

Kobra Formen GmbH, 08485 Lengenfeld, Germany

Preserving knowledge, securing the future

■ Andreas Gebauer-Günther, Kobra Formen GmbH, Germany

Even in the modern concrete block industry, there is often talk of Industry 4.0, automation and cycle times. However, a crucial foundation for long-term success is often overlooked: The interplay between high-precision tool technology and the in-depth knowledge of those who operate it on a daily basis. A recent practical example at Al Wady, one of Saudi Arabia's industry leaders, illustrates why Kobra Formen GmbH does not rely solely on hardware sales, but on a holistic strategy of innovation, ease of maintenance and experience.

A partnership between equals: Al Wady and Kobra

The success of a concrete block factory can be measured by its ability to deliver consistent product quality over many years

with maximum plant availability. The Saudi Arabian company Al Wady has perfected this claim since its foundation in 2008. With around 150 employees in production, maintenance and quality control today, the company has achieved impressive growth.

This development is closely linked to the management's vision: From the very beginning, Mr Sayed Sleem and Mr Ezz Eldeen Hassan attached great importance to establishing clearly defined processes and procedures. For them, staff training was never just a side effect, but a cornerstone of the company's strategy. This focus on professionalism is also reflected in the machinery, which brings together leading companies in international plant engineering: German production lines from Masa form the core, supplemented by surface finishing systems from SR Schindler and technology from Forest Press.



An overview of Al Wady's factory

CONCRETE PRODUCTS & CAST STONE

The philosophy of Kobra Formen GmbH fits seamlessly into this highly professional environment, where structured maintenance routines have been in place from the very beginning. Kobra will celebrate its 35th anniversary in 2026 - an era that began in 1991 with a clear focus on maximum precision and reproducibility. As a pioneer in the consistent application of milling and the integration of in-house hardening technology, Kobra has defined new standards. With around 400 experts at its headquarters in Lengenfeld and another 50 in a global network of six international subsidiaries, Kobra ensures that innovations reach where they are needed: in daily production under extreme conditions.

A key pillar of this success in the Middle East sales region is the close cooperation with partner Ko-Biz, which has been in place since 2010. Owner Markus Kollmann has decades of experience in the international mold business and understands the specific requirements of the market in detail. With the founding of Ko-Biz, he deliberately expanded his portfolio to include complementary products in order to offer customers such as Al Wady comprehensive, cross-trade support from a single source.

The fact that this partnership is based on consistency and trustworthiness is also reflected in the company's future-oriented positioning: His son, Jannik Kollmann, has been actively involved in the business for two years. This not only ensures continuity in the support of key Saudi Arabian customers, but also secures succession and the transfer of valuable market knowledge for the coming decades. This family succession plan reflects Kobra's philosophy of preserving expertise in the long term and acting as a reliable partner across generations.

