

Schlüsselbauer Technology GmbH & Co KG, 4673 Gaspoltshofen, Austria

Long-established Lithuanian company starts up large-scale Ringmaster concrete ring plant

■ Christian Weinberger, Schlüsselbauer Technology, Austria

Since the successful production of standardized concrete infrastructure components not only requires consistent product quality, but a reliable and high output rate as well, Kauno Gelžbetonis has been working hard to keep up with the demanding market conditions. Accordingly, the company has addressed this challenge with an investment offensive to carry the company, founded in 1963, into the future. Kauno Gelžbetonis' management team has met this challenge by focusing on three priority developments—namely meeting higher quality requirements, providing fast availability of quality mass-produced products, and reducing the number of required working hours. Against this background, the company has taken the initial step of installing a modern production plant for concrete adjustment rings by Schlüsselbauer Technology.

Approximately one hour's drive from the Lithuanian capital, Vilnius, is Kauno Gelžbetonis's base in the city of Kaunas, where the Ringmaster by Schlüsselbauer Technology was installed and commissioned with impressive speed in the summer of 2021. Right from the start, adjustment rings measuring 700 mm in diameter and in seven different heights have been manufactured at the plant. A feature unique to the plant is production without steel bottom pallets. The fresh products are lifted out of the machine and carefully moved to the curing area using a hydraulic gripper. A closer look at the production process reveals how smoothly and seamlessly—almost at a rate of every minute—reinforcement rings are transferred to the mould and hydraulically centered, and then the mould is filled with concrete. The vibration unit, core, mould, and press work perfectly together to compact the concrete



Ringmaster production plant by Schlüsselbauer Technology during daily operations at Kauno Gelžbetonis.



Fully automated adjustment ring manufacture and handling with automatic Ringmaster stacker.

and form the joint. Aside from laying the pre-prepared reinforcement rings in the machine, the plant operator's main task is to monitor the process and to check the concrete and product quality is consistent. Depending on the selected ring height, the Ringmaster plant can output 40 to 60 circular adjustment rings every hour.

It is not only the speed of the new machine that demonstrates Kauno Gelžbetonis's determination to keep up with the times, however. Budgets are being approved like never before in order to restore the existing infrastructure and build more. The founder and owner of the company, Mr. Algimantas Aleksynas, anticipated the need for investment early on and adapted his long-term investment strategy accordingly. Indeed, it was in 2005 when the Magic manhole production system by Schlüsselbauer Technology was installed. Now, plants that can produce in high volumes, while also reducing staff workload, are being purchased primarily for products that are likely to grow most in demand. The decision to invest in the Ringmaster plant is a prime example of this idiology. Whereas, previously, a crew of several people with frequent staff rotation was responsible for producing the adjustment rings, this is now being accomplished by a single employee, who has the task of moving the ring stacks out of the curing area along with their monitoring responsibilities.

The curing area of the plant is operated by a smart handling system. The gripper picks up the fresh products from the production unit and moves them to a defined set-down position. These positions are defined such that the 21 steel storage pallets in the curing area are loaded alternately with fresh products, starting at the side from which the finished items are moved away. Additional adjustment rings are then set down on the products that have been in the curing area the longest.



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Production of adjustment rings with rebated joints without bottom pallets.

This, together with a fine layer of release agent on the underside of the products, ensures that fresh products do not stick to one another. A different number of components are stacked on the steel storage pallet depending on the height of the relevant product. Once all pallets have been loaded, the operator moves them out of the machine area into a second curing area and then moves the emptied pallets back to the machine.

In principle, round components with an outer diameter of up to 1,100 mm and a height of 300 mm can be manufactured on Ringmaster. The machine also makes it possible to form recesses in the product for handling on the construction site, to compact frame elements, and to produce cover plates as well as rectangular elements measuring up to 780 x 780 mm. And if the shape of the product requires it, the plant can also work with individual steel bottom pallets. However, even with the use of bottom pallets, nothing changes in the further course of production. For Kauno Gelžbetonis, this means flexibility in terms of product variety and capacity. Components from the existing portfolio can be incorporated into production and thus manufactured much more efficiently. ■



The owner of Kauno Gelžbetonis, Mr. Algimantas Aleksynas (right) and Johann Schlüsselbauer are convinced of the high performance of the Ringmaster.



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UAB Kauno Gelžbetonis
 Pramonės Pr. 8, 51223 KAUNAS
 T +370 37 45 17 33
info@kaunogelzbetonis.lt
www.kaunogelzbetonis.lt



SCHLÜSSELBAUER Technology GmbH & Co KG
 Hörbach 4, 4673 Gaspoltshofen, Austria
 T +43 7735 7144-0
sbm@sbm.at, www.sbm.at