

Specific information regarding digital presses

Biggest difference — most systems rely on toners, not inks.

After they are applied, toners are typically baked onto the surface of the paper at a high temperature. This is only a problem when using conventional shells. ie. running a large conventional shell program and then coming back with a digital imprint over a conventionally printed area having color such as a tinted background. The conventional inks could liquefy causing a smeared type look. A test run would be a good idea. Best case, imprint onto a conventional shell on the white paper surface only.

Many experts recommend against using toner-based printing systems to print letterhead stationery, feeding it through a high heat laser printer might cause your name or logo to lose definition.

Compared to conventional inks, toner is also somewhat more likely to crack when folded. It's important to avoid large floods of color or heavy toner coverage on the folds. Using perfect binding rather than saddle stitching will also help reduce cracking.

Dry toner-based systems typically cannot print at the high resolutions available with the best offset printing, so the use of extremely fine screens should be avoided.

The electrostatic charge used to attract the toner often varies in strength across the sheet, which make it difficult to control gradations.

Since few systems allow for the use of spot colors, it can be difficult to match corporate colors or to print metallic inks.

Keep in mind that what you see on the monitor is NOT what you'll see on press. The colors on screen are inherently more vibrant and encompass more of the entire spectrum.

Toner Based Digital Printing Systems:

Most toner-based systems rely on some type of electro photographic printing technology. Electro statically charged particles of toner are attracted to areas of the paper that have received an electrical charge. Then the toner is fused to the paper to form the image.

Xerographic Systems:

A light source scans the image and reflects it onto an electro statically charged photoreceptive drum. The drum passes over a toner roller, and dry or liquid toners are attracted to the charged image areas of the drum. The drum deposits the toners on an electro statically charged piece of paper or other substrate, and the toner is fixed to the substrate by heat and pressure. The image and any remaining toner particles are then erased from the drum, which is ready for its next image.

Laser Printing Systems:

Also rely on electro photographic technology. The artwork is scanned, converted into digital data and then transferred onto an electrically charged drum using either a laser or a light emitting diode. Toners are attracted to the image areas on the drum, which then transfers them to the substrate.

Ink Jet Based:

Rather than relying on electro photographic technology, these systems use drops of ink applied to the substrate to create the image. Drops leave the nozzle at a rate of up to one million per second, producing a glossy image with a look that comes close to that of a continuous tone photograph. They use electrical charges to guide the placement of the drops on the substrate. Drop-on-demand inkjet printing applies drops of specially formulated liquid or solid inks in response to a digital signal.

Hybrid Technologies:

Combine digital and conventional offset technology. One type (DI), Direct Imaging, work like a standard sheetfed offset press, but the plates are imaged and prepared right on the machine. DI presses can match the performance of high quality conventional offset presses, but they do not allow for variable data, because once the plates have been prepared, they can only print identical copies of the same image.