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True Press Color

Subject: Color Consistency from True Press Print Engine

Date: 02/22/12

Digital vs. Offset

Offset printing is more a chemical process than a computer process. In an offset job there are four rollers that have etched metal plates on them. These four rollers typically represent the CMYK you hear about. C = Cyan, M = Magenta, Y = Yellow, K = Black. (K is used to avoid possible confusion as Blue) The paper runs through these four (or more) rollers at lighting fast speeds and "offsets" the image from the plate to the paper. Print quality, registration and color matching is the result of electronic monitoring and largely dependent on the skill of the press person in charge of the job.

A digital press like the Truepress 520 digitally processes each and every page image and "RIP"s it into a very complex bit map or array of dots. Each dot is selected from the same CMYK colors as the offset press uses. And each dot size is selected from one of four possible sizes. The processor that does all of this also uses a profile based on the paper being used. The processor doing this is aware of every paper used in Sebis inventory.

The important point to this is that the processor will arrive at the exact same dot pattern every time. A specific profile is created for each job that is run. That profile is automatically selected when the job is run. The processor is trusted to utilize the same profile resulting in the same color outputs every time. If desired, variations can be made by changing paper profiling and making adjustments to the profile of that job. But these changes would be intended.

Duplexing Integrity

To insure the accuracy of front-side back-side document integrity. The print engine generates and prints a high resolution barcode on the waste area of every front side image. AT the point of imaging the back side of the same image, this bar code is read and processed to insure that the back side image is being placed on the correct sheet.

Print Head Specifications

Truepress Jet 520 Inkjet heads and their output

Quality standard specification

Uniformity of density

C,M,Y / $dD \leq 0.05$ Bk / $dD \leq 0.10$ (100% coverage)

Linearity : 70micron

Registration

4 color plane: 70micron

Both sides: 300micron

Color Matching

ICC profile

Piezo/DOD inkjet head

The Truepress Jet520 features the reputable Piezo Drop on Demand (DOD) inkjet heads manufactured by Seiko Epson Corporation. The piezo elements in these inkjet heads change shape according to the voltage applied, which enables extremely fine control of the ink drops ejected from the inkjet head. This grayscale technology generates extremely smooth gradations.

Single-pass production for better printing and registration precision

The inkjet heads are mounted in a single-pass multiple-head array, which enables extremely high printing precision. The distances between the inkjet heads for each color, as well as the distances from the inkjet heads to the media, are short, ensuring exceptional color-to-color registration.

720 x 720 dpi imaging

The Truepress Jet520 utilizes the highest resolution of any single-pass inkjet digital printing system – 720 x 720 dpi. This makes it suitable for just about anything, including the output of barcodes, which must be output at high resolution to work properly.

Print Quality Monitoring

Unevenness is often cited as a problem when using multiple printheads. The Truepress Jet520 features built-in quality control scanners, reading a printed test chart and automatically correcting for any problems. There is no fluctuation in temperature at the inkjet heads during the run as is common with toner based fusing elements that cause color fluctuation. The Truepress Jet 520 maintains precise print quality is maintained throughout the run. The unit is also designed to use special techniques to prevent problems with jammed nozzles. The Truepress Jet520's automated printing quality monitoring ensures consistent, high-quality results throughout each job as the system prints.

High registration accuracy

Printing can be carried out with the aid of preprinted registration marks, marginal punches or registration marks created for use as a reference, to make certain print registration is maintained. Related registration marks on the front and the back side of each sheet ensures front-to-back registration and accuracy. A sensor monitors the paper feed. If the paper starts to come out of proper alignment, the EPC roller tension is automatically adjusted to compensate, so that the paper is fed correctly at all times.

Monthly Calibration

Once per month, a full color calibration is performed. The press runs a predetermined set of color swatches and scans them using its built-in scanning analyzer. Any corrections to print-head characteristics are made and stored in memory.