

Germany

150 Years of HÄNDLE: From Workshop to Globally Accepted Partner

At the beginning of the HÄNDLE era in 1870 was a machine shop-cum-smithy set up by the young master machinist by the name of Karl Händle in a rented workshop in Dürrmenz/DE. With the engineering of the first brick press in 1890 for a neighbouring brickworks, the foundation was laid for machine engineering for heavy clay ceramics. The further development of the de-airing pug mill to a de-airing extrusion unit gave the company international standing, making it a leading manufacturer in this field. We spoke to Managing Director Gerhard Fischer (GF) about the company's development in recent years and its strategic orientation for the future.



Fig. 1 Gerhard Fischer, Managing Director HÄNDLE GmbH – Maschinen und Anlagenbau

cfi: *The history of the company has been shaped by innovations, investments and a worldwide market presence. How do you see the current international market development in the core business of machine engineering for heavy clay ceramics?*

GF: Generally, clay brick remains both valuable and important as a "sustainable" construction material. It also remains attractive because ceramic process engineering has always adapted effectively to the changing requirements for the properties of clay bricks and roofing tiles.

With regard to market developments, however, there isn't just good news. Still positive are the developments in Germany, Austria, Switzerland and Great Britain as well as in the Benelux countries and parts of Eastern Europe where the continuing boom in construction is also reflected in investment in new plants and machines. Other European countries are recovering only slowly from the real estate crisis that took place ten years ago now.

In construction, it is not only material properties that count but also installation time and the resulting costs. Here materials in competition with brick can certainly score points. But especially in visible areas (façade, roof, pavers), investments in replacement and extensions for brick production

are being made in Europe, confirming its strong position compared to competitor materials.

In export markets we also have to cope with negative developments. In Russia, demand is low, on a similar level to in previous years. Iran is a market with high demand, to which, however, there is currently no access because of the embargo. In Iraq, urgently necessary investments in new plants and machinery are very difficult to realize on account of the political situation. The market in Saudi Arabia remains challenging because of domestic political reasons, and in North Africa, following years of high investment, a certain market saturation has now followed. In China, we only work on requests for special niche projects. Overall, we are seeing hardly any growth in terms of clay brick and roofing tile demand on the global market.

For this reason, we are expecting a weaker order intake in machine and plant engineering in 2020, while for after-sales business we assume that the business situation will remain stable.

cfi: *Will BREXIT come with problems for market development in Great Britain?*

GF: Naturally, we don't know all the implications of that. But we have worked to get a good position on the market in Great Brit-

ain. In this market, relatively large groups of companies determine the situation. We have shown that we can adapt well to the needs of their customers and are currently negotiating on relatively large projects in cooperation with market partners.

cfi: *What have been the most important innovations from HÄNDLE for heavy clay ceramics over the last ten years?*

GF: It was strategically correct for us to address the production of clay roofing tiles. In 2012, we presented the Wega-S3 turntable press for roofing tile accessories, and in 2017 we introduced the new NOVA III 2400 roofing tile press with eccentric cam. For preparation, we have developed solutions to take the step from heavy clay mixes to the increasingly necessary degree of whiteware preparation. In this context, I can mention the new development of the economic and functional Gamma fine roller mill as an example.

These demands are derived from the drastically reduced web thickness of bricks and especially the now extremely high requirements for brick surfaces in visible applications. In addition, here, amongst other things, the use of more regional raw materials that were previously neglected because of the high preparation effort involved plays a role or recycling. These are aspects that

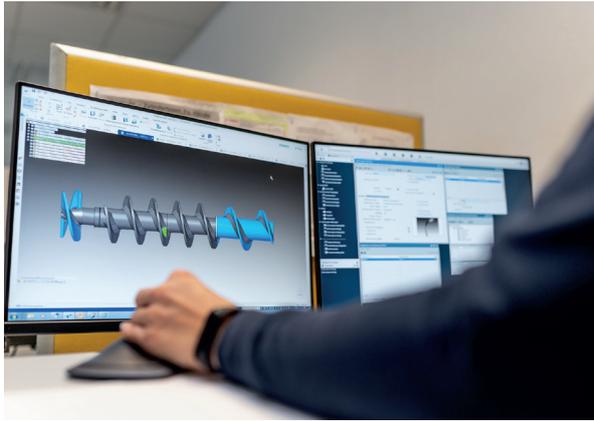


Fig. 2 Development activity in the range of extrusion



Fig. 3 The new logistics centre

are becoming increasingly important with the demand for sustainability.

We have generally pushed ahead with the further improvement of the energy efficiency of drives and entire production lines. Taking a user-oriented approach, we are focusing on operability and plant visualization. In the replacement and wear part business that is important for us, we have been able to set new standards in respect of wear resistance with the introduction of PTA technology (plasma powder build-up welding). More and more attention is being attracted by our new service tool for preventative and

planned maintenance. We are getting positive feedback from customers already using this tool. After the completion of further series of tests, we shall include it permanently in the service portfolio at the end of 2020.

