Technologe Watch™

Technology Watch For the Graphic Arts and Information Industries

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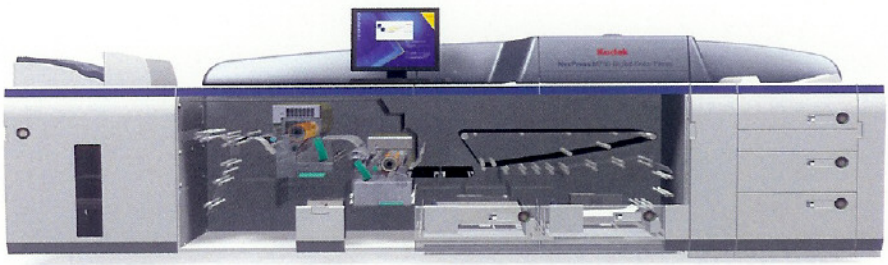
The Kodak NexPress M700 - Delivering High Quality Imaging with 2X Reliability and Increased Flexibility in Print Production Workflow

Kodak has delivered a successful and growing line of front end imaging press products, workflows, and electronic printed imaging systems across the entire range of graphic arts production requirements. Because Kodak has historically been more heavily rooted in the evolution of traditional printing processes as new electronic ones have emerged, Kodak's unique ability to recognize and transfer functions from traditional printing to emerging methods is a key advantage for the company. After reviewing Kodak installations, it appears that no company at this time is better positioned to properly meet the growing demand for offset and digital printing without compromising speed and efficiency.



Kodak NexPress M700 Digital Color Press cutaway drawing with two fusers (in orange) and the excellent wide arching paperpath. The dual fusing system was especially designed for new M700 color toner and printing heavier weight stocks at full rated speed.

At its first showing in Boston this past winter, the Kodak NexPress M700 was awarded best of show for a digital press by an independent panel of experts. One reason for this award is that the M700 clearly reflects Kodak's understanding of practical production facilities. This is the focus of this Special Issue of Technology Watch.

To help better understand and appreciate some of the special capabilities of the M700, we will take a quick look at its imaging system, and give a brief introduction to its unique operator-repairable design. We will briefly discuss the front-end workflow benefits provided by the M700. We could have easily devoted an entire issue of Technology Watch to these subjects; Kodak engineers have made many significant improvements in imaging, operation, and workflow. Within our limited space, we will mention a few of the highlights here. However, we most certainly will address these in more detail in future issues of this publication.

This issue demonstrates the printed imaging strengths of the M700 digital color press by matching traditional offset lithography with a standard reference image. See pages 2 and 3 for the comparison. As always, we say "you be the judge" on the matching of traditional offset by the electronically printed image of the Kodak NexPress M700.

Kodak NexPress M700 Delivers Impressive Color Printed Images

The ability to print and perfect (imaging both sides of the page) without slow-down at a full 70 pages a minute on all weights of plain paper stock up to 300 gsm separates the Kodak M700 from its class of sheet fed digital presses. The Kodak press achieves these speeds without quality loss thanks to a special oil-free wax based set of dry toners that are heat affixed with specially designed dual fusers. The M700's photoreceptors are written using 2-beam visible light lasers that are scanned across their recording surfaces with a 12 faceted spinning polygon optical raster output system.

The Kodak M700's tone reproduction range is very strong. The printer has four bits of addressability per recorded pixel, resulting in 64 discretely imageable tone levels. Printing 1200 x 1200 dpi with a 4-bit depth gives the M700 the second highest number of addressable levels per square centimeter for a digital color press, second only to products like the Kodak NexPress 2500. The LED exposure system on the 2500 delivers a staggering true 256 discrete levels of tone per single pixel (see Technology Watch, page 2 ,Volume 11 / Fall 2006, "High Information Capacity Printing").

Based on sample color gamut scan plots provided by Kodak, the NexPress M700's 64 levels per pixel delivers a larger reproducible color gamut than other digital presses in its class. This superiority is especially evident in the green color region of the spectrum. Using the DIC color measurement standard, the M700 achieves a 131% DIC rating, which is excellent.