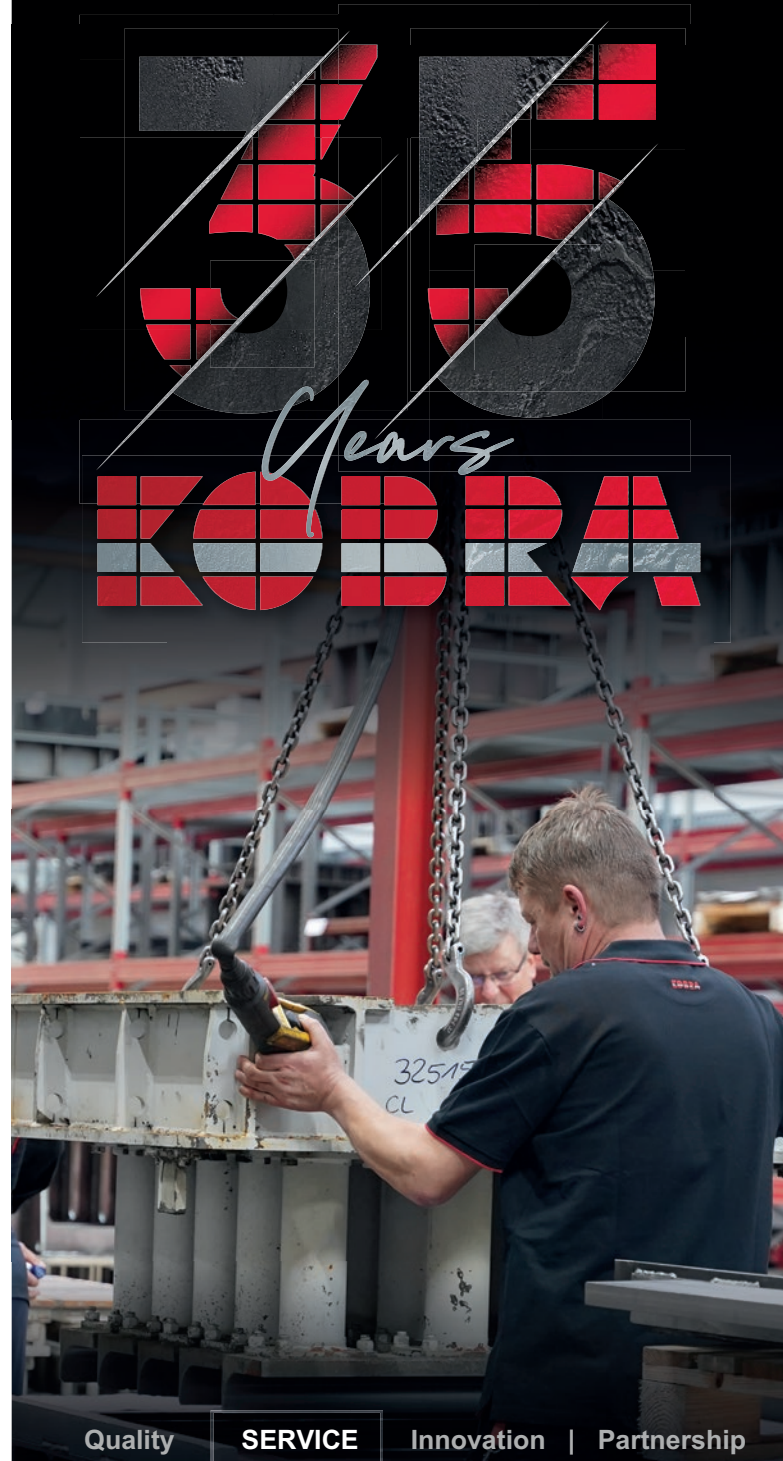
Knowledge as a protective shield

A tool is a high-performance system that only reaches its full potential in the hands of a trained user. During a technical workshop at Al Wady, it became clear once again that employee training is a strategic investment that goes far beyond technical skills. With a wink, one could describe these training courses as "human maintenance". Just as a mold needs care, the knowledge of the workforce must also be regularly maintained and updated.

This transfer is particularly critical in times of demographic change and the threat of knowledge loss due to the retirement of experienced specialists and other fluctuations. When an experienced maintenance engineer leaves the company, implicit knowledge that has grown over decades is often lost. Kobra counteracts this with systematic training. The content is deeply rooted in practical experience:

Preventive diagnostics

Participants learn not only to recognise signs of wear, but also to interpret their causes. Uneven wear patterns on the mold cavities lower edges can provide information about the machine settings or the material filling, which in turn can be influenced by the production pallets or the vibrating table itself.



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Mold rack at the Al Wady factory

Craftsmanship perfection

The training covers the professional refurbishment of mold edges to extend service life using specific welding electrodes, as well as the use of special abrasives for edges and radii in the cavities to ensure the long-term finishing of the end products.

Precision change

The replacement of entire wear part sets in the specially designed 4-part Kobra frame is trained in such a way that downtime is minimised and the mold can immediately return to production with the correct dimensions after replacement.

Materials science and hardening technology: The heart of longevity

A key factor in the very long service life of Kobra tools is the consistent implementation of state-of-the-art hardening processes. While compromises between toughness and hardness are often made in the market and different hardening processes are used, Kobra relies on highly specialised processes in its in-house hardening facility. Here, all wear parts are specifically heat treated to achieve an optimum micro-structure. This is not a standard process, but a science in itself, ensuring that the molds can withstand the abrasive effects of the various aggregates found in concrete block factories around the world.

However, these extreme hardness grades can only be achieved because Kobra has chosen a decisive design ap-

proach: Moving away from welded joints. Less than 3 % of the molds manufactured by Kobra are welded in the mould insert. The reason is not only technical in nature: Welding causes thermal stresses and structural changes that can lead to deformation and cracking in highly hardened steels. Thanks to its consistently bolted construction, Kobra can use materials whose degree of hardness would simply not be controllable in welded constructions. At the same time, Kobra molds are characterised by their angularity, especially in the case of large-format stone formats such as paving slabs. The result for customers is above-average service life and high-precision concrete blocks.

Service as the face of sales: From production to the customer A special feature of the Kobra philosophy is the close integration of service, sales and the "Stone & Design" team. Here, service is not treated as a downstream department, but as an integral part of the sales concept. Many of Kobra's service employees began their careers in production or repair in Lengfeld. They know every component, every screw and the hardening process from their own experience.



