DPX SYSTEM

Computer-To-Plate for Small Offset Printing

A Purup-Eskofot White Paper
(01.04.2000)

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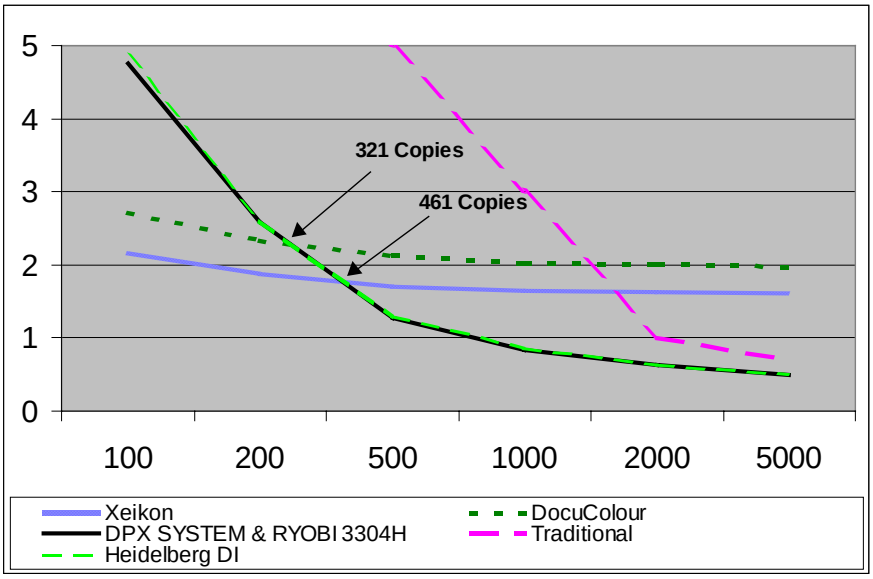
INTRODUCTION

Over 90% of all printing jobs are defined as short-run work which means that each job is printed in less than 5,000 copies.

Ever since Drupa 95 digital printing has been one of the major issues in the printing business. The main reason is that digital printing is believed to be an extremely profitable way of producing short-run colour work, ranging from 500 to 2,000 copies, compared to traditional work flows.

Purup-Eskofot's DPX SYSTEM primarily addresses the segment of short-run printing due to its tremendous labour savings in the pre-press area and its great flexibility. And is therefore capable of competing in the short-run market segment.



The above graph shows price per copy for five different production flows; Xeikon – Digital Press, DocuColour – Digital Press, DPX SYSTEM and a 4-colour printing press, conventional prepress, and Heidelberg DI. The comparison is based on investment in new equipment

As shown in the graph the cost savings and productivity of the DPX SYSTEM will make the break-even point substantially smaller than with conventional platemaking methods; Using conventional plate making the break-even point is at approximately 1,500 prints and using the DPX SYSTEM it is at approximately 350 prints.

The DPX SYSTEM covers all conventional plate making processes in one single unit – from digital original to press-ready plate – It eliminates processes such as manual stripping and output of film.

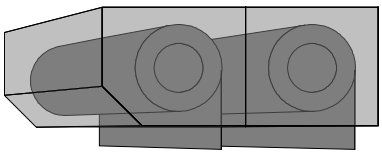
The DPX SYSTEM produces press-ready offset polyester plates with a maximum format of 460 x 550 mm (18.1" x 21.6"). The plates are loaded automatically, punched, exposed, processed, dried and finally stacked.

PRODUCT DESCRIPTION

The DPX SYSTEM is a Computer-To-Plate system, which produces press-ready plates for offset printing presses. The job handling of the DPX SYSTEM is almost as easy as that of a common office laser printer.

High capacity magazines

The polyester plate material is delivered on rolls with a 6" core. The rolls are wrapped in plastic and can be loaded directly into the DPX loading magazines. The rolls are loaded in full daylight leaving only the first layer to be pre-exposed. Each roll contains 61 metres (200 ft) of plate material, which corresponds to approximately 120 GTO 52 plates.



