Prinzing GmbH, 89143 Blaubeuren, Germany

Resource-preserving production of precast concrete manholes

The objective and new challenge for the Prinzing company is to further develop production processes and machines so as to achieve the maximum degree of sustainability and environmental protection. A large step in this direction has been successfully taken with the further development of the Tornado/Primuss, so that manhole bases, rings, necks and covers can now be produced rationally and economically on just one plant. The first of these modern and innovative plants has already been sold to Hungary.

Headquarters of Prinzing GmbH in Blaubeuren, Germany

In many cases, environmentally friendly production processes are more elaborate and therefore acceptance can only be achieved by laws and subsidies. With the further developed Tornado/Primuss, however, expenditure and the use of material are substantially reduced. Until now, a manhole ring production machine and a manhole base production machine were required for the production of the precast manhole parts. It has been possible to replace these two machines by the further developed Tornado, on which both the manhole base blanks and the cones can be extremely rationally produced. Integrated into this plant is the Primuss, with which the order-related, program-controlled milling of the connections and channels is performed.

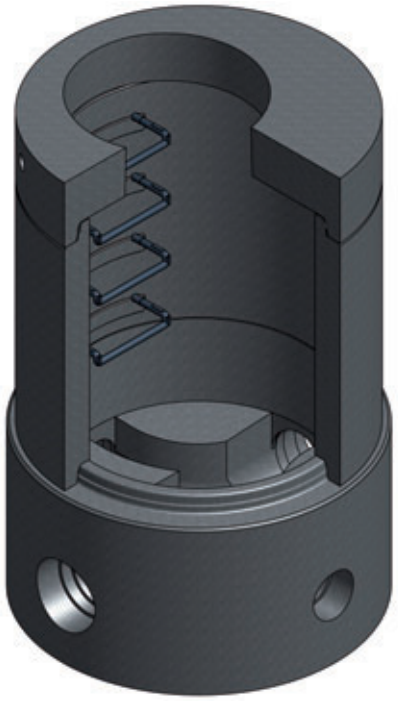
Short description of a production shift

At the start of a shift, for example, the production of manhole base blanks begins. The manhole bases are manufactured to order with the required nominal widths, wall thicknesses and overall lengths. The production data is automatically generated by the input of the sales order data into the Absolute software. The automatic production of the blank takes place after transferring these data to the Tornado. This is removed from the Tornado and placed in the curing area in the hall. After brief partial curing, the connections and channels of the order-related manhole base are milled on the Primuss milling centre. The Primuss works to a large extent automatically, so that the machinist is primarily occupied with forcing off the support caps and feeding the Primuss. The conversion of the Tornado for the production of manhole rings, cones or covers takes place in parallel to this. The conversion times are reduced to a minimum by the hydraulic mould clamping and product-related storage of the programs.

The Tornado also uses the normal vibration compaction process in the production of the manhole elements. What is special here, however, is that the compaction is performed by a frequency and amplitude controlled vertical compactor arranged on a hydraulic lifting mechanism. This allows the mould core to be raised above floor level for the insertion of the climbing elements in the direct vibration segment.

Following the automatic manufacturing process, the manhole rings/necks or covers are ejected above floor level and brought to the curing area. The capacity of the Tornado/Primuss can be increased as required by the extending the shift or by means of two-shift operation.

Manhole with cone



Manhole with cover

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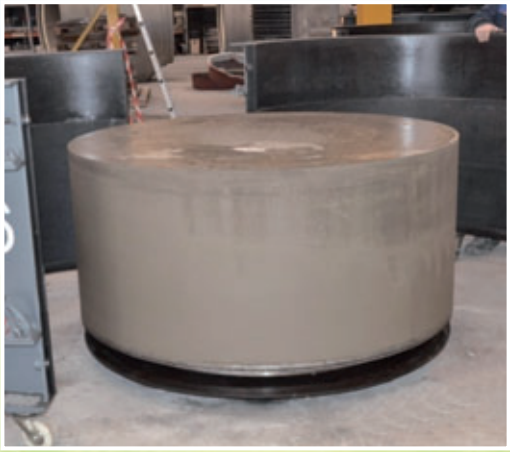

