



The industry has recognized Teutemacher's expertise for decades. And with good reason, for this glass refiner and insulated glass manufacturer is clearly doing everything right.

Teutemacher Glas GmbH: Maximal Value Creation

Unlike many glass companies, who viewed insulated glass merely as a means of increasing market share during the IG boom of the 1970s, Teutemacher Glas, founded in 1920 by the grandfather of today's owner Carl Pinnekamp, started as a grinding and mirror shop. Today, Teutemacher is a medium sized state-of-the-art glass company with 80 employees. Thomas Pinnekamp, the son of Anne and Carl Pinnekamp and a member of the Executive Board, is responsible for glass technology (glass and metal construction).

Teutemacher's product line, always broad and intelligently designed, grows more balanced from year to year. The company sees trends early, adopts what works, and implements new capabilities with a sense of proportion. Teutemacher Glas integrated metal construction more than twenty years ago. Recognizing the ongoing trend toward high-quality safety glass, Teutemacher acquired a heat treatment furnace two years ago. Utilized for top-quality tempered and insulated glass, but also for difficult-to-manufacture interior solutions and showcase construction. The focus is on premium products, produced with consistent quality and minimal tolerances.

New, high-quality end products are created from safety glass and metal – value creation is enhanced consistently. In addition to insulated glass for window manufacturing, Teutemacher offers finished and semi-finished glass and metal



Work preparation at Teutemacher: here, batches are combined, storage spaces specified, and production throughput defined for each product. Thanks to A+W Production, this is all done without paper and with the greatest planning intelligence: for efficient production, orders are separated according to technical criteria, and then recombined in shipping at the end.

products. The metal constructor gets everything from a single source – for example, the appropriate profile, including the glued-in insulated glass. Or the structural glazing element including the integrated bracket for precise mounting.

Teutemacher also specializes in small-format, highly insulated glass for door inserts, two or three-layer transparent or matte items with countless patterns and refinements.

Careful, expert advising of end customers is a component of the company's product philosophy.

Optimized processes – intelligent production network

For profitable manufacturing, a challenging product portfolio requires state-of-the-art production technology controlled by the best industry software. Teutemacher Glas has known this since the 1970s, when Carl Pinnekamp's father recognized the potential of modern cutting optimization and became an A+W customer: the XOPT optimization system ensured maximum yield in cutting even at that time.

Since then, control of machine technology with intelligent software has become part of Teutemacher's corporate philosophy. When it comes to commercial software, this Warendorf-based glass refiner has always been up-to-date and piloted the first A+W order processing system with graphical user interface.

Carl Pinnekamp assesses the cooperation with A+W: "Project implementation was usually more complicated than we would have thought, but everything always went well in the end." Production Manager Zischke assesses A+W's service: "The A+W employees in technical service, many of whom we have known for years, are all experts and they always help us when we have problems."

2014: it's becoming more difficult to steer the enormous variety of sheet sizes and types through complex production with minimal waste. Teutemacher decided to introduce a state-of-the-art sorting system controlled by A+W DynOpt, which can arrange the sheets in order to achieve maximum yield and pass them along to downstream technologies – in insulated glass manufacturing through a direct connection to the production line; for the grinding shop using docked slot carts.



Coordination in the TG production: Managing Director Thomas Pinnekamp with the head of IT and the furnace operator (from left)

Clever organization begins in cutting!

Most users of sorting solutions in cutting limit themselves to optimal supply of the insulated glass line. With today's online connection, this means significantly faster cutting without sorting and improved quality thanks to touch-free sheet handling. The insulated glass line is supplied constantly, throughput improves greatly. Broken sheets are discarded, recut immediately, and they can often still be delivered with the intended order.

However, at Teutemacher, the company has taken things a step further: with the completely automatic filling of the slot carts by the SortJet shuttle, all production is controlled from cutting. No sorting or searching is required in the cutting area. The glass is always ready in the correct sequence for the next machine or furnace, regardless of the sequence of sheet sizes. Special sheets for the IG area, which do not run on the main line, are also transferred here.

Completed grinding batches are reported ready by the A+W Production Monitor. This way, the grinding status is always available in order processing and customers can be informed accordingly.

Using residual sheets optimally

With the incorporation of the space-saving ReMaster residual sheet storage system, optimal material utilization is guaranteed even with Teutemacher's broad product line. Set-up times for removing residual sheets and manual feeding are omitted almost entirely.

Controlled by the A+W Realtime Optimizer, the first cuts are made according to the situation and inserted into ongoing production processes in real time. The system always searches for a first cut in ReMaster before searching for a new sheet. Here, the best possible waste ratio is considered. This is how individual sheets of one glass type or individual subplates can be cut with little waste and minimal effort.

These combined technologies give Teutemacher – a medium-sized company – one of the most intelligent cutting and sorting solutions in the European flat glass industry. Carl Pinnekamp: “I don’t know of any better optimization solutions ...” This solution package was subsidized by the European Fund for Regional Development because it’s so efficient.



Teutemacher is well-known for the highest processing quality. The CNC machines in the grinding shop are controlled with intelligent interfaces such as A+W CAM-DXF – reliable communication between man and machine.



Managing Director Carl Pinnekamp (center) and Production Manager Heiko Zischke (right) with Heiko Schuh (A+W Sales Director Europe and Teutemacher’s customer support agent) in TG production

Green production

However, Carl and Thomas Pinnekamp and the Teutemacher team don’t just care about reducing costs, they also care about CO₂ emissions: Teutemacher is a “green” company that is recognized locally as an eco-profit company.

In addition to many energy-saving measures, the majority of which originated with employees’ ideas, this is thanks largely to improved waste ratios and the drastic reduction of residual sheets due to the use of DynOpt combined with the SortJet. Optimized energy consumption also played an important role in the selection of a tempering system, for the manufacturing and processing of flat glass involves enormously energy-intensive processes. A lot of glass is saved thanks to new optimization and automation methods – and glass that doesn’t have to be produced at all always has the best energy footprint of all.

Teutemacher trains

Teutemacher’s broad and challenging product line requires well-trained employees who can be deployed flexibly in different areas. Teutemacher therefore actively encourages employee development and trains young people to be flat

glass mechanics, glaziers, and industrial sales representatives. Teutemacher always employs up to twelve trainees – and most of them remain at the company after their training.

This is what the future looks like!

With its unique product mix, a stable group of regular customers, and a well-trained and highly-motivated staff, Teutemacher Glas GmbH is a very well-positioned, innovative family-owned company that is well-prepared for future challenges.

Thanks to thoughtful investments, this Warendorf company is a big step ahead of its competitors – for craftsmanship and high technology belong together when the focus is on top quality and the best customer service.

Another part of Teutemacher’s success is due to its ability to counteract the ruinous price drop in the flat glass industry. Carl Pinnekamp has prepared the company for this with his years of association work: “Today, our employees make outstanding products. At the same time, we produce cost-consciously and reliably. Customers recognize this with a fair price.”

► Contact: www.teutemacher.de



Cutting with the highest performance, minimal waste, and desired sequence for IG and processing: the sorting system controlled by A+W DynOpt was custom-tailored for Teutemacher’s complex requirements.



All flows in production are controlled in real time; here, for example, the situation in ReMaster and on the IG line.