

Ink Dispensing Systems

Bill Ford, President, Pamarco Global Graphics, Offset

With the “green” culture becoming an imperative rather than an option in our global economy, the printing industry needs to continually innovate and reinvent key processes to minimize our environmental impact. Sustainability is now a major influencing factor with print buyers, highlighted by Walmart’s announcement in February to eliminate 20 million metric tons of greenhouse gas emissions from its global supply chain by the end of 2015. However, at the same time as meeting these green challenges, printers are also faced with the economic challenges of reducing operating costs to succeed in an increasingly competitive marketplace.

Whether to demonstrate their commitment to environmental sustainability, searching for bottom line improvements, or most likely a combination of the two, more and more companies are realizing the benefits which canister-based ink dispensing systems (See Figure 1). can bring to their business. In fact, with industry studies showing investments in green technology have an 8:1 payback ratio, the green and profit-based reasons are now going hand-in-hand.

So what makes canister-based ink dispensing so effective? First, more than 98% of the ink is dispensed directly from the canister into the ink fountain, whereas it has been estimated by Printing Industries of America that up to 20% of the ink in traditional cans never reaches the paper. Second, the system eliminates virtually all the common causes of ink waste, maximizing the 98% transferred into the ink fountain.

The automated system works equally well with UV, EB, and conventional inks and is designed to maintain a constant, very low level of ink in the fountain at all times. It can be set to maintain a constant level of a half pound or more of ink in a 40-in. press, and the automated dispenser will constantly move across the fountain, dispensing ink only where the electronic eye detects a low area.

The reduction of total ink used on a production run as a result of this elimination of waste and overflow of the fountain have been reported as high as 30%, not to mention increased press productivity with faster makereadies, monitoring of fountains, and quicker cleanups, which have all been conveyed by users.



Figure 1. A canister-based ink dispensing system.

So let’s look at the benefits which canister-based ink dispensing systems bring to today’s modern print operation:

Efficiency

With canister-based systems the operator is able to maintain a low level of ink in the fountain and quickly learns to shut off his dispensing units toward the end of the run, using up the remaining ink in the fountain and keeping the amount of ink left to be cleaned up to an absolute minimum. However, when using the old method of hand filling the fountains, operators may have a tendency to over fill them when knifing ink to save them making continuous trips to the ink fountain. Therefore, on a six-color 40-in. press, each washup could waste forty pounds or more of ink in the fountain. In addition to this, most commercial and packaging printers do not keep the ink left in the fountain at the end of the job as it is contaminated, and it is therefore discarded for quality reasons and disposed of as hazardous waste. This leads to additional waste disposal costs and the cost of the wasted ink.

The other benefit with canister-based systems derives from the fact that the canisters are kept constantly sealed, which means there is also no skinning as the canister is never opened and that the unused ink can then be put back on the shelf for use at a later time. The ink room is no longer full of half cans of ink with the tops skinned or dried over.

Quality Enhancement

The number one cause for job rejection, and therefore customer dissatisfaction, is color variation. Generally this is caused by either running low, or totally out, of ink or overfilling the fountain. In many cases it is a combination of the two, moving from one extreme to the other. However, with canister-based systems, maintaining a small amount of ink in the fountain, and refilling areas depleted with fresh ink, the color variation resulting from the reasons listed above is totally eliminated. Not only does this save the additional costs of ink, paper, labor, overhead, and transport associated with rework, it also brings a huge intangible benefit . . . 100% customer satisfaction as a result of zero color variation. What price would you put on that?

Labor Savings

Filling fountains with an ink knife, and maintaining them, is considered the most time-consuming job on the press. It is also an unfriendly job and can create some health issues for the operator, such as carpal tunnel syndrome and soft tissue injuries. It is estimated that operators spend two hours per shift on this function alone (based on a six-color 40-in. press). However, with canister-based systems, that's reduced to less than twenty minutes per shift. The central control console allows easy monitoring of all units from one location and gives the operator the ability to "Auto Fill" and/or stop all the units as may be needed. If he or she is required to report on material usage, systems like the Sentinel iPro from Pamarco will automatically provide a printed job report, allowing the printer to track ink usage on every color, on every job, every time.

Other Benefits

The canisters themselves are manufactured to promote the use of recycled materials and reduce waste management costs. One of the more commonly used canisters is made from 100% post-consumer recycled paperboard and can generally be disposed of in public receptacles (with some exceptions), as the remaining ink is in compliance with the EPA and most state waste regulations. It is important to note that you must check with your state and local regulatory disposal agency prior to disposing of spent cartridges.

UV and conventional inks are considered hazardous waste by the EPA. Conventional inks expose volatile organic compounds (VOCs), and UV and conventional inks can also release hazardous air pollutants (HAPs) in the landfills once they are exposed to the air, either by burning or natural decomposing. Canister-based ink dispensing systems therefore, by significantly reducing ink waste, make an

equal contribution to the reduction of these hazardous wastes. In addition, as less than 2% of the ink is left inside the canisters, they are considered waste stream compatible in most states.

Canister-based systems also make an important contribution to managing the levels of VOCs in the pressroom. With the majority of ink being in a sealed canister, and the only other ink in use being the minimum amount in the fountain, it reduces the VOC level (as much as 10% as reported by users) and makes for a much safer, cleaner, and greener operating environment. And where the dispensing system allows for full reporting of the inks being used, this also provides detailed VOC usage.

In summary, canister-based ink dispensing systems are providing their users with numerous financial benefits, so much so that average return on investment figures are in the region of ten months. Research studies have estimated that if all presses in the United States had canister-based ink dispensing it would eliminate 25,000,000 lbs. of ink waste per year! Combining this with the undoubted increases in quality and, most importantly, the positive environmental impact they make, it becomes very easy to see why canister-based ink dispensing systems are becoming the obvious choice for today's printer.

Pamarco Global Graphics is at the leading edge of ink dispensing with its Sentinel iPro system, as well as a leading supplier of rollers, consumables, and press accessories to the offset, flexo, and gravure markets. Bill Ford can be reached at 770-795-8556 ext. 114 or bill.ford@pamarcoglobal.com. For more info on Pamarco Global visit www.pamarcoglobal.com.

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