



PressingMatters

Dye Sublimation & Specialty Imprinting Newsletter

1st Quarter 2003 Volume 1-1

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Welcome... to the premier issue of the DSSI Newsletter! Developed for members of the Dye Sublimation and Specialty Imprinting forum, the goal of this publication is to provide an additional source of industry information, taking advantage of our online community resources to bring you relevant news in a format that is more akin to a trade magazine than an online forum. While this first issue is in printed format, future publications will be distributed electronically. With a large community of sublimators and other im printers online each day to answer your questions and share information, you will find DSSI to be "the" place to go for answers, ideas, and industry networking. To join, go to: www.dyesub.org. Basic membership is free! We also offer a great online chat room that allows for real-time help - indispensable when you need answers now! If you are using heat transfer technology currently, or just want to learn more about it, visit www.dyesub.org to stay abreast of the latest industry news, reviews and tips. Here you will find a wealth of information related to sublimation and other heat transfer processes!

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What is Dye Sublimation?

By Cherie Derrick, Encompass Technologies

Dye: to impregnate color into a material. Many times this color change is permanent.

Sublimation: a change directly from the solid to the gaseous state without becoming liquid.

Polymer: consisting of large molecules made up of a linked series of repeated simple molecules.

Dye Sublimation: Solid dye particles are changed into gas using heat and pressure, which then bond with any polymers present, and change back into a solid.

In today's market when people talk about dye sublimation transfers, they are usually speaking about output from ink jet printers. Epson printers are the most common brand of ink jet printers used for dye sublimation transfers, due to their advanced printer head technology, print density, and low cost.

Confusion arises from the fact that we are using ink jet printers but we don't use ink in them. The fluid that is stored in the ink jet cartridge is just the carrier of the dye. The carrier stays on the paper, it is only the dye that migrates from the paper to your substrate. The dye has little or no color until heated, so what you see on the paper usually looks nothing like the final transferred image.

Other forms of dye sublimation transfers are done with thermal printers, offset printers, monochrome laser printers, color laser printers, and can even be done by screen printing transfers.

The dye particles that are used for this type of dye sublimation are designed to only bond with polymers, so the higher the polyester content in the material the more dye that will bond, giving you a brighter image.

Now you may be starting to think, well this is neat, I can change the color of just about any ole' piece of plastic or polyester material. Well, stop thinking that. That would be magic! Many polymers cannot withstand the amount of heat needed to sublimate, and if they can stand the heat what's going to happen when you add some pressure and time? Many of them melt and shrink.

So does it work on cotton? Again, these dye particles are designed to bond with polyester, and ignore everything else. It is like trying to mix oil and water with most natural materials. There are fabric enhancers, prep sheets, and sprays that can be added to non-polyester fabrics, which will add a layer of polyester to the shirt. This works better on 50/50 shirts since the added polyester can bond with the polyester that is already part of the shirt, and then the dye will have more polymer to bond with. This will make the image more vibrant, and it will last longer than with a 100% cotton shirt.

Hopefully this helps clear those muddy waters. It's really not all magic, it's just dye with a little magic thrown in!

HotTips

Speeding up Your Epson 3000 Printer in Windows

By Mark Bilyeu, 4M Design

One of the things I hear often is "how can I make my printer print faster?". Well, this help file was written just for you! This may also work for other models/brands of printers, but you need to know where to access the spool file settings for the printer.

Before we begin, bring up an image and print it the way you normally do, and time how long it takes. Make it a good sized image so that you are counting minutes and not just seconds. This step is not completely necessary, but it will give you a reference as to how much time you saved. When we are finished you should print the same file exactly the same way.

In order to accomplish our goal we need to create a separate spool directory for each printer we are working on. This sounds harder than it really is, so bear with me and follow each step carefully. Soon you will be on your way to faster print times, which translates to increased productivity and profits for your business!