The magazines are configured individually, which means that the plate material can vary in both thickness and width depending on requirements. Most printers possess more than one printing machine and may therefore require different plate sizes. The DPX can be programmed to select any of the magazines automatically during production.

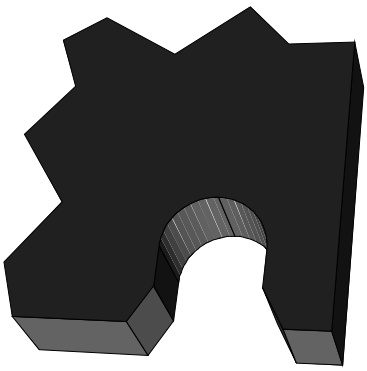
Unique plate loading system

In traditional workflows the plates are always cut at a 90° angle and are therefore rarely out of alignment. However, with CTP systems plate alignment becomes an important issue, since the plate material is loaded in rolls and cut to size during production. No consideration has been shown to this problem on most imagesetters as they have been designed for film.

The DPX' unique loading system ensures full alignment – from loading to output – The plate material is transferred directly from the loading magazines to the drum. As soon as the plate material enters the drum, it is fixed to the drum surface by means of vacuum, which ensures perfect alignment as the plates are punched, exposed and cut.

Plate punching in the drum

The flexibility of switching between plates is often required for short-run colour work. One of the most critical points when switching plates is to obtain perfect registration of colour separations in order to ensure high quality results.



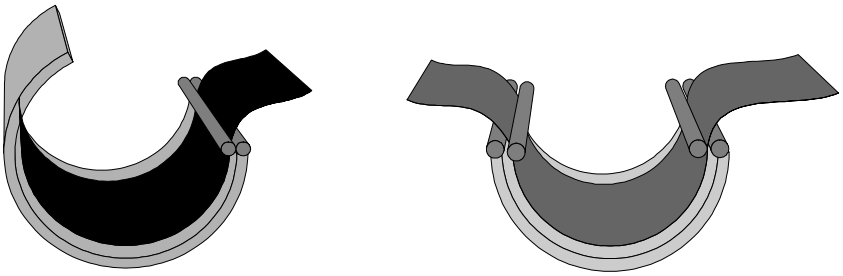
In the DPX SYSTEM punching is carried out by a plate register punch (Bacher 2000 compatible) placed in the drum. The punching is done automatically in order to ensure the required accuracy and to eliminate manual errors, which can be very expensive and time consuming.

High quality internal drum exposure

The internal drum technology used in the DPX, was introduced by Purup-Eskofot more than 18 years ago, and is therefore a well-proven and accepted technology in today's market. Almost all of our high-end imagesetters and platemakers use this technology.

The drum, which is manufactured at Purup-Eskofot's modern drum production facilities, is made of cast iron, which shows in a hard and resistant surface.

The high precision exposure system ensures that the image is positioned correctly in relation to the punches and that the registration is as accurate as that of metal plates. The plate exposure is performed by a Visible Red Laser diode, 680 nm, 10 mW. The rotation of the spinner is 30.000 rpm (rotations per minute).



Purup-Eskofot Drum

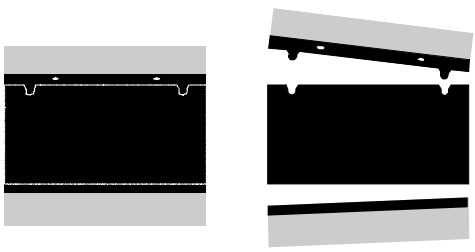
Other manifactures drum

Plates – cut to size

Polyester plates are exposed as negatives, but printed as positives. On the press the unexposed areas are the ones carrying ink i.e. creating an image on the paper.

