

# PremiumSetter

HIGH-RESOLUTION 3D DIRECT LASER ENGRAVING FOR RELIEF PRINTING



# The diverse range of applications for the PremiumSetter

## 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 finer screens to be used than is usually the case with CO<sub>2</sub> lasers. Ink transfer is excellent, and embossing rollers can also be engraved.



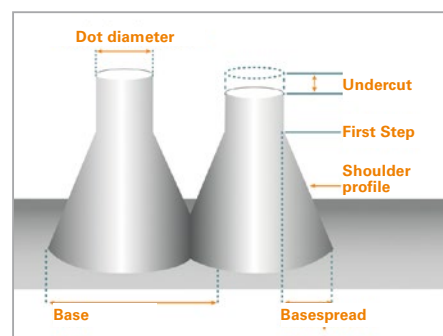
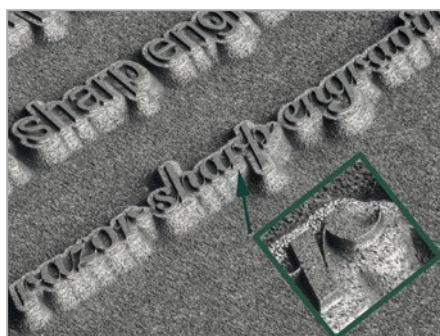
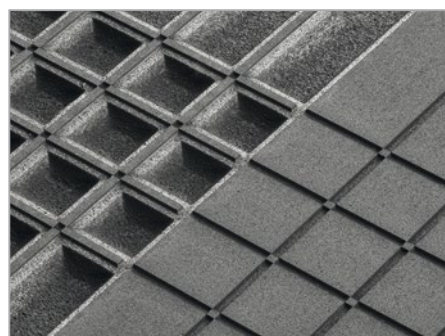
## Flexible packaging

Flexible packaging, especially with flexographic printing, is becoming an attractive option for more and more brand owners. High-resolution direct engraving using PremiumSetter technology delivers printing results that are on a par with gravure or offset printing. Digital control options for printing form parameters and the properties of elastomer combine to deliver longer service life and maximum reproducibility. High print densities ensure outstanding results for white backgrounds, for example. Elastomer sleeves offer a significant cost advantage over photopolymer sleeves and are also much faster procured and provided in a press-ready condition.

# PremiumSetter technology

## Principle

PremiumSetter technology is based on high-performance, high-resolution lasers that, in tandem with newly developed elastomers, make it possible to create high-precision, three-dimensional printing reliefs. The unique digital control options and the associated high reproducibility of the printing form parameters are particularly important in this technology. The process consists of just two stages and ensures printing forms are available fast.



High-precision production of three-dimensional printing reliefs, according to pre-defined criteria

## High-performance laser

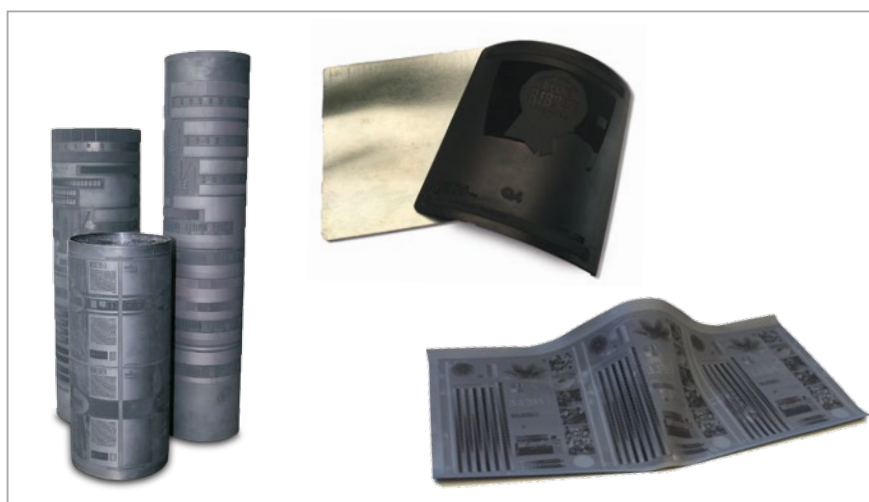
At the heart of the PremiumSetter is a high-performance fiber laser that removes the three-dimensional relief to the full depth in a single step. The fiber laser works with a wavelength that is ten times shorter than a CO<sub>2</sub> laser, enabling a much more focused beam. The ultra-fine laser spot of the fiber laser and the high write resolution produce an overall resolution that cannot be achieved when using CO<sub>2</sub> lasers due to their design. The only step after engraving is cleaning with water to remove debris. Another special feature of the PremiumSetter is the option of lasering photopolymer printing forms with a digital LAMS coating.

## 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.

## New-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



## Flexibility

PremiumSetter technology is available both for printing plates and for sleeve printing forms, as the machine can be configured for optimized plate handling, optimized sleeve handling or both types of printing form.

### Optimized plate handling

Simplified plate handling has been developed for the PremiumSetter S1000 and S1700 for lasering elastomer and digital photopolymer printing plates. Elastomer printing plates can be mounted on polyester or metal substrates. An integrated loading table incorporating stops, a vacuum cylinder with clamping bar, and footswitch controls make the process of loading and unloading these machines exceptionally user friendly. A pin system is available for printing plates for dry offset and for coating plates.



