# Innovative Mobile Diamond Wire Saw (MDS) for quarries

**Schwing GmbH has developed a mobile diamond wire saw (MDS) for various quarry requirements. It is compact, can be moved quickly and does not need to be installed stationary. The design is already in use at the Bamberg natural stone plant, among others, and will be presented at Marmomac 2023.**

The new mobile diamond wire saw MDS 5034 from SCHWING is flexible and versatile. It is primarily designed to cut raw blocks of any type of rock in the quarry and also to cut tranches on site. The quality of these can be checked in the quarrying area and they can be allocated for further processing. This does not have to be done in the course of processing in the factory. Unlike stationary wire saws, the MDS is not permanently installed. It can be quickly moved by the operator to its place of use, takes up its working position without additional aids and can be set up and supported in a short time. Its fully hydraulic saw unit can be extended seven metres by means of a telescopic arm and moved and aligned in five directions. It can be raised and lowered, tilted in and out, swivelled to the left and right and tilted. The cutting width is infinitely variable. Cutting capacities of up to 5 m x 3.4 m are possible, as well as different cutting patterns - parallel, at different angles and with variable widths and heights. Parallel cuts can be made without changing location.

**Intensive development work**

"With the process, higher feed rates than usual are possible and the cutting quality corresponds to that of stationary saws," says Markus Hatzer, who came up with the basic idea for the design. Back in 2012, the quarry master, who used to work for various natural stone companies, developed initial plans, applied for patents and built a prototype before approaching SCHWING. The contract manufacturing department at SCHWING in St. Stefan in the Lavant Valley in Carinthia began to look at realisation in 2018 and started the complete new development in 2020. An important goal of Hatzer, project manager Daniel Kriegl and all others involved was to design an economically as well as ecologically innovative product. Savings of rope deflection pulleys were the focus of the development in order to greatly reduce the bending cycles of the diamond rope, which again has a positive effect on rope tension, stability and service life. The geometry was

fine-tuned and optimised for a long time and finally it was possible to get by with only seven rope deflection pulleys, says Kriegl. By dispensing with sliding guides, the rigidity and robustness of the saw unit have been further increased. The diamond wire has a fixed dimension, does not have to be lengthened or shortened and is part of the saw unit. A remote control is available for aligning the saw unit and carrying out the cutting process, which can also be used to control the telescopic loader.

In addition, the MDS is equipped with a cabin with a workstation, which is used for control when loading or driving to the job site and positioning there. One person is enough to operate the machine in the quarry. Another innovative feature is the new protection concept with movable slats, which completely encloses the rope and increases the safety for the operator enormously compared to other solutions. The machine is designed as a hybrid version: it can be operated with diesel or diesel fuel.

**Proven in use**

The Bamberg-based natural stone company Hermann Graser GmbH has accompanied and supported the development. Among other things, the company sent raw blocks to SCHWING for testing purposes and took delivery of the first finished prototype in mid-2022. The mobile innovation is interesting for the company not least because it operates more than 20 quarries where quarrying is carried out on a changing and order-related basis. With its compact transport dimensions of less than three metres, the MDS can be transported easily and quickly from one quarry to the next using a standard low-loader, according to CEO Martin Graser. From there, the all-terrain saw with all-wheel drive and tilt adjustment can be quickly driven to its destination to get straight to work.

In the meantime, three MDS 5034 wire saws are already in use in the quarries of the Bamberg natural stone plant and have already proven their worth: Both when quarrying hard EPPRECHTSTEIN GRANIT and various sandstones. Another company in Germany is also currently testing the machine and a company from Sweden is already using the new development.

The MDS 5034 will be presented to the industry at the upcoming Marmomac 2023, 26 - 29 September. Outdoor area, Avenue H, Stand H 104

Image-Video: https://www.youtube.com/watch?v=bKsWOn6Pz30

## Technical details

Mobile diamond wire saw MDS 5034

**Cutting capacity**
2 m - 5 m width x 3.4 m height
**Transport dimensions**
Under 3 m width, 3.3 m height,
8.8 m length, 14 t weight
**Diamond wire**
8.8 - 9.2 mm, 20 - 40 m / s
24,5 m endless spliced
**Hydraulic pump**
Diesel and electric
**Carrier**
Manitou MT1440 HA RC
**Operation**
Radio remote control
**Telescope**
7 m extendable
**Arm angle**
33 - 2 (sides) x 13° tiltable

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