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1. Go into Windows Explorer.
2. Highlight the root directory, C:\
3. Click on File.
4. Click on New.
5. Click on Folder.
6. Make the name of this new folder match your printer so that you can remember which one it is. i.e.: "Sub3000".
7. Do this for each printer, use a different name for each one.
8. When you are finished, close Windows Explorer.
9. Now we are going to make each printer use its own spool directory.
10. Click on Start.
11. Click on Programs.
12. Click on Epson.
13. Click on Spool Manager (this will have a version # after it).
14. In the dialog box highlight your printer and click on Queue.
15. Click on Setup.
16. Put a check mark in the "Use Print Manager for this port" box. Note: Some people report that doing this slows the printer back down. Try it both ways to see which gives you the fastest results.
17. Where it says Spool Directory, click on Browse.
18. Find the new directory you created and select it.
19. Click on OK.
20. Click on OK again.
21. Repeat step 14 through 20 for each printer.

You're finished!Now that wasn't so bad was it? Now you can go back and print the same file you printed before we started and check the difference. The larger the file the more time you will save!

Sublimation Transfer Papers

By David Lavaneri, DGL Engraving

The evolution of sublimation technology has inspired the manufacture of an increasing number of transfer papers. Many people enter the industry with the impression that any kind of paper may be used as transfer paper. Nothing could be further from the truth, and this overview of transfer papers will ease some confusion over which type of paper to use and when to use it.

There are basically three printing methods used to create sublimation transfers: Offset printing, laser printing, (using special sublimation toners), and ink jet printing.

Offset printing is done on large printing presses and the paper used for transfers is nothing more than a high quality offset bond. Offset printing is primarily used for high volume applications where 1,000 prints (or more) of an identical image are required. Set up costs would be prohibitive for short runs.

When addressing laser sublimation, the "Paper is Paper" theory holds true. Laser sublimation is a "dry" process. During printing, laser toner is fused to the paper. There is no need for a special transfer paper. The same plain bond paper you use in a copy machine can also be used for laser sublimation transfers.

Ink jet printing is a "wet" process whereby a fine dot pattern of ink is sprayed onto the transfer paper. This is where specially manufactured papers become necessary. If you were to use plain paper for an ink jet transfer, although you would get a result, you wouldn't like what you see. The results would be a blurred image without much vibrancy of color. This is the result of plain paper acting much like a sponge and allowing too much ink to be absorbed by the paper, therefore, not releasing enough dye to the substrate.

Another occurrence, commonly referred to as "migration" or "bleeding" is when the fine definition of an image becomes slightly blurry or exceeds its desired borders. This can also be caused by the sponge-like traits of plain paper. Ink jet sublimation papers are specially designed to reduce ink absorption, meaning much of the ink stays on top of the paper. This increases the amount of dye available for transfer and promotes much sharper detail in the printed image.

The basic categories of paper suitable, or specifically manufactured for, ink jet sublimation transfers are:

Single Sided Papers:

The majority of papers for ink jet transfers are single-sided, which means only one side of the paper is usable. With rare exception, the bright white (or whiter) side of the paper is the printable side. Printing to the wrong side of a single-sided paper will produce a weak final image, similar to that of a transfer printed on plain bond paper. One sure method of determining the printable side is "The Coin Test." Take a coin, such as a dime, and rub the edge across the corner of the paper. The side which leaves a mark is the printable side.

Double Sided Papers:

Either side of the paper can be used, which eliminates the likelihood of printing to the wrong side of the page.

High Release Papers:

These papers are single-sided and designed to release a maximum amount of dye to the substrate. During pressing, these papers release over 90% of their dye to the substrate, and a side-by-side comparison of a traditional (general use) and a high release transfer paper would show that much less of the original image remains on the high release paper after pressing.

Factors governing which transfer paper to use include production time, substrate compatibility, color correction compatibility, availability and paper cost.

Production Time:

Most transfer papers can be taken immediately from the printer, applied to the substrate and pressed. Some brands of high release paper require that the ink be completely dry before pressing. Transfers can either be left to air dry, (sometimes for as long as 24 hours), or the transfer can be force-dried, which is most often accomplished by placing the transfer paper a few inches below the (heated) platen of a heat press until dry. Not being able to go directly from printer, to substrate to press, amounts to a delay in production.



