

Innovation in Pad Printing

TAMPOPRINT launches new printing plate and laser technology for direct imaging

Up to now, pad printing has only been able to display different levels of brightness and color gradients, as known from photography, at great expense and usually with unstable results. With the help of print screens, this representation could be simulated at least for the human eye. Thanks to the TAMPOPRINT development of laser-structurable clichés such as the INTAGLIO cliché and the development of 3D microstructuring using the CLICHÉ LASER Xi, color and brightness gradients as well as four-color prints can now be created with impressive quality.

Without pad printing and the ingenious technology of TAMPOPRINT - the inventor of industrial pad printing - many everyday products would not be what they are today: the numbers on the watch dial, the letters on computer keyboards, the faces of the Playmobil figures and Barbie dolls popular with children or the measuring scale on baby bottles - many things only become products thanks to the machines and technical components developed by TAMPOPRINT. In order to always offer its customers state-of-the-art technical solutions, the market-leading special-purpose machine manufacturer for pad printing and laser engraving is constantly developing new solutions and accessories in order to offer coherent concepts from a single source. With developments such as the CLICHÉ LASER Xi, jointly developed with the Swiss company Lüscher AG, the specialists from Korntal-Münchingen are constantly opening up new fields of application and ever more effective production possibilities for their customers.

In-house developed cliché meets precise laser engraving

For optimum direct imaging with the CLICHÉ LASER Xi, TAMPOPRINT has designed a new type of printing form, the INTAGLIO cliché. The material reacts highly sensitively to laser radiation, always offers good mechanical resistance and a long service life as well as reproducible results. The new cliché is based on a thin steel plate. Then follows an adhesive layer, a carrier material and a final coating specially developed by TAMPOPRINT.

Thanks to its fully digital imaging capability using laser technology, this new type of printing plate has the potential to replace conventional imaging processes. For the users of the printing process, this opens up a new spectrum of application fields. This in-house development from TAMPOPRINT, for example, could replace the polymer clichés used in the past. It requires neither a repro film nor an exposure or any other steps that would be necessary in conventional cliché production.

The special quality of the INTAGLIO cliché becomes clear in the interaction with the direct laser engraving of the CLICHE LASER Xi, as until now, in pad printing, the creation of different brightness levels and color gradients, as known from photography, was not possible. However, it was possible to simulate this process with the aid of print screens. Thanks to the development of laser-structurable clichés such as the INTAGLIO cliché and the development of 3D microstructuring as with the CLICHE LASER Xi, color and brightness gradients as well as four-color print motifs can now be created with impressive results. In addition, this processing method can be used to create filigree lines and screened elements with contour lines as well as a depth of individual image elements or the combination of line and screen engravings and to achieve optimal, repeatable print results. In order to use the full potential of the machine, TAMPOPRINT recommends using the INTAGLIO cliché.

The workflow also clearly shows the advantage of cliché production using direct laser engraving. Until now, the production of conventional clichés required at least eight work steps: from data preparation, lacquer coating and imaging to etching, decoating and cleaning - numerous steps were necessary but at the same time allowed plenty of room for fluctuations in quality and variations in print quality. „The direct laser engraving now reduces the workflow to four work steps, consisting of data preparation, imaging, cleaning and final inspection. This drastically reduces the manual labor required and thus automatically ensures a considerably higher process reliability", explains Stephan Berger, Head of Development at TAMPOPRINT.

System solution using cliché material, laser, process and control

The CLICHE LASER Xi is characterized by a compact design. It is based on a flatbed transport system that is moved step by step under an oscillating laser head. An ingenious cliché holding system ensures that inaccurate positioning of the magnetic cliché material during the exposure process, especially in multicolor printing, is now a thing of the past.

This reduces the need for any later adjustments to the printing machine. Thanks to this technology, the exact reproducibility of the clichés also drastically reduces machine set-up times: cliché production can be repeated at any time with exactly the same parameters and thus achieve consistent printing results.

A striking feature of laser technology is the particularly high resolution: motifs can be produced with up to 5080 dpi or 150 lines/cm. This ensures high detail reproduction and the realization of finest structures and fonts in the subsequent printing process. Now even individual halftone dots can be varied in width and depth and achieve a homogeneous and detailed print result later on.

Thanks to the CLICHÉ LASER Xi, imaging of clichés is even possible regardless of format and perforations. So, for instance, the laser is effectively used for imaging record or steel clichés. During this process, a laser-sensitive layer is removed, and the cliché is then chemically etched. For optimum results with steel clichés, indirect exposure by laser is recommended as an alternative to light-sensitive coating lacquer.

