

NOVEMBER 2023

# HORN NEWS

## CONTENT

NEWS FROM JSJ JODEIT

HALDYN GLASS LIMITED STARTS UP GLASS FURNACE  
IN INDIA

HORN BUILDS ANOTHER GLASS MELTING FURNACE  
FOR THE AMBERG KRISTALL-GLASSFABRIK GMBH

WIEGAND-GLAS RELIES ON TECHNOLOGY FROM HORN  
GLASS INDUSTRIES AG FOR THE FIFTH TIME IN SUCCESSION

SATISFACTORY RESULTS WITH THE NEW  
CONTACTLESS GLASS LEVEL MEASUREMENT HRD-BEAM

WHAT DO YOU DO AT HORN?  
INTERVIEW WITH VICTORIA NEUES

HORN GLASS INDUSTRIES AG IS COMMITTED TO  
SUSTAINABLE ENERGY AT THE PLÖSSBERG SITE

HORN INVESTS IN PRODUCTION AT THE PLÖSSBERG SITE

HORN EMPLOYEES EXPERIENCE  
THE MAGIC OF ACTING

12 TRAINEES START THEIR CAREERS AT  
HORN GLASS INDUSTRIES AG

NEW ORDERS

**HORN**  
GLASS INDUSTRIES

## DEAR READERS,

once again, an interesting year in the glass industry has passed. The first winter in a warlike period in Europe is behind us. Rising prices in all sectors have meanwhile settled at a high level or are even falling again. The geopolitical and global economic conditions determine all our actions and also have an influence on the glass industry. For example, the pressure on the energy transformation towards the use of renewable energies in the glass industry remains high. The trade-off between sustainable or future plant concepts and, at the same time, competitive glass production now and later, is a difficult balancing act for our customers.

HORN is already in a position to offer a comprehensive range of products, from tried-and-tested conventional to hybrid/superhybrid and all-electric melting furnaces. Furthermore, there are already elaborated solutions for the successive use of alternative heating media such as hydrogen. In the end, however, it often turns out that the framework conditions for sufficient ecologically but also conventionally produced electricity and hydrogen are not available in the first place. So projects are stopped, postponed or in some cases abandoned altogether. Nevertheless, rising emission fees will sooner or later induce the glass industry to switch to sustainable energy sources.

Global warming simply does not allow us to continue burning fossil fuels without restriction, despite stable or even falling prices for these energy sources.



So we at HORN Glass Industries AG are well advised to offer our customers advanced technologies for the use of renewable energies.

A bigger pain in the neck for us are the still high end-customer prices for consumers. Inflation has slowed down, but prices are not going back to pre-crisis levels. A reduction in consumer purchasing

power means that fewer alcoholic beverages are being bought and that people are being more frugal in the food sector. Glass packaging is needed less as a result. Plans for new glass melting furnaces therefore remain in the drawer for now, waiting for a better time. We will see how the situation unfolds. However, experience shows that crises in the past - be it the financial crisis in 2008 or the Corona crisis in 2021/22 - have had an impact on the economic activities of HORN Glass Industries, but have never caused major damage. On the contrary, the time could be used to consolidate and deepen product improvement.

The order books continue to give us optimism for the future. Our engineering capacities are well utilised and our production facilities are full with orders until mid-2024. This is due to various large orders in 2023. Based on these orders, which our valued customers have placed with us, we look forward to a busy, but on the other hand also promising future. We show you a list of current projects in this edition of the News.

The new commissions for turn-key plants and glass melting furnaces also call for more staff. Here we have reacted quickly and hired new, competent personnel. Our increase in new workforce also confirms healthy growth.

At the beginning of 2023, HORN Glass Industries had around 360 employees in Germany and now has around 380. Worldwide, HORN even has over 500 people on its payroll.

With these new employee figures, the Special Glass Division also continues to develop in an interesting way. The acquisition of the furnace manufacturer for special glass, JSJ Jodeit from Jena, has proven to be the right move. Orders for new all-electric glass melting furnaces demonstrate this. The internal processes in and between the new subsidiary and HORN have now been strengthened. The efficiency gained can therefore be fully invested in the new projects.

It will also be thrilling with regard to our two research projects, which we announced last year. These will go into operation in 2024. Euphonious names like Zero-CO2Glas and GreenGlass4.0. will provide us with new knowledge about the use of hydrogen, low carbon raw materials and highly flexible electric furnaces with over 200 tonnes of glass per day.

So we will help shape the future and I would like to take this opportunity to send my best regards and wish you, your colleagues and your family a happy and healthy future.

