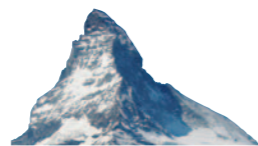


PLATING
FINISHING
LASER
ENGRAVING
PREPRESS
AUTOMATION
DOCTOR BLADES
CONSUMABLES
PERIPHERALS
DIGILAS

LASERSTAR Daetwyler is the leading developer of Laser engraving for Packaging printing, meeting all areas of packaging, label, foil or gift wrap market demands. As a leading supplier to the printing industry, our **LASERSTAR** technology is based on years of experience with Gravure and Flexo processes. With 35 kHz and 70 kHz engraving speeds and the free selection of the most advanced cell configurations, make this unit the "tool of choice" when quality and economics are key requirements. Continuous investments in R & D and constantly observing the market, result in practical system developments for single machines or entire processing lines. MDC Max Daetwyler AG has successfully introduced the DLS to Packaging gravure printing. The new standards set with the **LASERSTAR** have become the industry norm for quality, reliability, and repeatability. We are the only manufacturer of cylinder engraving equipment worldwide, which produces more than 80 % of our entire range of equipment in-house. The **LASERSTAR** solution, together with plating, surface finishing, EM engravers, cylinder layout and data preparation software, cylinder transport management systems and logistics, as well as Pressroom supplies, such as Doctor Blades for Gravure and Flexo, ties everything together into a neat "hassle-free" package.

Daetwyler – the **"single source"** for all your needs.

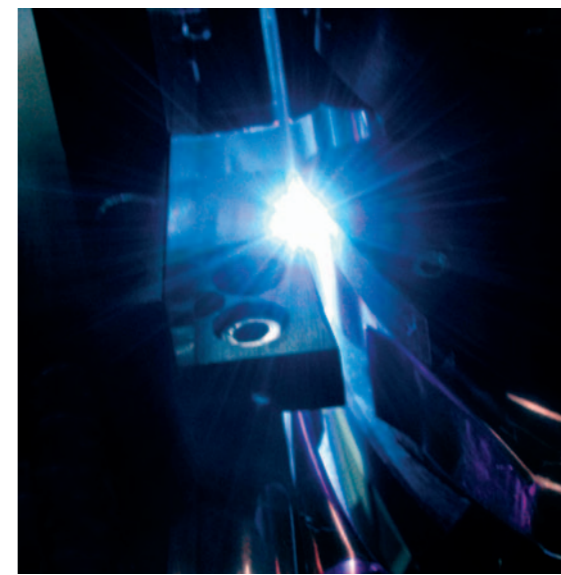

Daetwyler
 INNOVATIONS FOR THE PRINTING INDUSTRY



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 Flugplatz
 CH-3368 Bleienbach
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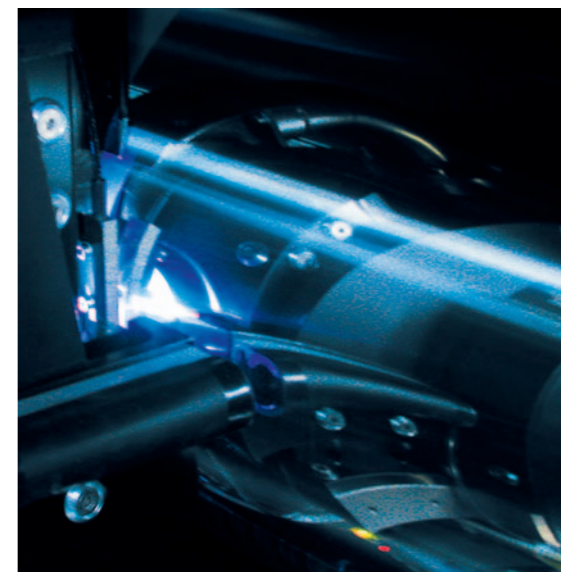
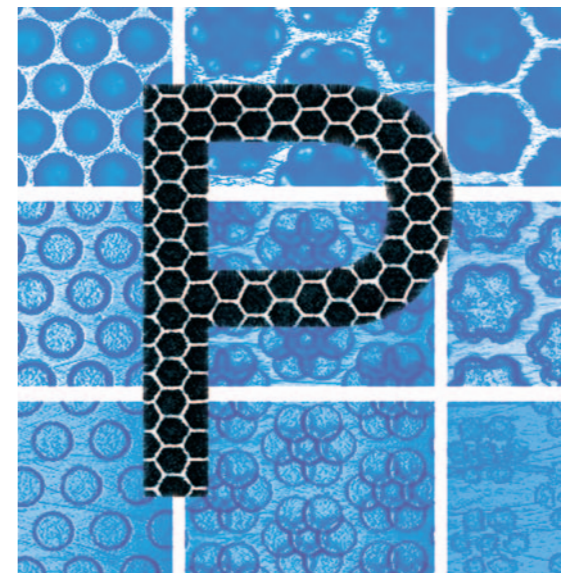
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LASER

