blockchain is worth considering in the context of an application if it would bring four out of seven potential benefits," recommends Dr Martin Holland, Director of Strategy & Business Development at Prostep.

BLOCKCHAIN IN THE GLASS INDUSTRY

Turning to an example of a project involving glass production, a master's thesis written by Thomas Lenze at A+W Software GmbH, analyses options for capturing and managing data in insulating glass production that uses manual and automated processes. One potential application would involve an insurance company using a smart contract application to gain access to stress testing information after a hardening process, so that it can then ascertain the product liability risks. Requirements for digital documentation in the context of building information modelling (BIM) also need

to be considered.

The process chain is made up of the cutting and prestressing stages, along with the heat soak test, insulated glass production stage including the auxiliary materials and all the serial numbers, with everything working on the basis of the barcode on a single pane. The process as a whole involves recording data, assigning the barcode ID and linking this to the overarching system. This covers everything from the glassworks material batch, the individual pane assignments, the curing oven temperature/time profiles and the heat soak oven to the batch numbers for the sealants.

If this data is provided in a blockchain, it then becomes

possible to create any number of channels that each deliver certain items of information to certain users, such as the insurance company in this case.



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Advanced glass is taking over the market





Advanced glass is used for a wide range of applications in different industries such as electronic displays, optical fiber, aerospace, and high-performance composites, thick-film packaging, and more. In the past few years, it has become an essential part of an aesthetic lifestyle. From trends in construction to interior decors, advanced glass is used broadly. Over traditional glass, specialty glass is made of different compositions. However, performance-wise it offers more durable and reliable properties.

HIGH DEMAND

The usage of advanced glass is increasing greatly. From the development of large building structures to utilizing it for partitions, advanced glass is becoming highly demanded. The trend of using advanced glass is rising to a further level. The market is therefore estimated to elevate further more in the future. According to a report published by Allied Market Research (<https://www.alliedmarketresearch.com/advanced-glass-market>), the global advanced glass market will reach USD 103.8 billion by 2027.

TOUGHENED GLASS FOR DOORS AND FURNITURE

Toughened glass, which offers the advantage of break resistance, also offers a premium look for doors. Glass aesthetically increases the value of the furniture and shelves section for household as well as office spaces.

The cooling process in toughened glass allows for less responding stresses, which makes it exclusive and high-value. Moreover, this glass does not shatter into small fragments when broken, it rather forms shards, thereby minimizing the risk of injury.

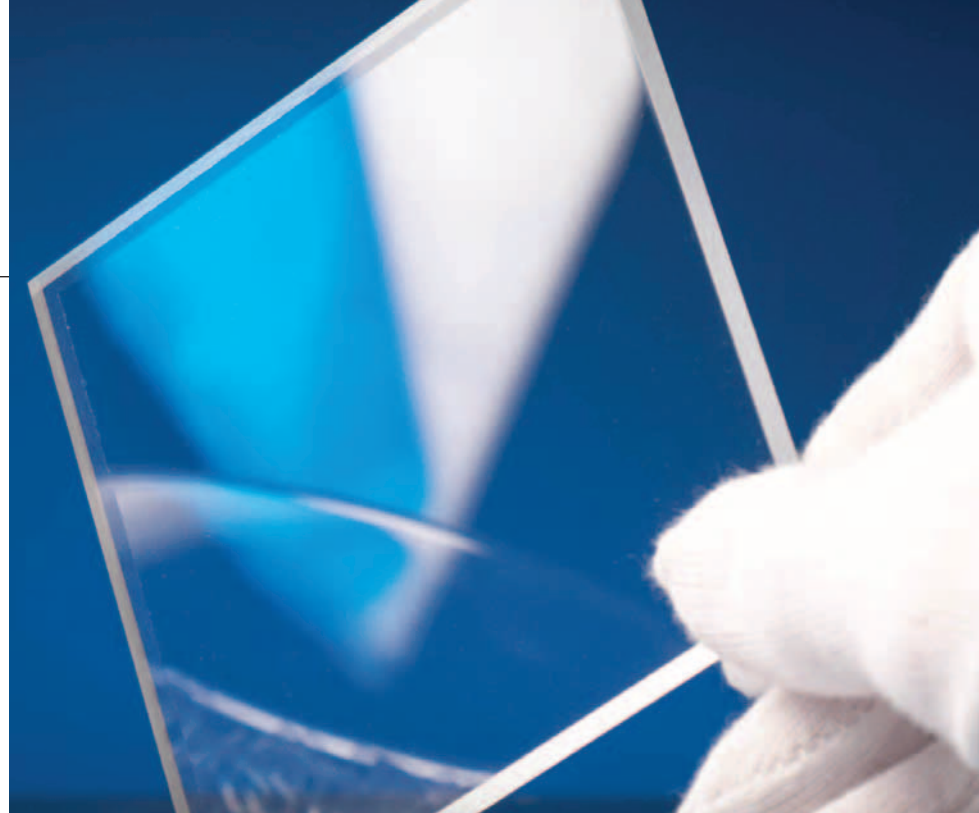
This glass is commonly used for shower doors, with a translucent milky-white appearance. This helps in maintaining privacy along with allowing light to travel across the room.

LAMINATED GLASS FOR WINDOWS AND WINDSCREENS

Laminated glass is a popular option for security assets such as front doors, car windscreens, and store window fronts. Laminated glass is glued together with an interlayer, which protects it from shattering when impacted, thereby minimizing the risk of break-ins and other potential damage caused by shards of shattered glass.

COATED GLASS FOR HOME INSULATION

Coated glass is flat glass, which offers new improved properties to help with insulation and infra-red protection. It is used for double-coated windows to augment home insulation. This in turn helps in propelling the thermal efficiency of the home along with decreasing costs.



TINTED GLASS FOR IDEAL DOORS AND WINDOWS

Tinted glass in doors or windows allows for better privacy. Tinted glass blocks the view from the outside whilst enabling plenty of natural sunlight to get through. Tinted glass can also reduce the number of harmful UV rays, thereby offering health benefits.

The glass industry has come a long way through

these advancements. The current lifestyle and preference for natural light has boosted its use. The current challenges include the high prices of the material, which restrains the growth of the market to a certain extent. However, the development of the construction industry is highly beneficial to the glass market. The increasing urbanization is playing a major role for the industry to grow. Furthermore, the demand

for value-added products in specific industries is increasing. All these factors are helping the growth of the advanced glass market, together with the wide range of designs and introduction of new trends, which are estimated to usher in an array of opportunities for the industry in the near future.



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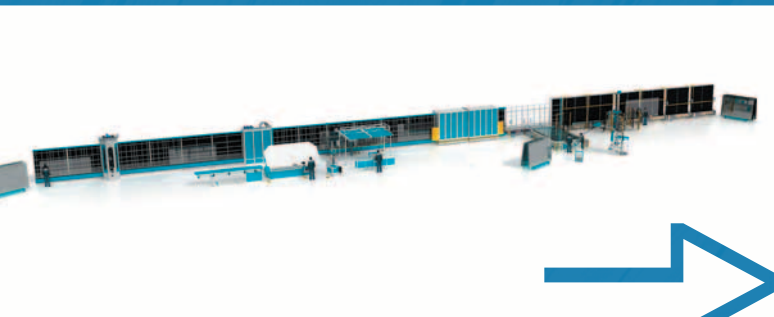
- Start-up level for IG-SG production
- ≈ 800 sqm/shift capacity
- Short recovery time of investment



- Professional level for IG-SG production
- Appropriate for mass mass production
- Low labour cost via automated machines



- Continious line for multi processes
- Compatible for product trackings via ERP
- ≈ 1000 sqm/shift capacity



- Continious line for oversize panes
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Neptun
Schiavo
SGM - Special Glass Machinery
Si.Ste
Triulzi

VERTICAL WASHING MACHINES

Adelio Lattuada
Ashton Industrial Sales
Bavelloni
Best Makina
Di Gregorio
ECOL
Forel
Glass Company
Glaston Group
Hiseng Glass Machinery
IOCCO Group
Lisec Group
Neptun
Schiavo
SGM - Special Glass Machinery
North Glass Technology
Si.Ste
S.T. Group
Stefiglass
Triulzi

WASHING MACHINES FOR AUTOMOTIVE GLASS

Bando Kiko
ECOL
Glaston Group
IOCCO Group
Triulzi

WASHING PURIFICATION SYSTEMS

Dieffe Macchine
Forel
Glass Company
Glaston Group
IOCCO Group
Schiavo

LIQUID WASHING CONCENTRATES

Schiavo

ACCESSORIES

Helios Quartz
Idrotecnica
Schiavo
S.T. Group

Mirror production

COMPLETE PLANTS & CONVEYORS FOR MIRROR PRODUCTION

Bovone Elett.
IOCCO Group
Triulzi

PAINTING EQUIPMENT

Fenzi
IOCCO Group
Triulzi

DRYING OVENS

Bovone Elett.
CMS

AUTOMOTIVE MIRROR BENDING FURNACES

Bovone Elett.

MANUAL SILVER- SPRAYING EQUIPMENT

Fenzi
Glass Company

PAINTS AND CHEMICAL PRODUCTS

Fenzi

ACCESSORIES

Fenzi
Helios Quartz

Insulating glass

COMPLETE INSULATING GLASS LINES

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

AUTOMATIC SEALING LINES

Bavelloni
Forel
Glaston Group
Lisec Group
S.T. Group

AUTOMATIC SPACER BENDING MACHINES

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

DESICCANT SALT FILLING MACHINES

Ashton Industrial Sales
Bavelloni
Best Makina
Di Gregorio
Fenzi
Forel
Glaston Group
Lisec Group
Neptun
Schiavo
Stefani
S.T. Group
Tecno Glass
Thermoseal Group
Triulzi

SPACER CUTTING SAWS

Ashton Industrial Sales
Bavelloni
Best Makina
Di Gregorio
Fenzi
Forel
Lisec Group
Neptun
Schiavo
S.T. Group
Tecno Glass
Thermoseal Group

BUTYL EXTRUDERS

Bavelloni
Best Makina
Di Gregorio
Forel
Glaston Group
Lisec Group
Neptun
Schiavo
Si.Ste
Stefani
S.T. Group
Tecno Glass
Thermoseal Group
Triulzi

HOT-MELT EXTRUDERS

Bavelloni
Best Makina
Di Gregorio
Fenzi
Forel
Lisec Group

Neptun
Schiavo
Si.Ste
Stefani
S.T. Group
Tecno Glass
Thermoseal Group
Triulzi

POLYURETHANE EXTRUDERS

Bavelloni
Best Makina
Fenzi
Forel
Glaston Group
Lisec Group
Schiavo
S.T. Group
Tecno Glass

POLYURETHANE ENCAPSULATION

Glaston Group
Lisec Group
Schiavo

SILICONE EXTRUDERS

Best Makina
Di Gregorio
Fenzi
Forel
Glaston Group
Lisec Group
Schiavo
S.T. Group
Tecno Glass
Triulzi

POLYSULPHIDE SEALANT EXTRUDERS

Best Makina
Fenzi
Forel
Glaston Group
Lisec Group
Schiavo
Stefani
Tecno Glass
Triulzi

GAS FILLING EQUIPMENT

Di Gregorio
Fenzi
Forel
Glaston Group
Lisec Group
Neptun
Schiavo
Si.Ste
Sparklike
Stefani
S.T. Group
Tecno Glass
Thermoseal Group

DESICCANT SALTS

Ashton Industrial Sales
Di Gregorio

Fenzi
Neptun
Schiavo
Stefani
S.T. Group
Tecno Glass
Thermoseal Group

SPACERS/PROFILES

Ashton Industrial Sales
Edgetech Europe
Fenzi
Schiavo
S.T. Group
Tecno Glass
Thermoseal Group

GEORGIAN BARS

Ashton Industrial Sales
Hegla
Tecno Glass
Thermoseal Group

BUTYL

Ashton Industrial Sales
Fenzi
Stefani
Thermoseal Group

POLYSULPHIDE SEALANTS

Fenzi
Stefani

HOT MELT

Ashton Industrial Sales
Fenzi
Stefani
Thermoseal Group

OTHER SEALANTS

Fenzi
Stefani

PANTOGRAPHS Fratelli Pezza

ACCESSORIES
Ashton Industrial Sales
Deltamax Automazione
Forel
Helios Quartz
Schiavo
Sparklike
Stefani
S.T. Group
Triulzi

Tempering

TEMPERING FURNACES (ARCHITECTURAL GLASS)

Glass Company
Glasstech Inc.
Glaston Group

Hornos Industriales Pujol
Jinglass
Keraglass
Landglass Technology
Lema
Lisec Group
Mappi International
Schiavo
North Glass Technology
Tekno Kilns
Texpack

TEMPERING FURNACES (AUTOMOTIVE GLASS)

Glass Company
Glasstech Inc.
Glaston Group
Jinglass
Keraglass
Landglass Technology
Mappi International
Mazzaroppi Engineering
Satinal Spa
SGLASS
North Glass Technology
Taifin
Texpack

CHEMICAL TEMPERING EQUIPMENT

Glass Company
R.C.N. Solutions

ROBOT FOR CLEANING SILICA ROLLERS

Eurotech Way

ACCESSORIES

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

Bending

BENDING FURNACES (ARCHITECTURAL GLASS)

Hornos Industriales Pujol
Jinglass
Keraglass
Mappi International
Mazzaroppi Engineering
R.C.N. Solutions
SGLASS

Tekno Kilns
Texpack

BENDING FURNACES (AUTOMOTIVE GLASS)

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

ACCESSORIES

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

Laminated glass production

COMPLETE PLANTS

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

LAMINATED WINDSCREEN

BENDING FURNACES

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

AUTOCLAVES

Bürkle
Glass Company
Glaston Group
Hornos Industriales Pujol
Lisec Group
Triulzi

AUTOCLAVE-FREE LAMINATED GLASS PRODUCTION

Bürkle

CLIMATIC CABINS

Forel
Glaston Group
IOCCO Group
Lisec Group
Triulzi

INFRARED OVENS

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

PRESSES/BENDING MACHINES

Forel
IOCCO Group
Lisec Group
Triulzi

RESIN LAMINATING MATERIALS AND EQUIPMENT

IOCCO Group
Satinal Spa
Torgauer Maschinenbau

EVA (ETHYLENE VINYL ACETATE)

Satinal Spa

PVB

Everlam
Kuraray - Trosifol

PVB - SHAPING AND CUTTING EQUIPMENT

Ayrox
ECOL
Forel
Glaston Group
IOCCO Group
Lisec Group
Softeco

PVB - WIRING TECHNOLOGY FOR HEATABLE LAMINATES

Ayrox
ECOL
Softeco

ACCESSORIES

Ayrox
Bottero
Deltamax Automazione
Eurotech Way
Glaston Group
Helios Quartz
Hornos Industriales Pujol
IOCCO Group
Lisec Group

Satinal Spa
Softeco
Taifin
Triulzi

Drilling

AUTOMATIC DRILLING LINES

B Solution
Bando Kiko
Bavelloni
Forvet
Glaston Group
Intermac - Biesse
IOCCO Group
Schiatti Angelo
SKG - Skill Glass
Vismara

MULTI-SPINDLE DRILLING MACHINES

B Solution
Bando Kiko
Bavelloni
CMS
Forvet
Glass Company
Glaston Group
Intermac - Biesse
IOCCO Group
Schiatti Angelo
SKG - Skill Glass
Vismara

DRILLING MACHINES WITH OPPOSITE DRILLING HEADS

B Solution
Bando Kiko
Bavelloni
Bottero
CMS
Di Gregorio
Fenzi
Forvet
Glaston Group
Hiseng Glass Machinery
Intermac - Biesse
IOCCO Group
Schiatti Angelo
SKG - Skill Glass
Vismara

COLUMN DRILLING MACHINES

B Solution
Bottero
Di Gregorio
Fenzi
Schiatti Angelo
Si.Ste
Vismara

PORTABLE DRILLING MACHINES

CMS

Fenzi
Schiavo
Si.Ste

DRILLING AND MILLING MACHINES

Bavelloni
Bottero
CMS
Forvet
IOCCO Group
Schiavo
SGLASS
Vismara

DIAMOND DRILLS

ADI
Bovone Diamond Tools
Diamut - Biesse
Fenzi
Glaston Group
Lanzetta
Mole Moreschi
Schiavo
Si.Ste
Vincent

ACCESSORIES

CMS
Fenzi
Schiavo
Si.Ste

Other equipment and plants

TURNKEY PLANTS / ENGINEERING - FOR BUILDING GLASS

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

TURNKEY PLANTS / ENGINEERING - FOR AUTOMOTIVE GLASS

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

KEY PLANTS / ENGINEERING - FOR DISPLAY GLASS

Bando Kiko
Cugher Glass
Torgauer Maschinenbau

EDGES ROLLER COATING MACHINE

Eurotech Way

WORK CENTRES - CNC CONTROLLED

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

FLOAT PLANTS/LINES (EQUIPMENT & ACCESSORIES)

