HELL Gravure Systems

PremiumFlexo®

PremiumFlexo brings together the PremiumProfiler, PremiumSetter® and cutting-edge elastomer printing forms to create one unbeatable team. These three components combine to enable first-class and reproducible flexographic printing forms to be produced in two production steps in a fully digital process.

In addition, PremiumFlexo offers tools for simple and efficient job preparation that help users get the most out of the PremiumFlexo solution.

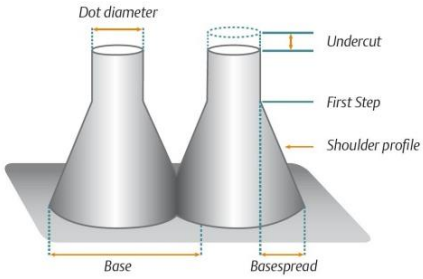
Advantages:

- **Direct laser engraving of elastomer printing forms**
- **Real digital process**
- **Defined and reproducible dot shape**
- **Simple and groundbreaking operation**
- **Two process steps only**
- **Highest quality in print**
- **Cost effective production**

1 stop job preparation

Successful production depends on a system's ability to meet defined quality criteria. Simple and efficient job preparation helps meet this goal, which is why PremiumFlexo provides tools that improve reliability in production and raise productivity. Basic settings can be compiled centrally and made available for subsequent production steps. Job-specific parameters and information are linked with these settings, thus ensuring successful production.

PremiumProfiler – ProfileEdit



The profile of the screen dot wall impacts on its print stability and intermediate depth. It is also a determining factor for ensuring the uniform geometry of the printing dot surface. The digital makeready (undercut) lowers the printing level of the screen dot, which reduces the dot gain.

The three-dimensional screen dot shape is defined in the PremiumProfiler. Various parameters determining the shape of the screen dot can be defined here for a number of tonal value areas. The defined parameters are saved in profiles in the PremiumProfiler and are available for further use.

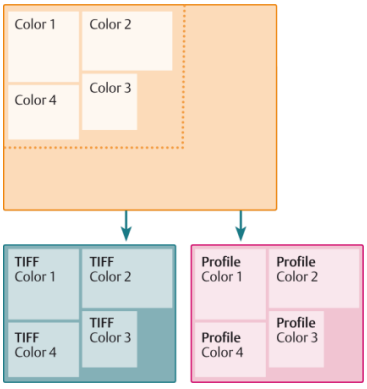
Jobticket-Workflow

The Jobticket Station enables users to prepare their production jobs centrally. This approach greatly improves reliability in production and enables job preparation to be performed separately from the PremiumSetter®, e.g. in prepress.

All production-relevant parameters such as the job type, name and format, the number of colors and job and form dimensions are stored in a job ticket. Unchanging parameters for the separations of a job are entered once and separation-dependent parameters are input as additional entries.

The job tickets are based on an SQL database and provide a simple means of archiving all the parameters that are entered. In conjunction with the stored 1-bit TIFF data, this allows repeat jobs to be reproduced very simply and efficiently.

PlateMaster



When engraving plates, PlateMaster enables a number of different color separations to be combined in a single engraving job. Approved, selected separations with a layout based on specified criteria are imposed as a 1-bit TIFF file and made available to the PremiumSetter® via the job ticket.

The PremiumProfiler profiles belonging to the relevant separation are positioned automatically and this information is also stored in the job ticket.

MIS import

MIS import enables data that is already available from an existing system, such as a management information system, to be imported for further use in the job ticket workflow. This minimizes duplicate entries throughout the process and eliminates sources of errors. An open interface is used to facilitate connection to existing systems.

PremiumSetter® - properties and basic equipment

The key component of the PremiumFlexo is the PremiumSetter®. Thanks to the high-resolution laser's ultra-fine recording beam, flexographic printing forms are engraved directly to an unprecedented quality standard.

The PremiumSetter® S1300 is configured as a compact direct laser engraving machine for manual loading. It is based on tried-and-tested HELL equipment and PremiumFlexo components.

