

PremiumSetter

HIGH-RESOLUTION DIRECT LASERS FOR RELIEF PRINTING



The diverse range of applications for the Premi

Dry Offset for container printing

Dry offset printing is ideal for decorating open containers, metal drink and aerosol cans, and polymer cups and tubes. Elastomer offers many advantages in this process. The surface tension of elastomer and blanket is coordinated, which leads to excellent ink transfer. The low tendency to swelling extends the service life of the printing form. The ultra-fine laser spot of the fiber laser engraves with a previously unattainable resolution. Careful use of infinitely variable undercuts results in much lower dot gain. Elastomer printing forms for IDF machines do not require a separate sandwich structure. The PremiumSetter is much more productive than conventional direct engraving systems.



Coating applications enhance sheetfed offset

Surface finishing can hugely improve the appeal of packaging for cosmetics, foodstuffs and toys as well as publicity materials. Sheetfed offset enhanced with a flexographic coating unit offers a varied range of surface finishing options. Here, too, elastomer delivers many benefits. The finest elements can be reproduced, and larger areas can be coated evenly and with excellent edge definition. Short process times ensure fast availability of the printing form. Elastomer printing forms are also much more cost-effective than conventional printing plates.

Hygiene, wrapping paper, ruled paper

Ruled paper, napkins, wrapping paper, diapers, and other hygiene products are frequently printed in large-format and continuous processes. This is where PremiumSetter technology unlocks the benefits of high-resolution direct engraving. Elastomer printing forms last longer, particularly on coarse print substrates. The ultra-fine laser spot of the fiber laser enables fine screens to be used than is usually the case with CO₂ lasers. Ink transfer is excellent, and embossing rollers can also be engraved.



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Flexible Packaging

High-resolution direct engraving with the PremiumSetter delivers printing results that are on a par with the LAMS process based on photopolymer printing plates. The digital controllability of the printing form parameters in conjunction with the elastomer properties leads to longer service lives and maximum reproducibility. High printing densities, for example, lead to very good results in white printing. Elastomer sleeves offer a clear cost advantage over photopolymer sleeves and are also much quicker to procure and ready for printing!

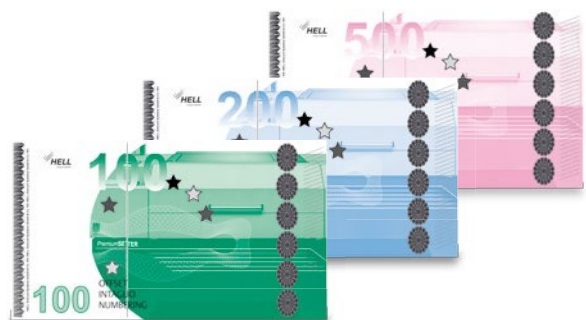


Corrugated board

The printing of corrugated cardboard using the direct post-print process accounts for a large proportion of the volume. In the indirect pre-print process, the subsequent top layer of the corrugated board is pre-printed and then laminated. Flexographic printing is increasingly being used in this area of offset printing. Here, the directly engraved elastomer plate scores particularly well due to its long service life in the printing press.

Security printing

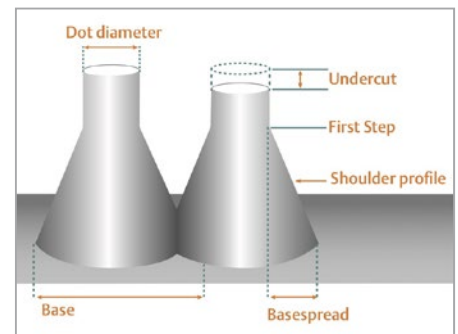
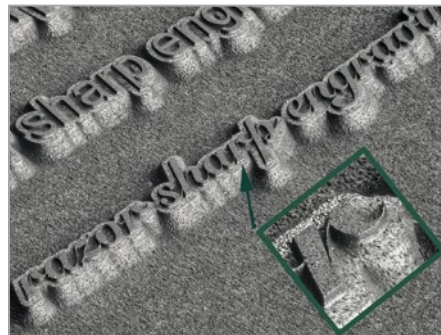
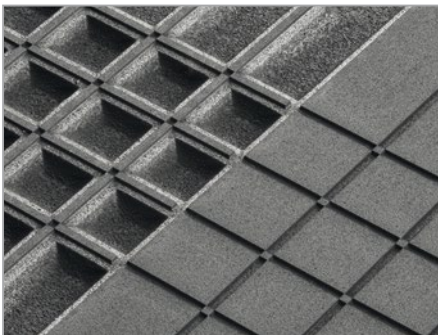
High-priced products in the pharmaceutical, cosmetics, spirits and tobacco industries are increasingly being protected by security features. These are often derived from the banknote or document sector, such as the micro-representation of lettering and geometric objects. The fineness of the imaging is crucial for optimum protection. PremiumSetters have a standard resolution of 5080 dpi, which, in conjunction with a customer-specific register system, makes them ideal for this area of application.



The PremiumSetter technology

Principle

PremiumSetter DLE (Direct Laser Engraving) technology is based on powerful, high-resolution lasers which, in combination with newly developed elastomers, enable high-precision three-dimensional print reliefs. The unique digital controllability and the associated high reproducibility of the printing parameters play a decisive role in this technology. The two-stage process also ensures that the printing forms are available quickly.