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Sublimation Transfer Papers

(continued. from page 3)

Substrate Compatibility:

Depending on the substrate type, some transfer papers perform more admirably than others. What I describe as “general use” transfer papers, such as Accuplot (single-sided) or Jet Trans 1405 (double-sided) usually do a decent job of printing to all substrates. Occasionally, such as when printing an image containing large areas of solid color, the general use papers simply won’t generate enough opacity, meaning that there isn’t enough density of color to block the original color of the substrate from showing through. A lack of opacity can lead to a slightly blotchy appearance, and colors may look washed out - Blacks may appear dark gray. The use of a high release paper makes great strides in rendering a much more opaque image.

Color Correction Compatibility:

Many sublimation suppliers provide a means of color correction with their ink. Whether it is a specially created print driver, RIP (raster image processor) or ICC (International Color Consortium) profile, there is usually a specific transfer paper around which the individual color correction method was designed. This isn’t to say that you can’t experiment with various transfer papers, but particularly if you’re new to the process, it’s best to use the transfer paper recommended by your ink vendor.

Availability:

Transfer papers are readily available through most sublimation suppliers, although not all sublimation suppliers carry more than one type of transfer paper. Furthermore, some parts of the world have limited access to the full spectrum of papers. You can find a list of U.S. suppliers and the transfer papers they carry at www.dyesub.org.

In A Pinch?

If you live in a part of the world with limited access to a wide variety of transfer paper, or merely find yourself un-expectantly without transfer paper, help may be as close as your local office supply store. While it’s highly unlikely that you’ll find a high release transfer paper there, you will find some ink jet papers which will be very suitable as general use transfer paper. One example of such a paper is Epson Matte Photo Quality Ink jet paper. It’s a one-sided paper which compares very favorably, in both appearance and results, to that of Accuplot.

Cost:

Traditionally, transfer paper is sold in 100 sheet packs. If you’re buying 8.5” x 11” sheets, costs can range from approximately 10 to 15 cents per sheet, for general use paper. High release paper costs are higher and will run approximately 15 to 18 cents per sheet. Some suppliers offer a discount of around 3 cents per sheet when you buy 500 sheets.

Transfer paper is just one area of the dye sublimation industry in which improvements are continually being made. In my opinion, the savvy sublimator, as well as the astute industry supplier, should stay tuned to www.dyesub.org and the DSSI forum, to stay abreast of the latest breaking innovations.

Don’t miss out on the next issue of *PressingMatters!*

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Mug Press "Shoot-Out"

Guidelines for evaluating Mug Presses

By Larry Cohn

In this round-up of mug pressing solutions we compare the specifications of 7 traditional mug presses, two mug "wraps" and one mug attachment to a combo press. Refer to the chart on page 6 for a side by side listing of the following features.

Warranty:

The warranty on a mug press is broken down to one warranty period on the press itself, one on the controller (in some cases) and another on the heating blanket. The typical warranty on the press and the controller is one year, the typical warranty on the heating blankets is 6 months.

Whichever mug press you choose, you should be aware of how long the warranty is on a replacement heating blanket, since it can and will go out over time. Having said that, it is possible to get years of life out of one heating blanket, even with high usage. Longer warranties help but are not necessarily indicative of which heating element blankets will last longer.

Replacement Mug Blanket:

Also important is the cost of a replacement heating element after the warranty is up, and whether it is easily replaced by the user. The easiest one on your wallet is the replacement blanket for the ORG-3 or ORG-2, only \$70. Some heating blankets cost up to \$135. Fortunately, recent improvements in mug press designs mean that you can now easily replace the heating blanket on any of the mug presses reviewed here.

Effective Heating Areas - Width and Height:

There is a wide variation among mug presses as to the effective heating area, both in the height and the width of printing on the mug. In the construction of a typical heating blanket, there are "dead areas" built into the blanket on its edges, in order to maximize its life span.

I have listed the mug blanket dimensions both in height and width, but now we need to do a bit of math to guess how much heating area we are actually going to get, accounting for those dead areas. A typical blanket that is 9" long will give 8" to 8.5" of heating area, which translates to heating within 1/2" to 3/4" from each side of the handle on a typical 11 oz mug with a 9.5" diameter, even though it may look like it can cook to within 1/4" of the handle. The same thing goes for the effective cooking height.