Kobra technician Jens Schubert and Al Wady maintenance team preparing wear parts

Over the years, these experts have continuously upgraded their skills in foreign languages and state-of-the-art technology and now act as valued advisors on an equal footing. They are already familiar and welcome faces to customers worldwide, not only solving problems but also actively contributing to process optimisation.

The direct line between the production facility in Saxony and the Kobra plants in the USA and, since the end of 2024, also in Morocco, ensures that customer requests are fed back into product development without any filters.

High-tech diagnostics for optimised processes

Kobra's service concept goes far beyond traditional maintenance. Specialised diagnostic procedures are used to optimise concrete block production processes down to the smallest detail. Precise vibration measurements are used to record and visualise the behaviour of the mold and the dynamics of the vibrating table. A specially developed tool also enables comprehensive, fast and accurate inspection and adjustment of the vibrating table's vibrating bars - a critical interface for compaction energy.

One technological highlight is the analysis using high-speed cameras. This visualises the production cycle in order to track processes that normally take place in fractions of a second - such as mold filling or vibrating compaction - in extreme detail. All these measures have one goal: To create a deeper physical understanding in order to sustainably increase production efficiency for the customer.

Tailor-made logistics: More than just transport

At Kobra, comprehensive customer service also includes logistics that are tailored to the individual needs of the plants. Every year, almost 6,000 orders leave the factory in Lengenfeld for concrete block factories around the globe. There is no routine, rigid way of working: Whether it's self-collection, classic truck transport within Europe or complex sea and air freight connections - Kobra organises the route for the tool so that it arrives at its destination on time and safely. For particularly time-critical situations, express and direct deliveries are available to minimise production downtime for the customer. This logistical flexibility is an essential part of the reliability that customers such as Al Wady value in Kobra.

**The logic of value creation:
 Reducing costs in application**

A key point of discussion in procurement is often the purchase price. However, a purely price-based approach is insufficient. A key principle of the Kobra philosophy is therefore: Money is not saved when purchasing, but where the tool is used. High-quality mold technology is characterised by the fact that it massively reduces follow-up costs.

One example of this is the universality of Kobra system frames. These frames are designed in a way that they can be used for more than just one specific stone size. Different



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Details of the reusable mold frame

modal heights and block formats – for example, for hollow blocks and solid blocks – can be combined with the same basic frames. In conjunction with the system tamper heads, this results in a cost advantage that is noticeable over the entire service life. Instead of completely replacing a worn mold, only the wear parts are replaced in Kobra molds. The trained maintenance engineer at Al Wady immediately recognises the added value of this bolted construction in daily handling: It offers the stability of a solid mold combined with the flexibility of a modular system.

**Innovation through dialogue:
The leap to additive manufacturing (AM)**

The development of ISO stone molds shows that the exchange between Kobra and users is not a one-way street. These were created based on direct feedback from maintenance personnel. The biggest challenge was handling: Lifting and turning heavy molds for minor repairs is time-consuming and poses safety risks.