In the scope of service, the activities of the HÄNDLE Academy have become increasingly important. We offer customers training tailored to their requirements either in-house or, if requested, in their own plants. The training content is agreed individually and adapted to various target groups.

cfi: *In 2014, we spoke in cfi about the takeover of ZMB Braun GmbH/DE. You were*

then able to offer the extruder-pressure head-die system from one source. How has this integrated approach fared on the market since then?

GF: Thanks to the high demand and customer acceptance, both companies are now profiting to a large extent from this approach. From the joint shaping development group, which was formed from HÄNDLE and ZMB Braun employees, interesting new developments have been brought to market maturity. As representative examples, I should mention the optimization of shaping for roofing tile batches and the extrusion of ceramic panels for exterior facades.

We have also shown that thanks to optimized stiff extrusion, flue pipes can be produced with the same dimensional tolerances as those of dry-pressed flue pipes. Outside the brick and tile industry, we are enjoying a high degree of acceptance for this solution approach.

cfi: *Last year, we have launched a series of EF extruders for the refractories industry, refractories is actually an existing application segment for HÄNDLE extruders, what has been specifically improved?*

GF: That is correct, we delivered equipment to the refractories industry years ago. We have been able to identify new market requirements here. In particular, we have been able to determine an increasing market requirement for tap hole clays for resealing a blast furnace after removal of a batch. Here, we have here adapted extruders to customers' individual needs and tailored them to high pressures.

Generally, we offer a varied, modular product range to satisfy individual needs. We are

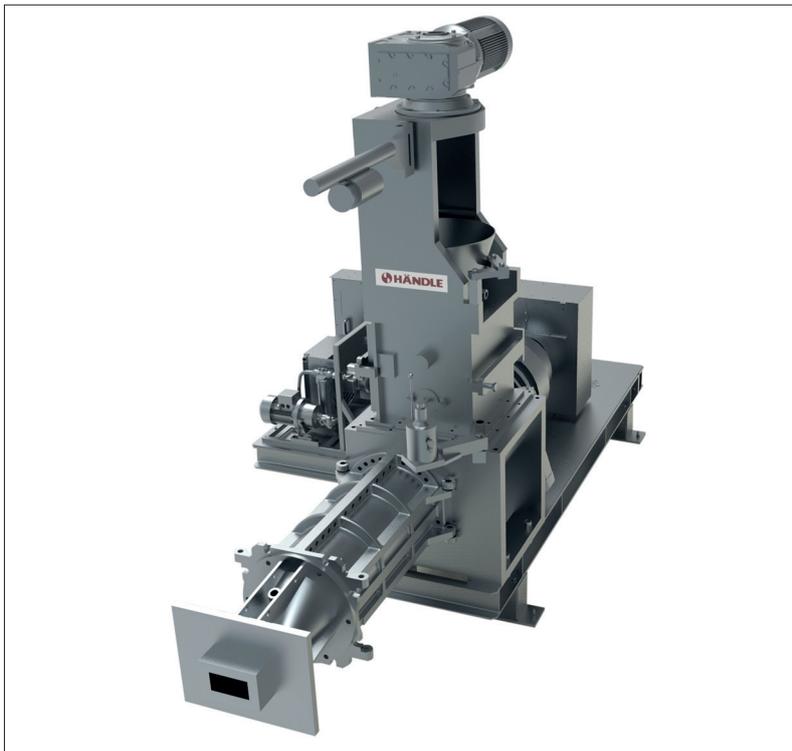


Fig. 4 Extruder type EF

not offering "commodities", but individual, tailored system solutions. In our HÄNDLE laboratory, we can clarify process optimizations and then realize these in our designs.

cfi: In 2014, the new logistics centre was also opened. In the meantime, further investments have been made with the aim of strengthening our own production. What importance do these investments in the German base have for successful operation on the market?

GF: The new logistics centre was part of a programme of investment in the period 2011–2014 with a total of EUR 2,8 million. Logistics is the hub between purchasing, in-house production and installation. The efficient handling of different parts, assemblies and machines is only possible with sophisticated supply chain management. Especially with our high service orientation, we want to ensure that replacement parts, insofar that they are not in stock, can be manufactured over night in our own production for customers. That can't be done in time with the incorporation of external partners.

cfi: How are you realizing Industry 4.0?

GF: The service I mentioned earlier for preventative maintenance is an important element here. Basis are the continuous monitoring and evaluation of measured data and regulation in the plant control system. Certainly, we shall also be able to adapt approaches from other branches in future.

cfi: Against the backdrop of the intensive climate discussion in society, there is even greater focus on the keywords of energy and environmental efficiency. How are you addressing these topics?

GF: The main energy consumer in brickworks are, of course, the thermal processes. Although being responsible for the upstream manufacturing steps, we are, however, taking the topic very seriously. We therefore are going with completely new drive concepts in future, which we shall present at ceramitec 2021.