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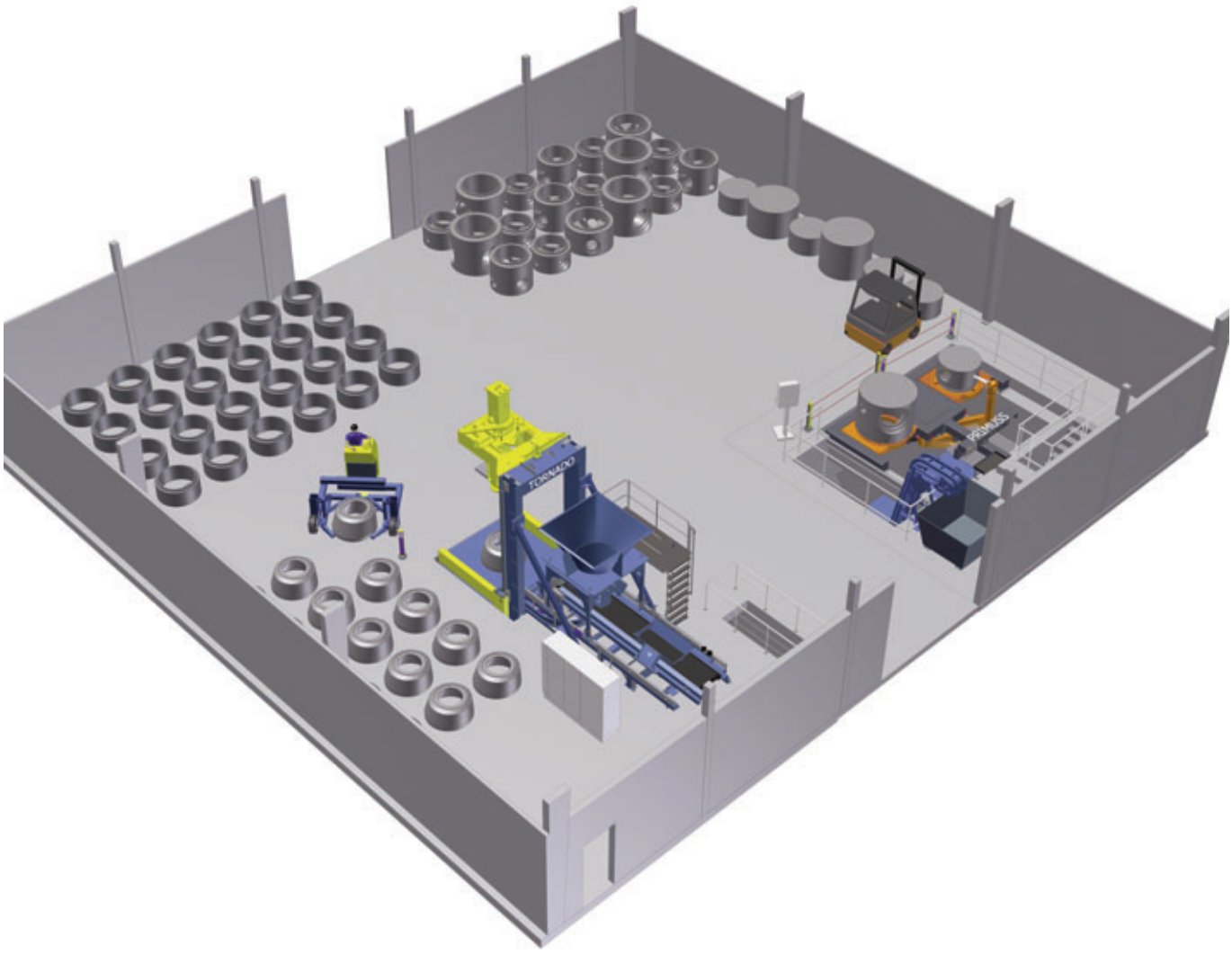

Tornado/Primuss for manhole bases, rings, necks and covers

The following benefits were achieved

- With the new investment for the production of manhole bases, manhole rings, manhole necks or covers, only one manufacturing plant is necessary. This reduces the size of the investment as well as personnel and spatial requirements.

- All manhole elements are produced with constant high quality.

- The manhole bases comply with the latest requirements with regard to monolithic implementation, with optimal channel routing and top quality and dimensional accuracy.

- Sustainability and improved environmental friendliness is achieved by the reduction of material consumption and personnel requirements whilst at the same time improving the quality of the products.

- The competitiveness of the environmentally friendly material concrete for sewers has been further improved and developed.

FURTHER INFORMATION

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