Bovone Elett.
Horn
IOCCO Group

CULLET HANDLING SYSTEMS

ECOL

COMPLETE BATCH PLANTS

Zippe

VACUUM COATING EQUIPMENT AND PLANTS

Glass Company
North Glass Technology

ENAMELLING EQUIPMENT AND PLANTS

Glass Company
Rollmac division of GeMaTa

DRYERS AND ENAMELING FURNACES

Bürkle

SPRAYING TECHNOLOGY

Bürkle

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

Bürkle

SANDBLASTING SYSTEMS, EQUIPMENT AND PLANTS - OPTIMIZERS

Di Gregorio
Fenzi
Fratelli Pezza
Glass Company
Schiavo
SKG - Skill Glass

DIGITAL INKJET PRINTERS

Glass Company
System Ceramics

SCREEN PRINTING EQUIPMENT AND PLANTS

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

SCREEN PRINTING FRAMES COMSS

SCREEN PRINTING DRYING SYSTEMS

COMSS
Cugher Glass
Glass Company
Rollmac division of GeMaTa

ACIDING GLASS EQUIPMENT AND PLANTS

Lisec Group
Rollmac division of GeMaTa

LASER DECORATING MACHINES

Ashton Industrial Sales
Glass Company

LASER MARKING

Ashton Industrial Sales

Artistic glass production

CERMAMIC INKS

Glass Company

CHAMBER ELECTRIC KILNS

Glass Company
Keraglass
Tekno Kilns

ACCESSORIES

Deltamax Automazione
Helios Quartz

CUTTERS

Si.Ste

CUTTING WHEELS

Si.Ste

MANUAL GRINDING MACHINES

Di Gregorio

UV ADHESIVES

Si.Ste

Miscellaneous

ADHESIVES FOR GLASS BONDING

Si.Ste

AUTOMATION

Ashton Industrial Sales
Horn
IOCCO Group
Torgauer Maschinenbau
Zippe

AUTOMOTIVE GLASS APPROVAL SERVICES

Ayrox
Softeco

AUTOMOTIVE GLASS QUALITY CONTROL

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

CE MARKING - QUALITY CONTROL EQUIPMENT FOR GLASS IN BUILDING

Ayrox
Softeco

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

Bürkle

COLOURS & ENAMELS - OTHER APPLICATIONS

Ayrox

DEIONIZING AND WATER SOFTENING EQUIPMENT

Fenzi
Forel
Glass Company
Idrotecnica
Lisec Group
Triulzi

FLAT GLASS QUALITY CONTROL DEVICES

Ayrox
Deltamax Automazione
Forel
IOCCO Group
Softeco

FURNACES

Glass Company
Horn
Texpack

FURNACES / HYDROGEN GENERATORS (WATER ELECTROLYSERS)

Nel Hydrogen

GLASS COATING AND TINTING

Bürkle
Glass Company
Rollmac division of GeMaTa

GLASS TREATMENT FILMS

Glass Company

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

Horn
Keraglass
Texpack

HINGES FOR GLASS DOORS

Si.Ste

METAL ACCESSORIES

Si.Ste

INFRARED TUBES

Helios Quartz
Deltamax Automazione

KILNS

Glass Company
Keraglass
Lisec Group
Tekno Kilns
Fenzi

METALLIC SECTIONS

Fenzi

NUMERICAL CONTROL SYSTEM (CNC) FOR ALL GLASS PROCESSING MACHINES

Glass Company
IOCCO Group
Prodim

OPTICAL DISTORTION ANALYSERS FOR AUTOMOTIVE GLASS

IOCCO Group
Keraglass

OPTICAL INFRARED THERMOMETERS

Optris

POWDER OR LIQUID APPLICATION SYSTEMS FOR PROTECTING FLOAT GLASS

Cugher Glass
Glass Company

PUMPING AND APPLICATION SYSTEMS (AUTOMOTIVE GLASS)

IOCCO Group

PURIFIERS FOR REFLUENT WATER

Dieffe Macchine

PUTTIES AND SEALANTS

Fenzi

QUARTZ EQUIPMENT

Helios Quartz

SHAPE CHECKING DEVICES

IOCCO Group

SHOWER ENCLOSURES

Vismara

SIC HEATERS

Helios Quartz

SOFTWARE SYSTEMS FOR PRODUCTION CONTROL

A+W Software

CMS

Cugher Glass

Deltamax Automazione

Edgetech Europe

Forel

Lisec Group

Optima

Prodim

SOLDERING EQUIPMENT FOR ELECTRICAL CONNECTORS FOR WINDSCREENS AND BACKLITES

Ayrox

Softeco

SORTING SYSTEMS

Glaston Group

Lisec Group

SURFACE STRESS MEASUREMENT INSTRUMENT

Ayrox

Glass Company

TESTING FOR SOLDERINGS

Ayrox

Softeco

TESTING DEVICES OF BACKLITES ELECTRICAL HEATING

Ayrox

Softeco

THERMAL IMAGING SYSTEMS

Glass Company

Optris

TIN FLOAT BATH FURNACES

Horn

IOCCO Group

UV LAMPS

Helios Quartz

UV PORTABLE MACHINES

Helios Quartz

Glass Magazines

1989

Glass-Technology International

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




Annual Guides

2013

The **FLAT GLASS WORLD DIRECTORY** is a unique international annual guide providing a complete overview of glassworks and suppliers for the flat glass sector. More than 150 pages of company profiles and information about worldwide glassmakers, glass processors and suppliers, including addresses, management, sister companies, plants, number of employees, turnover, banks, year of company foundation, capital, trademarks, areas of activity, innovations, sales network, exhibitions, and, of course, interactivity in digital format, make the **FLAT GLASS WORLD DIRECTORY** the annual reference point for the international flat glass industry.





TECHNOLOGY AND INNOVATION,
BEYOND THE LIMITS TO THE FUTURE.



TECHNOLOGICAL MACHINES FOR WASHING, STOCKING AND CUTTING OF FLAT GLASS

SOLUTIONS FOR WASHING:

vertical and horizontal washing machines for low-e glass

SOLUTIONS FOR GLASS STORAGE:

manual, semiautomatic and automatic storage systems

SOLUTIONS FOR CUTTING:

manual, semiautomatic and automatic cutting tables for float and laminated glass

SOLUTION FOR GLASS HANDLING:

automatic loader and unloaders, clamps, vacuum lifters, manipulators

SOLUTION FOR PROCESSING:

CNC Milling machines, vertical drillers

SCHIAVO
Italian technology

WWW.SCHIAVOTECH.IT

Via Cave Ticino, 10 - 20020 Robecchetto con Induno (MI), Italy Tel: +39(0)331 897904

Preview



In the following pages, readers will find a highly useful guide regarding advertisers of this issue who are exhibiting at Vitrum 2021

COMPANY	HALL & STAND	COMPANY	HALL & STAND
ADELIO LATTUADA	22 C01 - E10	KERAGLASS INDUSTRIES	24 D11 - F20
ADI	24 D29 - E30	LANZETTA ALDO	24 B10
B SOLUTION	24 L12	MAPPI INTERNATIONAL	22 E01 - G10
BOVONE ELETTROMECCANICA	24 F21 - F22, F29 - F30	MAZZAROPPI ENGINEERING	22 S01 - S11 - T02 - T10
CMS	24 H11 - H19	MOLE MORESCHI	24 B21 - C24
COMSS	24 A7	MOVETRO	24 M21 - S22 - P15 - R20
CUGHER GLASS	24 C29 - D30	NEPTUN	24 N19 - P20
DELTAMAX AUTOMAZIONE	22 D17	OPTIMA	24 L20
DIAMUT	24 P11 - S12	PRODIM	24 L11
EDGE TECH EUROPE	24 G11	RBM ITALIA	24 D21 - E22
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Pick up your free copy:
Hall 24 - Stand K11

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

hall 22 / stand C01-E10

People to contact at our stand

ADELIO LATTUADA OWNER
NICOLA LATTUADA SALES DEPARTMENT
GINO S. GRAMAGLIA SALES DEPARTMENT
OUR TECHNICAL AND COMMERCIAL STAFF



Adelio Lattuada, together with its strategic partner Knittel Glass, offers robotic solutions for all types of needs and applications.

Increased automation levels, higher flexibility, important increases in productivity, production optimization, cost reduction and increased safety are only few of the main characteristics.

Any kind of robotic application related to the glass industry can be evaluated (CNCs, double-edgers, cutting, tempering or IG lines, etc.).

Many different solutions and configurations are available for the pre-processing area: from the most sold solution with 2 edgers and 1 robot, up to fully automated cells with 2 machines and 2 or 3 robots. Other configurations such as 1 machine and 1 robot or 4 machines and 3 robots, for example, are also possible.

Lattuada vertical washers, as well as other new or already existing (Lattuada or third party) machines, can be added



to the lines.

Lattuada Robotic Solution is part of Lattuada's cyberAL project, which includes also A-WR and i-AL packages to increase machines automation to the top level.

This solution provides numerous advantages, i.e.:

- The quickest solution available on

the market, a couple of real examples from our customers:

- 44 pieces/hour (1000 x 2000 mm)
- 375 m/hour (1000 x 2000 mm)

including dubbed corners

- Up to 5 m/min
- The most sold and installed (more than 150 projects already installed by Knittel Glass)

• The widest experience in this field (Knittel has been supplying robotic application for the glass industry since 2000)

• Easy use and reduced maintenance. What happens if the line stops? Our lines can, in most situations, continue from the point they have been stopped, or resume and empty the line automatically

• Integration with third party software and many different ways to receive or read glass dimensions to be processed.

Range of products

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

www.adeliolattuada.com • www.lattuada-na.com



ADELIO LATTUADA
Via Abbondanza 11/13 - 22070 Carbonate (CO) - Italy
Tel.: +39-0331-832713 - Fax: +39-0331-833886 - E-mail: info@adeliolattuada.com



LATTUADA NORTH AMERICA
6967 Wales Road, Suite F, Northwood OH. 43619 - USA
Tel.: +1-567-2494486 - E-mail: info@lattuada-na.com

People to contact at our stand

DINO ZANDONELLA NECCA GENERAL MANAGER AND CEO
LORENZA DAL MASO SALES MANAGER

ADI
INDUSTRIAL DIAMOND APPLICATION
SURFACES GROUP

ADI's R&D Department is always focused on increasing the performances of our tools.

These efforts are channeled to improve the quality of the UHS family of tools for vertical CNC machines. Customers who choose to invest in such key equipment, need to be sure those tools can match the performance guaranteed by the machine. This is why customers who try UHS tools do not subsequently revert to standard ones.

The family of UHS tools includes routers, PE wheels for automotive use, solar and architectural glass as well as trapezoidal wheels.

The availability of the Technical Department, which is always able to suggest the optimal set up for each machine, allows ADI to act not



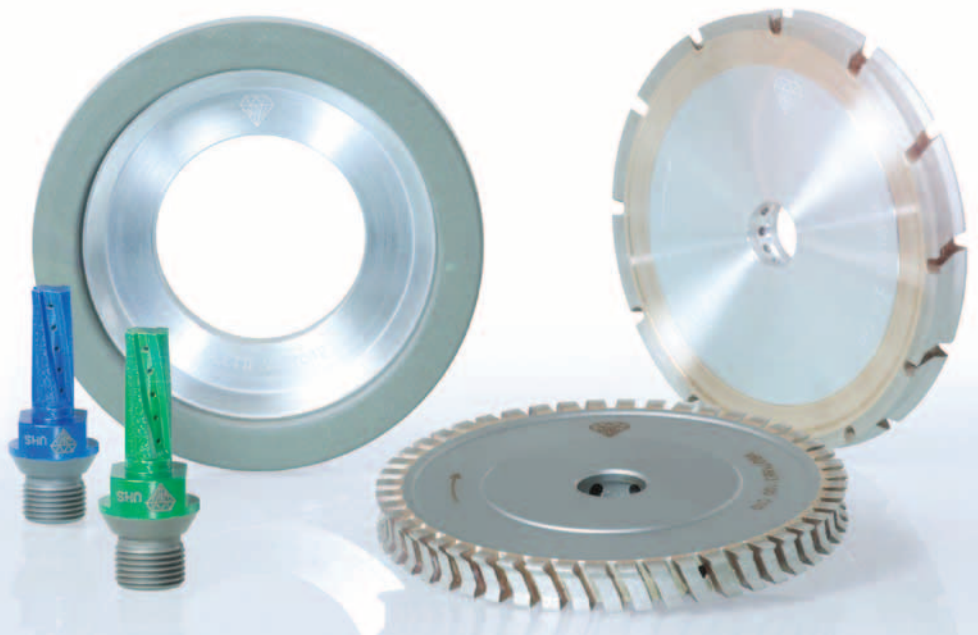
only as a mere supplier of tools, but rather as a supplier of Total Service.

Our large stock allows ADI to respond quickly and efficiently to the customers' needs.

A new wheel for single and double edgers will be presented at Vitrum. The aim of this wheel is to allow for greater versatility in the machine working processes of float and laminated glass.

ADI will thus present the patented GLASS RENU Scratch Removal System. The peculiarity of this system, which makes it a unique product in the current market, is its dry working process.

As a consequence, it is much easier to use the system in both indoor and outdoor areas. The possible applications of this system are limitless, ranging from the architectural industry to the automotive, marine and maintenance of public transportation.



www.aditools.com



Via Dell'Economia 12/16 - 36016 Thiene (VI) - Italy

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bovone
MADE IN EXCELLENCE

NEWS?

**TO BE
REVEALED**

AT VITRUM 2021
Pad 24
Stand F21-F22,F29-F30

ask for more at info@bovone.com

Range of products

- MIRROR SILVERING LINES
- LAMINATED GLASS LINES
- BEVELLING MACHINES
- MIRROR SILVERING LINES FOR CSP
- EDGING MACHINES
- WASHING MACHINES



hall 24 / stand L12

People to contact at our stand

GIANLUCA BONFANTI
DANIELE NARDO

MANAGING DIRECTOR
SALES MANAGER

B Solution
ON THE PLUS SIDE ●○○

SpeedArris

HIGH-PRODUCTIVITY ARRISING-GRINDING

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



SpeedEdge

HIGH-QUALITY GRINDING

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



Produced in Italy in collaboration with high-tech partners

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

Transport system with suction cups for high performance glasses

High-productivity guaranteed for double glazing lines

Oscillating spindle ensures the regular execution of threads

Possibility of stand-alone installation or integrated with existing lines

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

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

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

Maximum level of precision of machining

Best efficiency of tools

New sheet loading during the cycle



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People to contact at our stand

CARLO PROPERSI
SERGIO GERVASONI
ALESSANDRO COLELLA

DIVISION MANAGER
BUSINESS UNIT MANAGER
PRODUCT MANAGER



CMS Glass Technology: High performance machining centres and exclusive integrated glass processing lines

YPSOS, the new vertical machining centre for grinding, milling and drilling glass sheets, will be presented at Vitrum in the 4528 format. Main features of this machine include grinding and polishing capabilities with the two spindles, thus optimizing the productivity of the machine and a dressing system for any type of automatic and polishing tool. That, together with the already pre-set laser, keeps the working conditions stable, with high-quality results for the final product even without operator intervention.

YPSOS will be implemented in the already consolidated range of CMS vertical machines, made up of the PROFILE (Drilling, Milling and edge processing vertical machining centre) and VERTEC (Drilling and milling machining centre).

The GTS 300A cutting table is part of GFP range, a Venice-based com-

pany acquired by CMS, specialized in cutting tables and seaming machines for glass processing. The GTS 300A is an automatic table for float and laminated glass shaped cutting. It is characterized by the high quality and cutting precision of the shape cut on the glass, ranging from the thinnest to thickest sizes. Also, the new generation software and simple programming makes this cutting table the right choice for any production need.

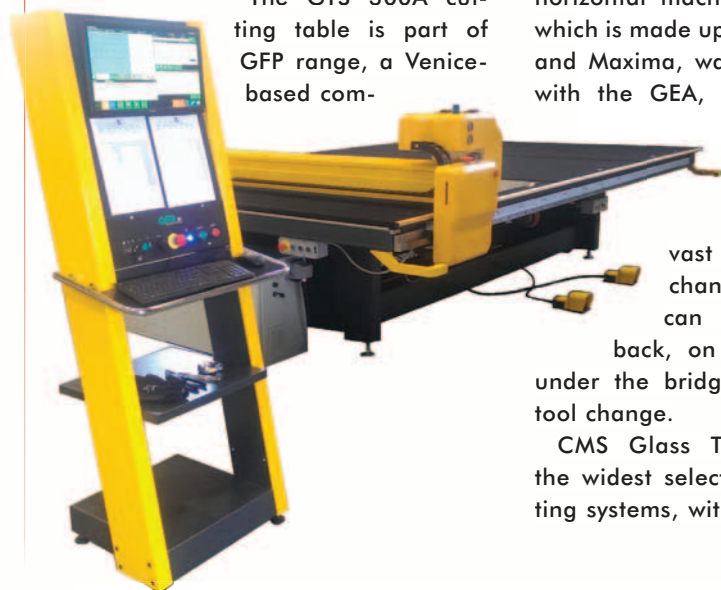
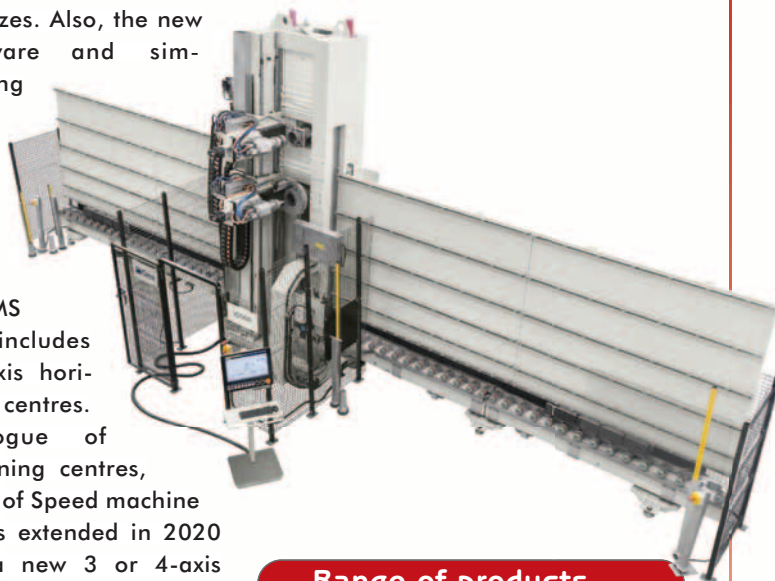
The range of CMS machines also includes 3-, 4-, and 5-axis horizontal machining centres.