We appreciate your support and look forward to continuing our successful partnership in 2024 with HORN employees and our valued partners, customers and suppliers.



**Yours, Stefan Meindl**

NEWS FROM JSJ JODEIT

WHAT?

CUSTOMER

**Signing of the contract** for the dismantling and rebuilding of a hybrid furnace which has several electrically heated forehearth

Auer Lighting GmbH  
(Germany)

**Incoming order** for a delivery of spare parts for the general repair of two opal glass furnaces

Borosil Ltd.  
(India)

Development of a new type of **top electrode** for all-electric melting tanks, which was installed and tested at a customer.

**Innovations:** reduced cooling water losses, reduced electrical losses, optimised electrode structure/design

**Commissioning** of the borosilicate glass furnace with 25 tonnes of commercial glass per day is expected to be completed in early 2024

Borosil Ltd.  
(India)



## HALDYN GLASS LIMITED STARTS UP GLASS FURNACE IN INDIA

**Haldyn Glass Limited, formerly known as Haldyn Glass Gujarat Limited, was established in 1991 and is part of Haldyn Corporation Limited (formerly known as Haldyn Glass Limited), based in the Indian state of Gujarat. Looking back at a track record of nearly six decades, Haldyn Corporation Limited specialises in the manufacture of brown and white soda lime container glass. Customers worldwide from the food, pharmaceutical, soft drink, spirits and beer industries have trusted the quality standards of the glass expert for many years.**

In May 2022, HORN Glass Industries AG received an order from the Indian company for the construction of furnace 3, an end fired furnace with 5 production lines. The plant is designed with a melting area of 86.14 m<sup>2</sup> to produce a total of up to 280 tonnes of glass per day. In this project, the HORN scope of supply included the

engineering of the refractory material and the steel structure, critical equipments, combustion system and a HVR 500F® HORN Batch Charger, the supervision, the tempering and commissioning. The melting furnace is characterised by the use of the HORN E-Fusion-Power Boosting as well as the HORN HRD-BEAM glass level measurement.

The technology supplier HORN would like to express its sincere thanks to Haldyn Glass Limited for the trust placed in the company and the excellent cooperation between Haldyn and the HORN construction management on site, as well as HORN project management and HORN logistics. Despite the tight delivery times and bottlenecks, the equipment was delivered to India in time for the start of construction. Thus, the glass flow took place on 06.09.2023. The entire project was even successfully commissioned before the set target date.



## HORN BUILDS ONCE AGAIN GLASS MELTING TANK FOR KRISTALL-GLASFABRIK AMBERG GMBH

**RIEDEL Austria / Tiroler Glashütte GmbH, an Austrian company founded in 1756, is one of the largest producers of crystal glass in Europe. The manufacturer is famous for its development and production of unique stemware that is specially adapted to different types of grape. Today, RIEDEL is the preferred brand of wine lovers, beverage specialists, restaurateurs and consumers all over the world. The products of the RIEDEL group of companies are marketed under the established traditional brands of Riedel, Spiegelau and Nachtmann.**

Part of the production of Riedel drinking glasses is manufactured in the Kristall-Glasfabrik Amberg GmbH in the Upper Palatinate. HORN built the melting tank for the factory in Amberg back in 2002, which was also repaired by HORN in 2013. 10 years after this repair, HORN, as the world's leading supplier, now received the order to build a new melting tank.

HORN was responsible for both the demolition and the construction of the new melting

furnaces. This is a crossfired recuperative furnace with 4 forehearth, which can produce up to 35 tonnes of tableware per day.

HORN's scope of supply included the complete planning and implementation of the new furnace. The requirement was to design the new furnace in such a way that future glass production would be more sustainable. By making specific adjustments to the doghouse and also to the burner settings, it was possible to significantly reduce gas consumption and thus successfully achieve the goal of more environmentally conscious glass production.

In June of this year, the time had come: the completed furnace was heated-up by HORN and successfully commissioned. On 25.07.2023, the first glass flowed out of the new furnace.

HORN would like to thank all the subcontractors involved and Kristall-Glasfabrik Amberg GmbH for the good cooperation and wishes them a successful future.

## EXHIBITIONS 2024

Next year too, HORN Glass Industries AG will be on the road again at various trade fairs all over the world.

Here are the dates to remember.

