

apilion machines + service GmbH, 77694 Kehl am Rhein, Germany

High-performance welding machine for the production of reinforcement cages for bored piles

Even at a time when apilion machines + services GmbH was still operating under the name Züblin Maschinen- und Anlagenbau GmbH (Züblin MAB), the company was known worldwide for its fully automatic reinforcement welding machines. The basic principle of the wire drawn from coils makes it possible to produce reinforcement cages of virtually unlimited length.

This advantage is particularly important for bored pile reinforcements. For this reason, Züblin MAB and apilion developed a machine model in the 1990s as part of a cooperation with Yacoby Steel Co. (today Packer Construction Steel, Israel), the characteristics of which are still state-of-the-art today and of which all four machines supplied are still in use today.

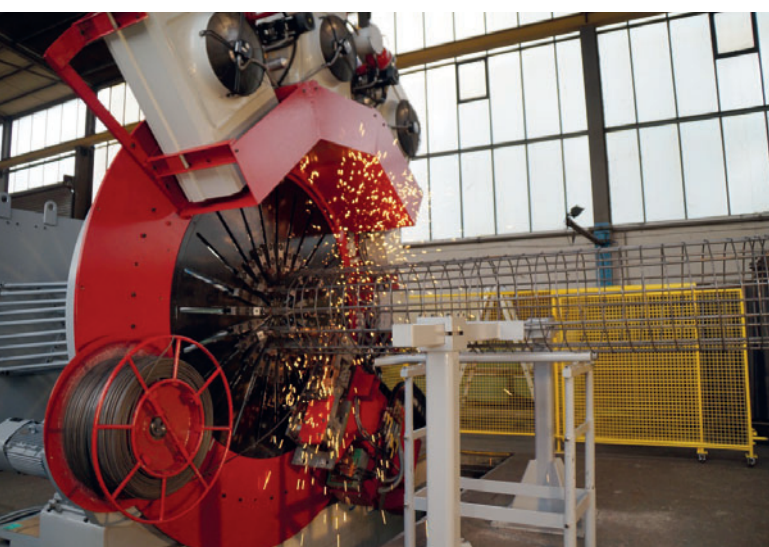
Among other things, medium-frequency spot-welding technology from the automotive industry was already adapted for use in this machine and has since been continuously improved. This complex welding technology, which uses a welding power of 1,000 kVA, permits extremely fast and reliable welding, even of corroded or scaled wires. The position of the respective welding spot can be set easily and with millimetre

accuracy via the machine program, which guarantees exact setting of the welding spots.

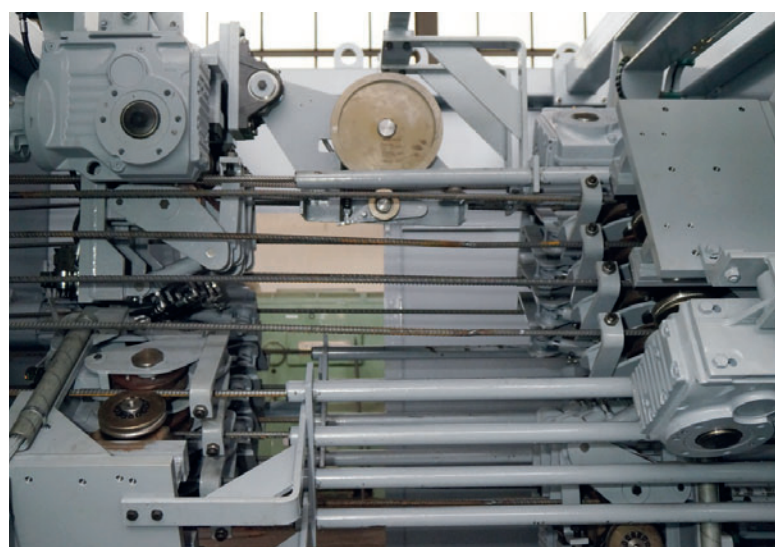
This high-performance welding machine is supplemented by a fully automatic wire transport synchronized with the machine, which in the standard configuration can pull 24 longitudinal wires with a diameter of up to 18 mm from the reels and feed them to the welding machine. Reinforcement cages with asymmetrical longitudinal wire arrangement in practically any configuration can also be manufactured without any problems by conveniently connecting or disconnecting individual wire transport units via hydraulic cylinders.

With medium cage diameters, up to approx. 2.5 m/min of finished welded cage can be produced at a speed of approx. 20 rpm. This enables some of our customers to process up to 800 tons of reinforcing steel per month with one machine.

Neuman Steel Industries, one of the largest reinforcing steel processing companies in Israel, did not have to think long about who to turn to when it came to invest in a reinforcement welding machine for bored piles. Since the machine was set



Automatic cage welding machine USM for the production of reinforcement cages for bored piles



Interior view of the wire transport unit for the automatic wire feed of the longitudinal wires to the welding machine.



Longitudinal wires with diameter 18mm wound on 3to spools

up and the operators received introductory training, it has been working almost continuously in 24/7 operation. The return on investment was achieved in less than a year, so that about a year later the next machine was ordered and put into operation.

In this way, Neuman Steel gains a decisive competitive advantage to continue supplying the booming Israeli market with large quantities of high-quality reinforcement cages for bored pile reinforcement. ■

FURTHER INFORMATION



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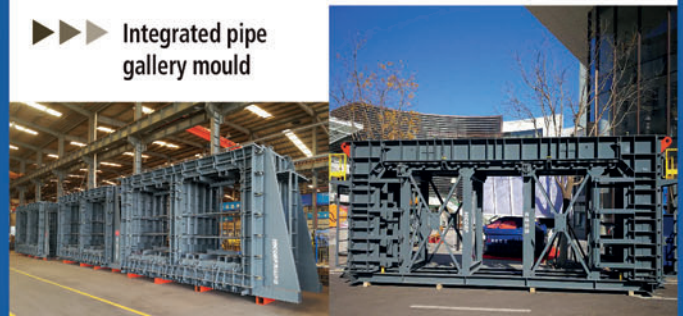
High precision mould, manufacturing expert.

Shield segment die



Advanced mold manufacturing concept, unique die R & D technology, using the attached high frequency vibration mode, continuous production without deformation, embedded floating seal close not leakage slurry. The precision of die cavity width can be controlled in ± 0.2 mm. It is designed with safety protection device to ensure the operation safety of the staff to the maximum extent.

Integrated pipe gallery mould



The integrated pipe gallery mould adopts advanced high frequency attached vibrator, fast locking, multifunction opening, high strength special base, etc. It has continuous production without deformation and leakage of slurry and the smooth appearance of finished products with no porosity.

Shield segment production line



Qingdao Hicorp Group has been developed and manufactured the world advanced segment production system that is able to adapt to the harsh working environment combined with the advantages of European and Japanese shield segment production lines. The segment production lines adopt hydraulic transmission system and run stably and reliably. Daily full load operations are able to produce three times the number of mold products as usual.

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