Packaging Printing Solutions




Daetwyler
 INNOVATIONS FOR THE PRINTING INDUSTRY

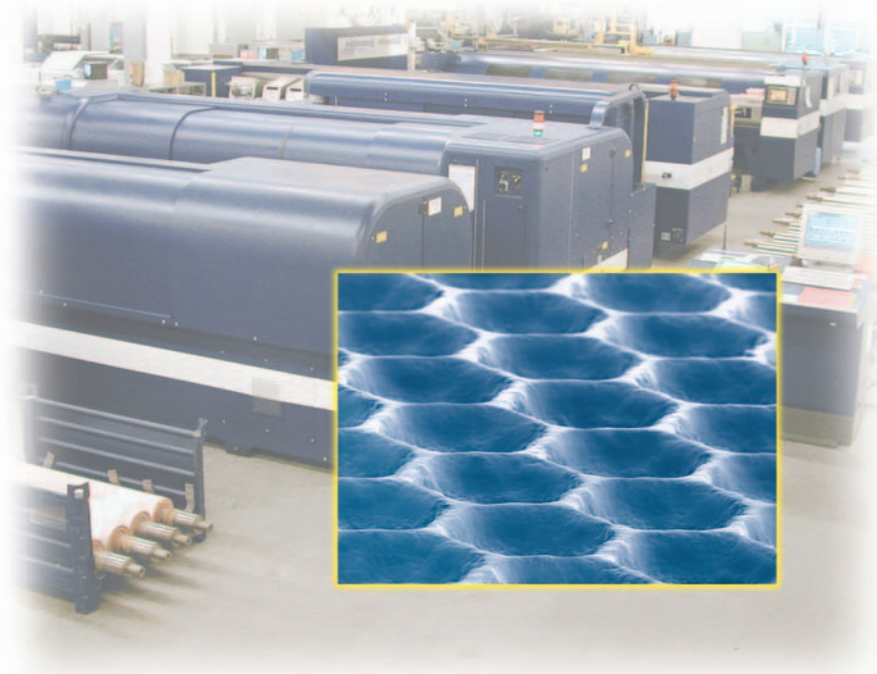


LASER

Packaging Printing Solutions

High-Speed Laser Engraving

Within a short period of time, the **DLS (Direct Laser System)** by MDC Max Daetwyler AG has been successfully established in Packaging Gravure printing. High productivity and quality, perfect reproducibility and a unique flexibility in the choice of cell shapes and screen resolutions impacts firmly the technical superiority of the **LASERSTAR** implementing tomorrow's technology today. The packaging **LASERSTAR**-based version features 35'000 cells per second engraving and is significantly faster than electromechanical engraving systems and offers both superior quality and flexibility. The patented dual laser version can also double the engraving speed to 70'000 cells per second. Adding a **ZINCSTAR** and a **FINISHSTAR** to an existing line, automation and integration into existing handling systems can be upgraded as desired.



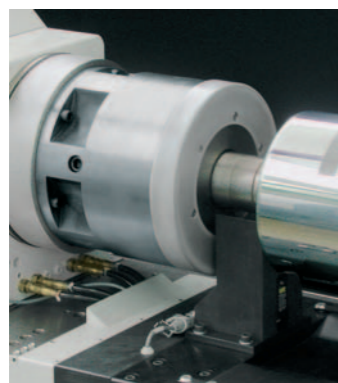
DLS - Direct Laser System

Where electromechanical engraving systems have been pushed to their physical limits, developments in laser technology are progressing rapidly. In **DLS** cylinder making, all shortcomings of oscillating mechani-