EXHIBITION	DATE
Mir Stekla	27 February - 1 March 2024
China Glass	25 - 28 April 2024
Glassman Latin America	15 - 16 May 2024
Glasstec 2024	22 - 25 October 2024

## WIEGAND-GLAS RELIES ON HORN GLASS INDUSTRIES AG TECHNOLOGY FOR THE FIFTH TIME IN SUCCESSION

**The family-run Wiegand-Glas Group is a well-known German container glass manufacturer dedicated to innovative packaging concepts made of glass and PET. With more than 450 years of experience in development and production, the glass expert has become one of the most successful manufacturers of container glass in Europe. In its total of four plants, located in Steinbach am Wald, Ernstthal, Großbreitenbach and Schleusingen, more than eight million glass containers are produced daily for the beverage and food industries.**

For the fifth time in a row, Wiegand-Glas commissioned the glass melting technology specialist HORN to build a glass melting furnace. The new end fired furnace for the plant in Steinbach am Wald will produce amber container glass in the future.

HORN's scope of supply includes the glass drain and the dismantling of the existing furnace. This was followed by the construction of the end fired furnace with the associated engineering of the refractory material and the steel structure, as well as the tempering, full melting and commissioning. The new furnace was also equipped with a new combustion system, an E-Fusion boosting system, various furnace equipment and a HORN HVR® 700 S-2P batch charger.

The furnace is characterised by state-of-the-art technology. Side electrodes for melting boosting as well as bottom electrodes for barrier, refining and throat boosting and forehearth boosting were installed. In addition to the new burner holders, a swivelling stirrer unit was also installed for the first time in this furnace – both innovations from HORN.

The glass flow was completed on schedule. HORN would like to thank Wiegand-Glas for the renewed trust placed in them and for the consistently good cooperation. The furnace manufacturer is already working on a follow-up order for another new furnace, which will be built at the Ernstthal plant.



## SATISFACTORY RESULTS WITH THE NEW CONTACTLESS GLASS LEVEL MEASUREMENT HRD-BEAM

**After HORN Glass Industries AG had already presented the new glass level measurement last year at the leading trade fair in the glass industry - Glasstec - very satisfactory installations of the measurement on melting tanks by means of radar waves have meanwhile become apparent. The major advantages are the simple installation, the low-maintenance operation and the trouble-free, precise measurement.**

The radar sensor can be placed on the superstructure of a forehearth or the distributor trough by means of a simple construction. An opening of 80 mm diameter is sufficient to give the radar waves access to the glass surface. In this way, all mechanical components are outside the forehearth. A water-cooled housing allows an environment of up to 250 °C.



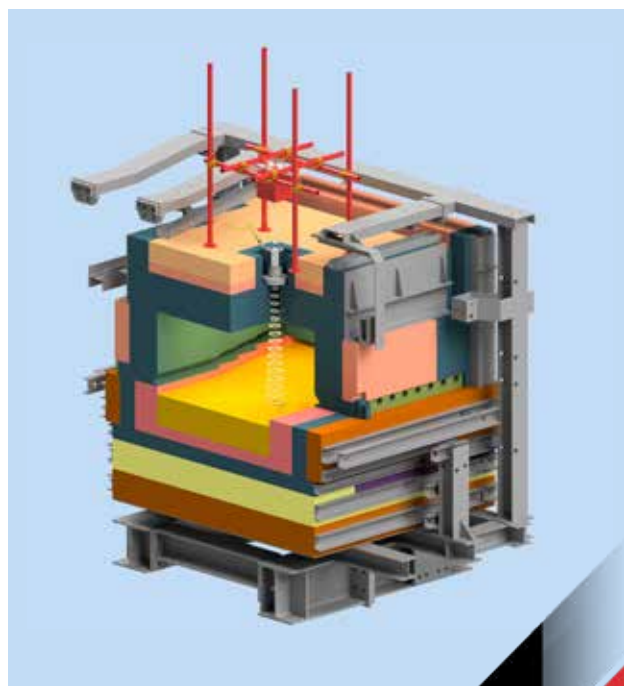
A special ceramic sealing plate on the measuring aperture ensures that radar waves can penetrate it, but no exhaust gases can escape. Consequently, no condensates can settle on the radar sensor. Maintenance work is reduced.

The 60 GHz waves cannot be deflected by disturbing cooling air or the influence of the glass colour. They therefore find their way unhindered to the glass surface.

They are reflected by the glass surface and returned to the sensor. The time required for this is converted into a glass level signal by the electronics.