Improved wear protection leads also to a reduction of frictional forces and therefore to lower energy demand. Very important is the optimum interlinking of processes and design of the individual machines and plant components. In this way, improved efficiency and therefore a specific energy saving are achieved in the overall process. The further development of machines is selectively oriented to energy saving and performance



Fig. 5 Karin Scharrer (Editor-in-Chief, Göller Verlag, 2nd f. r.) and Corinna Zepter (Marketing Manager, Göller Verlag, 3rd f. r.) together with Gerhard Fischer (r.) and Dietmar Heintel (Head of Sales Service, HÄNDLE) visiting the Assembly Department

based on material efficiency (e.g. optimized raw material preparation, reduction of body moisture, avoidance of rejects, selective recycling).

cfi: How important today is cooperation with market partners for the successful implementation of projects?

GF: HÄNDLE has proven over decades a high competence in interlinked plant engineering. We need highly specialized partners as today in turnkey projects the responsibility etc. for locally externally produced components is given over to the general contractor. For this you need spe-

cific knowledge to be able to define suitable materials and components in countries that have other standards and norms. Large projects are now associated with such great complexity that a team of specialists must work together in the scope of structured project management.

cfi: What applications besides the already established segments in ceramics do you see as additionally relevant for HÄNDLE technologies?

GF: Besides the ceramic-bonded construction materials, we are seeing a trend towards alternative binder systems in the con-



Fig. 6 Recycled-gyps test series in the company's lab

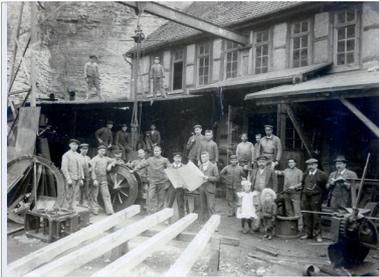


Fig. 7 Workshop in 1870

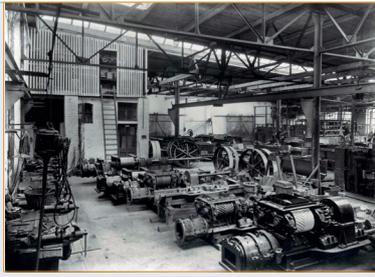


Fig. 8 Extruder manufactured in 1925...

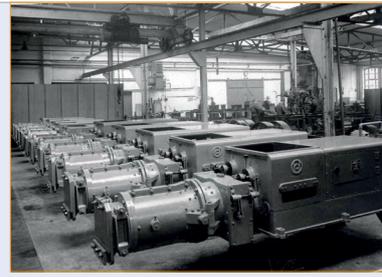


Fig. 9 ...as well as in 1936

Milestones in HÄNDLE's History

1870	Company founding by master machinist Karl Händle in Dürrmenz/DE
1890	Engineering of the first brick press for a neighbouring brickworks
1905	Building of a new factory building with railway siding to Mühlacker's/DE rail yard
1906	Invention of a mixing and box feeder
1922	Construction of a casting shop
1930	Delivery of the 1000 th box feeder
1937	The 1000 th screw extruder is built – development of the de-airing pug mill to a combined de-airing extrusion unit
1947	Building of a pilot plant and a laboratory
1965	Construction of the first deairing extrusion unit for stiff extrusion
1977	Construction of a 4000 m ² production facility
1978	Construction of the world's largest pan mill for the ceramics industry
1988	Construction of the 5000 th Händle extruder
1992	Development of the bucket chain excavators
1993	Construction of a new assembly facility for large machines
1999	New generation of roller mills – high-performance Alpha II fine roller mills
2000	J. C. Steele & Sons (Statesville, NC/US) acquires majority share
2000	NOVA II revolving press enables first pressing of large-format roofing tiles with 5 pieces/m ²
2003	Founding of the Polish subsidiary
2003	Further development of the WEGA high-tech press system
2004	750 th Super Extruder E75 for multi-column extrusion
2009	Production of first longitudinal-dredging excavator in Mühlacker
2010	Founding of the Russian subsidiary
2012	Wega-S3 turntable press for roofing tile accessories
2014	Takeover of Ziegelmundstückbau Braun GmbH, a brick and roofing tile die manufacturer in Friedrichshafen/DE, and August Kampen GmbH in Bad Salzflun/DE
2014	Construction and inauguration of the new HÄNDLE logistics centre
2017	Market launch of the new NOVA III 2.400 roofing tile press with eccentric cam
2019	EF extruder series for applications outside the brick and tile industry
2020	150-year company anniversary

struction materials industry (e.g. cement, gypsum, geopolymers, etc.). Here, our great wealth of experience in heavy clay ceramics helps us to solve handling problems with adhesive materials. In addition we can score points with individual recycling solutions – e.g. removing plastic or organic matter, plasterboard recycling or the incorporation of waste materials in clay bricks.

cfi: *In future, will innovations come essentially from your own company or be worked out with development partners, especially in new fields?*

GF: As we are a company in the Steel Group/US, within the group we have the possibility to utilize synergies in machine development and services, e.g. in the pelletization of different non-ceramic materials. In addition to

that comes our established network with specialist partners, which we are steadily expanding.

For process engineering developments, depending on the specific aspect, we work together with external partners from industry and research.

cfi: *Thank you for talking to us.*

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