CMS's catalogue of horizontal machining centres, which is made up of Speed machine and Maxima, was extended in 2020 with the GEA, a new 3 or 4-axis CNC that simplifies loading/unloading operations due. CMS has a vast modularity of tool changers, the tool holder can be installed at the back, on the sides, or even under the bridge for a 9.5 second tool change.

CMS Glass Technology provides the widest selection of waterjet cutting systems, with the introduction in

2020 of the innovative 3 or 5-axis Proline machining centre.

All CMS machines have the same simple and intuitive interface and they can be interconnected to one another via CMS CONNECT (CMS IoT software for Industry 4.0).



Range of products

- **VERTICAL MACHINING CENTERS**
- **HORIZONTAL MACHINING CENTERS**
- **CUTTING TABLES AND CUTTING LINES**
- **LOADING SYSTEMS**
- **WATERJET CUTTING SYSTEMS**



People to contact at our stand

MARCELLO E ANDREA AIUDI TECHNICAL & SALES MANAGERS



1974 – 2021

COMSS s.r.l. has more than 47 years of activity and experience in artistic and industrial screen printing.

The two generations still present in the company combine their experience and dynamicity – the ideal combination for those who turn to COMSS looking not only for a supplier, but also a partner able to supply plants and follow-up with technical and post sales services.

Our technical services involve close contact with our clients, on-site where the plant is to be installed. In fact, knowledge of the company and its organization are essential to be able to install a new production line that is perfectly integrated with existing machinery.

The production of customized machinery and plants is what enables us to do this, and is – and has always been – COMSS' strong point.

Customization can regard functional work dimensions, automation and layout, as per the area available for the installation of the same plant. Our screen printers, transport systems and conveyors, as well as drying ovens, have all been designed with modularity in mind, enabling clients to update and increase their plant at a later date.

Post-sales involves, first and foremost, spare parts and assistance, fundamental to be able to guarantee continuous production of the plants.

Online assistance also plays an important part in reducing machine downtime

needed, and for this reason all our machines have Internet connection.

COMSS services also include training courses for screen printer operators for companies who are beginning to work in the sector.

Screen printing, in fact, is one of the sectors where human presence is important in reaching high quality levels of the finished printed products.

Training takes place on-site at the company's premises, where the operator will be working, and using the machine he will be working with.

COMSS can also supply screens ready to use for different sectors.

Range of products

- **SILK-SCREEN PRINTING MACHINES AND EQUIPMENT**
- **SILK-SCREEN PRINTING PLANTS**
- **DRYING SYSTEMS**



hall 24 / stand C29-D30

People to contact at our stand

BARBARA MAZZA	GENERAL MANAGER
MARINO BONETTI	SALES MANAGER
ANDREA ZORZITTO	AUTOMATION DEP. MANAGER
PAOLO BARDOTTI	MECHANICAL DEP. MANAGER
MARIANNA CROCI	MARKETING MANAGER
SILVIA VIVA	SALES ACCOUNT



ARCHITECTURAL LAB
Performing Glass Technology

The same flexible engineering approach that has allowed **Cugher** to be recognized as a global player in the Automotive sector is now the basis of Cugher Building&Interior Design division, which gives life to tailor-made solutions for silk-screen printing and handling on float, tempered, laminated glass, with civil and industrial applications that go from windows and balconies to furnishing elements and shower enclosures.



- **Order manager 4.0**, the interface between machinery and customer's operating system

Cugher Building&Interior Design plants and machinery ensure efficiency, precision and long life with very little maintenance.

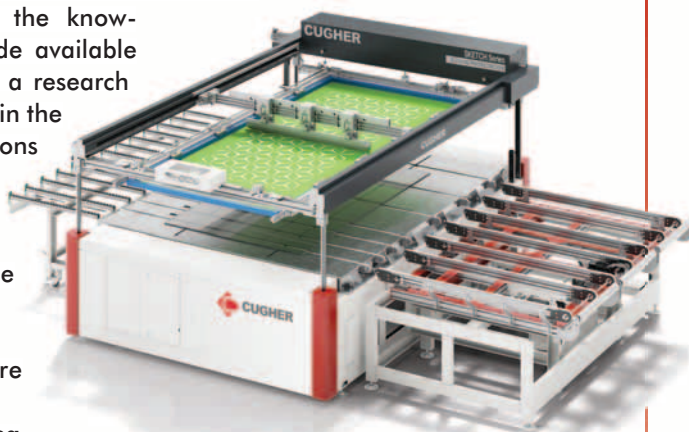
Range of products

- **SILK-SCREEN PRINTING MACHINES**
- **HANDLING**
- **IR AND UV DRYERS**
- **VISION SYSTEMS**
- **ORDER MANAGER 4.0**

The competence and the know-how of Cugher are made available in the Architectural Lab: a research center highly specialized in the creation of specific solutions for the building and interior design sector.

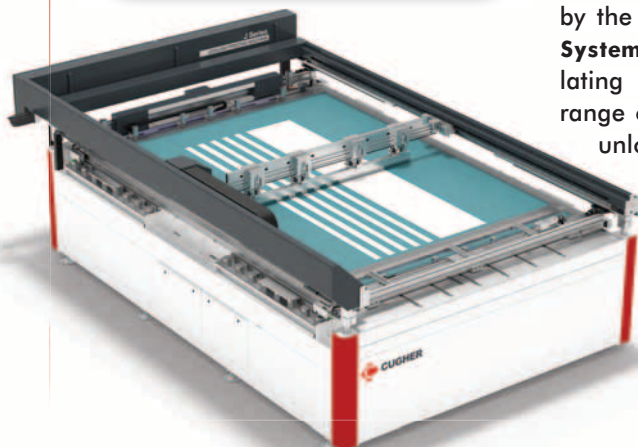
At Vitrum 2021, the company will present the developments of this specific research that characterizes the core products:

- **Silk-screen Printing Machines** that guarantee reliability and long durability, ease of use and fast set-up, as well as extra print quality.
- **Handling**, mainly represented by the new **Automated Harps Rack System** to insert glasses in the insulating glass line and also by the range of **Conveyors** for loading and unloading
- **IR and UV Dryers** for silk-screen and digital printing
- **Vision Systems** for quality control and broken screen detection



Services

- **CUSTOMIZED ENGINEERING SOLUTIONS**
- **OPPORTUNITY CHECK: A FREE STUDY OF THE TECHNICAL NEEDS AND PECULIARITIES OF CUSTOMERS**
- **CUGHER HELP DESK: THE NEW AFTER-SALES SERVICE THAT GUARANTEES CONTINUOUS PRESENCE AND SPECIALIZED INTERVENTION**



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People to contact at our stand

GIANLUCA DIENER



DELTAMAX
we see it

ENHANCE YOUR PRODUCTION CYCLE

The complex production of float glass often involves the presence of structural defects in glass sheets, defects that cannot be repaired. This results in significant costs connected with waste management and client claims.

With a view to make the whole float glass transformation process more efficient, **Deltamax** has developed OPT, the innovative solution destined to change the glass sector. OPT is able to detect defects before each processing step without having to wash the sheets, thereby guaranteeing numerous advantages and a quick return on investment. From the very initial stages, the system has been conceived to be versatile and flexible so as to easily adapt to any cutting process without needing any modification. Easy to install, OPT requires limited line stop for installation, as well as reduced maintenance.

Anticipates controls

OPT inspects glass sheets during their transit from the loader to the cutting table. The software elaborates the image, detects its defects (bubbles and inclusions) and excludes those of acceptable dimension. Clients have full control of the minimal dimension parameters they wish to assign to defects.



Save resources, speed up the process

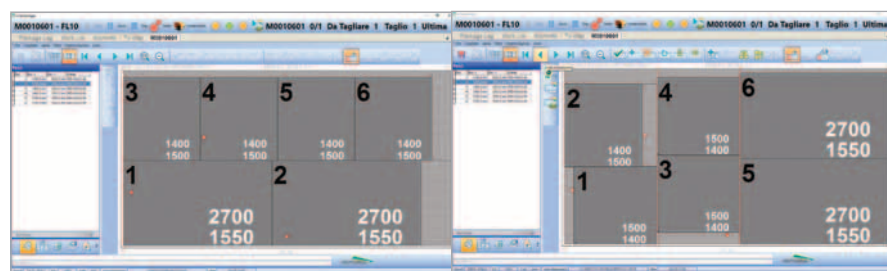
OPT allows to waste just a limited area around the defect, instead of the whole sheet. Only sheets without defects will proceed with further processing. This will reduce machinery wear, the whole processing time, as well as the need to cut defective sheets again.

Sustainable quality

OPT technology is environment-friendly. Thanks to cutting program optimization, glass waste and energy consumption will be considerably reduced. The same will apply to machinery wear as no sheet bound for waste will have to be processed any more.

OPT: advantages

- checks unwashed glass sheets before starting the cutting process.
- detects structural defects such as bubbles and inclusions in monolithic and laminated glass.
- interfaces with cutting table software for a fully automatic management.
- reduces the glass refuse surface as defects are placed in the scrap areas provided by the cutting pattern of each sheet.
- saves energy and prevents machinery wear as non-compliant sheet will not be processed.
- rationalizes cycle time thanks to reduced waste on the line and increased time saved for their management.



Example of optimization with Optima

OPT places the detected defects in the shrinking areas. This keeps waste portions to a minimum and production is optimised because the system can calculate the best positioning.



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People to contact at our stand

GIANLUCA GRIANTI	DIAMUT DIRECTOR
ANDREA MENEGHINI	AREA MANAGER TRADE
ALBERTO BISIO	AREA MANAGER SUBSIDIARIES & ITALY



Diamut is the brand of Biesse Group specialised in the production and marketing of diamond tools for the processing of glass, stone and ceramic materials, used on the majority of the machines on the market. Diamut will be present at Vitrum 2021 showing a wide range of products, among which Helix, a Diamut patented product, which sets new standards in drilling operations, and Chevron, Diamut's definitive solution for laminated glass.

The Helix System was created thanks to the collaboration with Intermac in the development of a revolutionary drilling system which, to date, has not been present on the market. This system is able to perform drilling operations with integrated upper and lower countersinking on glass sheets up to 19mm thick, using a single tool on CNC machines.

Helix overcomes all the limits of traditional drilling. Today's technology forces operators to use two tools, as well as impos-

ing limits; it does not integrate countersinking of the lower part, thus requiring the use of different drill bits for bores of different diameters.

Helix is an innovative tool managed by dedicated software. This tool no longer descends vertically, but works helicoidally; the entrance of the tool takes

place from the bevelled side of the tool and the glass is ground to create a hole instead of being drilled.

Chevron is Diamut's new arrow-cutting profile which has been specially designed to optimize the removal of plastic film and to ensure removal capabilities that have never been achieved previously with traditional tools. Furthermore, compared to a standard tool, the new V-shaped design limits and delays the generation of the classic cutting at the centre of the groove caused by the plastic film that affects the performance of the tool.

The results go above and beyond all current standards. The new, innovative arrow profile allows the Chevron grinding wheel to channel the water to the centre of the tool, facilitating cooling and thus improving performance and final results.

The Chevron line of tools is available in a wide range of different configurations according to machining operations to be carried out and the type of machinery on which these will be performed. The tool is available in 100mm, 150mm and 200 mm diameters, and can be mounted on both CNC and vertical machines, for trapezoidal, flat and groove profiles.



Range of products

- **CUP AND PERIPHERAL WHEELS**
- **DRILL BITS**
- **ROUTERS**
- **CUTTING DISCS**
- **WRITING BITS**
- **SPHERICAL TOOLS**
- **TOOLS FOR THIN GLASS SHEETS**
- **PRESETTER**
- **TOOLHOLDER FOR CNC**



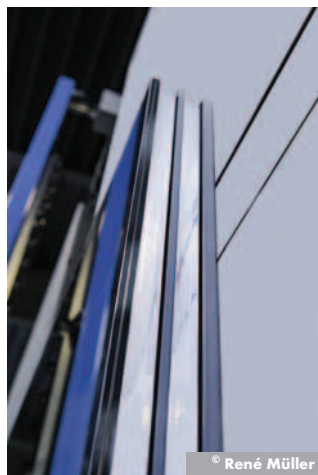
CUSTOMISATION PLUS SCALING = INDUSTRY 4.0

Super Spacer® presents itself automation ready at the VITRUM trade fair

Mass customisation is often proclaimed one of the formulas for success for products and services in the 21st century. At the VITRUM trade fair, **Edgetech Europe** will demonstrate the advantages of the flexible Super Spacer® for automated processes in the digital age.

Customised made-to-measure windows have characterised the fields of window construction and insulating glass production since time immemorial. Due to intense competition and the great pressure to be efficient, a large portion of the industry has effected the transition towards industrial-style production. Last but not least, energy requirements and the trend towards large glass surfaces, as well as curved and free-formed glazing, are constantly presenting the industry with new challenges.

Through the use of intelligent automation, insulating glass manufacturers are capable, on the one hand, of taking advantage of the economies of scale offered by producing higher volumes and, on the other hand, of economically realising even out of the ordinary customer requirements in batch size.



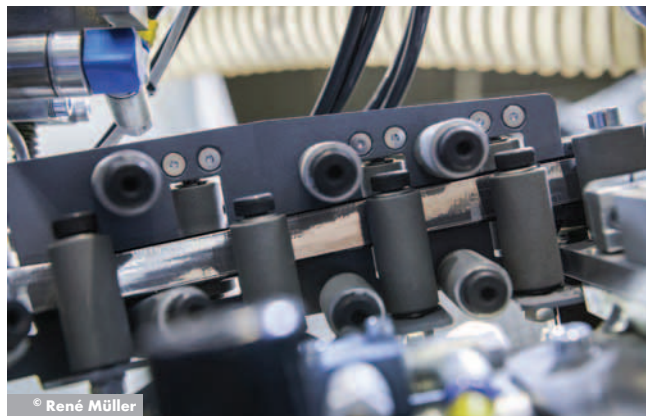
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'Automation-ready' components are required in order to transform this customer-oriented thinking into digitised production. Edgetech considers itself best equipped to meet this challenge. "Flexible spacers such as Super Spacer can now really demonstrate their benefits," Joachim Stoss, Managing Director of Edgetech Europe GmbH and Vice President International Sales at Quanex, confidently claims.

Very high levels of investment are required for activities that arise from the processing of rigid spacers, such as bending, desiccant filling or the joining of sections, especially for small and medium-sized companies. If flexible spacers from the roll are applied automati-



© René Müller

cally, the majority of set-up times are eliminated and the line is flexible to the maximum possible extent in terms of window dimensions, glass type, number of panes and spacer width. "Super Spacer is set in parallel down to the last millimetre and guarantees a visually appealing and, above all, tight edge seal," adds Johannes von Wenserski, Head of PR & Marketing of Edgetech Europe based in Heinsberg.

The warm edge has gained a market share in the spacers sector of over 50% in almost every single country in Europe. "The core function of our spacers as a warm edge remains the ongoing number 1 issue for our visitors at the VITRUM trade fair", Johannes von Wenserski continues. "In the end, the best overall package of Psi values, climate protection, room comfort, flexibility and production efficiency will decide which solution will edge its way to the front in the market."

About Edgetech Europe GmbH

Edgetech's Super Spacer® flexible foam-based spacer systems acts as energy-efficient warm edge spacers in insulating glass windows. They significantly reduce energy loss to the outside, largely prevent condensation and also contribute to the lifetime of a window. On average, worldwide, more than 300 million metres are sold annually in over 90 countries.

Edgetech Europe GmbH, located in Heinsberg Germany, is a fully-owned subsidiary of Quanex Building Products Corporation, an industry-leading manufacturer of components sold to Original Equipment Manufacturers (OEMs) in the building products industry. Quanex designs and produces energy-efficient fenestration products in addition to kitchen and bath cabinet components, with its head offices in Houston, Texas. Based on turnover Edgetech/Quanex is the world's largest manufacturer of spacers. Edgetech Europe GmbH is a sales location for the markets in continental Europe and one of the three worldwide Edgetech production plants, with a total of 480 employees and 17 extruders.





Filtraglass is already warming up its engines for Vitrum 2021. This year, the company will take advantage of the event to present its new line of high flow filtration machines, the XtremFlow.

This new range has been specially designed for glass treatment companies that need to filter large amounts of water to meet their production rate needs. The XtremFlow range, which includes six different models, differs from all its predecessors mainly because it works with a new filtering system: the filter press. This new feature has made it possible to exponentially multiply the number of litres that a Filtraglass machine can filter.

However, this isn't the only innovation offered by XtremFlow as all new models include a touch screen on the control panel that allows to program the machine, set it to operate in automatic or manual mode, and much more.

Other great new features include a pH control meter, a turbidity control system, and a complementary filter to produce top quality filtered water for use in CNC spindles.

Naturally, Filtraglass hasn't forgotten about small- and

medium-sized companies that are seeking an ecological and affordable solution to treat the water they use during glass manufacturing. Filtraglass is going to showcase the EcoBox, the little sibling of the new XtremFlow machine, at its Vitrum Milan stand, so all visitors at the fair can not only see it, but watch it in action live.

