

Schlüsselbauer Technology GmbH & CoKG, 4673 Gaspoltshofen, Austria

Economical DN 2500 Large Ring Machine the Latest Milestone in Site Upgrade

■ Christian Weinberger, Schlüsselbauer Technology GmbH & Co KG, Austria

Since its foundation in 2006, Tiba Austria GmbH has constantly been expanding its production plant for environmental, sewer, and drainage technology in Sollenau near Vienna. As well as updating the hall and mixer infrastructure, the company is gradually replacing or upgrading its production facilities in line with the state of the art. In Summer 2022, a Magic 2500 machine from Austrian manufacturer Schlüsselbauer Technology was installed, representing another milestone in the site upgrade. The cost-effective Magic system was purchased to manufacture manhole risers and cones with nominal widths of 2000 and 2500 mm. This is Tiba's second product from the Magic series, having already installed a Magic 1501 including fully automated palletizing back in 2021 for the manhole riser product range up to DN 1500.

The management team of Tiba Austria GmbH worked with Schlüsselbauer to devise a productivity benchmark with the aim of producing 110 manhole risers with diameter DN 2000 over an eight-hour shift. This is done by feeding the concrete

directly from the mixing unit to the 3 m³ silo on the machine via a conveyor belt. The concrete silo is fitted with a filling guard which constantly monitors the availability of material and ensures that the concrete is supplied at the right time. In order to facilitate the daily cleaning which needs to be carried out within the normal eight-hour working period, the silo has an additional safety entrance. The required amount of concrete is transferred to the filling table via a dosing conveyor and a filling conveyor, and poured into the relevant mould via the stirrer with the appropriate nominal width.

However, before the process of filling the mould starts, a bottom pallet is inserted into the machine by a pivot arm. This process is fully automated and is done immediately after the fresh product is removed from the machine. After the reinforcement and the optional step rung sleeves have been inserted, the process of pouring and compacting the earth-moist concrete begins. Thanks to the continuously variable electronic core vibrator, concrete compaction can be ideally tailored to different products. All parameters such as



Economical production of large rings up to DN 2500 on Tiba Austria GmbH's Magic 2500.



A steel bottom pallet is automatically transferred to the machine for each production cycle.

vibration cycles and frequencies, and acceleration values are stored in the machine program for each product. This means that the operator can access all the necessary product settings at the push of a button right from the start, even after the product – and therefore the mould – have been changed.

At the time of start-up, the new Magic 2500 at Tiba Austria GmbH was used to manufacture manhole risers and cones with the nominal widths DN 2000 and DN 2500. The manhole risers are available smooth or with built-in sleeves for step rungs to be installed later on. There is also a version with perforated manhole risers for soakaway applications. The maximum construction height of the manhole risers of both nominal widths is 1000 mm. The construction heights of the cones are 800 mm for the nominal width DN 2000 and 900 mm for DN 2500. Just like the manhole riser moulds, both cone moulds are equipped with hydraulic reinforcement ring centering. This not only ensures that the reinforcement ring is precisely positioned in the product, it also makes the rings easier to insert. For secure and space-saving storage, both cones are shaped to fit the external contour with different sized stacking lugs.



In order to ensure the fresh product is demoulded carefully, the mould and the press unit are raised in cycles.

Fresh products are transported from the machine to the curing area by a worker using an electrical cart. To protect the manhole riser joint, a set ring mounted on the electrical cart for transportation is placed on the fresh product and removed again in the curing section once the product has been set down; this can be done without the assistance of another worker. Once the products have been delivered to the exter-



Fresh products are carefully transported to the curing area using an electrical cart for transportation and a set ring manipulator.



Up to 110 DN 2000 manhole rings or 90 DN 2500 manhole rings are manufactured in one-man operation at the Sollenau site every day.

nal storage area, the pallet stacks are returned to the machine or taken to the pallet storage area using the electrical cart. The hydraulic width adjustment function integrated into the electrical cart for transportation is particularly useful for the operator if the nominal width changes.



The installation of the Magic 2500 is a milestone in the site upgrade work at Tiba Austria GmbH in the Greater Vienna area.

This also applies for the quick-change mould system, which enables the machine to be converted in under an hour. Thanks to the high level of flexibility provided by the Magic series, Tiba Austria GmbH will also be able to easily manufacture other products on this machine in the future if need be.



Manhole rings up to DN1500 are produced on the Magic 1501, first installed in 2021, as reported in detail in CPI 01/2022.



Signs of a successful long-term partnership: Perfect manhole base production system installed in 2014, Exact manhole cone production system installed in 1998.

The longevity and reliability of Schlüsselbauer Technology's machines is plain to see at the plant in Sollenau. Back in 1998, a previous Maba Group company installed a fully automated Exact manhole component production system at the same site. To this day, manhole rings and cones up to a construction height of 2100 mm are manufactured in one-man operation on a daily basis. The entire handling process for the fresh and cured products is fully automated and is carried out using a Transexact crane robot and a connected pallet management system, including cleaning, oiling, and storage. In 2014, after the site was taken over by Tiba Austria GmbH, a Perfect monolithic concrete manhole base production system was installed, followed by the Magic 1501 manhole ring system mentioned above. Tiba Austria GmbH currently employs 150 people at five production sites for precast concrete parts in Austria and generates an annual turnover of approx. 38 million euros. ■

FURTHER INFORMATION



TIBA
KIRCHDOORFER
CONCRETE SOLUTIONS

TIBA AUSTRIA GmbH
Industriestraße 28
2601 Sollenau, Austria
T +43 5 7715 454 441
office@tibanet.com
www.tibanet.com



Schlüsselbauer Technology GmbH & Co. KG
Hörbach 4
4673 Gaspoltshofen, Austria
T +43 7735 71440
sbm@sbm.at
www.sbm.at



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