A typical mug press with a 4" tall mug blanket can only effectively cook a mug to a height of 3" to 3 1/2". There can be up to 1/2" range in effective coverage, as you see listed in the chart. This is for 3 reasons:

- 1) The human factor. It depends on how good you are in centering your mug in both directions on the heating blanket.
- 2) Some companies design their heating coils as close, or closer, to the edge as 1/4", while other heaters are designed with a more conservative 1/2" of dead (no heat) areas around the edges. I don't have the resources to determine this measurement for each heating blanket, so I'm giving these measurements a window. Consider the smaller measurements to be achievable and the bigger measurements to be possibly a bit too optimistic.
- 3) If you are using the original Sawgrass Sublijet ink or if you are using laser sublimation toners, you will possibly get up to 1/4" higher and wider coverage than if using other sublimation inks. These inks and toners happen to be more forgiving and require less time and temperature to sublimate.

The ORG-3 and ORG-2 presses are listed in the same column since the only differences between the two presses are the heating blanket height and the idle temperature. The Nova Chrome Mug Pro Plus is listed with 2 possible heating blanket heights. You can choose which height heating blanket you would like, at the time of purchase.

Controllers:

The controllers on some mug presses are set up for manual operation, and on others are set up for programmed operation. The manual operation presses can be set with analog controls (The Cactus ORG-3 and ORG-2) or the more accurate digital controls (the Geo Knight DK-3).

The mug presses with digital programmed operation are the Stahls Mighty Mug press, the Nova Chrome Mug Pro Plus, and the Hix CW-550. I like the fact that with digital programmed operation, you can eliminate the timing variables of whether or not you are starting out with cold mug stock or warmer stock, or whether there are differences in the thickness of the mug walls which could result in a different heating rate. You just tell it to heat to a desired temperature, say 400F, and then tell it to stay at that temperature for a desired amount of time, say 20 seconds, or "dwell time" before it buzzes to tell you it's done. This method can, in theory, be a more accurate way of getting consistent mug pressing results.

(continued on page 8)

Mug Press Feature Chart

	<i>Xpres MX-300</i>	<i>Geo Knight DK-3</i>	<i>Cactus Coatings ORG-3/ORG-2</i>	<i>Nova Chrome Mug Press Pro</i>
Price (\$U.S.)	\$1195	\$749	\$745/\$695	\$799
Warranty - Press/Controller	1yr/3yr	1yr/3yr	1yr/1yr	1yr/1yr
Warranty - Mug Blanket	6 mo	3yr or 10,000 cycles	6 mo	1yr
Replacement Mug Blanket	\$129	\$135	\$70	\$125
Heating Blanket Height	4"	5"	4.5"/3 7/8"	4"/ 4 3/4"②
Actual Heating Height	3" - 3.5"	4" - 4.5"	3.5"-4" / 2 7/8"-3 3/8"	3"-3.5" / 3 3/4"-4 1/4"
Heating Blanket Width	8 5/8"	9.5"	9"	9 3/8"
Heats How Close to Handle?①	3/4" - 1"	1/4" - 1/2"	1/2" - 3/4"	5/16" - 9/16"
Programming ②	(4)	(2)	(1)	(3)
Temp. Display (Set + Actual)	yes	yes	no	yes
Cooking Time ③	2:40	5:30	3:06/2:57	2:49
Pressure Required	medium-light	heavy	light	medium
Max. Temperature	400F	400F	400F	475F
Wide 16 oz. Mug Clearance?	easy	tight	semi-tight	easy
Hot/Cold/Adjustable Idle	hot idle	hot idle	switchable/cold ④	hot idle
Accepts German Beer Steins	yes	no	no	yes/no ⑤
Bottom Power Boost	no	no	yes	no

Notes:


① Assuming an 11oz. mug with a 9.5" circumference stopping short of the handle.

② Programming is either (1) Manual time/temp controls, (2) Digital time and temp controls, (3) Digital control of temp and a selectable "dwell time" after selected temp is reached or (4) Digital temp control only.

③ Cooking time assumes the press is properly calibrated. Use a heat gun to measure the heat blanket at full heat, without a mug in it. If it reads less than 400F when you have set the temp control to 400F, then your times will be longer than the results posted here. The exception is the Hix press which comes "calibrated" at the factory with a blanket reading of 330F when the control reads 390F.

④ The ORG-2 is a cold idle press. The ORG-3 can be switched to hot or cold idle.