According to Kodak, the M700 uses a LAB color model to address color assignment, instead of the conventional "lookup table" used by other vendors. More accurate spot colors result. Combining this with the oil-free toner dual fusing system, excellent gloss control, precise front to back registration, and cross-run consistency (the M700 uses an inline densitometric color calibration system), the M700 has been designed very well. Based on these features, we can say that the M700's color fidelity and printing quality should not disappoint the most discerning critics of color printed images; in turn, Kodak's M700 press customer will not disappoint their most demanding customers.

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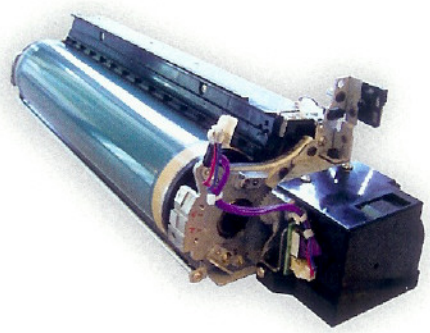
The Kodak NexPress M700 *Continued from page 1*



Pictured above is an Imaging Cylinder Assembly from the Kodak NexPress M700 Digital Color press. This assembly is one of the Operator Replaceable Components (ORCs) making the M700 a very efficient, stable and adaptive press.

The M700 Has Twice the Reliability Thanks to Operator Replaceable Components - ORCs

Borrowing from what has become an industry leading hallmark of the Kodak NexPress family--a design that enables press operators to perform a significantly wider range of press adjustments and maintenance activities--gives the M700 twice the reliability and uptime compared with other vendors, according to Kodak. This efficient, stable, and adaptive design approach allows M700 press operators to service their devices and finish their production runs rather than waiting for field service technicians to arrive, something that is becoming a bane for many plants with production deadlines.

The new Kodak NexStation Graphical User Interface incorporates a web-based point and click interface for ORC management and help. The GUI is intuitive and visual, incorporating videos and graphics that truly make the ORC model viable. The Kodak NexPress M700 has 8 filters and 21 key operator-replaceable components. In addition, parts called "swap assemblies," are not thrown away and are field serviced off-line by Kodak. As an example, say you have a problem or failure with the magenta printing unit. In less than 7 minutes, the M700 press operator can remove the M700's magenta printing unit, slide in a replacement, start the press up, and continue production almost unabated.

In addition, the ORC model allows printers to custom-tune the M700 by inserting brand-new imaging units to print the most demanding color work, and using older units for less demanding work. The ability to custom-tune gives the M700's press operator a much greater dynamic range of press reproduction control than he or she has with presses from other vendors.

Nobody has more experience in this area than Kodak, who has led in this innovation and has been successfully delivering this capability for many years now. Simply put, the customers love it, and more deadlines have been met without delays.

NexStation RIP Control and Workflow Further Distinguishes the M700

Kodak's internally developed NexStation RIP, used in the M700, is based on proven NexPress designs with added enhancements. The NexStation provides supervisory management control logic, all the way from delivering the electronic imagery through the servicing of the ORCs. Incorporating the Adobe PrintEngine standard directly into the NexStation base design provides Kodak's customers the most up to date processing of PDF files without the overhead of Postscript and other dated workflows. This reduces processing traffic and overhead, resulting in a much more efficient processing workflow.

The M700's NexStation can apply different screening methods to different objects within a single page allowing graphics to be optimized differently than text, for example. The new Kodak Staccato DX Stochastic Screening methods used on the NexPress 2500 press (see Technology Watch, page 6, Volume 11 / Fall 2006) will offer exciting new print capability options for the M700. The NexStation RIP has the ability to "auto normalize," whereby an EPS file is instantly converted to a PDF file inline in a touchless fashion. Kodak has incorporated PrintOpen profiling in order to achieve precise color match mapping, as you can see on pages 2 and 3 of this issue.

The NexStation RIP incorporates dual parallel processors, speeding the production workflow without slowing the M700 while running demanding variable-based printing. In addition, Kodak has incorporated SmartBoard software that allows the M700's NexStation to receive and send work interoperably within the entire Kodak family of digital presses and products. This family includes the original NexPress line, the Kodak DigiMaster monochrome printing line, and Kodak's Prinergy (over 18,000 successful installations and growing). Other comprehensive production workflows are available across Kodak's entire conventional and digital printing product lines.

More enhancements (including inline finishing) to the Kodak NexPress M700 are under development. Considering the features and technologies described above, the M700 should be carefully evaluated as a strong contender when selecting a color digital sheet fed production press. ■

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