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### One machine - many cage geometries

**The VSM-S cage welding machines from mbk for the manufacture of square cage reinforcements for driven and bored piles have stood the test of time and ensure a stable production process. A new type, the VSM-057-S, has now been brought onto the market. Different cage geometries can be realized with this machine. That is made possible by different index plates, which are necessary for the production of round, oval, triangular, square or rectangular cages.**

The innovative force of a company is shown by its ability to recognize market needs early and to react to them quickly in order to offer its customers effective solutions with which they can gain a clear competitive advantage.

mbk is well known in the industry as one of the global market leaders for three-dimensional solutions such as cage welding machines. With over 1,100 machines sold worldwide, the company has an impressive share of the market in the global concrete pipe, bored pile, driven pile, construction and precast industry. Welding machines for the reinforcement of manholes and concrete pipes have been produced in Kisslegg since 1961, now in the third generation.

mbk has also been producing welding machines for round, rectangular, square, oval and conical cages for more than 15 years. Their range of application extends from precast concrete columns, joists, beams and masts to the areas of special underground construction, foundations, geothermic and soil stabilization with concrete driven piles, bored piles, etc.

The product portfolio is supplemented by wire mesh welding machines, lattice girder welding machines, wire straightening and cutting machines and an extensive range of machine accessories such as coil grabs. A professional and mature after-sales service and the practiced retrofit concept are important elements in mbk's daily business.



### Innovation

The new VSM-057-S cage welding machine is the next generation of the well-known VSM and has been designed for the rational, high-speed manufacture of round, triangular, square and rectangular reinforcement cages. Use is made here of coil technology. The advantage of this is that the coil rotates around the longitudinal wires (the product), allowing very precise and fast manufacturing. The index plate technology also allows the manufacturing of special geometries that cannot be produced on the LSM version, for example. The index plate can be exchanged simply and quickly by means of the mbk quick-change system, which has proven to be useful in the precast plant, where geometries change frequently.

Through the appropriate adjustment of the index plates and welding angle, different cage geometries are available for the respective areas of application, such as bored piles, driven piles, precast concrete columns and masts. The index plates can be equipped with longitudinal wire guides for diameters of 8/10/12/14/16/18/20/25 mm. Further customer-specific index plates with special welding angles are used for round, oval and triangular geometries as well as double wires.

A maximum 1,500 kg of wire can be wound onto the winding wire coil. The winding wire coil is wound in the machine by a winding device (layer winder).

The reel is equipped with a switch-off function and an adjustable reel attachment and is designed for coil sizes with an internal diameter of 370 - 900 mm, a maximum external diameter of 1,200 mm, a coil height of up to 850 mm and a maximum coil weight of 3,000 kg. Driven reels or adaptations for the coils typical of the country are possible at any time. The high welding performance is provided by the optimized mbk welding transformer.



## Cage geometries

### Round cages

Round cages can be produced up to a cage length of 3,000 to 14,000 mm - with different cage diameters. Different specifications apply in each case:

- Cage diameter 190 to 570 mm with 8 longitudinal wires 45° each
- Cage diameter 140 to 570 mm with 5 longitudinal wires 72° each
- Cage diameter 240 to 570 mm with 10 longitudinal wires 36° each
- Cage diameter 150 to 570 mm with 6 longitudinal wires 60° each
- Cage diameter 270 to 570 mm with 12 longitudinal wires 30° each

Further geometries such as oval are possible for the specific customer

The diameter of the longitudinal wires thereby ranges from 8 to 25 mm, the diameter of the winding wire from 5 to 8 mm. The winding wire pitch lies in the range from 8 to 200 mm and depends on the cage size.

### **Square cages**

With the square cages a cage length can be selected in the dimension of 3,000 to 14,000 mm. Four longitudinal wires are used with a diameter of 8 to 25 mm, a winding wire diameter of 5 to 8 mm and a winding wire pitch of 20 to 200 mm, depending on the cage size.

### **Rectangular cages**

A cage length of 3,000 to 14,000 mm is possible in the production of rectangular cages. The production requirements include four longitudinal wires with a diameter of 8 to 25 mm, a winding wire diameter of 5 to 8 mm and a winding wire pitch that depends on the cage size.

### **Machine specifications**

The machine is equipped with a cage support (support rail) and a reinforcing steel mesh cutter at the cage extraction. Optionally, a cage removal device or an ejector can also be installed. Feed trolley with longitudinal wire clamping. The machine is controlled by means of IPS and soft-PLC. The technical and safety implementation are CE-compliant.



With its continuous development, mbk has set a benchmark in a highly demanding global market and once again thrilled the industry with creative, individual solutions with top-notch technology from the Allgäu.

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