*Read Part Two of this Mug Press Review at
www.dyesub.org/articles/mugreviewpart2.shtm*



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Mug Press Feature Chart

	<i>Stahls</i> ⑥ <i>Mighty Mug</i>	<i>Hix</i> ⑦ <i>CW-550</i>	<i>Cactus Coatings</i> <i>Mug Wraps</i>	<i>Cowtown</i> <i>Oven Press</i>	<i>Mug Attachment -</i> <i>Knight Digital Combo</i>
Price (\$U.S.)	\$745	\$829	\$20ea	\$45ea	\$300
Warranty - Press/Controller	1yr/1yr	1yr/1yr	n/a	n/a	n/a
Warranty - Mug Blanket	6 mo	1yr	n/a	n/a	n/a
Replacement Mug Blanket	\$130	\$118	n/a	n/a	n/a
Heating Blanket Height	4 1/4"	4.0"	4.35"	4 1/4"	4.5"
Actual Heating Height	3 1/4" - 3 3/4"	3" - 3.5"	4.35"	4 1/4"	4.5"
Heating Blanket Width	9.25"	9"	9.5"	9.5"	4.5" ⑨
Heats How Close to Handle?①	3/8" - 5/8"	1/2" - 3/4"	1/8"	1/8"	1/4" possible
Programming ②	(3)	(3)	n/a	n/a	n/a
Temp. Display (Set + Actual)	yes	yes	n/a	n/a	n/a
Cooking Time ③	3:30 est.	5:40	avg. 3:00 possible ⑧	avg. 3:30 possible ⑧	not tested
Pressure Required	heavy	medium	medium-light	medium-light	heavy
Max. Temperature	430F	390F	n/a	n/a	500F
Wide 16 oz. Mug Clearance?	easy	easy	easy	easy	easy
Hot/Cold/Adjustable Idle	205F-300F idle	hot idle	n/a	n/a	hot idle
Accepts German Beer Steins	no	no	yes, custom	no	no
Bottom Power Boost	no	no	n/a	n/a	no

Notes Continued:

- ⑤ The Nova Chrome Mug Press Pro can be ordered with either a 4" heating blanket or a 4.75" blanket. The German steins can only fit in this press with the shorter blanket installed.
- ⑥ The Stahls press is also sold as the Xpres MX-400.
- ⑦ The Hix press is also sold as the Airwaves AW-5000 and the Blanx XM-2000.
- ⑧ The cooking time of the Cactus Mug Wraps and the Cowtown Oven Presses are based on cooking 6 mugs at a time in a standard oven or convection oven.
- ⑨ The mug attachment only cooks one side of the mug at a time. Therefore, it cannot cook a full wrap mug design, and cooking a 2-sided design takes 2 cooking cycles. Also, due to the fixed curvature of the heat platen, it may not cook all sizes of mugs optimally.



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Guidelines for evaluating Mug Presses

(Continued from page 5)

First you need to get the surface temperature of your mug up to the point at which it will accept the sublimation dyes (typically 400F), then you need to give it a small period of time at that temperature to properly absorb the sublimation gasses. Programmed operation requires a bit of a mental adjustment from the manual time and temperature settings you may be used to. In reality, you can get good results either with manual or programmed operation as long as you are using the correct settings.

There is one mug press, the Xpres MX-300, that almost gives you this type of digital programmed operation, but not quite. It will buzz when it reaches your desired set temperature, up to 400F, but will not allow you to program in a dwell time at that temperature. This means that, to simulate a programmed operation, you'd have to turn off the buzzer as soon as it buzzes and then time the dwell time manually with a \$10 digital kitchen timer.

Temperature Display (Set and Actual):

It's nice, but not mandatory to have a digital readout of the set temperature as well as the actual temperature as it is being sensed, ideally on the mug surface. This can give you the assurance that your press is operating properly and can show you the temperature swings on or close to the mug surface as it goes through its cooking cycle.

Most of the mug presses can display both set temperature and actual temperature. The Cactus Presses (ORG-3 and ORG-2) do not have a temperature display.

