

Kobra Formen GmbH, 08485 Lengenfeld, Germany

Products and services around concrete block moulds

In retrospect the **bauma 2019** was one of the most successful events ever for the Kobra Group. The international team welcomed about 1,500 visitors to the trade fair booth, who came to get information about products and services around the concrete block mould. For the first time, Kobra presented itself with a double-decker trade fair booth that topically illustrated the two large strategic fields of business - **Tools (concrete block moulds)** and **Care (service)** - on two levels.

Tools - "Driven by knowledge"

Headguide feature

The further-developed Headguide forced centring system was presented on the ground floor. It ensures the absolutely central and correct installation of the complete mould in the

machine and thus protects particularly sensitive mini-chamfers. The guide bolt of the forced centring guarantees the precise plunging of the tamper head into the mould bottom. With circumferential play of two tenths of a millimetre, the mould can move freely, but remains guided. Wear on tamper shoes and the upper edge of the mould is significantly reduced, and the resulting metallic abrasion is almost completely prevented at the mould.

Within the scope of continual product improvement, Kobra has developed the Headguide system further by adopting the modular concept for all the different subassemblies of the forced centring susceptible to wear. The pin consists of a reusable and a wearing (exchangeable) component. The wearing pin is easy to exchange with a bolt.

Apart from that the development of a wear-free forced centring system, for which a patent has already been applied for, has been presented in which the pin is fully prevented by



View of the complete trade fair booth



Functional model of the Headguide

magnetic fields from touching the bushing when plunging into the mould bottom, thus making wear impossible.

Boltline 1 - system hollow block mould

The Boltline 1 hollow block mould offers a standard frame for various stone formats. This is possible because the core bar subassemblies are only bolted in the insert and have no connection to the frame. The cores are also bolted in order to guarantee the simple and accurately positioned exchange of wearing parts. Furthermore, the underside of the frame beam is provided with a wearing part or a support widener.

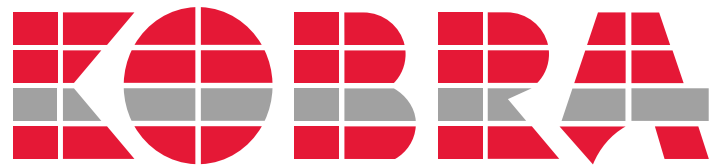
The mould bottom is combined with a standard Kobra tamper head which always has the same design for different board sizes. The upper part of the tamper head is bolted and remains with the customer, who can use it for different block moulds.

Boltline 3 - paver mould

In a Boltline 3 mould the modular concept is implemented across all subassemblies up to and including the insert. Made from individual mould elements, this technology offers maximum precision of dimensional and angular tolerances and can also be used for unusual geometries and mould occupations. The insert is made of individual ribs in carbo 68 plus quality and can be replaced with little effort in case of wear. That also applies to the cover plate produced in the same



Boltline 1 - hollow block mould



WE CARE FOR YOU.

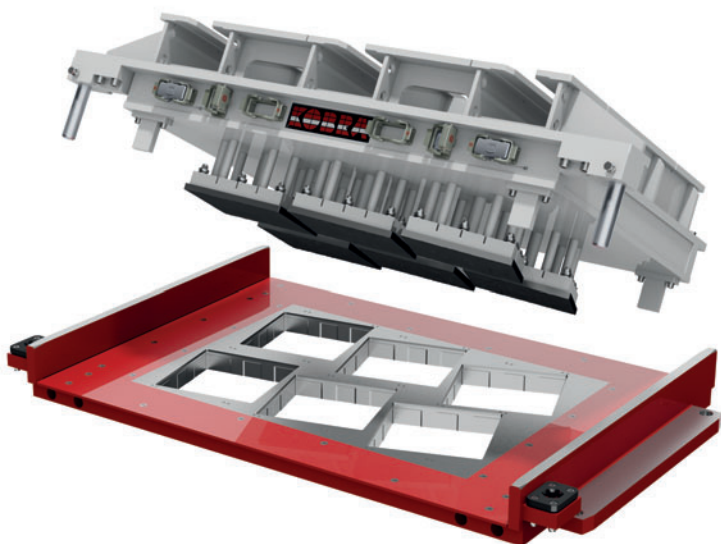
PRODUCT DEVELOPMENT PROCESS

In our in-house product development, our engineers form the interface between the design department and our service team to bring together theory and practice. Working hand-in-hand, both departments produce new solutions, and optimize and maintain existing products. Practical reports from our international customers on the performance of the concrete block molds in use form the basis for further development of our technology. After in-house tests, new products are tested under real conditions in consultation with our customers. In this way we can ensure comprehensive testing of our innovations.



TOOLS
MOLDS. Driven by knowledge.

CARE
SERVICE. Powered by experience.



Boltline 3 - paver mould

hardness quality. Frame and tamper head can be reused. The paver mould presented at the bauma 2019 also has the Hotshoe and Flexshoe features, which help to increase the quality of the stones.

