

## Vibrator MRZV 15SD on the ABI MOBILRAM TM 13 - The specialist for stone columns



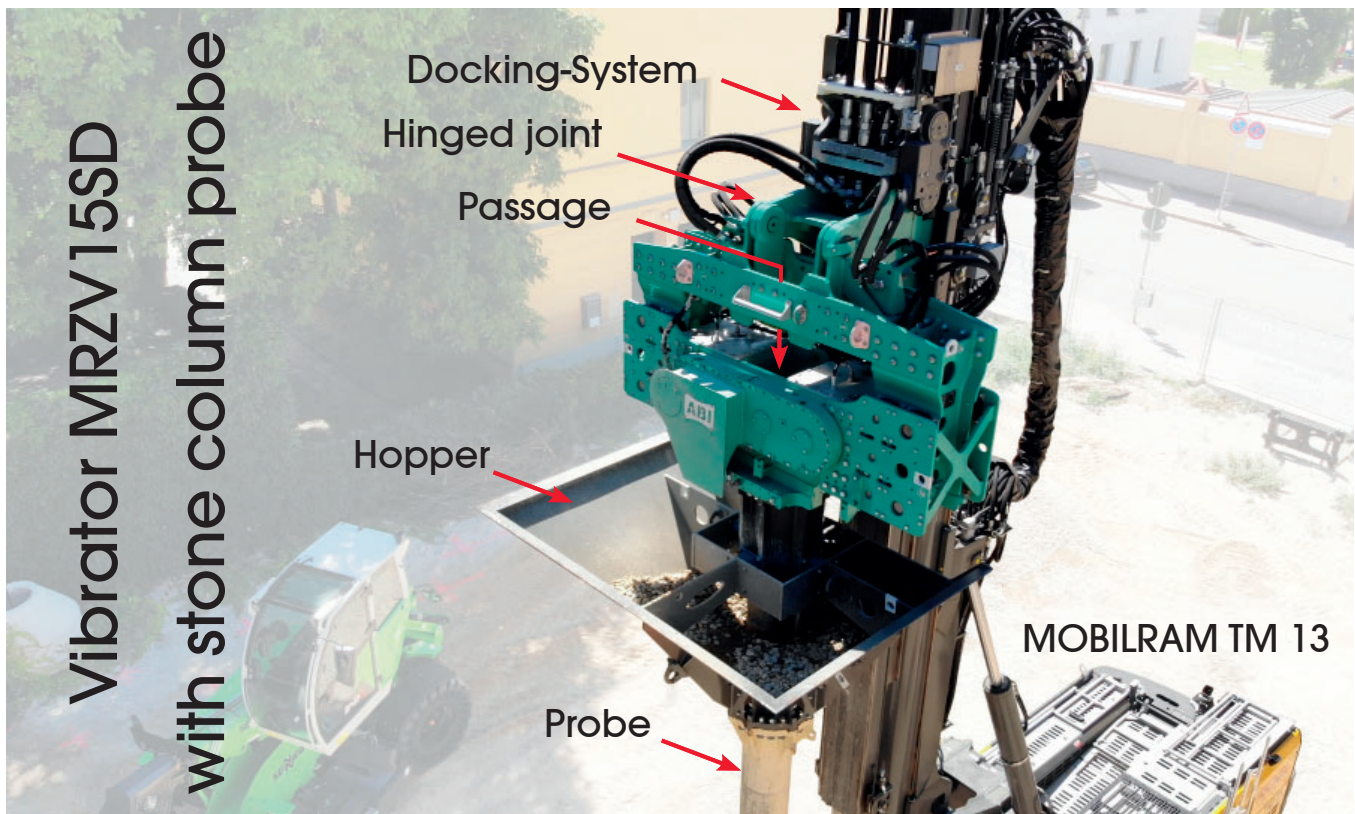
*Photo: ABI MOBILRAM TM 13 with vibrator MRZV 15SD with hopper and probe installing stone columns*

The leader mast guided MRZV 15SD vibrator was specially developed for the production of full displacement piles. The special features of the vibrator include a **hinged joint** for **easy set-up** and a **center passage** for **inserting reinforcement material**, such as reinforcement cages or beams.

During the production of stone columns, a piling probe and hopper are installed under the vibrator. In order to further reduce set-up times on the construction site, the complete unit can be transported already assembled.

Upon arrival at the construction site and having the advantage of the hinged joint, assembly takes place in just a few simple steps. Once on site and using suitable lifting equipment, the carriage on the vibrator is lifted up 90 degrees into a vertical position. The vibrator is then connected to the machine via the Docking-System and raised up until the piling probe is also in a vertical position. The MOBILRAM is ready to go to work!

The rigid vibrator has a static moment of 15 kgm. The counter-rotating eccentric weights generate a sinusoidal centrifugal force that acts in a vertical direction. The static friction in the ground and the surface friction of the piling element are reduced; the advancement of the probe is assisted by the dynamic weight of the vibrator and the pre-



stressing forces of the leader mast. The static moment can be changed to 13 kgm via a simple conversion and thus adapted to different soil conditions or piling probes of different lengths and dimensions.

For the production of stone columns, the ABI MOBILRAM-System offers the driver excellent technical support via the **stone column automatic**. When extracting the automated up

and down steps can be used. Once the probe is driven to depth the first step in the process is that the vibrator is automatically pulled upwards so that the aggregates can fall into the displaced soil volume. In the next step, the direction reverses and the probe is driven downwards. The process is automatically repeated until the probe is completely extracted. The material is compacted by the vibration and the crowd force, resulting



Photo: Set-up - the guiding carriage with hinged joint is mounted on leader mast

## Vibrator MRZV 15SD - technical data

		Version 15 kgm
Docking-System		D6/4
Static moment	kgm	15 (13)
Dynamic mass	kg	2260
Revolutions max.	min <sup>-1</sup>	1780 (1910)
Centrifugal force max.	kN	520
Static extraction force max.	kN	200
Oil pressure max.	MPa	35
Weight vibrator without hopper without probe	kg	3890
Weight vibrator with hopper with 9 m probe	kg	7450
Transport weight vibrator with transport frame	kg	4410
Dimensions		
Passage vibrator	mm	328
Transport height with transport frame	mm	1340
Transport width with transport frame	mm	2380
Transport length with transport frame	mm	2950



Photo: Installation of stone columns for soil improvement



*Photo: The hopper is filled with gravel bevor extracting the probe*

in an even, compacted stone column. The parameters for depth, speed, pre-stressing pressure and holding period can be freely adjusted.

The MRZV 15SD also opens up new possibilities for the advancement of other innovative processes in which materials are introduced at depth into soils, such as the production of concrete piles in the full displacement process. This is where the other innovative structural feature, the center passage, comes into its own, because concrete piles often require reinforcement. Through the passage in the piling

axis e.g., reinforcement cages, girders or tubes can be inserted and adjusted very easily before extracting and do not have to be inserted into the pile after extraction. This increases the efficiency and installation speed on the construction site considerably. In conjunction with the ABI MOBILRAM TM 13, this results in an enormously powerful and compact solution for soil improvement measures.

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