Cooking Time Needed:

There is a major variation in cooking times among the various press models. In order to standardize the needed times, I came up with a plan to measure how long each press takes to cook a U. S. Coatings 11 oz mug to the point that the inside of the mug, opposite the handle, measure in the middle of the inside wall, reads 350F with my heat gun. I have found through experimentation that this is an easy way to approximate the correct time for cooking these mugs, since at that point the outside surface of the mug is at the proper temperature.

Some people may or may not agree with this method of establishing correct cooking times, but it makes an easy benchmark in which to test the speed of each press. All I had to do is to cook the same kind of mug in each press and see how long it took to reach an internal 350F reading. The results are posted on the chart.

Actual optimum cooking times in a given mug press depend, in part, on the ink or toner used, the relative hardness or softness of the mug coating, any possible unique properties of the mug coating, the thickness and size of the mug, and the ambient temperature of your blank mug stock.

Cactus ORG-2, since it is a cold-idle press, was preheated to the maximum temperature prior to timing the cooking cycle in order to simulate the timing with continuous operation.

The Xpres MX-300 and the Novachrome press are both winners in terms of raw cooking speed, with the Cactus ORG-2 and ORG-3 following closely behind. The Stahls press lagged about 30-45 seconds behind the above presses on average, mostly due to a recommended cooling period between pressings. Still, the above 5 presses are quite fast on the whole. The last 2 presses, the Hix and the Knight DK-3, are about twice as slow as the fastest presses reviewed here.

Pressure Needed:

Depending on the way the mug press is designed, different pressures are needed in order to get the good, consistent contact needed for proper mug printing results. The lightest pressure needed is with the Cactus ORG-3 and ORG-2 presses. The Xpres MX-300 requires almost as little pressure as the ORG presses, requiring only what I would call "medium-light" pressure. The Novachrome and Hix presses both require medium pressure. The Geo Knight DK-3 and the Stahls require heavy pressure.

The less required pressure needed, in my experience, the better. More pressure not only makes it more tiring for the operator making mugs, but also more quickly wears out the press components. It is also a sign of a less conforming heat blanket, which may mean that it will be harder to get a good even coverage on the mug surfaces that have any curvature or slope to them.

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Guidelines for evaluating Mug Presses

(Continued. from page 8)

Maximum Continuous Temperature:

The industry standard temperature needed for subbing, 400F, is only barely being met at the maximum temperature setting by most of today's mug presses. This is alright as long as you are really getting 400F at the point of contact with the mug surface, but I've seen many cases where that is not the case. Some of the presses I've seen have not been properly calibrated at the factory, and just a little lower temperature can make a major difference in the cooking times. Your best line of defense is to either have, buy, beg, borrow or steal a laser heat gun and find out what you really have. If it is low, then find out how to get it calibrated properly.

The Stahls Mighty Mug press can be set as high as 430F. The Nova Chrome press can be set as high as 475F, although I don't think you would want to take that risk.

One press, the Hix CW-550, falls short not only because of its maximum temperature setting, 390F, but, even worse, because my reading of the heating blanket at the 390F control setting was only 330F. That means that on top of it theoretically not being able to reach the recommended 400F sublimation temperature, it's actually not even getting close to that: due to the actual temperature reading on the heating blanket lagged by 60F.

Wide Mug Clearance:

I've had problems getting a wide 16 oz mug into Geo. Knight DK-3 mug press without messing up the position of the taped-on transfer. The ORG-3 also is a bit tight, although its clearance is greater than the DK-3's clearance. The other presses have plenty of opening travel, so it's not a problem.

Idle Temperature (no mug in):

The idle temperature of a mug press is going to be "cold" (no heat), "hot" (full temperature), or something in between, depending on the operation of your particular press. The Cactus ORG-2 is a cold-idle press.

Hot idle presses are the Geo Knight DK-3, the Xpres MX-300, and the ORG-3 (the ORG-3 can be set for either hot or cold idle via a switch.) The Hix CW-550 is essentially a hot idle press since the idle temperature can be set by the user, and since they let you set the idle temperature to only a maximum of 8 degrees less than the cooking temperature.

The Stahls Mighty Mug press' idle temperature can be set by the user, but only in the range of 205F to 300F. That may be a bit frustrating for someone who wants to keep the cooking times as short and repeatable as

possible by having a hot idle temperature, but it saves time compared to starting off with a cold idle temperature. I guess this can be thought of as a "warm idle".