Features

The "Feature Bar" integrated in the trade fair booth illustrated all the insert/frame connections and additional items of equipment that represent useful additions to the mould, depending on the stone system that is to be produced.

The "Flexshoe™" feature is a useful compaction aid in particular for large products and special formats. The rubber-mounted tamper shoes provide for better compaction results and higher surface quality of the stone. Flexshoe prevents the uneven lifting of the tamper shoes off the stone and ensures optimum tamper shoe play on account of the damping effect in the tamper head.

Higher surface qualities of the concrete block can verifiably be achieved with the "Hotshoe™" feature, which consists of heated tamper shoes and an integrated control device for temperature regulation. Through the surface drying of the facing concrete the adhesion of the tamper shoes to the concrete is prevented and the structuring of the stone surface is supported. In this sense the Hotshoe is the ideal stripping aid. The control compares the target temperature with the actual value measured on the heating element and reheats if necessary. The setpoint to be set is dependent on the individual mould, the proportion of water in the concrete mix and the ambient temperature.

As a result, the water-cement ratio tailored to the product can be applied without restrictions from difficult surface structures, because sticking to the tamper shoes is prevented. Better surface qualities and finer surface patterns are obtained.

The "Multigroove™" feature designates holding notches in the insert walls that hold the stone while the mould lifts up off the production board. There is a choice of four available standard versions, depending on the stone dimensions. Individual holding systems can also be manufactured.

The "Singlebolt™" one-piece tamper head is the consistent continuation of the Kobra modular system. Its stability is achieved through the length, geometry and arrangement of the tamper head sleeves inside the mould upper part, which guarantee high resistance to wear and a long service life.

Every Kobra Singlebolt is manufactured to drawing and mounted precisely on the tamper head plate. Due to the arrangement of several sleeves on one tamper head, the pressure is distributed optimally. The bolting of the tamper shoes enables their simple replacement.

Stone design

In close coordination with the customer, true-to-scale stone models are created in virtual 3D drawings from sketches, photos, natural stones or 2D drawings. Just a photo is enough to be able to create various surface modellings, shapes and geometries.

Kobra works with modern CAD and CAM programs for this and can create versatile surface variants, some of them with very delicate elements. Practically no limits are imposed on the imagination. In order to be able to guarantee the trouble-free production of new developments, the ability of each product to be produced, packaged and stacked is already clarified during the development phase. Kobra currently has archives of over 5,000 surfaces.

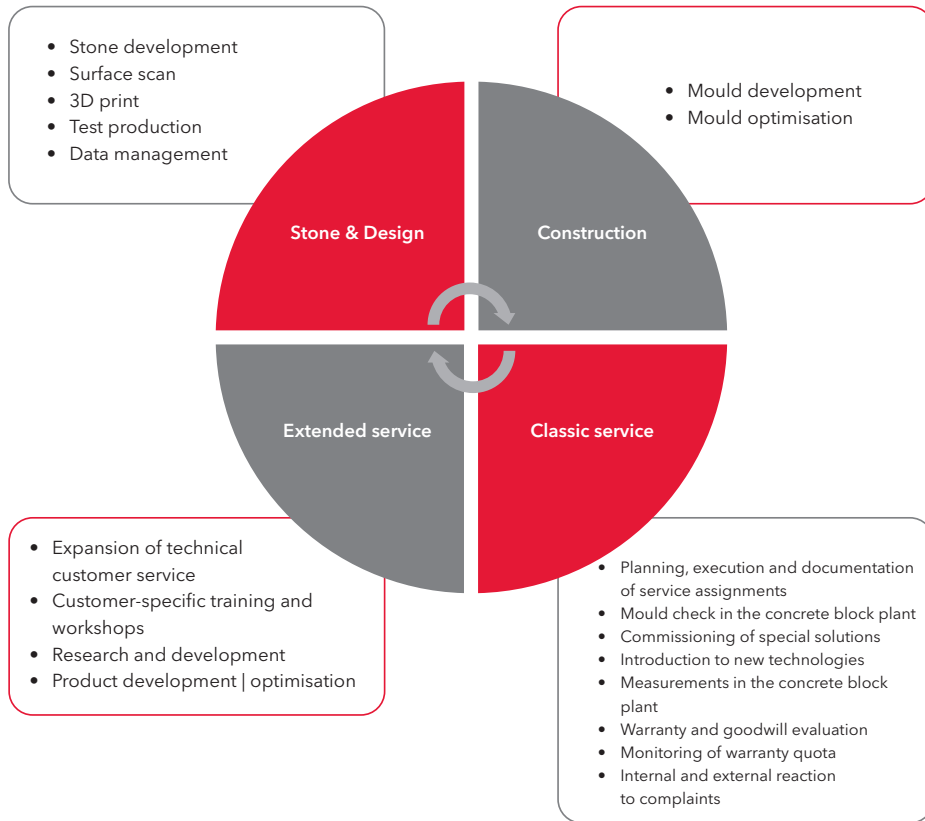
At the bauma, customers were able to get advice especially on the development of new products and to take inspiration for new ideas home with them.