Input data	screened 1-bit TIFF data from standard RIPs
Write resolution	2540 - 5080 dpi
Screen ruling	continuous
Tanal value range	1 to 99%
Lasered relief depth	up to app. 800µm (depending on the material); usually 420µm
Relief depth ActiveFastForward	depending on the material; up to app. 1 mm

Laser and optical system

The PremiumSetter® incorporates fiber lasers with an ultra-fine recording beam. This fiber laser uses laser diodes as a pump source, with the high-energy diode beam being injected into a special fiber. The fiber acts as a resonator and produces a stable, uniform laser beam. It also serves as a means for transferring the light to the processing location. A maintenance-free optical system specially developed by HELL maps the laser spot onto the cylinder.

The benefits of this laser principle are its simple design and compact size, the high efficiency and the outstanding beam quality with a large focal range.

Operation

The PremiumSetter® is extremely easy to operate thanks to intuitive navigation and the ergonomic user interface. The operating and control program runs on a Windows operating system. PC, monitor and keyboard are integrated in the machine.

Hood

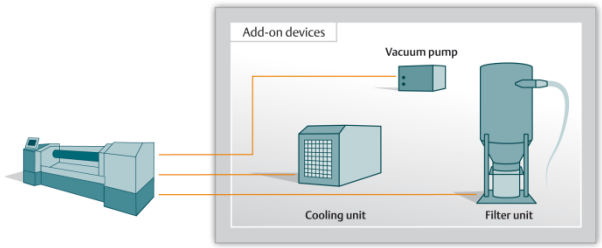
The PremiumSetter® is equipped with a rotatable, manually operated hood to provide protection from the laser beam, dampen noise levels and screen off the workspace.

Mandrel mounting

The PremiumSetter® features a fixed drive bearing block and an end bearing block that can be adjusted to load and unload the air mandrel. The air mandrel is mounted using cones.

Cooling water unit/ suction device

The cooling water unit, which regulates the temperature of the laser unit, and the suction device, which transports the burn-off and the shavings from FastForward machining and cleans the exhaust air in a downstream filter unit, are stand-alone modules. They can be positioned up to 10m from the PremiumSetter and, if necessary, outside the production room.



PremiumSetter® - function

PremiumProfiler-OnlineEngine

Screened 1-bit TIFF data and the saved profiles are used to calculate data for controlling the intensity of the laser beam in the PremiumSetter®. This data includes all the details on the three-dimensional shaping of the printing form and ensures 1:1 transfer of the original. The digital shaping process takes place on the fly on the PremiumSetter®.

Job ticket processing

The PremiumSetter® can process prepared job tickets. This means that production-related parameters can be input outside the PremiumSetter®, thereby cutting its setup time and enabling job preparation to be transferred to areas outside printing form manufacture.

ActiveFastForward

ActiveFastForward (AFF) involves removing non-printing areas of a printing form by using a cutting tool. AFF results in an average time saving of more than 20 percent and it is even possible to achieve savings of up to 80 percent with appropriate forms.

During 3D-shaping, the PremiumProfiler identifies coherent non-printing areas and makes this information available to the PremiumSetter® for further processing. In addition to the areas analyzed, non-printing areas at the edges of the printing form can be defined manually in the job ticket or on the PremiumSetter®.

Before laser engraving, the defined areas are processed using the fixed cutting tool that strips the form's unlasered material surface to a relief depth of 1mm with the sleeve rotating. The cutter is mounted on the support and is advanced automatically.

PassiveFastForward

PassiveFastForward (PFF) skips solid areas on a printing form. Analysis of the TIFF data by the PremiumProfiler identifies solid areas that do not need to be processed. The PremiumSetter® performs a fast crossfeed in these areas during which the laser does not operate.

Laserpointer

The laser pointer and mirror enable the starting point for engraving on the sleeve to be determined under visual control.

Edge text engraving

Specific details can be lasered on the right- and left-hand edges of sleeves for identification purposes. This makes it easy to clearly indicate the particular customer order, color set or inking unit to which they have been assigned.

TIFF edge engraving

Image data can be lasered at the right- and left-hand edges of sleeves for specific applications. In addition to other applications, the precise positioning of TIFF data enables register marks for W&H EASY-REG to be engraved.

Engraving status display

The remaining engraving time and the time of completion are displayed on the PremiumSetter® at all times for each individual job.

Centric engraving

The PremiumSetter® can position engravings centrically on the sleeve. This helps cut makeready times in the press.