The EcoBox is the entry-level line of Filtraglass machines. The system, unlike the XtremFlow range, but in the same vein as standard systems, works through a pressure column filtration system. EcoBox is designed for companies that are seeking to obtain a water recycling system at an affordable price while maintaining optimal efficiency standards and ecological guarantees. In addition, the EcoBox is quick and easy to install and only requires replacing the original water tank and assembling the system.

The Filtraglass team will be at the fair to speak to companies looking for a solution to reduce their tap water consumption and improve their productivity while always respecting the environment.



People to contact at our stand

CARLO ZUCCARELLO SALES AREA MANAGER

**FOREL AT VITRUM 2021:
AUTOMATION AND INNOVATION**

At Vitrum 2021, the latest addition to the **Forel** insulating glass range will be on display in a fully automated configuration: a line for assembling insulating glass with a thermoplastic profile.

This solution will be part of a completely automated system managed by a single workstation (in keeping with the principles of Industry 4.0), guaranteeing optimum precision and productivity.

The line will be fed by the Art. SS Sorting System - Forel's system for managing glass sheets within the production flow - which automates the storage and handling of panes to suit the manufacturing: no bottlenecks, no mistakes, and no slowdowns or indecision; clear improvements in productivity, order, flexibility, safety and quality.

The Sorting System will feed the thermoplastic profile "High Tech" insulating glass line. Making its début in this solution is the new Art. TA applicator, designed to perfectly position the product on the basis of two key principles: productivity and ease of use. The interface already includes all the most widely used work programs and the various options for thermoplastic products: its simple, intuitive and user friendly. In another step aimed at boosting productivity, the profile thickness changeover process is now completely automatic: the operator can produce a thermoplastic spacer of a different thickness by simply modifying the working parameters.

The product is pumped from the drum to the recirculation units, consisting of two units that work in tandem to feed the



dosing equipment, guaranteeing non-stop extrusion. The benefits of this configuration are particularly clear when the drum needs replacing, as it means there's no slowdown in production. Continuous extrusion is further controlled by the temperature monitoring system that runs along the entire conduit.

The coupling press with gas filling art. AP has been enriched with a dedicated option for processing the IG pane with thermoplastic spacer. In any case however, this solution can also process panes with a rigid frame.

The final step is entrusted to the well-known Art. SR "High Tech" sealing robot, which has also proved perfectly suitable for thermoplastic products. The process is completed with an innovative automatic unloading system, developed to suit any kind of IG unit, also with thermoplastic spacer.

As this is a dual purpose solution, Forel's products for the preparation of traditional rigid profiles will also be on show: the Art. PB profile bender (one of the top machinery in its category, thanks to the exclusive "Smart Arm" patent), the Art. DF desiccant filling machine and the Art. MB butyl extruder.

Forel's vertical processing line - consisting of the Art. EM edging machine, the Art. DM drilling and milling machine and the Art. VW washing machine - will also be on display at Vitrum 2021. This solution can handle arissing, grinding, polishing, milling, drilling and final washing, on both monolithic and laminated glass. The line features three machines that are independent of each other and can work simultaneously on different glass sheets, increasing productivity. With its patents, the Forel vertical processing line has been a best seller in its category for several years now, and is esteemed by the best glassworks all over the world.



People to contact at our stand

OUR MANAGEMENT STAFF

FORVET SpA preview

FORVET
Innovative Solutions in Special
Glassworking Machinery

AEVOLUTION X.O

COMPLETE AUTOMATIC PRODUCTION LINE



Range of products

- COMPLETE HANDLING AND SORTING SYSTEM
- INTEGRATED ROBOTIC SYSTEM FOR LOADING/UNLOADING
- DEDICATED SHAPE CUTTING AND BREAKING SYSTEM
- INTEGRATED DRILLING, MILLING AND WATERJET MACHINES
- AUTOMATED AND INTEGRATED EDGING LINES
- WASHING AND DRYING MACHINES



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People to contact at our stand

MICHELA PEZZA	PRESIDENT
PAOLO DE BORZATTI	SALES MANAGER
FABIO GABRIELI	TECHNICAL DIRECTOR

Italian company **FRATELLI PEZZA**, leader in the production of sandblasting and marking systems for flat glass, is now ready to launch the new **Mistral EV+** series, full optional sandblasters that comply with the standards of Industry 4.0: interconnection, digitalization of the production process and constant monitoring of performance, key factors for the competitive development of any glassworks, on the market.

The cabins, equipped with an abrasion-resistant touch screen display, enable to manage an unlimited number of working programs, copy, rename, delete them or, on the contrary, create backups of these programs. They are also equipped with counters for the monitoring of processes, along with reports of any alarms and predictive maintenance information. In addition, when a sandblasting area is entered into the program it is displayed through a graphic simulator, so that the customer



can have a clear idea of what he is doing.

Last but not least, pre-recorded demo programs will help the operator and simplify the programming procedure for the most common processes (shading, deep engraving, zonal sandblasting, etc.).

All automatic cabins are also equipped with a revolutionary system that prevents the accumulation of static electricity in the cabin, **MirrorProtection**: this system enables mirror manufacturers to no longer have to worry about the

phenomenon of static electricity sparks. Fratelli Pezza will display the model **Mistral 180EV+** along with the automatic marking device **Easymarker** at Vitrum. Available in two models, **EasymarkerEV** and **EasymarkerUP**, this system is suitable to be combined with vertical and horizontal machines respectively. **Easymarker** can be connected to other glass processing machinery (tempering lines, double glazing, washing machines, etc.), receiving an impulse that activates the marking operation in a totally automatic way.

Fratelli Pezza will, at Vitrum, also have on show the portable marking units **Marker 101T** and **301T** that enable, just like the **Easymarker**, to carry out logos up to 30 mm in diameter.

Range of products

- **SANDBLASTING AND MARKING MACHINES**
- **PROTECTIVE COATINGS FOR CLEAR AND SANDBLASTED GLASS**



People to contact at our stand

CLAUDIO BERNABUCCI
CRISTINA SANTINI

MANAGING DIRECTOR
ADMINISTRATIVE DEPARTMENT

GLASSCOMPANY

Glass Company, a leader in the sector for special glass processing machinery, will be at VITRUM 2021 with its innovative Laser Scanner, specifically designed for the glass sector, in particular for the cutting and removal of all types of coating, such as silver, reflective, electro-conductive, protection of coating, organic and tempered inks, etc., leaving the glass completely transparent. Laser Scanner machines are able to carry out fast and high-precision processing of small-, medium- and large-size glass sheets, consuming less than 1 KW/h of electricity.

Glass Company personnel will be at the show to discuss the numerous applications and sectors of LASERMEK SCANNER technology, with the machine up and running, carrying out cutting of diverse types of coating, during which visitors will be able to see for themselves the speed and high-quality of the end product.



Range of products

- **LASERS FOR REMOVAL, MARKING AND ENGRAVING OF ALL KINDS OF SURFACE COATINGS ON GLASS, INTERNAL 3D GLASS ENGRAVING, CUTTING AND DRILLING GLASS**
- **TURNKEY SYSTEMS FOR THE PRODUCTION OF (EI30, EI60, EI90, EI120, ETC.) FIRE-RESISTANT GLASS**
- **FLAT AND CURVED GLASS TEMPERING FURNACES OF ALL SIZES, FROM VERY SMALL FURNACES TO LARGE FORMATS FOR CONSTRUCTION GLASS**
- **GLASS PAINTING AND DECORATION SYSTEMS**
- **3- AND 5-AXIS WATER JET CUTTING MACHINES**
- **GLASS LAMINATION SYSTEMS, FROM THE SIMPLEST WITHOUT AUTOCLAVE TO THE MOST EFFICIENT WITH AUTOCLAVE.**
- **MACHINES FOR SURFACE TREATMENT OF GLASS (PLASMA, ANTIBACTERIAL COATING, EASY TO CLEAN, ETC.)**
- **QUALITY CONTROL INSTRUMENTATION FOR TOUGHENED GLASS, LASER ENGRAVED, SMART INDUSTRY, ETC.**

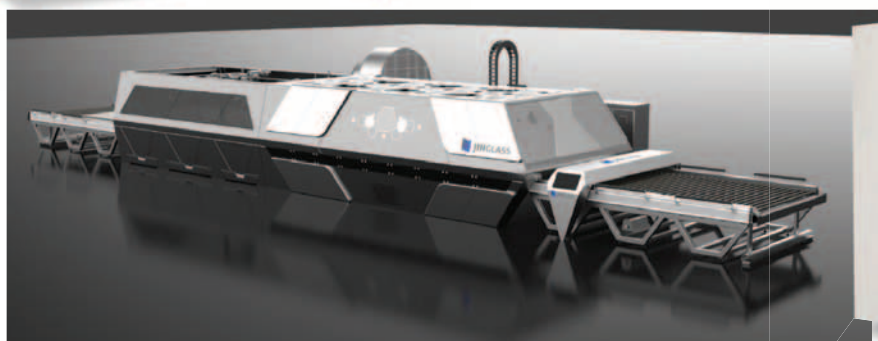
The most recent developments of Laser technology, such as laser drilling and cutting of glass with thicknesses up to 12 mm, will also be demonstrated.

Glass Company will have on show EI fire resistant glass, produced with the FIREMEK line, a turnkey system dedicated especially for the production of fire-resistant glazing, suitable also for small- and medium-sized companies, both with regards to their ease of use, as well as for their affordability. Company staff will discuss the main

parts of the line and the products required to produce EI30, EI60, EI90 category glass, etc.

Glass Company can also supply the tested and approved intensifying mix, as well as machines and equipment.

Tempering furnaces will also be on show, in particular VULCAN, the new generation of Intelligent Glass Tempering Furnaces, with highly optimised energy costs, in collaboration with Jinglass for whom we are agents and dealers in Europe.



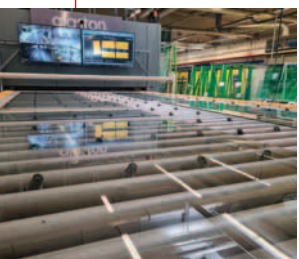
hall 22 / stand E17-F20

People to contact at our stand

AT VITRUM, OUR EXPERTS WILL BE AVAILABLE TO PROVIDE YOU WITH RECOMMENDATIONS AND SOLUTIONS FOR ANY OF YOUR GLASS PROCESSING CHALLENGES. COME ASK US MORE!

glaston
seeing it through

GLASTON AT VITRUM 2021



Flat Laminating

Glaston's **ProL** full convection laminating technology has been setting new standards for quality, yield and processing capability over the past few years. During 2021, we've continued to improve our laminating line performance.

With the new laminating process Autopilot the furnace will learn to achieve the most optimal way of running instead of operators having to make adjustments manually. The trend in flat lamination is the growing use of structural interlayers and for that we've introduced the new convection control technology, offering significantly wider operating windows even with complex laminates.

ing, with a holistic view of the overall process in pre-processing of glasses for different application areas.

The new active convection technology of the Matrix bending furnace improves the process with coated, printed and complex glass types, enabling faster heating. The new **MATRIX EVO** bending furnace is available with different size and capacity configurations to reduce cycle times. The new **HTBS** bending and tempering system with the most dense control matrix in the market meets the highest quality standards with bent tempered glass.



Digital solutions have always been – and continue to be – integral to the machinery and services we provide. They allow our customers to fully prepare for the future by generating significant business value. At Glaston, we keep investing in our digital capabilities to keep pace with the latest technological developments, such as the cloud, automation, remote connectivity and big data.

Flat Tempering

This year, we have reached one of our main goals and launched the first flat tempering line based on the big data of our global installed base. Results are already being tested in real production conditions and look really promising.

Digitalization of the tempering process includes innovations such as online fragmentation prediction for every glass type, and white haze detection using Artificial Intelligence (AI).

In addition, the new tempering process Autopilot reduces operator influence and offers process control without parameters.

By taking advantage of intelligence, our customers can gain higher bed utilization, leading to higher energy efficiency and capacity, better repeatability in quality and greater operational safety. Today, every machine can take care of its own predictive maintenance and suggest spare parts, when needed.

Insulating Glass Manufacturing

With the new arissing machine **MULTI'ARRISSER**, Glaston launches a high-quality solution for arissing of straight glass edges. The cup wheels adapt individually to different edge geometries of rectangular and shaped formats and have a 5- to 10-times longer lifetime than other systems, leading to higher productivity.

One cup wheel can be used for multiple functions – arissing of the edge, basic edge planing and corner dubbing. Additionally, the cup wheels allow a maximum arissing speed of 60 m/min., which makes the **MULTI'ARRISSER** the fastest single-head machine worldwide.

Premium low-E glass can be processed without any coated surface contact. Due to its compact design, **MULTI'ARRISSER** has a small footprint and can be used as a stand-alone solution or integrated into an IG production line.

Automotive & Display Glass Processing

For thin glass pre-processing Glaston has developed a thin glass kit that can be installed as an upgrade kit on new and existing cells.

With significantly improved performance parameters, the new **HYPERFLEX** grinding wheels represents a revolution in edge grind-

Range of products

- **FLAT TEMPERING FURNACES**
- **BENDING AND TEMPERING SYSTEMS**
- **FLAT LAMINATING LINES**
- **WINDSHIELD BENDING FURNACES**
- **INSULATING GLASS MANUFACTURING LINES**
- **PROCESSING LINES FOR AUTOMOTIVE AND DISPLAY GLASS MANUFACTURING**
- **HANDLING EQUIPMENT**
- **GLOBAL SERVICING & SPARE PARTS**
- **UPGRADING, REFURBISHMENT, REMOVALS AND RETROFITTING OF EXISTING EQUIPMENT**



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For more than 40 years **HEGLA** has been playing an important role in flat glass cutting and processing. All this time HEGLA has been known for outstanding quality as well as continuous development and product innovation.

With the ProLam LSR, HEGLA's mechanical engineering team presents a newly developed, time-saving cutting system for cutting laminated safety glass. Equipped with the patent-pending laser diode heating system as standard, productivity is increased by more than 20% compared to conventional heating technology. The shortened processing time also reduces the energy costs as a positive side effect. Since heat energy is introduced to the cut contour precisely, the surrounding area remains cold. Subsequent cuts can be made without any cooling time.

An ES-Guardm is available to visitors who are interested in non-destructive glass marking. Once the marking (QR

code, logo, or alphanumeric characters) is applied, it will remain firmly attached to the glass throughout the entire product life cycle. The pane of glass can then be identified, stored data accessed or the product reordered identically via the app or scan.

As a solution to cut costs in glass cutting, HEGLA recommends the dynamic intermediate storage system **ReMaster**. It is placed directly over the cutting machine and stores remnants until they are requested by the optimization system, no operator intervention is needed. Therefore glass damage is minimized and it guarantees the optimal use of a large variety of glass remnants. With multiple sheets per slot, the ReMaster utilizes the space above the cutting line even more efficiently.

HEGLA also supplies efficient and highly automated cutting tables for laminated glass. The **ProLam** with optional Shape equipment can not only process straight cuts but shapes and free forms of laminated glass. HEGLA is proud to offer an automatic system that can be fitted with electro-magnetic linear drives for the bridge and the carriage. This solution achieves even higher acceleration for the shortening of cutting cycles and double positioning precision. Various types of automated loaders and warehouse equipment, cutting machines

and automated breakout systems for float as well as sorting systems (SortJet), complete the product range.

As a leading manufacturer; HEGLA has three production facilities in Germany and also International Sales and Service companies in the US, France, UK, Russia and India. A highly competent worldwide network guarantees HEGLA's global presence and responsiveness in sales and services.

HEGLA is looking forward to meeting visitors in Hall 22, stand U01-Z08.

Range of products

- **GLASS STORAGE AND PREPARATION SYSTEMS**
- **CONVEYOR SYSTEMS**
- **FLOAT GLASS CUTTING TECHNOLOGY**
- **LAMINATED GLASS SEPARATION TECHNOLOGY**
- **COMBINED FLOAT AND LAMINATED GLASS CUTTING MACHINES**
- **DYNAMIC STORAGE SYSTEM FOR RESIDUAL SHEETS**
- **AUTOMATIC BREAKING SYSTEMS**
- **SORTJET - AUTOMATIC SORTING SYSTEMS AFTER BREAKOUT**
- **DE-STACKING AND TRANSPORT TECHNOLOGY FOR COATING PLANTS/ MIRROR COATING LINES**
- **PLANT AND PRODUCTION LOGISTICS FOR PHOTOVOLTAIC PANEL PRODUCTION**
- **SOLUTIONS FOR INTERNAL AND EXTERNAL GLASS LOGISTICS**

ES-Guardm is a marking system that can be used at multiple production steps



Cuts Down Costs:
Dynamic Intermediate
Storage ReMaster
with Galactic Cutting Machine



hall 24 / stand B03

People to contact at our stand

LUIGI GASTALDO C.E.O.
ARMANDO GIRO CHAIRMAN

helios quartz®



Helios Quartz is now an international player and a renowned supplier for Quartz Glass processing and the manufacturing of Infrared Emitters and Ultraviolet Lamps. Helios Quartz also produces Specialized Equipment for Industrial, Scientific and Medical applications.

TÜV certified, Helios Quartz is a very flexible and dynamic group which is deeply oriented towards internationalization and which is living a strong and stable growing phase with great momentum: in the last 10 years, Helios Quartz has opened commercial branches in USA (Helios Quartz America), in China (Shenyang Helios Tech) and Hong Kong (Helios Quartz Asia).