Care - „Powered by experience“

The new care concept, which describes all services around the concrete block mould, was presented on the first floor of the trade fair booth. Kobra attaches the same importance to this as to its core product, because the company wants to be not only a supplier, but also a reliable partner for its customers. Care describes a comprehensive range of services that already begins with the product development and extends in all departments through to after-sales service with its numerous offerings.

To this end Kobra has expanded not only in terms of content, but also in terms of personnel. The Service team consists of technicians who can carry out maintenance, repairs and measurements directly in the concrete block plant. Apart from that, engineers take care of the development of new products and the optimisation of existing ones. Together with experienced internal service employees, who support the service manager in all organisational and professional concerns, a fast and competent reaction to customer enquiries is ensured.

Overview of the care concept:



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Kobrame customer app

To accompany the care concept, Kobra has developed a customer app - Kobrame - providing weekly changing stone news. This is intended to give the user inspiration for new products. This feature was of particular interest to most of the visitors to the booth, because a constantly updated pool of ideas is offered.

Furthermore a messenger will shortly be available via which direct contact with the responsible Kobra employee is possible. On the one hand Kobra is so reacting to the EU General Data Protection Regulations, which came into force in 2018, while on the other it is offering a fast direct contact to Kobra.

In the Flexibility section the customer is provided a special contact form for urgent enquiries about concrete block moulds. Current company information is displayed in the News. The app has been available to all Kobra customers since April 2019 and was installed several hundred times at the trade fair.



Kobrame customer app

Augmented Reality application

Kobra is cooperating with universities and industry associations on the further development of its technologies within the scope of several projects. One task field is the creation of AR-assisted assembly instructions for concrete block moulds from the Kobra Boltline 3 mould series. The design documents and assembly instructions (disassembly and assembly

procedures) required for this were generated by Kobra and integrated into a corresponding software solution together with the TU Chemnitz and the Fraunhofer Institute. For this an app was developed that can be installed directly on the AR glasses.

With the help of these ultra-modern AR glasses, the visitors were able to hazard a look into the future and come face-to-face with the futuristic technology. At the specially manufactured AR table the disassembly and assembly procedure was carried out by the trade fair visitors on a Boltline 3 model with expert and virtual support.

The hardware is not yet suitable for use in the concrete plant. This study is constantly being advanced by Kobra on account of the increasing demands on concrete block moulds due to their complex design. In modern mould construction the AR glasses could be an indispensable aid for repairs or the exchange of wearing parts in future.

OGS Mould Management System

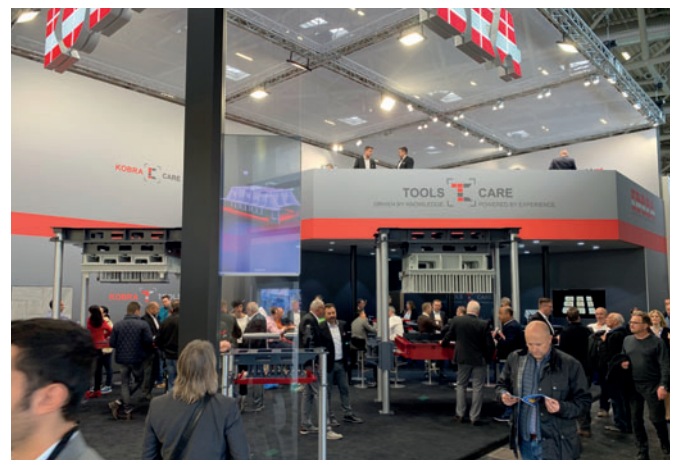
Kobra equips all its concrete block moulds with RFID (radio frequency identification) tags - a transmitter/receiver system for the non-contact localisation of objects using radio waves. In combination with the corresponding software the stock of moulds in the concrete block plant can be comprehensively managed.

To this end OGS Datenverarbeitung und Systemberatungs GmbH has developed the OGSiD MMS program (OGSiD Mould Management System) with which the users know at all times, for example, where a mould is located, how many cycles have already been produced, when maintenance is necessary or which projects it is planned to be used for in the coming weeks.

Kobra was involved as an industrial partner in the development of the mould software and was concerned with the testing of the RFID tag on concrete block moulds as well as with their identification by means of scanning. OGS informed in-



Augmented Reality - Boltline 3 assembly instructions



Visitors throng to the Kobra Formen GmbH trade fair booth during the bauma 2019.



The international Kobra team welcomed about 1,500 visitors to the trade fair booth.

international customers about the system and its possibilities at the trade fair booth.

The large range of exhibits and services was very well received by the visitors to the Kobra trade fair booth and never before was the quality of the visitors so high. The Kobra team wishes to thank all of its customers and business partners for the pleasant and constructive discussions and is looking forward to continued cooperation.



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FURTHER INFORMATION



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