Mirroring

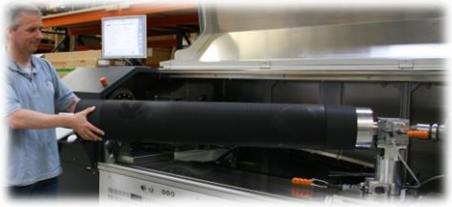
The PremiumSetter® can mirror engraving data in the circumferential direction during engraving. This function provides an easy means of engraving a cylinder for counter printing.

Status display

The machine status can be seen from a distance thanks to the traffic-light signals installed on the machine.

PremiumSetter® - optional equipment

Cantilever mounting for easy changing of printing forms



Cantilever mounting is available for quick and easy changing of printing forms within the PremiumSetter®.

The specially developed mounting enables the bearing block to be pivoted by approximately 15° toward the operator side of the PremiumSetter®. Connecting compressed air to the air cylinder then enables easy fitting and removal of sleeves, adapters or plate adapter. After disconnecting the compressed air and pivoting the bearing block back to the starting position, the air cylinder is clamped in the cones and engraving can be started.

Vacuum equipment – cylinder and pump for plate engraving

Vacuum equipment is available for the PremiumSetter® for plate engraving. This includes a vacuum pump that creates the vacuum required for plate fitting and engraving. There is also a vacuum cylinder on which elastomer plates are mounted for engraving.

Washer

Washer

The washer is used to clean burnt direct laser engraving residue from printing forms so that they can be used for printing straight away without any further process steps.

Water alone is needed for cleaning. No cleaning additives are required. The head positions itself automatically according to the specified size and the support moves steadily along the rotating printing form. Pressurized water removes the burnt residue from the surface and compressed air is then used to dry the form.

Bearing / mounting system

The washer is equipped with open shaft bearings to mount sleeves with or without an air mandrel. They enable loading within minimal makeready times and can accommodate the adapter for plate cleaning.

Technical Data

Language versions

An english operating system is shipped in standard. The application software is available in English and German, and – if necessary – other languages.

Dimensions

Basic data		PremiumSetter® S1300		PremiumSetter® S1700		Washer	
Basic unit	L	3105 mm / 122,24 "	L	3605 mm / 141,93 "	L	3275 mm	/ 128,94 "
	W	1353 mm / 53,27 "	W	1353 mm / 53,27 "	W	1525 mm	/ 60,04 "
	H	2062 mm / 81,18 "	H	2062 mm / 81,18 "	H	1055 mm	/ 41,54 "
Space needed	L	4700 mm / 185,04 "	L	5400 mm / 212,60 "	L	4880 mm	/ 192,13 "
(incl. access areas)	W	3150 mm / 124,02 "	W	3750 mm / 147,64 "	W	2790 mm	/ 109,84 "
Weight		approx. 3250 kg / 7165 lbs		approx. 3650 kg / 8047 lbs		approx. 650 kg	/ 1433 lbs
Sleeve formats							
Face width		Up to 1350 mm / 53,15 "		up to 1700 mm / 66,93 "		Up to 1700 mm	/ 66,93 "
Circumference		320-950 mm / 12,60-37,40 "		320-1220 mm / 12,60-48,03 "		250-1220 mm	/ 9,84-48,03 "
Face width		Up to 1150 mm / 45,28 "		up to 1500 mm / 59,06 "			
Circumference		250-950 mm / 9,84-37,40 "		250-1220 mm / 9,84-48,03 "			
Plate formats							
Thickness		Up to 3 mm / 0,12 "		up to 3 mm / 0,12 "			
Size		Up to 1300x900 mm / 35,43x51,18 "		up to 1650x1170 mm / 64,96x46,06 "			

Installation and Training

The components of PremiumFlexo are supplied ready to install, having undergone final testing before leaving the factory. Following scope of work shall be planned on site:

	Installation	Training	Scope of work
Jobticket-Workflow	app. ½ day	app. 3 days	power connection, connection to network
MIS-Import	depending on complexity	-	set-up and test
PremiumSetter®	app. 2 days	app. 2 days	power connection, connection to network, compressed air, argon gas, suction and cooling water supplies
Washer	app. ½ day	-	power connection, connection to network

Installation and assembly details are available in the latest versions of the relevant Planning Points.

Remote Service

A remote connection such as VPN shall be set up for service purposes.

Subject to technical modifications without notice.