A table incorporating stops, vacuum cylinder with clamping bar, pin system, and footswitch controls in the S1000

### Optimized sleeve handling

When lasering elastomer and photopolymer sleeves, the S1700 can be fitted with a one-sided bearing and pivot device (cantilever mount) for mandrels, which makes handling printing forms much easier. The S3000 holds the printing form either on a mandrel mounted on centers, or on a shaft cylinder mounted in three-jaw chucks.



Cantilever mount with mandrel in the S1700



### Elastomers and digital photopolymer printing forms

The PremiumSetter can both engrave elastomers directly and image digital photopolymer printing forms.



# Functions for boosting productivity and ease of use

Depending on the model and configuration, the PremiumSetter can be equipped with functions to boost productivity and ease of use.

The PremiumSetter is available in various **performance classes** and can be upgraded. Users can choose between 1, 2 or 4 (S3000 only) fiber lasers in the PremiumSetter, each with an output of 600 W.

The **PlateMaster** automatically positions and optimizes repeats on the available surface so as to achieve the best possible engraving time or cut, while the **PlateOptimizer** enables manual repeat positioning based on visual control.

The **„Export cutting masks“** function uses the positioning of repeats to create a CAD file that controls a cutting table.

Several types of FastForward are available for the Premium-Setter. **Passive FastForward** skips solid areas that are not lasered. **Active FastForward** uses a cutting tool to remove the non-printing areas of a sleeve printing form. **FastForward for coating plates** uses the principle of the removable top layer of coating plates.

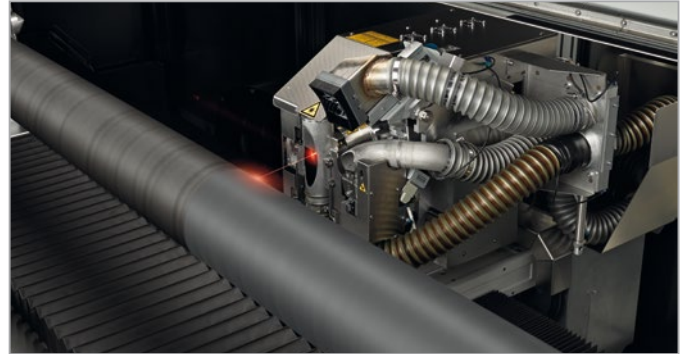
**Sequential engraving** makes it possible to engrave several jobs automatically one after the other. To do this, the Premium-Setter is fitted beforehand with several sleeves or plates, for example.

The maximum relief depth per laser pass is 800 µm although this can be increased to up to 3 mm by using **multipass lasering**.

The **laser pointer** can be used to specify the start position for engraving.

Jobs can be prepared centrally and away from the Premium-Setter on the separate **Jobticket-Station**, thus cutting setup times on the PremiumSetter.

Available data from MIS systems can be imported for further use via the **„Import-MIS“** function.



**PremiumSetter is available with a laser output of up to 2400 W**



**A range of functions designed to boost productivity and ease of use are available for the PremiumSetter**

# Technical and functional details

All the benefits at a glance

## PremiumSetter – overview



Model	S1000	S1700	S3000
Dry offset	•	•	
Coating plates	•	•	
Flexible packaging	•	•	•
Hygiene, tissues, wrapping paper, ruled paper	•	•	•
Laser power	600 / 1200 W	600 / 1200 W	600 / 1200 / 2400 W
Plate	<ul style="list-style-type: none"> <li>- Elastomer on metal substrate</li> <li>- Elastomer on polyester substrate</li> <li>- LAMS polymer plates</li> <li>- Plate thickness up to 3 mm</li> <li>- Format up to 53 x 42 inch (1350 mm x 1066 mm)</li> <li>- Loading table</li> <li>- Vacuum cylinder with clamping bar</li> </ul>	<ul style="list-style-type: none"> <li>- Elastomer on metal substrate</li> <li>- Elastomer on polyester substrate</li> <li>- LAMS polymer plates</li> <li>- Plate thickness up to 3 mm</li> <li>- Format up to 53 x 65 inch (1350 mm x 1650 mm)</li> <li>- Loading table</li> <li>- Vacuum cylinder with clamping bar</li> </ul>	
Sleeve		<ul style="list-style-type: none"> <li>- Elastomer</li> <li>- LAMS</li> <li>- Circumference up to 1350 mm</li> <li>- Length up to 1700 mm</li> <li>- Cantilever</li> </ul>	<ul style="list-style-type: none"> <li>- Circumference up to 1400 mm</li> <li>- Length up to 3000 mm</li> <li>- Hell mandrel with center mount</li> <li>- Shaft cylinder with three-jaw chuck mount</li> </ul>
Versions		<p>The S1700 PL is a plate-only machine.</p> <p>The S1700 SL is available as a sleeve machine and as a combined machine for plates and sleeves.</p> <p>The S1700 LAMS is equipped with Lüscher laser technology and is available as an all-LAMS machine for plates and sleeves:</p> <ul style="list-style-type: none"> <li>- 32 laser diodes</li> <li>- 940 nm wavelength</li> <li>- 2540 / 5080 dpi resolution</li> <li>- Up to 4.6 m²/h productivity (depending on circumference)</li> </ul>	

Subject to design modifications. Errors excepted.

Version: D10

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