Thanks to its experience in different fields and to its **cutting-edge testing laboratory** located in the historical Helios Italquartz S.r.l. plant in Cambiago (Italy), **Helios Quartz can advise customers and provide them with the best solution for every specific application.**

The key of all HELIOS QUARTZ companies is to be a partner for their customers, not only a regular supplier.

Helios Quartz product range for the glass industry includes:

- **QUARTZ INFRARED HEATERS** in short-, medium-, and fast medium wavelength, in single- and twin tube, with or without gold reflector for:
 - Laminating lines (plastic film coupling)
 - Screen printing lines
 - Bending furnaces
 - Fusion furnaces
 - Laminated glass cutting tables
- **INFRARED MODULES:** complete infrared solutions, designed and cus-



tomized according to customers' needs and ready to be integrated in existing machines and production lines;

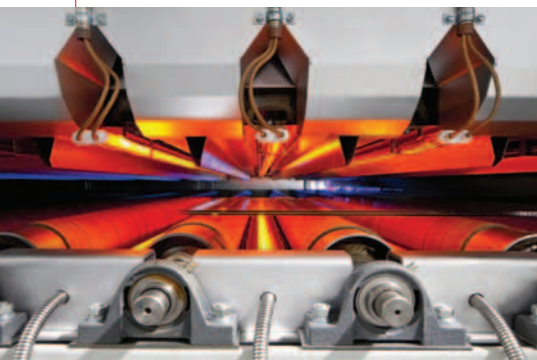
• **UV POLYMERIZATION EQUIPMENT:**

UV high and medium pressure lamps for drying screen printing of reactive inks, paints, coatings and adhesives for the decorating and furnishing sector;

• **TIN DETECTOR EQUIPMENT:**

UV black light devices which are able to detect the tin coated side of the float glass even under high brightness conditions. This kind of detection is crucial before processes like laminating, mirroring, printing and decorating. Helios Quartz offers two type of device:

- **MANWOOD 25-N: manual equipment.**
- **AUTOMATIC TIND SIDE DETECTOR: compact automatic version of this device.** It can be fixed directly on the glass transportation line, before the production process, in order to check each and every piece of glass. A user-friendly PLC helps the operator in calibrating and managing the different recipes.



Range of products

- | | |
|---|--------------------------------------|
| • INFRARED HEATERS | • UV POLYMERIZATION EQUIPMENT |
| • INFRARED MODULES AND SYSTEMS | • UV BLACK LIGHT EQUIPMENT |
| • FULLY AUTOMATIC TIN DETECTOR | • PHOTOCHEMISTRY |
| • MEDIUM AND LOW PRESSURE UV LAMPS | • QUARTZ GLASSWARE |



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People to contact at our stand

FEDERICO MARCENARO SALES TECHNICIAN



Idrotecnica will be present at Vitrum with its most recent developments and innovations, and the most representative and popular models used in the glass industry.

Cororesi is the new system that allows to recover wastewater from reverse osmosis demineralizers.

This system is indicated for medium- to large glassworks, with medium- to high intensity operations, with the following advantages:

- significantly reduce the volume of water used (50-70%)
- optimise and improve operations of the demineralizer that the system is serving.

The system has all the up-upgrades typical of Idrotecnica equipment: easy installation, very simple and intuitive operation, as well as high reliability thanks to components from leading companies and proven technical solutions.

New Industry 4.0 solutions that enable

remote monitoring and control of demineralization plants will also be on show at Idrotecnica's stand. These plants are equipped with high-level sensor technology, ensuring even more precise and timely communication of performance.

The combination of high sensor technology and Industry 4.0 PLCs provides plants with advanced diagnostics that help to organise maintenance, and prevent faults.



Range of products

- **REVERSE OSMOSIS DEMINERALIZERS**
- **ION EXCHANGE DEMINERALIZERS**
- **CLOSED-CIRCUIT SYSTEMS**
- **FILTERS, SOFTENERS, ELECTRODEIONIZERS, ETC.**



People to contact at our stand

LANFRANCO FONTANELLI	ADVANCED MATERIALS, GLASS AND STONE SALES DIRECTOR
ANGELO BUSETTI	SALES MANAGER GLASS CNC, WATERJET, DOUBLE EDGER
STEFANO FORLANI	SALES MANAGER GLASS CUTTING & DRILLING

INTERMAC



INTERMAC technology, software, and services to help spread digital culture in the 4.0 Factory.

Integrated handling systems, collaborative robotics, and new technology for work centres: Intermac's sophisticated technology places particular emphasis on automation and integration that support our clients in the challenge to Industry 4.0.

The Vitrum audience will be able to find out first hand, through machinery, product lines, and perfectly functioning integrated technological tools, how Intermac is capable of creating digital, automated, and interconnected factories.

Intelligent automation

The solutions that Intermac provides for its clients are Vertmax One, the new compact vertical machining centre based on the revolutionary concept of machining the piece vertically, Vertmax One can be fully integrated with Intermac's Aqua vertical wash-

ers: Master 38.5, the work centre dedicated to glass machining for products for the furniture, automotive, building and domestic appliance sectors. On display the comby lines, combined lines that were introduced onto the market by Intermac for high productivity cutting operations, and are the result of a clever combination between Intermac's float glass cutting tables and laminated glass solutions. The Busetti F series is the ideal solution for flat edge grinding operations with standard 2 mm or 15 mm axis with 45° profile, ideal for small, medium and large glassworks companies with flexible production.

Presenting IC, from evolution to innovation, now for all glass processing machines

The new software for CNC machining centre for glass. With a new renewed graphic interface that's user-friendly and easy to pick up thanks to self-learning concepts, but without compromises in terms of functions and programming with a robust, reliable platform, the software has a modern interface, extremely user-friendly, guaranteeing a total control of the design process, from drawing to the finished piece.

BIESSE S.p.A.

Biesse Group is an international company that designs, manufactures and distributes systems and machines for processing wood, glass, stone, metal, plastic and composite materials aimed at the furniture, housing & construction, automotive and aerospace sectors. Founded in Pesaro in 1969 by Giancarlo Selci, it has been listed in the STAR segment of the Italian Stock Exchange since 2001. 85% of its consolidated turnover is achieved abroad. It operates in over 160 countries with 13 manufacturing sites and a direct presence of 37 showrooms around the world, as well as an extensive dealer network.



Range of products

- **MACHINES AND SYSTEMS FOR MONOLITHIC AND LAMINATED GLASS CUTTING**
- **WATERJET SYSTEMS**
- **DOUBLE EDGING MACHINES AND SYSTEMS**
- **LOADING AND UNLOADING SYSTEMS**
- **VERTICAL WASHING MACHINES**
- **CNC WORK CENTRES**
- **STORAGE & HANDLING SYSTEMS**



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People to contact at our stand

DAVIDE SCHIAVON SALES MANAGER



PLATFORM TRANSPORTERS



INLOADER TRANSPORTERS



LAMINATED GLASS HANDLING

ITALCARRELLI - TOP HANDLING SOLUTIONS

Smart working, synergies of value.

Italcarrrelli designs and manufactures special machines, technology and accessories for the transport and storage of glass. After many years of hard work, the company has put into practice its idea of smart work. Smart with clients to create personalized machines responding to the precise needs and demands of clients. Smart with suppliers to have the constant availability of top class material and components. Smart solutions both with regards to technology and energy savings. Last but not least, smart for safety each and every day. The company is one of the very few that is able to provide both machines and automatic driving systems and, thanks to the perfect synergy between design department and software development, Italcarrrelli's machines have the highest levels of performance and ease of use, with low energy consumption levels.



CONTAINER
LOAD/UNLOAD

Range of products

- PLATFORM TRANSPORTERS
- INLOADER TRANSPORTERS
- SIDE-LOADERS
- TAILOR-MADE SOLUTIONS
- CONTAINER LOADING/
UNLOADING
- LAMINATED GLASS HANDLING



SIDE-LOADERS



TAILOR-MADE SOLUTIONS





People to contact at our stand

COMPANY STAFF

Alongside the big names, 'Made in Italy' is also made up of small- and medium-sized companies with a strong family footprint that know how to move forward, despite everything, even at small steps and without the help of anyone - just like a family - just like **Italmole**.

By maintaining its artisan spirit, and dedicating a significant part of investments to innovation, Italmole exports almost all of its products.

Over the past 10 years, important changes have taken place that have obliged companies to be organized differently. Digitization has cancelled and cooled personal relationships by forever changing the way people work.

The relationship with change, however, can be paradoxical, change is scary and it is not always easy to face but, at the same time, it is also fascinating and leaves room for creativity - those who overcome this fear are the ones who succeed in changing.

Company personnel are decisive in facing this process, success comes above all from collaboration between people who believe in the possibility of a combination of tradition and innovation, teamwork and it is this working together that allows to obtain the best results.

The basketball champion Michael Jordan said: with individual talent you can win games, with intelligence and teamwork you can win the championship.

This is the story of Italmole, that after 41 years on the market continues to represent 'Made in Italy' around the world, following the values of trans-

parency, correctness and seriousness as in the past, while researching new technologies and innovations, guaranteeing better quality of continuously evolving products, and always keeping up with market needs and demands.

At Vitrum, this year, Italmole will be presenting its range of products known at global level, starting from the most 'copied' BD peripheral wheels, BD2 engraving wheels, up to the complete range of BLACK-RED-AR1 thread aris wheels -AR2 and AB4. Last but not least, cup wheels for flat wire type X and L that are seeing more and more interest all over the world.

Moreover, Italmole will also have on show an important innovation named **ASTRA**.

This wheel is more silent and super-polishing, available only in peripheral form.

Astra wheel is suitable for CNC vertical machines such as VERTMAX, CMS, SKILLGLASS, as well as horizontal machines such as MASTER, CMS, BOTTERO-BIMATECH.



People to contact at our stand

STEFANO SPEZZANI

LUCA CALANCA

MAICOL SPEZZANI

SIMONE CECI

ANDREA BUGADA

FRANCO CAPECCHI

SIMONE SPEZZANI, PATRIZIA DURIAVIG

ORIENTA GUALTIERI

PAOLO RIGHI

GIULIA FERRARI

MARCO ASTOLFI, LUCA CARANI,

ANDREA SPINETTI

FOUNDER, VICE PRESIDENT

DIRECTOR, ADMINISTRATIVE & OPERATING OFFICER

SALES DIRECTOR

AREA MANAGER

AREA MANAGER

AREA MANAGER

SALES SUPPORT

MARKETING DEPARTMENT

TECHNICAL & SERVICE MANAGER

SERVICE DEPARTMENT

TECHNICAL SUPPORT

At the 2021 edition of Vitrum, **Keraglass** will be receiving visitors at a 350 square metre stand packed with cutting-edge products.

One of the key systems installed at the stand will be the tempering furnace that has been pushing the functional and qualitative envelope of systems of this type. We're referring to the Vision line, that has achieved excellent performance and aesthetic results, achieving 0.01 in terms of emissivity of the latest generation low-E glass, workable glass sizes up to 3,350 x 9,000 mm and the perfect flatness of the glass. All this thanks to an innovative heating system based on jets of 700° preheated air through a network of stainless steel pipes. The possibility of graduating the air intensity according to each recipe and each area of the single glass sheet optimizes results. The cutting edge of this technological jewel is also the monitoring system that it is equipped with. Supervision Intelligent offers constant process insight allowing the operator to



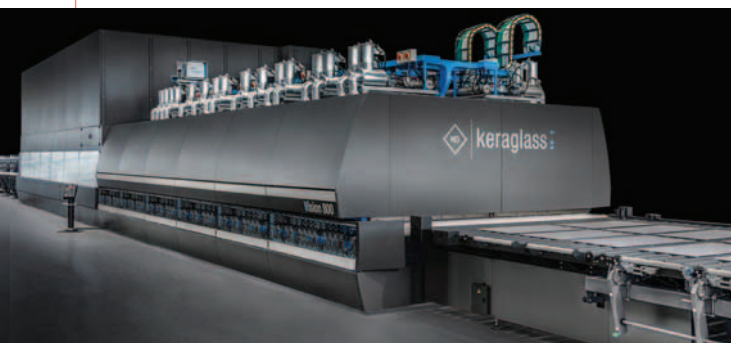
follow and manage the whole process step by step and in real time.

But the attractions of the stand are not just limited to tempering. Sharing the exhibition space with Vision line there will also be solutions dedicated to digital printing. The Vitrum show will also host "iPlotter", the digital inkjet plotter with DOD (drop on demand) technology, specifically designed for printing on glass sheets. It uses specific inks to reproduce drawings, images and photographs on structures for use in the architectural, automotive and furniture sectors.

"Vision 800" and "iPlotter" are two very different products but both able to guarantee operators high speed, optimized process times, and record-breaking product quality in terms of both efficiency and aesthetic appeal. Beautiful, powerful, fast. In a word, Keraglass.

Range of products

- **OSCILLATING AND CONTINUOUS FURNACES FOR THE TEMPERING OF ARCHITECTURAL GLASS, HOUSEHOLD APPLIANCE GLASS, SHOWER DOORS AND FURNITURE GLASS**
- **BENDING AND TEMPERING FURNACES**
- **HEAT SOAK TEST FURNACES**
- **SILK-SCREEN PRINTING MACHINES**
- **ROLLER-COATING MACHINES**
- **DRYERS • STACKERS**
- **AUTOMATIC LOADING-UNLOADING MACHINES**
- **90° DEVIATORS**
- **CONVEYING LINES**
- **PACKING MACHINES**
- **LAMINATING LINES WITH PVB**
- **MULTI-LEVEL LAMINATING KILN WITH EVA**
- **DIGITAL PRINTING MACHINE**
- **ROLLER CLEANING MACHINE**



People to contact at our stand

ELISA LANZETTA

SALES MANAGER

LUCIANO LANZETTA

TECHNICAL MANAGER



Diamond wheels and core drills for glass 100% Made in Italy. This is – and has been – **Lanzetta Aldo's** winning formula since 1955.

Production is carried out completely in-house and independently: technical drawings, mould design, binders, knowledge and control of materials. From raw materials to finished products, we are proud of our products.

Extensive experience in tools for grinding, drilling, countersinking, engraving, edging, chamfering, combined with great flexibility for all glass, mirror, laminate and ceramic glass processing.

ECO wheels: With ever-increasing attention to the environment, we invite glass processors to try our wheels and core bits with low content or free of harmful metals.

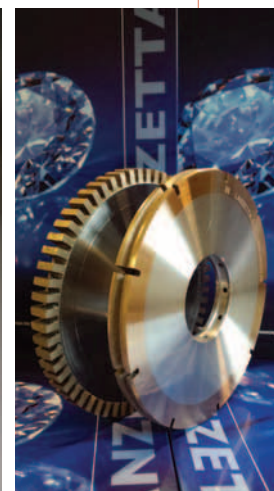
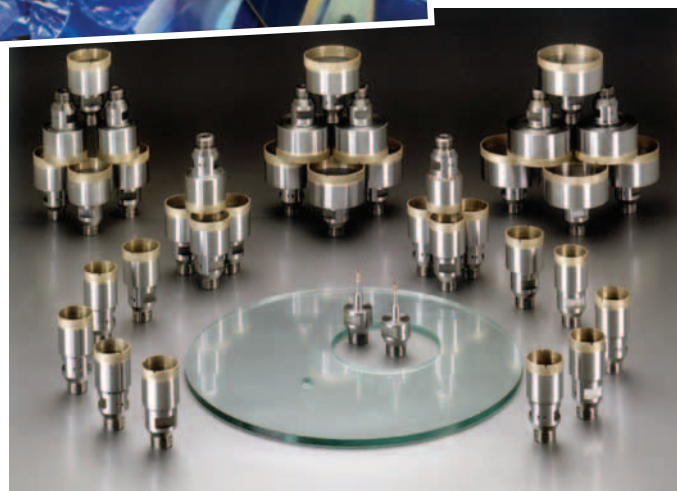
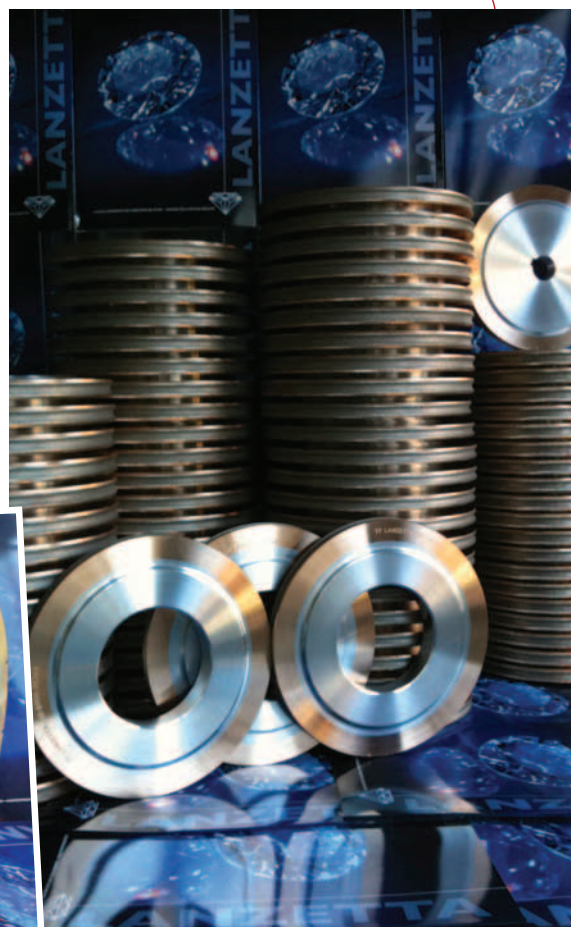
Grinding wheels for monolithic or laminate: the spe-

cial structure of the bond combined with cuts for long profile retention during processing.

