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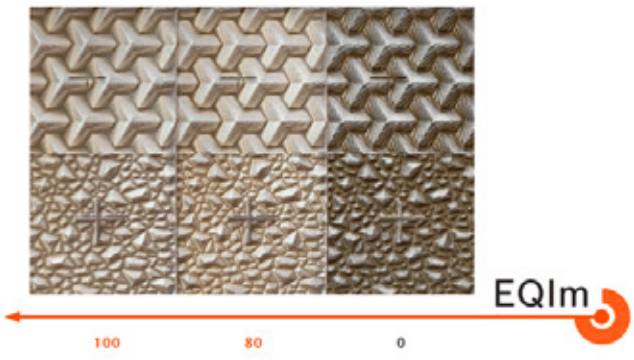
„EQIM" DIGIEXTENSION NOW AVAILABLE

Better quality and higher removal rates for standard engraving

The EQIm (Extra Quality Improver) Digi-Extension from Schepers is a high-performance software package that completely reinvents the way that laser technology interprets and outputs engraving data. The EQIm module works completely on-the-fly and its intensity and mode hardness can be freely adjusted at the control terminal. There is no need to prepare the engraving data in any other way.

When combined with the latest hardware for the output of engraving data (EgraBox), **EQIm** helps to produce better quality on standard engravings. It can also help achieve layer-by-layer removal rates that are sometimes much higher while maintaining standard quality.

For example, in some tests, it has produced the same results with a removal rate of 56 µm per layer that would only have been possible with a removal rate of 16 µm per layer in the past.



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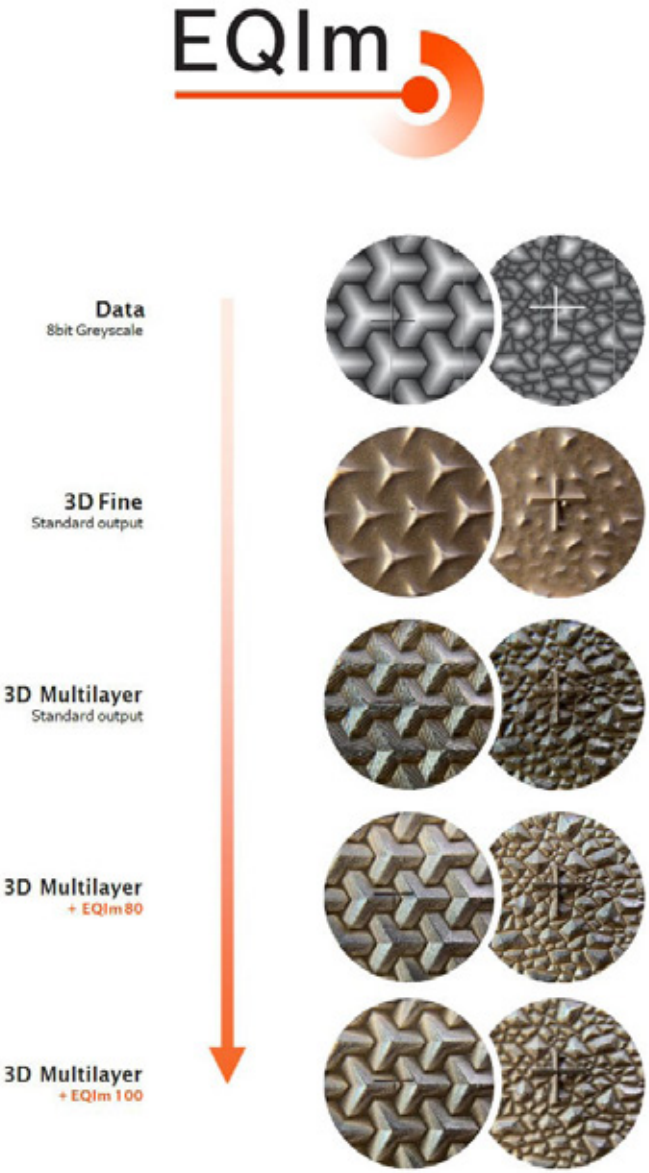

All examples engraved at 56 µm per layer. This means that the target depth of 600 µm was achieved in 11 layers. All examples were engraved on a Digilas 5000 (4-beam set-up, 2x 500-Watt lasers)

NEW MULTISCAN TECHNOLOGY DEVELOPED

Reduction of external influences in multi-layer engraving

The wider the face of the cylinder, the more likely it is that problems will occur during engraving, particularly when using high laser light intensities.

