

What is “Digital” Printing?

The demand for shorter print runs, for real-time content relevance, and for “faster, better, cheaper” is a major trend in the print industry. It’s been almost 15 years since the first high-volume, modern digital color printing system designed to meet this growing trend was introduced by Heidelberg with their DI press in 1992.

Since then, digital print technology has developed rapidly in many different directions, and the term “Digital Printing” defines many different technologies and processes.

Pacific Press uses digital offset and ‘true’ digital processes. We use the Ryobi 3404 digital offset (DI) and Canon (copier) technology. Unlike a traditional offset printing press in which the plate processing is done externally (film or computer-to-plate), the DI press pre-loads blank plates and images them automatically.

Registration is vastly improved because the plates are pre-mounted on the machine before they are imaged by lasers in each color unit, and there is no manual intervention. In addition, DI presses use waterless inks so they don’t require continuous ink-water balancing like traditional presses; they attain full color very quickly, waste less paper and are more environmentally friendly.

We think of this technology as “hybrid”, because the digital plate making process is extremely fast (cost-effective) yet the printing process is traditional offset, which means the highest quality, real ink-on-paper, unlimited paper selections, etc. Additionally, the press speed (10,000 impressions per hour) is much faster than any other type of digital technology, and the unit cost per piece decreases as the quantity increases.

For very short runs, however, this technology may still be too expensive since the plate making process, while faster and cheaper, is the major cost of the job; additionally, “variable” printing is not possible on this device. For these reasons, other digital technologies have emerged to meet the demands of shorter run and variable data printing.

“True” digital technologies

What we refer to as “true” digital presses are devices where a dynamic plate or surface is created just prior to every print impression.

These technologies are rapidly improving and are excellent for very short runs because they have minimal “upfront” costs to start the job, except for setting up the customer’s file to print. However, the cost to print on these devices stays constant throughout the job, so at higher quantities, prices exceed those of faster offset presses.

Because these devices use toner particles (dry or liquid) instead of real ink, the paper selection is limited, though improving, and solid color areas tend to not be as smooth as ink-on-paper technology; additionally, toners are fairly “soft” and tend to rub off in shipping and handling, unless coated.

As of this writing (Spring, 2005) the leading “true” digital devices include a wide variety of digital color copiers (Xerox, Canon etc.) as well as digital production presses such as Xerox’s iGen, HP’s Indigo, Xeikon, and Heidelberg’s NexPress.

Variable Data

Variable data printing allows each printed piece to be slightly different for customized printing to small groups or even to individuals. This technology is also developing quickly to meet a growing print market. Proponents of variable data printing claim that marketing pieces customized to the recipient are far more effective than general printed matter and that this segment of the print market will grow exponentially over the next few years.

Since true digital presses use a dynamic plate or surface with each impression, the options for variable data printing on these devices are limitless, and equipment manufacturers are developing variable data software by leaps and bounds.

Press manufacturers of every type of digital device mentioned above continue to modify, improve and enhance these technologies, and we expect our customers and the print buying market in general to benefit from this constantly improving technology.