BILATERAL GRINDING WHEELS: balancing of binders and diamond grits combination to achieve ideal finish with speed of machining.

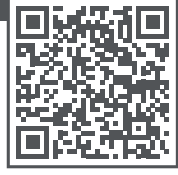
Range of products

- **GRINDING WHEELS**
- **DRILLS**



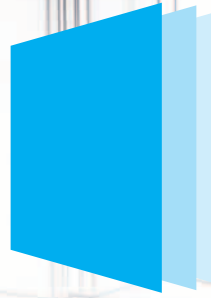
HYBRID+
FAIR EXPERIENCE

Information



GLASS

Eurasia



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hall 22 / stand E01-G10



People to contact at our stand

NANCY MAMMARO

ERMANNO PETITTI

ANTENORE TOSELLI, MANUEL DI LIBERO

GIULIO DALLA COSTA

VALENTINA D'AGOSTINO

MANAGING DIRECTOR

SALES MANAGER

TECHNICAL MANAGERS

SOFTWARE & ELECTRICAL MNG.

ASSISTANT



MAPPI

BEYOND GLASS PERFECTION

All new **Mappi** furnaces are Powered by Siemens qualified, ready to be integrated with a potentially infinite number of software applications compatible with Siemens MindSphere, and to communicate in real time with other machines and with the Company Management, Logistics, Maintenance and Planning. Fox built to perfection and Ats 4.0 furnaces now take a further leap into the future with Supertemper, a great innovation in fire-resistant glass tempering. Thanks to a series of innovations, every Mappi furnace can implement Supertemper functionality, and directly produce flame certified E30 resistant glass. It can do it in a faster, easier, more economical way than has ever been done in this particular industry.

MHS | MULTIZONE HEATING SYSTEM

It automatically manages the temperature of the furnace by means of a network of electronic controlled sensors that maintain constant temperatures and focus only the heat in areas where there is glass.

IHS | INTELLIGENT HEATING SYSTEM

The internal temperature of the furnace is controlled with an accuracy of +/- 1°C, preventing overheating of the ceramic rollers and avoiding downtime for the adaptation of the furnace temperature.

ESS | ENERGY SAVING SYSTEM

Heating and forced ventilation stages are coordinated and managed by a computer system optimizing consumption and significantly reducing the installed power required by the entire system.

SYNCR0 | TRASMISSION TECHNOLOGY

The ceramic rollers are precisely driven within 1/1000 mm by the DC drive motor with friction trasmission between iron/



rubber (avoids consequent slack time gaps, gear lash with risks of marks on the glass). This eliminates the need of SO₂. Brushless motors control roller drives to guarantee precise roller position and speed. Automatic speed management of the ceramic roller oscillation avoids distortions and damage to the glass surface. Full ceramic rolls, which can be easily replaced.

ITS | INTEGRATED TOUCH SYSTEM

The system monitors the parameters of the tempering process and immediately prints the compliance report for CE and ANSI glass standards at the same time, automatically storing this information for each production cycle.

AC | ADVANCED COOLING

A particular of the blowing system that allows even more specific control during tempering and substantially decreases the iridescence of the glass.

ATI | ACTIVE THERMAL INSULATION

ATI completely reduces the thermal dispersion thanks to the continuous research in the most performing materials for thermal insulation, in association with

the most prestigious research centres in Europe, as well as with Knauf and Morgan.

GHBS | XTREME PROFILE CONVECTION

GHBS can process all latest generation coated glass, including low-E with 0.01 Emissivity.

HEATING CHAMBER EXTRACTION

Mappi is the only tempering equipment manufacturer that has this feature for easier maintenance and better finishing product quality. ATS 4.0 is available from 1500 x 3800 to 3300 x 6000 mm and also in customizable sizes.

Range of products

- **HORIZONTAL TEMPERING FURNACES FOR ALL TYPES OF GLASS**
- **BENDING AND TEMPERING FURNACES FOR ARCHITECTURAL AND AUTOMOTIVE FLAT GLASS**
- **LAMINATING PLANTS**
- **HEAT SOAK TEST PLANTS**



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hall 22 / stand S01 - S11 - T02 - T10

People to contact at our stand

ANTONIO MAZZAROPPI	GENERAL MANAGER
FEDERICO MAZZAROPPI	MARKETING DIRECTOR
ORSOLA ABBATE	ADMINISTRATION MANAGER
MARIAELENA PICCOLO	SALES SUPPORT
MICHELE SPANO	CUSTOMER SERVICE
PIETRO MAZZAROPPI	TECHNICAL MANAGER



MAZZAROPPI
HIGH PERFORMANCE. ALWAYS

MAZZAROPPI ENGINEERING SRL: TEMPERING FURNACES ALSO FOR SMALL - AND MEDIUM - SIZED COMPANIES

One of the biggest issues, if not the main one, that holds back small- and medium-sized glass factories from purchasing a tempering furnace is precisely that of production, i.e. they think they do not have a big enough production to be able to buy a large plant, and therefore prefer to delegate the tempering of their glass to a subcontractor.

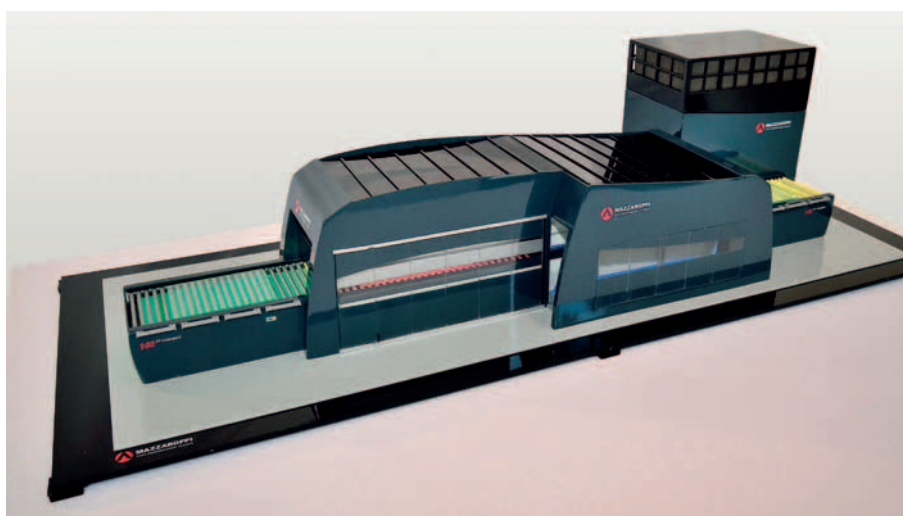
Obviously, this choice involves considerable costs and difficulties for these companies, which, in fact, are no longer "masters of their own work", as they:

- do not have the possibility to plan their own production;
- can't carry out quality control procedures;
- do not have the opportunity to engage with their clients to offer a range of different products with certain deadlines;
- are unable to manage emergencies and "special" items, for the reasons listed above.

Unlike the "classic" tempering furnaces of large dimensions, Mazzaroppi's compact furnace is designed and built to meet the production needs of small- and medium-sized glass factories, which do not need such a large plant as they do not have a big enough production to be able to "fill" it at best.

The Tp Compact has variable load dimensions, ranging from 1300x2600 to 1600x3600 (1.3 meters x 2.6 meters and 1.6 meters x 3.6 meters), with some intermediate measures.

The total length is about 17/18 meters, depending on the various types.



With Tp Compact, furnaces are no longer just for large groups or companies, but are ACCESSIBLE to everyone.

Mazzaroppi uses the most advanced technology to offer the best quality on the market and to optimize the performance and energy consumption of its machines. Reducing energy consumption, for example, not only makes glass processing more sustainable, it also allows customers to save significant amounts, therefore improving profit.

Every machine is produced exclusively with guaranteed quality European components and materials. This makes Mazzaroppi machinery reliable and durable, with minimal maintenance requirements.

The certainty of the quality of the product is in fact confirmed by the formula offered by the company:

After 10 years Mazzaroppi guarantees a market value of its machinery equal to 40% of the purchase price.

After 10 years the client can therefore also use the trade-in option in accord-

ance with the company itself.

We therefore look forward to seeing and meeting visitors at Vitrum Milano from 5 to 8 October in Pavillion 22, stand S01 – T10, at the only stand where visitors will have the opportunity to see an operating glass tempering furnace up and running – and be able to try it out!

#glassintheanswer

Range of products

- GLASS TEMPERING MACHINES
- TEMPERING AND BENDING MACHINES
- AIR CONVECTION SYSTEM FOR LOW-E GLASS
- BENDING MACHINES
- LAMINATING MACHINES
- HEAT SOAK TEST MACHINES



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People to contact at our stand

MARCO MORESCHI	OWNER
BARBARA DODA	SALES MANAGER
YURI CATTABRIGA	SALES MANAGER



MORESCHI is, and has been, one of the leading companies in the production of diamond wheels for glass processing machines for 100 years. The company can offer a complete range of diamond and polishing wheels for all types of glass processing, with different bond and grit to be used for float glass and laminated glass. The wheels are made for high production and long life, the best partners for processing of all types of glass.

Our wheels have greater process stability than the wheels on the market, improving efficiency and reducing cost of glass processing. Moreschi can offer sets of wheels for all types of grinding and polishing: polished edge, ground edge, industrial edge and polishing with cerium oxide. Depending on the quality of the edges, the wheels can be combined with or without polishing.

The routers are available in different types with diameters, and each type is available with different bonds for the best quality.

Moreschi give its customers the possibility to have the best technology and the best tools.

At Vitrum, **Moreschi** will be in **Hall 24P / Stand B21-C24**, with the following products on show:

- New bond for high speed CNC vertical machines
- New bond for double edger peripheral
- New ring construction available from diameter from 100 to 200
- New Patented refrigeration system
- New wheels for laminated glass
- New countersinks without vibrations and free cutting



/// MOVETRO

People to contact

GIORGIO MISTRELLO

OWNER

DAVIDE MISTRELLO

SALES MANAGER

Movetro srl is a leading company for the manufacture and installation of automatic plants for the storage and handling of glass sheets. Well-established know-how and considerable experience are the basis of the company history, which started up with the construction of simple sheet storage systems, and today can offer the most up-to-date technological systems on the market.

Movetro's main strengths are its flexibility and great ability to adapt its product range according to the times and to technology evolutions. Company organization is ideal to be able to offer highly customized products with professionalism and competence that have always been Movetro's trademark worldwide.

Movetro is a real industrial company, able to accept new technological challenges, counting on technical and human resources, listening to and understanding customers' needs, which are always satisfied with highly customized designs and which have, as their main considerations, reliability, safety and efficiency of the plants.

Movetro guarantees a very high quality level which positions the company among the leaders of similar glass industries as all machines are fully manufactured and tested in-house at the company's metal workshop, while welding, painting and assembling lines are positioned in order to reach the very ambitious target of 'total product quality'.

Movetro does not only manufacture and install automatic systems, but goes beyond this point thanks to the fact that all plants can be fully connected and integrated to

already existing processing lines manufactured by any other company.

From the smallest to the largest glass processing company: all can find in Movetro the right partner who can, thanks to a wide product range and well qualified technical staff, provide the correct solution when space, storage or handling needs cannot be satisfied by the standard market offer.



Loader

Overhead loading devices



Range of products

- **AUTOMATIC STORAGE AND HANDLING SYSTEMS**



Static storage
Automatic classifiers



Prime Shuttle



People to contact at our stand

MATTEO ROLLA
STEFANO BAVELLONI
ELISABETTA MEZZEDIMI
FABIO PALELLA

SALES DIRECTOR
CHIEF OF OPERATIONS
MARKETING REP.
SALES OFFICE



Vitrum is finally back

In these past two years **Neptun** has worked hard, behind closed doors due to the pandemic, and it is now proud to present three new models and the Rock edger with further patented functions.

The Quick project has established itself as the go-to solution for NC vertical drilling and milling/grinding. Neptun now has the widest range of vertical NC machines for all work needs and company sizes.

Top of the range is **Quick 2 T8**, the uncompromising drilling/milling machine with amazing performances such as simultaneous tool change and axes positioning in less than 8 seconds.

Glass movement at 25 m/min, with positioning tolerance 0.15 mm and drilling speed up to 4 mm per second.

The patented DCS system optimizes drilling performance based on the quality of the tool, and allows you to maximize results even for non-expert operators.

Stopwatch in hand, the fastest drilling-milling cycle on the market.

The latest vertical NC, **Quickmill 100** single-head milling/drilling machine, will also be on display, ideal for companies with less intense production



and automation needs. Although built for industrial use, the Quickmill 100-22 has technical solutions that meet small budgets, with the trademark of 'still glass' processing.

At Vitrum, Neptun also presents the new series of **LV Evo** vertical washers which is among the top of the range, Wave and the budget model LV Top.

We have introduced a series of advanced technical solutions that make them have top performance at a budget price.

Finally, we present **Rock 10-45 AWA** equipped with all the accessories that make it the most per-

forming and automated edger on the market.

In addition to the well-known features, such as the heavy structure in cast iron, the indirect drive system spindle/motor, the patented kevlar conveyor for a long life and powerful PLC Touch screen, the model exhibited has three patent functions.

- ETS for squaring the glass to size, ideal for glass showcases and gluing.
 - AWA, the exclusive hydraulic system for the automatic management of the wheels
 - RC-4, the ingenious trolley system for processing parallelogram glass
- Live demos will be held at the company's booth at the show.

Range of products

- **VERTICAL NC MACHINES**
- **STRAIGHT LINE EDGERS**
- **ALL TYPES OF WASHERS**

www.neptunglass.com



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People to contact at our stand

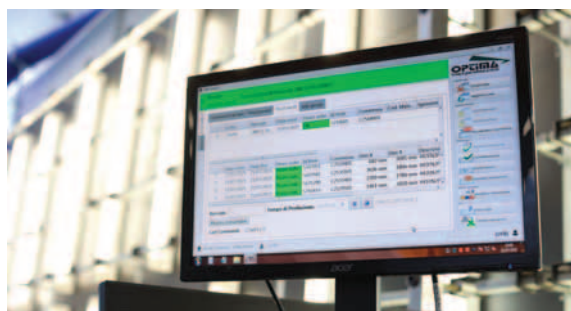
CRISTIAN ZANCA
ANDREA PAGANI

SALES MANAGER
PROJECT & PRODUCT MANAGER



Optima, established in 1994, drawing on the experience and professional knowledge of its founding partners, pools dynamism, competence and motivation. Today, the company has operations in the Information Technology field applied to flat glass processing in particular, and flat glass processing with machine tools in general.

The company's objectives are therefore to develop 'turnkey' ERP solutions, capable of managing the entire production cycle in an integrated and interconnected way: from the purchase of raw materials, to accessories and consumables, providing quotations and filling orders; scheduling production for machine management in relation to production batches, unloading and handling on racks, automated or manual delivery to customers with issuing of packing slips and invoices, through to energy certification and DOP (thanks to the exclu-



sive integration with glassAdvisor).

Optima's ERP systems become MES solutions, planning materials needs, scheduling production and showing the production start date for every order.

Starting with defining the processing times, each machine is assigned a calendar showing the respective workloads. The collection and transmission of the production status data in real time (Industry 4.0) enables scheduling and verification whether the expected dates will be met or not, and therefore facilitates synergy with the final customer.

Always Connected is the slogan Optima uses to identify WEB based Solutions, such as the well-known "WEB Dashboards" that provide customized reports of sales statistics, production, calculation of processing times, warehouse data, and the new WEB Orders, which is a WEB portal directly connected with the ERP management system that allows the final customer to check independently the progress of orders at any time or place new orders by defining materials, processes, measurements and delivery dates. Orders will go directly to the ERP for approval.



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www.optima.it

People to contact at our stand

PRODIM'S SALES AND SUPPORT TEAM WILL BE AVAILABLE
TO PROVIDE LIVE PROLINER AND PRODIM SOFTWARE DEMONSTRATIONS

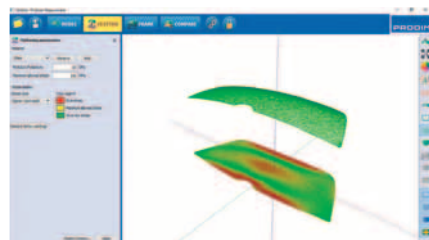
PRODIM

Proliner Generation X Glass packages – the best solution for digital templating

Prodlim has been supplying complete digital templating package solutions to glass templators and fabricators for over two decades now. The Proliner measuring device has always been at the centre of each package, completed by dedicated digital templating software for the glass industry. As a leading specialist, Prodlim invests heavily in the continuous development of the Proliner Glass packages to ensure they remain the best solution for digital templating. The Proliner Generation X Glass Packages have taken the market by storm.

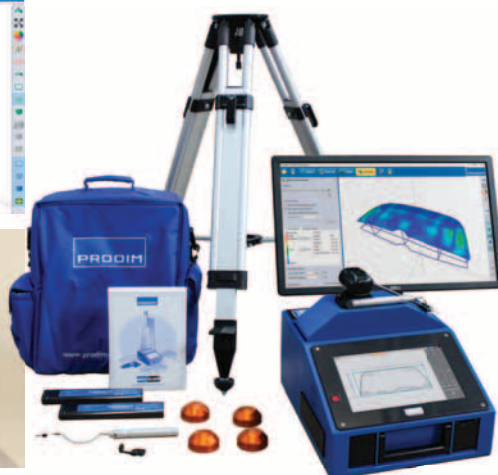
Proliner hardware: motion detection, easy handling and large capacity

Prodlim's Proliner X models include motion detection, allowing an alarm to go off if the Proliner is accidentally moved, preventing incorrect measurements. Other Proliner hardware features include the textured grip on the measuring pen for easy handling, good visibility of the measuring wire, excellent battery management and a large storage capacity.