Schepers has now developed a new technology – Multiscan – which considerably reduces external influences, such as high temperatures, during multi-layer engraving.

When using Multiscan, cylinders are completed in one step. This means that a uniform engraving image can be achieved from start to finish, even when working with large cylinder widths. The technology is based on the fact that the spot can be placed in a defined position axially on the cylinder within an area. When using a continuous spiral feed, up to eight layers can currently be removed in one step. In future, Schepers plans to extend this technology to 16 spots, meaning 16 layers can be engraved in one step.

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RESEARCH CONTINUES DESPITE THE CORONAVIRUS

Two highly promising R&D projects on laser machining

Schepers is working with a wide range of partners on various projects subsidized by the European Union and the German state of North Rhine-Westphalia. These projects also benefit customers because they involve testing and developing a constant stream of new approaches to imaging and surface treatment.

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The **MOVERO** project stands for the "use and further development of modern processes for surface structuring for interdisciplinary applications in the regional industry." In concrete terms, the project involves eleven companies from various sectors and researchers from FH Münster University of Applied Sciences in Germany and the University of Twente in the Netherlands. The project partners have spent more than three years gathering, thinking through, testing and developing ideas for surface treatment and, most importantly, for functionalization.

During the project, the companies are working with the universities and research institutes to establish the theoretical principles of surface geometries and their functional properties. They then use these findings to implement solutions in industrial practice.

One feature shared by all the planned applications is rapid, high-performance ultra-short-pulse laser removal and, if necessary, a subsequent laser polishing stage that is carried out to create various surface geometries on embossing rolls. This means the embossing process that takes place afterwards can transfer the optimized structures quickly and cost-effectively to various film surfaces (plastics, metals) in a roll-to-roll process. The form and the structural size of the functionalized surfaces can therefore be adapted to suit the corresponding uses.

The partners in the project are FH Münster University of Applied Sciences, TAFH Münster GmbH, DLR-Institut für Vernetzte Energiesysteme e.V., Schepers GmbH & Co. KG, Matthews International GmbH, Mikrobiologisches Labor Dr. Michael Lohmeyer GmbH, the University of Twente, Irmato, Kamp Coating Apeldoorn BV, Materiomics, Morphotonics B.V., Duropanel BV, FMI Industrial Automation B.V. and ECM Technologies BV.

The **LASERROLL** project is examining the high-resolution laser structuring of printing and embossing rollers for the roll-to-roll production of printed electronics and microstructured and nanostructured films.

The aim of the project is to develop a new type of laser processing technology that will increase efficiency and resolution in the production of precision printing cylinders.

Unlike conventional, multi-stage processes, the process being investigated in this research project is designed so that embossing tools can be structured in a single stage, with no need for postprocessing. To achieve this aim, a new ultra-short-pulse laser technology with wavelengths in the UV range is being used that fully vaporizes material with a depth resolution of 50-100 nm and lateral structural sizes of 1 µm and does so without damaging the surrounding material.

This significantly higher structural resolution generates a disproportionately large volume of data, and efficient data processing algorithms are also being developed in the project to ensure this data can still be processed.

As it simplifies the production of printing cylinders and significantly increases resolution, the direct laser structuring of printing rollers will help bring advances in various fields of application such as printed electronics, light guide technology and security/safety-relevant packaging.

Both projects are subsidized by the European Union and the German state of North Rhine-Westphalia.

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Always with our finger on the pulse of time. Ascribing to this motto, we continually keep you informed about current developments, products and services of the Heliograph Holding companies. In practical, customer-oriented and worthwhile terms.

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