It is well known in the glass industry that a precisely and constantly adjusted glass level is of enormous importance. The glass level has a direct influence on the gob weight and thus on the final glass product. A correctly adjusted glass level thus contributes to the reduction of rejects. It also extends the service life of the refractory material. A fluctuating glass surface increases corrosion at the purging edge and reduces the service life of the furnace. The HORN HRD-BEAM measures the glass level accurately to  $\pm 0.1$  mm at a distance of up to 2 metres.

Thus, the installations already in operation and the order status show that the switch from conventional measurements such as laser, tipping or radiometric measurements to radar-based measurement was the right step. Low maintenance, a long furnace life and little reject quote will thank the glass industry.





## WHAT DO YOU DO AT HORN?

**VICTORIA NEUES**

**QUALIFICATION:** Graduate engineer

**WITH HORN SINCE:** June 2021

**AREA OF RESPONSIBILITY:**  
Project Manager



### WHAT BROUGHT YOU TO HORN?

After my studies in industrial engineering with a specialisation in materials technology, I was initially unsure in which direction I wanted to go, as the course is very broad. Following a recommendation, I applied to HORN Glass Industries. After an interview, I could imagine my professional future very well at HORN, which is why I then also chose HORN as my employer.

### WHAT DO YOU DO AT HORN?

As a project manager, I am both the main contact for customers and the interface between them and the various departments at HORN. In normal day-to-day business, this means creating and adhering to schedules or budgets, project meetings and the associated writing of minutes, personnel/construction site planning, customer visits and, of course, lots of emails and phone calls. You are automatically responsible for every task that no one is really responsible for - this can also be a last-minute flight to Belarus when something urgently needs to be brought to the construction site. A big challenge and at the same time a prerequisite for the job is

keeping track of all projects and making sure that nothing essential is forgotten. But of course you're not alone here, you're always supported by the specialist departments.

### WHAT DO YOU LIKE MOST ABOUT YOUR JOB?

First and foremost, I have always enjoyed organising and planning. You regularly have a change from the daily office routine with business trips all over the world and accompany the project from start to finish, so to speak. By working with all departments, you get to know many of your colleagues and can acquire a wide range of knowledge.

### WHAT IS NEW OR WILL BE IN THE FUTURE?

With regard to the energy turnaround, one notices the growing focus on electric heating or alternative firing methods for the melting tank. The development towards Industry 4.0 is also very exciting, with intelligent technology opening up completely new control options for the melting tank. The automated system constantly records and evaluates data in order to adjust the settings accordingly.



## HORN GLASS INDUSTRIES AG RELIES ON SUSTAINABLE ENERGY AT THE PLÖSSBERG SITE

**4,802 m<sup>2</sup> of installed solar panels, which are mounted on the production facility as well as on parts of the existing buildings, have now been put into operation. The technology company is thus taking an important step towards sustainable energy supply.**

Whether for glass melting furnace for container glass or for complete plants. Glass manufacturers worldwide rely on the know-how of the technology company HORN Glass Industries AG. At the Plößberg site, around 380 employees – 130 of whom work in production – ensure every day that the individual components of a furnace or that of an entire glass factory are produced and shipped on time. Because 90 percent of all HORN products are still manufactured at the headquarters.

Last but not least, such production also involves a certain amount of

energy. In order to minimise the associated CO<sub>2</sub> emissions in the long term and to be able to produce more sustainably in the future, HORN is now relying on renewable energies. In the last 13 months and in cooperation with the company SM Energy GmbH, a photovoltaic system with an output of almost one megawatt has been installed in Plößberg. In mid-September, this was successfully commissioned by Stephan Meindl (Member of the Board of HORN Glass Industries), Markus Zant (Head of Projects & Technology at HORN Glass Industries AG) and Markus Sporrer (Managing Director of SM Energy GmbH) together with the respective employees responsible.

A total of 2,498 modules were installed on an area of 4,802 m<sup>2</sup>. In total, the plant is expected to produce 935 MWh annually. „Our goal is to cover up to 50 percent of our own energy needs with our photovoltaic system in the future,”

explains Markus Zant. „The photovoltaic system on our production halls and warehouses as well as the administrative buildings is an important step towards sustainability.” The electricity generated is used both in administration and in production for various devices and robots, and it will also be used to supply the newly installed charging station for future electric pool vehicles.

However, before the system could be put into operation, the old transformer house first had to be replaced by a larger one. The new transformer now ensures that the energy generated can be fed into the grid. At the same time, the existing photovoltaic system can be expanded without any problems. It is planned to equip all existing buildings with solar modules in the future.