Polyester plates may create some problems for imagesetter manufacturers due to the nature of the material. Many use drum technologies where the plate material passes through the entire drum, which is fed by rollers placed in both ends of the drum. During exposure the laser is unable to expose the entire plate, due to the physical placement of the rollers, and a stripe is left unexposed. The unexposed stripe will then carry ink on the press if it is not trimmed prior to printing. The operator will waste both time and material in order to correct the image.

The DPX SYSTEM works in a slightly different way. The plate material enters and leaves the drum through the same roller, which is placed, in one end of the drum. Prior to exposure the plate is pulled back in order to ensure that no parts are left unexposed. Afterwards, the plate is punched, exposed and cut to size.



Plates produced in an ordinary drum imagesetter have to be trimmed before use

Advanced plate processing

25 years ago, when polyester plates were introduced, Purup-Eskofot was one of the first prepress manufacturers who developed equipment using the plates in question. Since then the whole industry, including equipment and consumables has undergone an overwhelming development mainly due to the increasing digital demands. Processing techniques have also improved due to the digital development, and today they include advanced digital processors. The DPX is no exception.

The processor is based on the latest technology within polyester plate processing. The concept was developed from Purup-Eskofot´s well known technology that has been used in our camera platemakers as well as in our other CTP systems.

The processor is a 2-bath design with active replenishment. Using the new concept of two very small containers reduces the amount of chemistry used. Active replenishment ensures that there is sufficient fresh chemistry daily, even when an abundance of plates has been processed.

The processing section is mounted on sliders, making it easy to disassemble the unit for maintenance purposes and refilling.

Easy disposal of chemistry

In the processor is an overflow pipe that controls the chemistry level in the containers. Surplus chemistry will run into a waste chemistry container. When the chemistry waste container is full a warning signal will be given to empty the container.

By attaching the supplied hose onto the container and pushing a button, a pump will empty the effluent container without having an operator even touch the chemistry.

Dry plates to stack

After processing the plates enter the dryer system, which dries both sides of the plates. Stacking dry plates eliminates the risk of plates sticking together and thereby ruining emulsion sides. The exit tray is designed to ensure proper plate stacking, which also makes unattended production possible.

Platemaking – Easy as a laser printer

Any front-end system which produces PostScript files can be used with the DPX SYSTEM - Apple Macintosh OS, Microsoft Windows/NT, SUN etc. - As any other network printer the DPX is connected directly to the selected front-end system. The printer, in this case the DPX, is then selected from a specific program, such as Quark Xpress, Adobe PageMaker or Microsoft Word, and within a few minutes a press-ready plate is output on the DPX.

Automatic image positioning

Other exciting features such as image positioning is carried out automatically on the DPX. The operator defines the application size and sends the information to the DPX. The image is then positioned on the plate according to the required printing specifications. However, if a specific job requires adjustments, this is done on the designated RIP.

Easy re-exposure of plates

All ripped files are stored on the RIP during production. If an error occurs due to e.g. a scratched plate, the DPX can easily re-select and re-expose the job. The workflow is only interrupted for 4 minutes, which corresponds to the exposure and processing time of one plate.

RIP System

All Purup-Eskofot's RIP platforms are high performance Intel Pentium processors and they are based on the same Harlequin RIP software running under Windows NT. The software is compatible with the well-proven PostScript Level 3.

PRODUCTIVITY

In average a stripper produces approximately four to six plates per hour which corresponds to one or two 4-colour sets per hour. The DPX produces five 4-colour sets per hour at an optical resolution of 2540 Dpi. Printers, who want to increase productivity, even if it is for a short period only, will indeed benefit from the productivity of the DPX, since they do not have to employ extra staff or even work late.

Fewer production interruptions

Since the DPX ensures perfect registration and correct punching, the plates can be mounted directly on the press cylinder. An easy and fast process, which also results in fewer press stops due to the elimination of human errors, and in the long run it reduces costs and increases productivity.