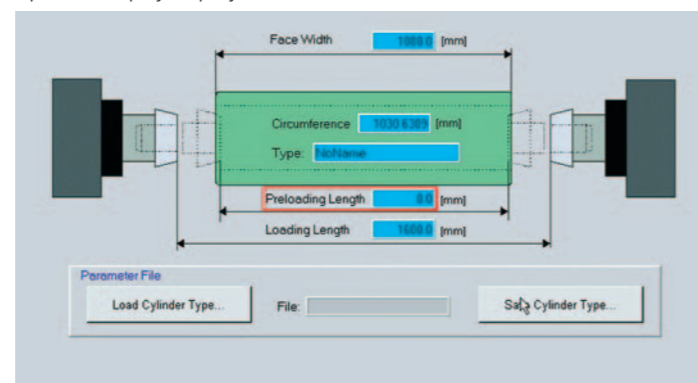
cal systems such as ringing, stylus wear, and hysteresis are history. The image information is transferred directly into the zinc layer, using 35'000 pulses per second (70'000 pulses per second with the dual laser version) of the laser beam as a touchless tool. The laser ablation as an

optical process does not involve physical forces, therefore, no wear of mechanical tools occur and uniform, repeatable engravings result. A cascade filter system collects the evaporated material. All process steps are fully automated.

Automated Collet Chuck



Operator Display Grip Cylinder



Galvanics

The zinc layer image carrier has to be only 15 µm deeper as the max. cell depth! After laser imaging, the cylinder is cleaned, pickled and 6 – 8 µm chrome plated. Copper and zinc cylinders are processed in the same chrome lines and can be printed with identical ink formulas.

New Cell Geometry

With **SHC (Super Half-autotypical Cell)** there is no longer a fixed relationship between cell diameter and depth, both can be controlled individually. The **SHC** feature allows for a wide spectrum of different cell shapes to represent the tonal range: From conventional mode (depth variable) to halfautotypical mode (varying area), the complete range is covered for an optimum ink transfer. Whenever high printing speeds and lower paper qualities are processed, the **SHC** screen advantages positively impact the final results, giving the most economic outcome.

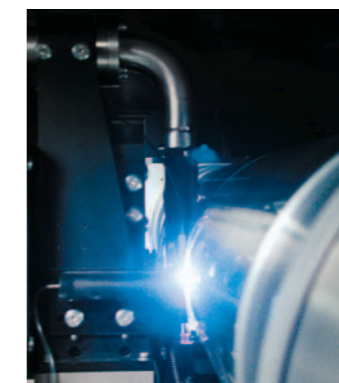
Print-Form Preparation



Prepress and Screens

The Direct Laser System accepts the open data formats Postscript, PDF or TIFF. Color separated data are converted into engraving data. The screen angle based on the round cell shape pattern can be set to 0° or between 30° and 62°. The zoom optic allows a pre-adjusted screen selection of engraving resolutions within a range from 25 l/cm – 400 l/cm. Printed ink densities of 70 l/cm in electromechanical systems are comparable to 120 l/cm of **DLS** cylinders. **DLS** combined with our layout software **COLLAGE** or the **COLLAGE-E** for full-up workflows, is the ideal "partner" in this technology-leading laser process to enhance its workflow and all other levels of productivity.

Laser Engraving



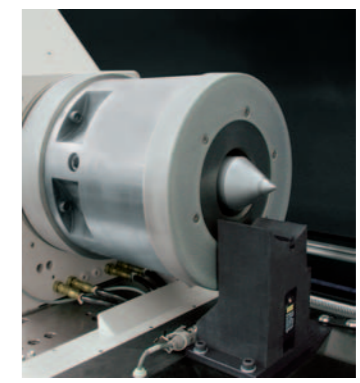
Economical Advantages

Due to the determinable ink transfer when printing **DLS** cylinders, a precise definition of varnish and solvent is given. Safety margins in ink formulas are no longer required, reducing solvent and extender. Some of the benefits of **DLS** include: print cylinders at higher printing speeds, homogenous ink lays, no break-offs in vignettes and detailed tonal renderings across the complete reproduction range. Lower press startup waste and ink savings of several percentage points, especially on flexible pages, are further advantages for the printer.

The Future is Laser

The inherent potential of laser technology is huge and the rate of innovation of the **DLS** in gravure printing will steadily increase. The entire printing industry, including producers of process equipment, ink suppliers, printers and their clients will look closer at the Direct Laser System.

Chuck for Hollow-Cylinder



LASER