Smartphone apps: Proliner File Transfer, Proliner Remote and Proliner Update

Prodlim's smartphone apps allow operators to connect their (Android) smartphone to the Proliner. The Proliner File Transfer app makes it easy to transfer files from the Proliner via Bluetooth, and from the phone, they can then be sent directly to the office. The Proliner Remote app enables operators to use their smartphone as the Proliner remote controller. Proliner Update is an app that uses the internet connection of the smartphone to update the Proliner software anywhere, anytime.



Prodlim Factory update 4.X

The latest Prodlim Factory 4.X update has further improved this highly successful desktop software, which is ideal for everyday CAD work. Proliner measurement files can be directly imported into the Factory Draw module for editing. Factory Draw is fast, easy-to-use CAD drawing software that further extends the functionalities of the Proliner Edit software. Factory Draw is easy to master and contributes to the easier processing and finalization of digital templates for production.

Prodlim Bent Glass: Measure - Model - Flatten - Frame - Compare

Prodlim's Bent Glass functionalities to measure and process digital templates of double curved glass constructions allow glass manufacturers to:

- create 3D Glass surfaces based on Proliner measurements;
- transform 3D surfaces to 2D unfolded production shapes;
- create digital support frames to construct moulds;
- 3D match surface models for IST and SOLL quality control.





RBM ITALIA is the world's leading reference for polishing wheels for flat glass processing.

Since its foundation in 1963, RBM has symbolised the state-of-the-art, continuing to innovate and offer increasingly higher-performing tools. Joining the Surfaces Group has strengthened RBM's commitment to the search for new solutions, seeing the development of newly designed hybrid materials that support the production process with increased and constant performance over time.

The X510 Cerium Oxide Wheels and the RP320 Arris Wheels are a direct result of this commitment. These hybrid bond wheels, which give incomparable results to any other wheel on the market, will be presented at Vitrum 2021.

The family of X510 wheels, dedi-

The New Hybrid Solution



cated to flat edge processing, combine the rigidity of cerium with the softness of rubber, guaranteeing versatility and durability, adaptability and process consistency. They eliminate residues of previous processing, protecting the sheet and giving a perfect and uniform brilliance and transparency, without a trace of halo. These absolutely unprecedented results set a new standard in processing.

The RP320 arris grinding wheels offer an exclusive hybrid grain combining the pluses of both hard and

soft grit wheels, guaranteeing the maximum brilliance of the arris, eliminating the risk of unevenness, scratches or splinters.

They adjust perfectly to edges, compensating for any defects in the line, works at very high speeds and remains stable throughout the process, always ensuring perfectly defined profiles and unprecedented tool-life.

These new tools help to reduce energy consumption, giving savings in the cost of tools in the long term and a guaranteed reduction in Total Cost of Ownership (TCO).

Visitors to Vitrum 2021 will have the opportunity to see these tools and other exclusive RBM products first hand, to really understand the characteristics that make them unique and inimitable.



hall 24 / stand C21-D22

People to contact at our stand

ELENA CALVI	CEO & OWNER
DAVIDE RICCHI	CO-OWNER AND R&D MANAGER
EZIO CALVI	PRODUCTION MANAGER
SIMONE VECCHI	SALES & TECHNICAL MANAGER
GIANFRANCO RIVAROLI	CHEMICAL TEMPERING CONSULTANT
ROBERTA COMETTI	INTERNATIONAL DEPARTMENT & PUBLIC RELATIONS MANAGER



RCN SOLUTIONS is ready to attend the first exhibition after many others have been cancelled or postponed due to the pandemic. Vitrum will, therefore, be even more important thanks to the build up for this edition, and the new activities connected to the event.

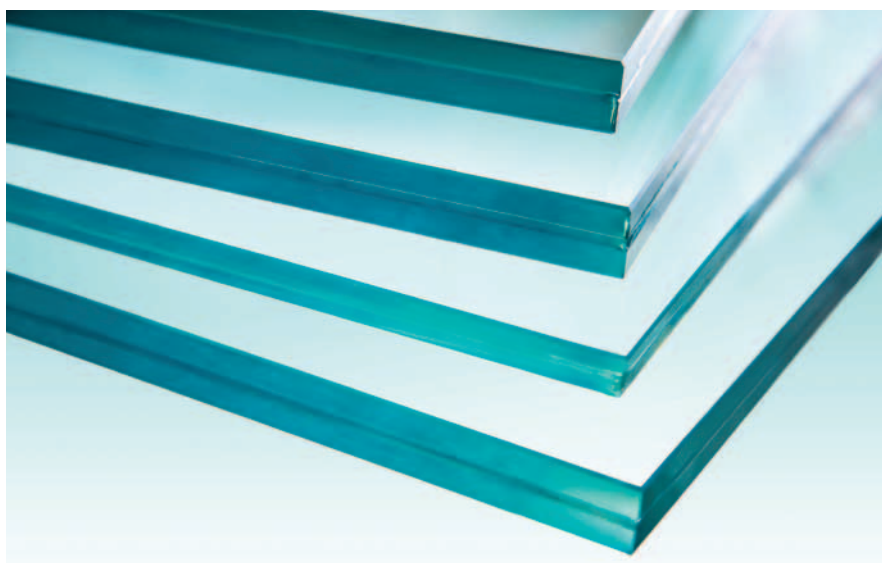
RCN will have on show all the features that make the company stand out on the market: innovations, high quality standards, ability to listen, and customization. All important aspects during exhibitions.

2021 is a year of important news for RCN as, in March, the company launched an absolute innovation: "RD CLEAN CONCEPT", a completely new concept in lamination. Designed and manufactured by RCN, this system provides clean edges at the end of the laminating process, without needing cutters or tools to remove excess EVA film.

This huge advantage allows to achieve effective maximization of production costs, with an eye on efficiency, if we consider that the laminated glass is ready to be installed at the end of the process. There is not other system on today's market that grants such successful results.

At Vitrum, the system will be displayed installed in an RCN laminating kiln, but it is equally important to know that all kilns

from other manufacturers can be equipped with this system, including customized machines and different ones too.



At RCN's stand, customers will have the chance to meet the inventor of this innovation: Davide Ricchi, and talk about the features of the "RD CLEAN CONCEPT" and production projects with him.

A wide range of solutions in lamination with different combinations to increase production and facilitate logistics will also be available for discussion, responding to customers' requirements.

Other proposals consist of chemical tempering plants, from small laboratory kilns to bigger or customized plants, including the supply of pure potassium salts – thus granting complete, excellent chemical tempering.

REVA BF, the laminating interlayer based on a totally RCN chemical formula and development, is always one step ahead. The distribution of this product is increasing more and more thanks to its important specifications related to extreme transparency, adhesion and durability.

Bending kilns designed for special curves are just as important, and are receiving great attention, no longer just niche products, but now becoming an integral part of an RCN production layout named ISF – Integral Sequencing Framework – the complete production flow including bending, chemical tempering and lamination. RCN machines are "smart machines", namely machines that include the communication with other machines but also with persons and other devices thus responding to the requirements of Industry 4.0.

RCN's new application "Easy Connect" is the key instrument to have production under control at any time, in any place: production at hand with just one click.

Customers will have many reasons to visit RCN's stand to meet the company's friendly but professional team who merge views, ideas and actions to create something new and important.



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People to contact at our stand

GIANNI MAITAN	GENERAL MANAGER
MAURO PELLIZZARI] — LABORATORY DPT.
MICHELE FASSINA	
RICCARDO BOOZ	



Rollmac, the commercial branch division of Gemata Spa, world leader in the design and production of roller finishing and coating machines, is now introducing itself to the enamelling market as a reliable and expert partner in the supply of finishing machinery, from single machines up to complete lines. The experience acquired over the years in the global market has brought the branch to offer final users complete know-how service and support to project completion.

ColorGlass is the single-roller machine, suitable to the enamelling and design printing of glass sheets by means of an engraved cylinder. Thanks

to its high versatility and ease of use, Colorglass is the indispensable working tool for in-house laboratory or production lines.

It is suitable from small dimensions such tiles and decorations to big sizes such internall walls, doors and façades.

Also on display at the show:

MULTIGLASS 1800 is the rollercoater for enamelling, coating and design printing on flat glass sheets by means of an engraved roller. The technology of the Multiglass machine is quite flexible and, without any particular changes or setting changes, special paints and products can be used to give the plate particular properties. Special care

has been taken in the uniformity and homogeneity of painting, that must not have overcoating, unpainted areas, drops or excess paint on the entry/exit edges.

GLASSLINE edge coater system designed for the complete automation of the Automatic Sheet Rotation (ASR) process. The ASR process is particularly useful for coating glass sheets which are too large, too heavy, or which cannot be handled manually.

Rollmac – Gemata is certified ISO 9001, ISO 14000, and Italian "Safe Work" standards

Live printing demonstrations and tests will be carried out during the show.



Range of products

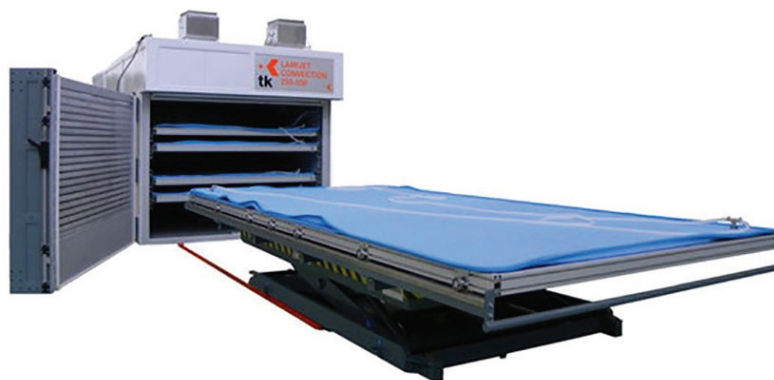
- ENAMELLING AND GLASS COATING MACHINES
- DRYING SYSTEMS
- EDGE COATERS
- CONVEYING SYSTEMS





Pure Italian Technology

For over 20 years TK has been one of the reference brands for the design and production of furnaces for the laminating, tempering, chemical tempering and HST of glass: forefront of Made in Italy technology, following Industry 4.0 guidelines.



CONTACT US

Ovens Division

TK Srl

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EVA interlayers Division

Strato™ by Satinal Spa

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STRATO EVA interlayers

STRATO® is the first complete line of EVA films produced in Italy, made out of thermosetting material that makes the interlayer insensitive to water, moisture and heat.

EVA STRATO® interlayers are certified according to European (UNI EN ISO) and American (SGCC - ANSI) standards and tested according to ASTM standards.

The products in the STRATO® product range are available in different colours and finishes and perfect for safety glass lamination both for architecture and interior design projects, without any risk of delamination.

SATINAL



www.satinal.it



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People to contact at our stand

ALESSANDRO SCHIATTI

PRODUCTION MANAGER

CINZIA SCHIATTI

SALES MANAGER

COMMERCIAL AND TECHNICAL STAFF



The glass industry is looking forward to this edition of Vitrum after a long period with restrictions and lockdowns. And **Schiatti Angelo** is no exception. In fact, while having to reduce travel and personal meetings, the company has replaced physical contact with digital technology, also using the time given to us by the pandemic to invest in research and development. The decrease in travel and meetings has stimulated Schiatti's creativity, giving life to a series of innovations that – applied to our machines – all go in the

direction of production optimization and automation.

The most interesting innovations concern, above all:

SME10: straight edging machine for the processing of flat edge and arris, mitring from 0° to 45°, cerium oxide polishing on the edge and chamfer; and

TFV1600: vertical drilling/milling machine which can be used as stand alone or in line with other machines.

AUTOMATIC LOADER/UNLOADER CVB WITH ROTATING TABLE

This tool, in particular, is the main innovation for 2021. On show for the first time to the public during Vitrum, it is already being used by one of our customers; the implementation allows to load and unload glass sheets in a continuous cycle, reducing unproductive technical lead times.

The structure consists of a fixed ring base, on which a slewing resting on rollers rotates which, in turn, slide on the circumference of the base. The turntable can be combined with existing loaders/unloaders.

Optimization, efficiency and practicality. All in Industry 4.0 perspective.

Schiatti will be at Vitrum 5-8

October, in Milan, at stand G21H30 PAV 24 to share news with visitors and professionals.

Range of products

- **STRAIGHT GRINDING MACHINES**
- **FOR PENCIL, FLAT EDGE AND**
- **ARRIS AND 45° MITERS (SINGLE OR COMPLETE LINES)**
- **DOUBLE EDGING MACHINES FOR**
- **PENCIL AND FLAT EDGE AND ARRIS (SINGLE OR COMPLETE LINES)**
- **BEVELLING MACHINES**
- **VERTICAL AND HORIZONTAL DRILLERS**
- **DRILLING CENTERS**
- **GLASS LOADER/ UNLOADER**
- **CORNER MACHINES**
- **CUSTOMIZED SOLUTIONS**



People to contact at our stand

OUR STAFF WILL BE AT YOUR SERVICE THROUGHOUT THE SHOW

SKILL GLASS preview



SKILL GLASS is an Italian company specialized in the manufacture and design of high technology numerical control machines for the processing of flat sheet glass, which, combined with special software with dedicated functions and modern and functional design, are simple and quick to use.

Key benefits

- Automatic reading and processing of workpieces
- Faster grinding and polishing with 2 simultaneous heads
- Automatic tool changer 24 positions
- Automatic tool preset and dressing
- Vibration-free and long service life
- Minimal maintenance
- Maximum precision and speed



E-D 101 is a vertical CNC centre for grinding, milling, drilling and polishing rectangular and shaped flat sheet glass. The machine can process both rectilinear and shaped flat sheet glass and combines all the technology for vertical drilling and milling with the features of a vertical grinding machine. Its main feature is its versatility, which allows for different types of processes at high speeds and optimal precision.

Oppositely placed heads ensure drilling is at maximum speed with top quality and precision, and countersinking can be performed with individual diamond tipped tools or with accessories of the drill bits.

The power and precision of the machine guarantee rapid and simple milling and multiple tools produce milled and grinded inserts in a few seconds.

DRILL 1600FF is a 5-axis CNC drilling machine designed for producing holes, inserts and countersinks on rectangular flat sheet glass with a thickness of 3-20 mm.

The machine is made up of five axes, X Y V Z W, and two electro-spindles which, as opposite drilling heads, create a double-sided drilling system that drills perfect holes.

This vertical drilling CNC is able to operate with extreme speed and precision thanks to the management of all the processes by numerical control and also thanks to the support of the double tool change.



www.skillglass.it



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People to contact at our stand

MR. JUKKA MANNER CEO
MR. MAURI SAKSALA SERVICE BUSINESS DIRECTOR
MR. ANTTI KOSKI SALES MANAGER

SPARKLIKE preview



Sparklike is the developer of the world's first non-destructive gas analyser for insulating glass. Sparklike devices are based on the company's proprietary and patented technology, which allows insulating glass manufacturers to measure the insulating gas concentration without having to break the insulating glass unit. Non-destructivity allows customers to deliver tested IG units, test already installed units or perform long term automated testing to their production. The gas concentration analysis can be carried out on double- and triple glazed insulating glass units with coating and lamination.



Sparklike Laser Integrated™ - automated insulating gas measurement station integrated in the IG-line



Sparklike Handheld™ for standard double-glazed insulating glass units

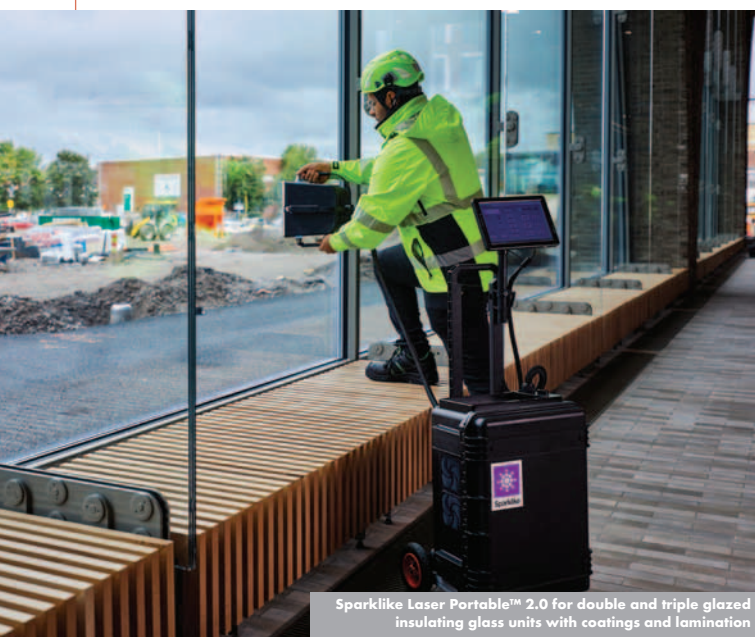
Sparklike Handheld™ and Sparklike Laser™ devices have become the de facto world standard for gas fill measurement of IGUs. The technology for Sparklike Handheld™ devices is based on Plasma Emission Spectroscopy, whereas Sparklike Laser™ devices are based on Laser Technology (TDLAS). All Sparklike products are designed and assembled at Sparklike Headquarters in Helsinki, Finland, and they are used on a daily basis by the leading insulated glass manufacturers, testing laboratories and window processors worldwide.