## HORN INVESTS IN PRODUCTION AT THE PLÖSSBERG SITE

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**With the implementation of state-of-the-art equipment, HORN Glass Industries provides its production staff with an even more productive and user-friendly working atmosphere. With the investment in a new, more efficient bending machine and two new storage towers, HORN has acquired tools that enable it to save working time and resources and at the same time to react even more flexibly to customer requirements.**

HORN has invested in the TruBend 5230 from TRUMPF, an all-rounder characterised by simple and intuitive operation. This highly automated bending machine easily masters very small batches and frequently changing production orders. It is also capable of effortlessly reading in 3D drawings, creating the necessary unwinding and automatically setting up and adjusting dies and punches with millimetre precision.

With this investment, the tedious manual work, the time-consuming retraction of the machine during product changes and inaccuracies during bending are also a thing of the past, as the machine has an integrated angle measuring system as well as a bending aid. This innovative feature significantly relieves the physical effort of the employees and simplifies the bending processes, thus increasing efficiency and precision.

Furthermore, Apfel GmbH's two new storage towers make the work much easier and the storage space

more efficient. Storage in the fully automated high-bay warehouse also has the advantage of reducing unnecessary journeys, as the required goods are automatically brought to the unloading point at the touch of a button.

As a forward-looking technology company, it is important to HORN Glass Industries AG that it continues to develop. In order to continuously improve and advance work processes and the resulting products, further investments are already planned and in some cases already commissioned.



## HORN EMPLOYEES EXPERIENCE THE MAGIC OF ACTING

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**In June of this year, some of HORN's employees experienced a very special adventure - they were allowed to immerse themselves in the world of acting. This unique experience**

**was part of an exciting project to produce a new advertising film designed primarily for HR purposes. For one week, the Plössberg location became a film set. HORN was also allowed**

**to hold a day of filming at Wiegand-Glas in Steinbach am Wald in the newly built glass melting furnace as well as at the Lamberts glassworks in Waldsassen.**

Standing in front of the camera opened up a completely new and also unfamiliar perspective for the employees. In the setting of the film set, they were able to demonstrate their talents and natural charisma while posing and acting for the camera. The project not only provided an opportunity to present the individual personalities and skills of the team members in a new light, but also created an inspiring and creative atmosphere that further strengthened teamwork.

HORN is proud to be able to call such committed employees its own, who have accepted the new

challenge in order to present the company to the outside world. Last but not least, this project illustrates the positive working atmosphere of the melting tank manufacturer.

A big thanks is due to the employees who supported the project both in front of and behind the camera, as well as to Wiegand-Glas and the Lamberts glassworks in Waldsassen for their support and the provision of the film set. A big heartfelt thank you also to the fantastic team from Bewegterblick for the conception and handling of the new HR film.



## 12 YOUNG TALENTS START THEIR CAREER AT HORN GLASS INDUSTRIES AG

**HORN began the new training year with 12 new trainees on September 1, 2023. The young men and women started their working lives in five different professions and look forward to an exciting and varied apprenticeship.**

The induction of the trainees begins with getting to know the company and its work processes, as well as their new colleagues. An extensive tour of the company in the first few days gave them an immediate insight into the business. In addition to a structured introduction, the focus is on the individual and successful develop-

ment of each trainee, which can be ensured by a personal supervisor.

Joint lunches and trainee excursions together with the other 20 or

so trainees ensure that they get to know each other better and facilitate integration into the new team.





## NEW ORDERS

CUSTOMER	COUNTRY	FURNACE	PRODUCT
-	Italy	35 t/d All Electric Furnace	Container Glass & Tableware
VICHISA	Mexico	300 t/d End Fired Furnace	Container Glass
SNJ Group	India	230 t/d End Fired Furnace	Container Glass
Pragati Glass Gulf LLC	Oman	200 t/d End Fired Furnace	Container Glass & Tableware
JG Containers	Malaysia	210 t/d End Fired Furnace and electric boosting system	Container Glass
-	Ukraine	Repair End Fired Furnace	Container Glass
Gerresheimer Lohr GmbH	Germany	390 t/d Oxy Hybrid Furnace	-
Heinz Glas Działdowo Sp. z o.o.	Poland	Modification Forehearth	Container Glass
Forschungszentrum Jülich GmbH (IPGR)	Germany	Test Furnace - ZeroCO2Glas	-

Funding project Energy and CO<sub>2</sub> savings with ZeroCO2Glas.

Funded by: Federal Ministry of Economics and Climate Protection based on a resolution of the German Bundestag.

Research partners: GHI - RWTH Aachen University, IOB - RWTH Aachen University

Technology partners: IPGR - RWTH Aachen University

## IMPRINT

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