QUALITY

Many printers are still reluctant to use polyester plates, which is mainly due to rooted prejudices stating that it is not possible to obtain the same quality with polyester plates as with metal plates. However, over the last years the quality of polyester plates has improved considerably and the difference between metal plates and polyester plates is practically erased. Furthermore, with the new advanced digital equipment such as the DPX the difference is virtually non-existing.

12 different resolutions

The DPX SYSTEM supports 12 different resolutions to be able to meet any quality demand in the market. The resolutions range from 900 to 3600 DPI. Resolution is one thing spot size another, the DPX SYSTEM works with variable spot sizes from 25µm to 6µm.

Polyester plates versus metal plates

The traditional process of producing a metal plate involves subprocesses such as stripping, plate burning, and plate processing. In each process the image quality will be slightly reduced and the final plate quality is often far from that of a film.

However, in the DPX all traditional processes are eliminated which means that 1st generation dots are exposed onto the polyester plate. The process is almost the same as that of an imagesetter and the resulting quality is extremely close to film quality.

Automatic stripping

There is no doubt that CTP is a fast and profitable way of reproducing originals. As opposed to manual stripping, CTP eliminates the risk of human errors, and it guarantees perfect plate alignment and accurate exposure every time. Moreover, CTP saves labour costs as well as time since all prepress is done digitally.

Design

Functional design is of great importance to Purup-Eskofot when designing prepress equipment. The DPX system is no exception. With its beautiful contemporary Danish design, it matches the Purup-Eskofot product line. The design is simple and easy to access and it allows fast maintenance saving the customer time, costs, and non-productive hours.

Ease of use

Due to fully controlled front-end operation the DPX SYSTEM is not only flexible but also easy to operate. The exceptional combination of a user-friendly interface, loading of plates in full daylight, built-in punching as well as in-line processing, makes the DPX SYSTEM a completely digital system.

“Imagine Straightforward Prepress”

“Imagine Straightforward Prepress” is the mission, the marketing concept and the promise Purup-Eskofot makes to its customers.

Purup-Eskofot´s objective is to support the growth and competitive advantage of the company’s customers by supplying the necessary prepress technology and technical assistance.

“Imagine Straightforward Prepress” is the umbrella for the five-point concept t which Purup-Eskofot is devoted:

Products

The driving force in Purup-Eskofot´s development process is the concept of “plug in for productivity”. The products are designed with and for the customer. Easy to use and maintain. Strong in application flexibility.

Service

Customers would prefer Purup-Eskofot to have its offices right next door. For ease of access. The aim is to get as close to this ideal as possible by deploying the whole range of digital technologies. Proactive service is the Purup-Eskofot way of ensuring trouble-free prepress.

Workflow

Straightforward prepress solutions are the ultimate aim of Purup-Eskofot. The workflow forms the core activity in bridging the excellent input and output solutions from Purup-Eskofot. The aim is to design workflows that make it easier to transport the work to the press. Prepress solutions from Purup-Eskofot help professional printers and newspapers implement new business models.

Knowledge

Customers talk to each other every day. Purup-Eskofot wants to offer a network with a structured approach to learning from one another. The aim is to be the customer’s ultimate partner in the exchange of knowledge. Small enough to be listening and creating flexible solutions. Large enough to make those solutions exceptional and unique.

Digital future

Purup-Eskofot wants to redefine and lead the professional prepress industry into the digital world. Purup-Eskofot sees its role as being that of customer’s link to the digital future.

The Purup-Eskofot product line

Purup-Eskofot – one of the world’s leading suppliers to the prepress industry – provides a comprehensive range of products, including scanners, imagesetters, complete Computer-to-Plate systems, RIPs, servers, and a whole range of advanced software products. Every item in the range is designed to ensure the best possible combination of quality and productivity – a policy that applies equally to single, stand-alone products and to complete prepress systems.

Be ready for tomorrow – “Imagine Straightforward Prepress”

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