To meet tightening industry standards and keep pace with the fast developments of state-of-the-art glass

manufacturing, Sparklike has developed an automated insulating gas measurement station, Sparklike Laser Integrated™. The measurement station can be integrated directly to any IG-line to provide information on the gas fill right after the filling process. The Sparklike Laser Integrated™'s dimensions and speed are compatible with all kinds of IG-lines and the level of integration can be adapted based on the customer's needs and insulating glass line requirements.

Range of products

- **NON-DESTRUCTIVE INSULATING GAS MEASUREMENT DEVICES:**
- **SPARKLIKE HANDHELD™**
- **SPARKLIKE LASER PORTABLE™ 2.0**
- **SPARKLIKE LASER INTEGRATED™**



Sparklike Laser Portable™ 2.0 for double and triple glazed insulating glass units with coatings and lamination

www.sparklike.com



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hall 24 / stand B07-C10

People to contact at our stand

MARCO POGGI

AREA MANAGER



System Ceramics wealth of knowledge and skills in the field of digital decoration will allow the Fiorano Modenese company to be among the protagonists with Creaglass, a high-performance single-pass Drop On Demand inkjet digital printing system that offers important application solutions in the field of architectural and building glass, glass for household appliances, autos and means of transport in general.

This is a highly innovative technology for the sector, modular and flexible,

which System Ceramics has developed thanks to the dedicated business unit System Digital, resulting from the proven experience of the parent company in the world of digital ceramic decoration and transferred to the processing of similar materials and surfaces.

Creaglass consists of modules of 2.5 metres each, corresponding to the different phases of the printing process and can be configured at any time according to individual production or space requirements.

In addition to its modularity, this new technology also features extreme flexibility, allowing any type of artwork to be printed simultaneously in double or quadruple rows on glass with different shapes, sizes and inclinations.



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People to contact at our stand

TOMASINO TALAMONI
ROSELLA MITIDIERI

OWNER
EXPORT MANAGER



Talamoni, founded in 1994, is specialized in the production of cutting tools in hard metal for the glass and ceramics industry. Thanks to a well-stocked warehouse, orders are sent out the same day worldwide. Today, Talamoni is a trusted and proactive partner for many companies, with 50% of its turnover coming from exports.

Cutting wheels and discs

Talamoni cutting wheels and discs, sintered with state-of-the-art technology, are produced in fine-, extra-fine and ultra-fine micro-grain, and are turned by machines that guarantee consistent high-quality batches.

The physical characteristics of materials, metallurgical properties and all stages of production up to finished products, are examined by the company's quality assurance department before being assembled into tool-holders – also produced by Talamoni – guaranteeing ready to use and performing cutting heads.

"Diamant" cutting wheels are produced in various sizes and finishes depending on the type of glass to be cut, ensuring improved cutting quality, easy break-out, triple lifetime, while allowing greater thicknesses to be processed.

Talamoni products are used in diverse glass processing fields.

Flat glass processing

- 12.4-diameter hard metal



wheels for automatic- or semi-automatic cutting tables, with angles from 90° to 165° for cutting monolithic, stratified, laminated, and special glass;

- plastic wheel holders for Bystronic, Bottero, Bavelloni, CMS, CSM, Euromec, Hegla, Intermac, Lisec, Gfpm, Macotec, OCS, Tuomas cutting tables;
- metal or steel wheel holders for all cutting tables, CNC-controlled machines and hand-held cutters on the market;
- metal modules complete with wheels for safe, fast and secure tool changes.

Lubrication

Talamoni cutting fluids guarantee ideal lubrication of cuts, optimising wheel working lifetime, as the oil enters the cut, maintaining the tension of the glass, facilitating the opening of the cut.

Talamoni offers four different types of synthetic glass cutting fluid:

- T-OIL 3125 for thick glass – low volatility;
- 3130 T-OIL for shaped glass – medium volatility;
- 3133 T-OIL for monolithic glass – high volatility;

- 3232 T-OIL for magnetron, stratified, coated glass etc. – super volatility.

All products are registered and checked to ensure safe working areas and cutting tables.

Manual cutting

The company produces various models of oil-reservoir hand-held cutters with handles in blue or transparent plastic or blue or grey anodised aluminium all rigorously "Made in Italy".

Talamoni glass cutters are produced with wheels sharpened to different angles to satisfy diverse cutting requirements, while manual tools are destined for professional use in glassworks or artistic workshops.

Hollow glass processing

Wheels in hard metal with diameters of 5.0, 5.6 and 6.0 are used for engraving hollow glass in automatic crack-off lines. Talamoni also produces tool-holders for these lines, as well as a series of diamond tools for edge processing and glass beakers.



People to contact at our stand

TRIULZI QUALIFIED STAFF



PREVIEWED AT OUR BOOTH AN INNOVATED DESIGN OF OUR MACHINES, BEST DESIGN AND BEST PERFORMANCE



**COMPACT WASHER , TOSCANA
MODEL NEW DESIGN: MAXIMUM
PERFORMANCE AND MINIMUM
FOOTPRINT**

- Made entirely of stainless steel
 - Working width 1,000 mm
 - Min. glass size 100 x 50 mm
- The innovated design will be previewed at our booth

**JUMBO VERTICAL CLOSED TOP
- ENERGY EFFICIENCY
WATER SAVING WASHER**

- Made entirely of stainless steel
- Working height 3,300 mm jumbo sizes - to be integrated in line
- Automatic thickness adjustment
- Low Emissivity glass detection with frequency control
- Complete with high pressure prewash section with tank
- 6 cylindrical brushes/3 water tanks, heated water
- Controlled by PLC and touch screen operator panel
- Very silent operation

**HORIZONTAL SCRUBBING
- ENERGY EFFICIENCY WASHER -
WATER SAVINGS**

- Made entirely of stainless steel
- Working width 2,600mm
- Top scrubber section with disc brushes
- 3 shifts daily performance capability
- 4 cylindrical brushes/2 water tanks heated water

- Conductivity water sensor for water control, cascaded water flow
- Controlled by PLC and touch screen operator panel
- Antistatic bar fitted to exit of upper drying section
- Remote control
- Very silent operations
- Bevel gear transmission

**CUSTOMIZED
SOLUTION**



Range of products

- OPEN AND CLOSED TOP VERTICAL WASHERS
- HORIZONTAL WASHERS FROM MINI TO JUMBO SIZE
- LAMINATING GLASS LINES
- INSULATING GLASS LINES
- AUTOMATED SYSTEM FOR CURVED GLASS
- WET POWDER APPLICATION SYSTEM FOR AUTOMOTIVE
- ULTRASONIC BATH GLASS WASHING EQUIPMENT
- FIREPROOF GLASS WASHING EQUIPMENT
- CUSTOMIZED SOLUTIONS FOR ANY GLASS PROCESS



Tuomas returns to Vitrum 2021 - where the glass industry comes alive

TUROMAS will be present at the new edition of Vitrum. After a period of uncertainty, the glass industry is approaching a new era with the Fourth Revolution and the Spanish company is channelling efforts in the research, design and development of new machines, software, and solutions 4.0.



The Spanish brand will make the most of this opportunity to present its complete range of machinery standardised for monolithic glass, laminated glass or smart storage to visitors who come over to stand N15 - P14 in hall 22P, as well as offer them personalised solutions.

We have all gone through a period that has tested us, brought out the best in us and made us overcome situations that had never been encountered before. However, TUROMAS has not been idle during this time, and has been supporting its customers day after day, helping them to overcome this turbulent moment. It is at times like these that close support for each one of them is most necessary.

Industry 4.0 – Tuomas Software

The industry is approaching a new era with the Fourth Revolution. The large corporations are driving and strengthening digital transformation processes. The digital infrastructures, interconnections and automatic production systems, motors for competitiveness, will also have special emphasis at Vitrum 2021.

The launch of the TUROMAS Innovation and Special Development Centre (CIDET) has provided with an ideal place to devise and give birth to TUROMAS Software a new range of products based on Industry 4.0. These applications understand how industry works, based on the data provided by the machines themselves.

They run state-of-the-art software that guarantees ideal interconnection of the machines with any ERP Optimiser

available on the market.

The software solutions provide optimal use of resources to manage production from a single control interface, monitoring and controlling glass stock in real time or managing non-automated glass warehouses.

Information is power, and that has been the aim of TUROMAS: to provide the necessary information to

make our customers' day-to-day work easier - in a standardised, open way for all software manufacturers.

New machinery developments

During the last few years, the need to offer higher quality products with lower environmental impact has led glass suppliers to develop a wide variety of high-performance coated glass.

These new products have generated a demand in the market: **a decoating system capable of eliminating a wide range of coatings as well as managing the associated waste from the process.**

Tuomas, therefore launches a new generation of edge deletion systems able to meet the needs of today's market and the requirements of the most demanding customers: larger amounts of glass in multiple coating formats.

In addition, a new machine model has been developed to revolutionise the concept of glass loading. The RUBI 406VA is an autonomous cutting table for 6-metre glass equipped with automatic loading system – VA. Its innovative design enables the loading, cutting and automatic unloading of glass, ensuring maximum productivity and automation in the smallest possible space.



Range of products

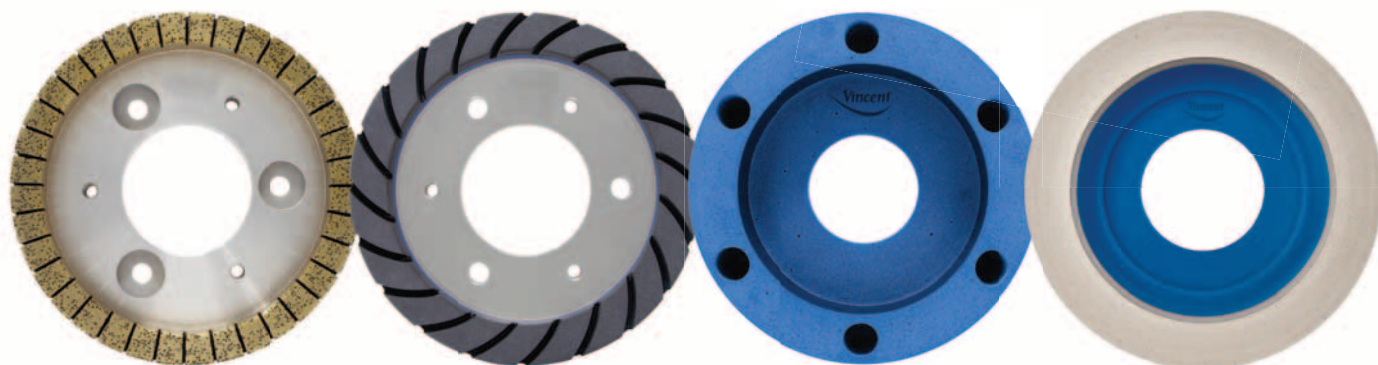
- **SMART GLASS STORAGE AND LOADING SYSTEMS**
- **FLOAT GLASS CUTTING SYSTEMS**
- **LAMINATED GLASS CUTTING SYSTEMS**
- **CUSTOMIZED PROJECTS**





People to contact at our stand

CARLO CRESCINI	SALES MANAGER
MORENO MOLON	SALES MANAGER
FRANCO DI NARDO	PRODUCT SPECIALIST



VINCENT provides the complete solution for the edging of glass on a whole double edging machine.

About three years ago VINCENT started a revolution in the flat glass processing on double edging machines introducing the STARFLEX set of diamond cup wheels. This universal set is able to grind a wide range of glasses, from 3mm mirror glass to thick glass, or even laminated glass, always using the same sequence of tools. The specifically developed bonds and the perfect match of the metal and resin wheels allow excellent removal capacity at high speed.

Vincent has also created CERIUM polishing cup wheels for the final steps of glass processing that can be used at very low pressure and high speed and still provide a perfect edge surface quality from the very first piece. CERIUM cup wheels ensure excellent final polishing quality that reduces roughness of the edge to a very close level to the glass surface.

In 2021, the sequence for double edging machines was completed with the introduction of polishing cup wheels, which give extraordinary finishing results in all working conditions. SURFACE polishing wheels are specifically

developed for the flat edge processing on double edging machines. On thick laminated glasses smudging is avoided due to the innovative deep bores. At the same time, excellent working continuity is achieved on thin glasses. Last but not least, Vincent outdid itself with the ARRIS polishing wheels, specifically developed for high quality finish of the arris.

Thanks to its R&D competence and technical application know-how, VINCENT is now able to offer a complete sequence of tools that grant easy machine setup for all glass processing on double edging machine. As a result, there is a considerable increase in productivity.

VINCENT wheels are available with different attachments and sizes to fit all machines available on the market. Moreover, VINCENT can also supply a full range of tools for straight line edging machines.

VINCENT is a leading manufacturer of cutting, grinding and dressing tools for Natural Stone, Quartz Agglomerate, Glass and Ceramics Tiles. Founded in 1974, headquartered in Thiene (Italy), which is also one of the main production sites and the R&D centre, VINCENT combines nearly 50 years of experience and know-how in the industrial abrasive market.



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GLASS MACHINERY PLANTS & ACCESSORIES is the leading international magazine for glass manufacturing, and is targeted at glassworks involved in the production and processing of hollowware and special glass (bottles, containers, household, lighting, technical, scientific, industrial and medical glassware).

GLASS MACHINERY PLANTS & ACCESSORIES is a bi-monthly periodical with about 100 pages of product news, current world news, focus on..., technical articles and dossiers, worldwide exhibitions, glassworks in the world, Yellow Pages, etc.



1989

Glass-Technology
International

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

Annual Guides



1990

Glass Industry
Directory 2021

The **GLASS INDUSTRY DIRECTORY** is a unique international annual guide which gives a complete overview of international glassworks and suppliers involved in hollowware and special glass manufacturing. About 300 pages of complete company profiles: addresses, management, sister companies, plants, number of employees, turnover, banks, year of company foundation, capital, trademarks, areas of activity, innovations, product-by-product and country-by-country breakdowns. The **GLASS INDUSTRY DIRECTORY** is the annual reference point for the international glass manufacturing industry comprising bottles and containers, domestic glassware, tubing, vials and ampoules, lighting glassware, technical and industrial glassware, scientific, laboratory and medical glassware and much more.



2013

FLATGLASS
2021 world directory

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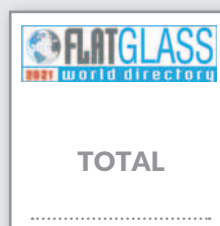
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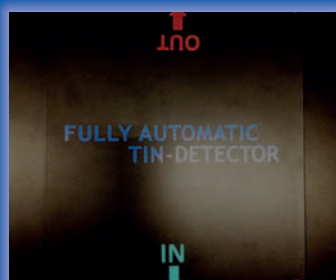
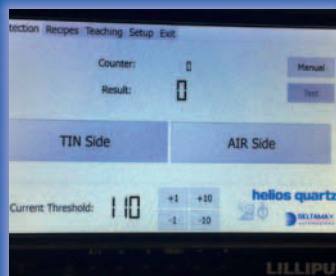
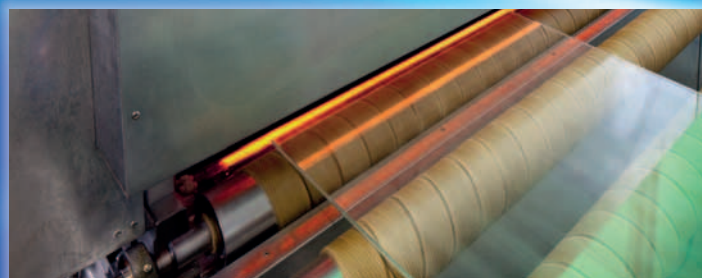
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2021/2022 Glass Events

12-15 September 2021	GULF GLASS	DUBAI - UAE
13-15 September 2021	GLASSBUILD AMERICA	ATLANTA (GA) - USA
5-8 October 2021	VITRUM	MILAN - Italy
1-4 November 2021	CONF. ON GLASS PROBLEMS	COLUMBUS (OH) - USA
3-6 November 2021	EURASIA GLASS	ISTANBUL - Turkey
2-5 December 2021	ZAK GLASS TECHNOLOGY	MUMBAI - India
16-18 February 2022	GPD-GLASS PERFORMANCE DAYS	TAMPERE - Finland
17-18 February 2022	GLASSMAN ASIA	SEOUL - South Korea
3-5 March 2022	GLASSPEX INDIA	MUMBAI - India
10-13 March 2022	COSMOPACK	BOLOGNA - Italy
April 2022 (date to be announced)	CHINA GLASS	SHANGHAI - China
11-12 May 2022	GLASSMAN LATIN AMERICA	MONTERREY - Mexico
6-9 June 2022	MIR STEKLA	MOSCOW - Russia
29 June-2 July 2022	GLASS SOUTH AMERICA	SAO PAULO - Brazil
6-9 July 2022	GLASSTECH MEXICO	MEXICO CITY - Mexico
20-23 September 2022	GLASSTEC	DÜSSELDORF - Germany
September 2022 (date to be announced)	GLASSBUILD AMERICA	LAS VEGAS (NV) - USA
26-28 October 2022	GLASSTECH ASIA	SINGAPORE - Singapore
15-18 November 2022	VETECO	MADRID - Spain
December 2022 (date to be announced)	ZAK GLASS TECHNOLOGY	DELHI - India

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IR fast medium wave twin tube emitters for:

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