High-precision implementation of three-dimensional print reliefs according to previously defined criteria

High power laser

At the heart of the PremiumSetter are one or two high-performance fiber lasers, each with 600 W laser power, which remove the three-dimensional relief in a single operation to a maximum depth of 800 µm. Engraving depths of up to 3 mm can be achieved using the multi-pass method. The fiber laser enables a writing resolution of 5080 dpi and thus engravings in HD quality. The screen ruling is infinitely adjustable and has no influence on the performance of the PremiumSetter.

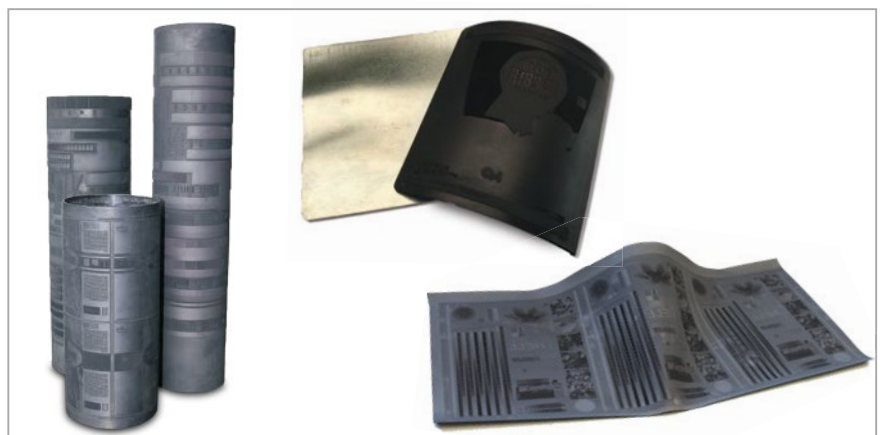


3D engraving

The PremiumSetter uses pre-defined parameters to convert 1-bit TIFF data into three-dimensional 8-bit TIFF engraving data, and does so on the fly. Based on tonal value and screen ruling, it calculates the height and shoulder profile of the print elements in halftone images, line art, and text. High-resolution direct laser engraving delivers precise, infinitely variable undercuts, first steps, and shoulder angles, which is impossible in other manufacturing processes.

Latest generation elastomers

Elastomers do not swell, because they exhibit greater resistance to chemicals. This makes them ideal for soft, water-based and aggressive ink and coating systems with any type of drying and component basis. Users can choose between printing plates on polyester or metal substrates and sleeves.



PremiumSetter engraves plates and sleeves

Key features of the PremiumSetter

Simplified plate handling

Simplified plate handling has been realized for the lasering of elastomer and digital photopolymer printing plates. Elastomer printing plates can be mounted on polyester or metal carriers. An integrated loading table with stops, a vacuum cylinder with clamping bar and control by foot switch make loading and unloading particularly user-friendly. A pin system is available for dry offset printing plates and coating plates.



PremiumSetter PLATE

Simplified sleeve handling

For lasering elastomer and photopolymer sleeves, the PremiumSetter is equipped with a one-sided bearing and pivot device (cantilever mount) for mandrels. This makes handling the printing form extremely easy.



PremiumSetter SLEEVE

Maximum flexibility

As a PremiumSetter hybrid configuration, both plates and sleeves can be imaged. This configuration utilizes the advantages of both simplified plate handling and simplified sleeve handling and therefore offers maximum flexibility.

What all PremiumSetters have in common is the ability to image photopolymer printing forms with a digital LAMS layer.



PremiumSetter HYBRID

The advantages of PremiumSetter and Direct Flexo

Two-step process

The direct laser engraving of a ready-to-print elastomer flexographic printing form takes place in a single step. The high-energy fiber laser creates the three-dimensional relief in just one work step and is easy to operate, even for non-experts, after a short briefing. After engraving, the cleaning system uses a soap solution and a brush system to remove the remaining rubber dust and other dirt particles from the plate and then dries it with warm air.



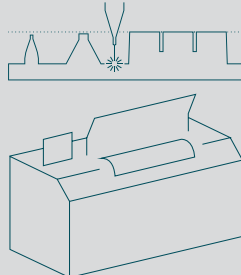
Video available

Fast availability

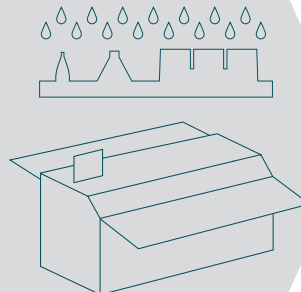
Less than one hour



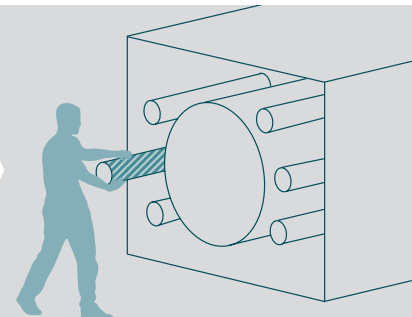
Material



Imaging



Washing



Printing

Increased service life

Elastomer printing forms are characterized by increased service life during printing.

Low investment

The unsurpassed lean printing form production with PremiumSetter, washer and elastomer printing form requires only a comparatively low investment.

All from a single source

As a complete solution, all components are offered from a single source.

Sustainable process

Direct Flexo with the PremiumSetter offers a number of environmentally relevant advantages compared to the established photopolymer technology:

- No solvents to wash out the printing form
- Printed forms are not hazardous waste
- Small footprint with e.g. only one laser and one washer
- No repeating plate due to long service life of elastomer

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