German Beer Stein:

There are only 2 mug presses and one mug wrap that can cook the 22 oz German beer stein sold by Nova Chrome and by Photo USA. The Nova Chrome Mug Pro Plus with the 4" tall heat blanket option was specially designed to accommodate this stein, which has decorative raised sides that interfere with proper cooking in most presses. However, the Xpres MX-300 can also do a fine job of cooking these mugs, as can Cactus Mug Wraps special ordered for that purpose. The regular 18 oz flat steins, such as those sold by Cactus Coatings and by Xpres, can be cooked properly in any press.

Bottom Power Boost in Heating Blanket:

The Cactus ORG-3 and ORG-2 mug presses are the only mug presses with a power boost in the bottom area of the mug heating blanket. This is a design feature which allows the press to get more heat to the larger ceramic mass on the bottom side areas of the mug. This reduces cooking time and also theoretically results in a more even cooking temperature throughout the image area.

Power requirements:

The current crop of mug presses all have a similar power draw, so this is no longer a major consideration. Therefore, I left this information off the chart. The typical power draw is around 3 or 4 amps, which translates to around 360-480 watts at 120Vac. The draw of the Knight Digital Combo press with the mug attachment is in the same range, less than 4 amps, or 480W. One exception is that if you attach another optional mug or plate press to the Nova Chrome Mug Pro Plus, then of course you have to allow for the extra wattage of those add-on units. When cooking mugs with a Cactus Mug Wrap or a Cowtown Oven Press, you will probably be drawing 1800 Watts with a convection oven.

For further reading...

As you can see, there are many factors to consider when comparing mug pressing solutions. This article is continued on www.dyesub.org. (This site is a free site dedicated to the advancement of the dye sub industry.) The article continues with individual reviews of each mug press and mug pressing alternatives, photos, and my overall conclusions. Hope to see you there!

Choosing a Dye Sublimation Solution for Your Awards Business

By Cherie Derrick, Encompass Technologies

As in any business decision, you should consider your target market when selecting a solution. With that consideration, if you are specifically looking for a solution to enhance your awards business there are two dye sublimation technologies that come to mind - Ink jet dye sublimation, which can consist of 4 or more colors, or magnetic laser dye sublimation, which comes in 2 flavors - monochrome and color (usually 4 colors).

If you are already using a magnetic monochrome laser printer in your business this may be a good way for you to break into dye sublimation transfer printing on metal products, especially if your laser isn't being utilized 100% of the time. The printer can be used for both regular printing and for sublimation printing by simply swapping out the cartridges.

There are dye sublimation cartridges on the market for many models of monochrome laser printers (check with your supplier) and they come in several standard colors like black, red, blue, green, purple, brown, orange, etc. Cartridges in most laser printers can be swapped out in a matter of seconds and with some models you may be able to print multicolor transfers by running the same sheet back through the printer. Magnetic toner color laser sublimation cartridges are available for fewer models of printers, usually the HP 4550 and HP 4500.

This type of laser sublimation works best on silver, gold, copper and bronze aluminum as well as brass with the plastic protector sheet left on the item during the transfer process. It is not recommended for white aluminum. There are no special paper requirements for these transfers. Some people do use magnetic laser sublimation for printing soft items like shirts, mouse pads and hats. There is a special technique used to imprint these items using laser sublimation.

Monochrome cartridges sell for \$89 - \$284, and color cartridges for \$199 - \$299/ea. (or \$796 - \$1196/per set) depending on the toner brand, printer model and fill volume of the cartridge.

Color ink jet is another solution readily available for dye sublimation for awards. Suppliers fill cartridges for several models of Epson printers. Epson printers are used because the print head technology allows the dye particles to pass through the head without sublimating. Other print head technologies tend to get much hotter which can cause problems with the dye particles, leading to clogging.

Using a dedicated printer is highly recommended - not only because switching ink cartridges can be time consuming, but also because in some printers doing so can introduce air into the ink lines. Also, in some printers, like the Epson 3000, switching cartridges is expensive since the printer holds 40 to 60 ml of ink in the lines and dampers which feed the print head. This ink would need to be purged prior to loading a different ink into the printer.