Development and service perfectly matched to customer needs

Especially users from the decorative sector with a high throughput of orders per day and frequently changing motifs, such as manufacturers of baby products, toys, advertising materials, cosmetics or automobiles, benefit from the interaction of the system solution: „The baby products market is a particularly interesting sector for the CLICHÉ LASER Xi. Products such as pacifiers or drinking bottles are decorated with a lot of effort, and the individual decors frequently alternate. Also the multitude of printed products per day and thus the number of clichés required per day is very high for pad printing“, explains Dietmar Scholz, Sales Manager Pad Printing Machines and Laser at TAMPOPRINT.

So, the purchase of a CLICHÉ LASER Xi is particularly worthwhile for customers who have such a high production output that they need more than three clichés per day. With this system, globally operating customers can produce the urgently needed printing plates quickly and independently of logistics. This also allows them to produce prototypes for newly developed applications by themselves and open up new fields of application.

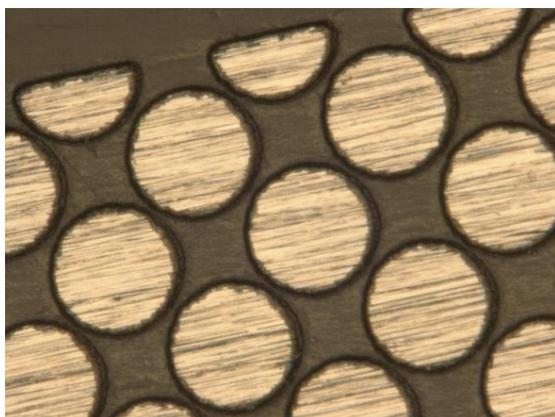
Focussed on service for the customer

Despite TAMPOPRINT's innovative developments, the company focuses less on the sale of technical equipment and more on the appropriate set-up of complete processes and optimal results for the customer. TAMPOPRINT not only offers sophisticated high-tech machines and accessories for almost every requirement, but also the right service for every customer need: Also for smaller companies that are looking for process-safe and precise solutions, but for whom the purchase of a cliché laser is not worthwhile for lack of quantities and thus profitability, TAMPOPRINT has the right solution:

You can purchase ready-to-print clichés directly from TAMPOPRINT and so also use the digital imaging technology. This way, you can obtain ready-to-print clichés for repeatable print jobs, which all have the same quality in terms of position and depth, and thus also benefit from precise results in the printing process.

Graphic material for this contribution

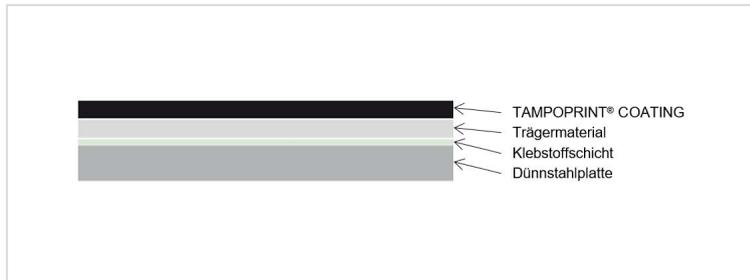
Photo credits: TAMPOPRINT



Detailed picture of a dot screen on a record cliché in 500x magnification.

Press contact for Germany

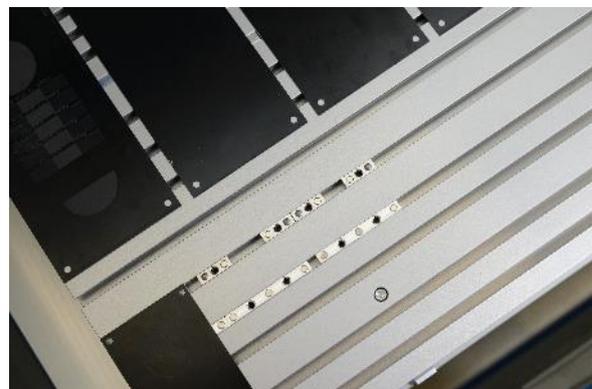
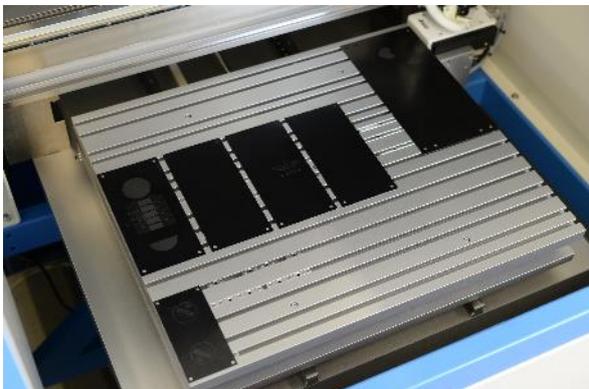
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The structure of the INTAGLIO cliché developed by TAMPOPRINT.
It provides for an optimal direct imaging with the CLICHÉ LASER Xi.



Thanks to the TAMPOPRINT development of 3D microstructuring, as with the CLICHÉ LASER Xi, color gradients as well as four-color prints can now be created with impressive results.



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