Grinding the lower edge of the mold after welding

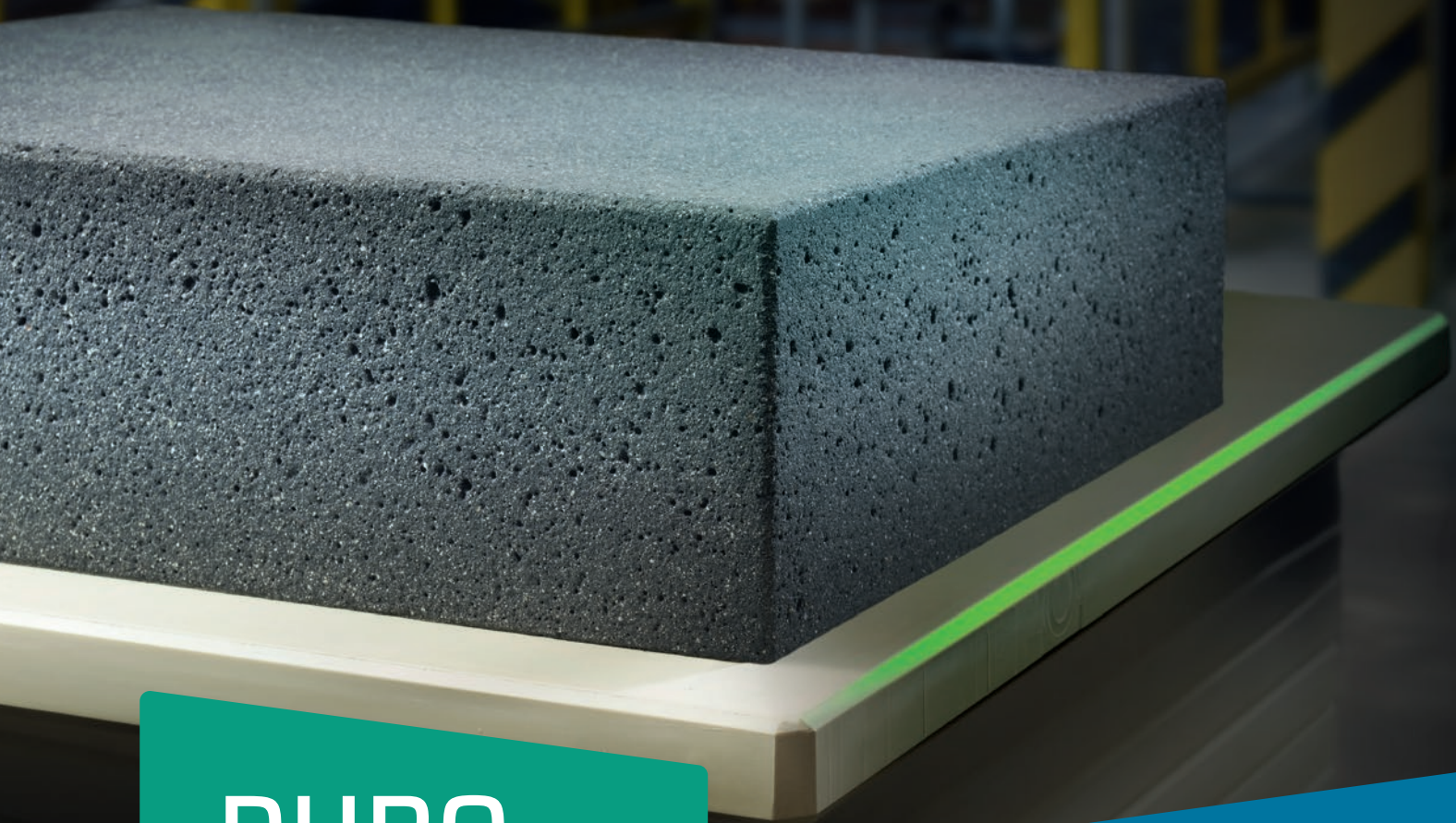
Kobra's solution was a radical redesign with a focus on easy accessibility. Critical wear parts are accessible from above, allowing them to be replaced directly in the machine. Additive manufacturing (AM) plays a crucial role here. By using 3D printing technologies in metal processing, Kobra achieves a new dimension of precision in reproduction.

A crucial advantage: Wear parts manufactured using AM exhibit particularly high dimensional accuracy. This makes it possible to manufacture spare parts so precisely that they fit into existing frames without any reworking. This precision in reproduction is another key to reducing maintenance costs, as the accuracy of fit is guaranteed even after years of use of the base frame. The combination of electronic measurement and additive manufacturing makes the Kobra mold a digital twin of itself that can be perfectly complemented at any time. Conclusion: Appreciation as an economic factor

The collaboration with customers such as Al Wady impressively demonstrates: A tool is only as good as its user.



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Al Wady Management and maintenance with Ko-Biz and Kobra Service

**Kobra Technology Symposium 2026:
Where knowledge meets the future**

In its anniversary year 2026, Kobra is once again inviting guests to its technology symposium in Lengenfeld. Participants can look forward to the following at this industry gathering:

- Specialist presentations & trends
Experts will talk about current challenges facing the concrete block industry.
- International inspiration
Exhibition of exemplary concrete products from around the world and insights into global design trends
- Pure practice
Demonstrations of the latest mold technologies and insights into additive manufacturing (AM)
- Networking
Platform for exchange with the Kobra "Stone & Design" team and professional colleagues from all over the world.
- Synergy
The proximity to the GaLaBau trade fair in Nuremberg makes it ideal to combine both events.

Registration and information via Kobra Sales or the website (www.kobragroup.com).

Conducting training courses is therefore also a sign of appreciation and recognition for employees. Investing in their skills promotes loyalty and ensures that the technological advantages of Kobra molds – from process reliability thanks to bolted frames to particularly high hardness – are fully exploited.

In the long term, this holistic approach secures the market position of both partners. After all, true competitiveness arises where technological innovation meets craftsmanship. Investing in training, service and quality is therefore not a cost factor, but the safest return on investment in a constantly changing industry. ■



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