

# THE CHOICE BETWEEN INK AND WAX

Mark Diehl discusses the differences in computer-to-screen systems

More and more screen-printers are asking what is the best way to image screens for their specific production needs. For textile printers there are two basic options that must be considered. Should they use film positives or should they use computer-to-screen (CtS)? And, if they use CtS, should they use ink-jet or wax jet CtS? Graphic and industrial printers are looking at a third option as well – CtS with direct UV lighting. The scope of this article will be for the textile printer; we will leave the graphic/industrial printer discussion for another day.

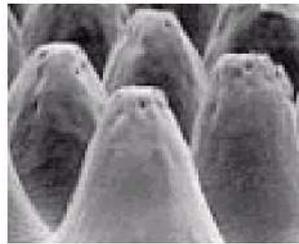
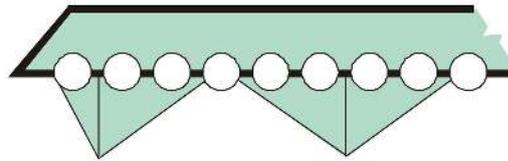
When CtS first came out for textile printers, a lot of printers (and manufacturers) thought the main cost justification for switching from film positives to CtS was the savings of the film. Though this is a nice bonus, there is a host of other advantages that make even small and mid-sized shops realise that the switch is much more about quality improvements and work-flow (labour) savings than film savings. We have customers with just two automatics that tell us that purchasing their Douthitt CtS Wax Jet Imager was the single best investment they have ever made.

CtS systems offer a number of advantages over film. The artwork is going directly to the screen output device rather than a film output device. This allows for first generation imaging of the screen and eliminates a number of potential quality pitfalls. Jobs are saved and stored electronically rather than in a physical file cabinet (or not at all) so that, if a job or a screen needs to be re-imaged, finding the artwork is very easy and quick. Further, a single screen can be re-imaged with confidence that the image will be the same as the first. If a film needs to be remade and a screen re-imaged, frequently all the screens need to be re-imaged for good registration to take place.

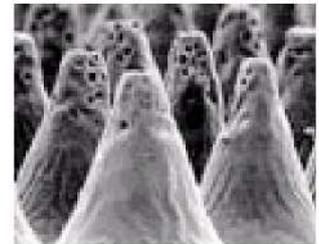
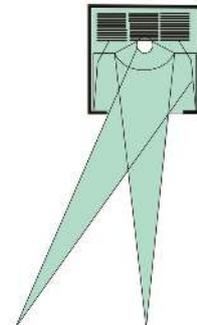


Novac installation with its pass-through design for two or more CtS units

## Multiple Lights (leds, fluorescents ...)



## Point Light



Comparison between multiple bank lights (fluorescents or LEDs) and point light

## REDUCING PRESS SET-UP TIMES

A good CtS system will match the registration system on the press so press set-up time drops dramatically. Since many screen-printers are doing shorter run lengths, this advantage is huge. One wax jet user quit using registration marks since, even on eight plus colour jobs, they only do micron adjustments. Saving press set-up time is a huge advantage.

With CtS you also eliminate the need for vacuum contact and the frame glass. This saves 100% of the vacuum draw-down time and approximately 40% of the exposure time. This also eliminates the potential for out-of-contact areas on your screen. When you have an out-of-contact area the image will not print clearly but will appear blurry on your print. The elimination of the vacuum frame will also eliminate most of the reasons for pinholes in your emulsion after developing. Pin hole touch up time will become nearly zero.

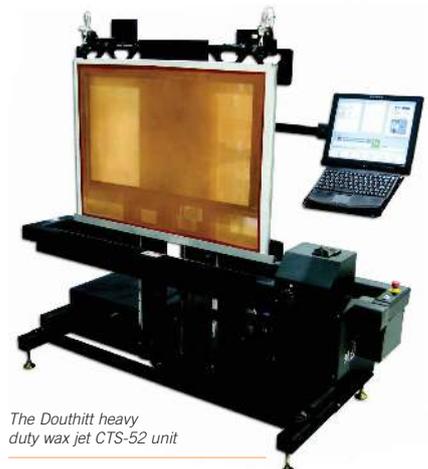
One important note, a good light source is still essential to avoid under-cutting of the image due to the emulsion thickness on the screen. Multiple bank systems will not produce the same quality as a good quality point light source with a focused reflector. One common installation at the time of a CtS installation is a no-vacuum exposure system. The unit pictured here is installed through the wall dividing the imaging area and the

developing area. This means handling the screen once after imaging and then the wash-out area has the screen – simple but efficient.

## INK OR WAX

Once a printer decides to go CtS there is another major decision to make. CtS imaging devices are either ink based or wax based. Wax offers a number of quality advantages to the printer.

The wax does not splatter like the ink; therefore, it gives a sharper image for either line work or half-tones. Also, the wax does not spread after imaging so exposure can be done



The Douthitt heavy duty wax jet CtS-52 unit



The AL53 is shown with its focused reflector for higher collimation over flood reflectors and multiple bank of light systems

right after or the next day. Printers producing small type, fine line or high LPI (lines/inch) will clearly see the benefit of the higher resolution imaging. No matter what kind of printing they are doing it is important to remember a simple truism that 'quality lost in pre-press is lost forever and no press can ever bring it back'.

Another huge difference between the ink systems and the wax systems is the density of the image on the screen. The wax will print a much higher density than the ink. Both systems will offer a DMin of zero but, as with film, a better DMax allows for more complete exposing of the emulsion. Fully exposing the emulsion creates a sharper image, a longer lasting screen and easier reclaiming of the emulsion after the screen is used.

Ink systems are less expensive to manufacture and can sometimes be slightly faster to image. However, long term durability should also be considered. How many ink-jets are working for three years on multiple shifts? For many customers the lower initial price does not offset all the down-sides of ink which include only certain emulsions that can be used, poorer dot quality and lower registration. Once quality is lost in pre-press no press in the world can get it back.

The best part of screen-printing is the latitude; but the latitude is also the worst part of screen-printing.

#### A USER'S EXPERIENCE

Tom Davenport, owner of Motion Textile and also an SGIA board member, explains why he chose CtS: "Years ago, when we decided to go CtS we were a relatively small operation – two automatic presses and a dryer. At that time, CtS technology was somewhat new and the equipment prices were quite high. Most of my colleagues thought that I was 'high' for purchasing a single piece of pre-press equipment for the equivalent price of a

new press! But, in my mind, maximising the efficiency of our small operation was more important than simply adding on printing capacity with another press. Additionally, the cost savings in consumables (mainly film) and pre-press labour (mainly handling and managing film) justified the lease payments on the CtS machine.

"The decision of which technology and which specific machine to invest in wasn't quite as easy," continues Davenport. "After a year of research, which included talking to various manufacturers, on-site visits to shops which were already employing CtS technology, hours of inspection of test prints (including paper, screen and finished garments), and the usual cost/benefit analysis, we decided on a wax-based system over ink-jet for its superior results and reliability. In the end, switching to CTS

proved to be the best equipment investment we have ever made – it revolutionised our operation."

When buying any capital equipment, it is important to look at the short term and long term value and durability of the equipment and its track record. Talk to other printers about the after-sales service and support and costs and quality. Invest for the short and long term advantages of any piece of equipment. ■

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