Color ink jet dye sublimation will work on a wide variety of products such as coated metals (including white aluminum), coated ceramics (mugs, tiles, etc), polyester fabrics (shirts, jackets, award ribbons, etc.), some cultured marble, and fiberglass reinforced plastics (for things like name badges). Ink jet sublimation is more translucent than laser sublimation so it works best on white or light colored substrates. On darker substrates like gold aluminum, the gold shows through the dye a little, which causes a color shift (picking up the gold background) as well as a weaker image. The darker the substrate the harder it is to see the ink jet dyes.

Costs for ink jet dye sublimation cartridges range from \$49.95/set to \$845/set depending on the ink brand, printer model and cartridge size.

One other desktop technology is color or monochrome hybrid dye sublimation using Seiko thermal wax printers. This is an older technology with a lower resolution and it is now becoming hard to find equipment and maintenance support for this process.

In conclusion, benefits of laser over ink jet are: laser sublimation is more opaque, toners can easily be swapped out so there is no need for a dedicated printer, print times are faster and the costs per page are lower than ink jet sublimation. Benefits of ink jet over laser are: ink jet sublimation can be used on a wider variety of items and startup costs are lower both in equipment (if you don't already own the right type of laser printer) and ink. Whichever solution you choose, you will find a variety of uses for sublimation in your awards business.

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Subbing on the Road

By Nancy Bahnsen, Lighthouse T-shirts Plus

In this ongoing column, we examine the pros and cons of taking a sublimation business "on the road".

Don't Make the "Pre-Make" Mistake!

You plan to take the business on the road to a show that's far from home. You look up the past stats on the event, and OH BOY, IT'S A BIGGIE! Your eyes bulge out at the prospect of THREE-QUARTERS of a MILLION possible customers walking past your booth. The wheels in your head start churning. Even if only one lousy percent stop by and get one thing each, that is SEVEN THOUSAND-FIVE HUNDRED ITEMS!

Joy fills your heart and your brain goes into over-drive. You start to imagine all the sales and what you'll do with all that newfound profit! (Oh come on! You know you do!) Then you realize how difficult it would be to imprint all of these items within the time frame of the event. Hmmm, how can you possibly handle that volume? A light bulb goes on over your head as you think, "I'VE GOT IT! I'LL PREMAKE a bunch of stuff." This will cut down on the workload on site & move sales through more efficiently, right? WRONG!

That wonderful sounding scenario is what I now refer to as "The Pre-make Mistake." A possibly devastating decision really, or a good-sized set back in your cash flow at the very least. Trust me! Been there done that. Every event is unpredictable. Bad weather, poor booth location, finicky customers and many other uncontrollable factors could turn your dream show into a disaster, no matter how desirable you think your products are.

In my case, the problem was what I now consider to be the 3 most important factors. LOCATION, LOCATION, LOCATION! My booth location was completely away from the general flow of traffic. We were lucky if we saw 10% of the massive 750,000 projected patrons. Over the course of the week, that cut our overall number down to 75,000. Take 1% of that and you are down to a measly 750 if you're lucky. All those shirts you pre-made have now become nothing more than boxes of unusable money. Remember all the new equipment you dreamed of getting? You would have been better off spending the money on it instead of the pre-made stock.



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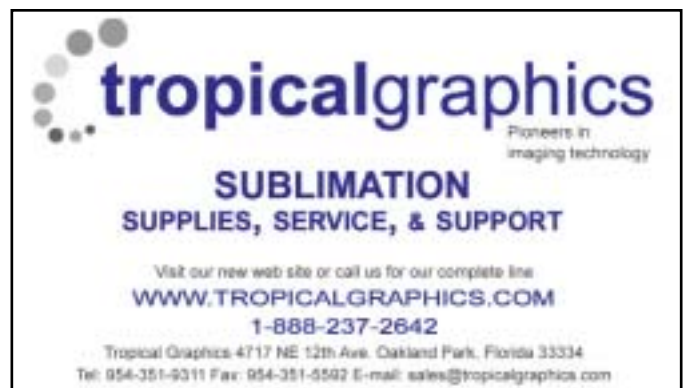
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If you are new to the world of shows and want to make it a success, or at least a non-disaster, take my advice as you can avoid a monetary hit that could sink a new business from the start. Being too busy to fill all the orders on site, you at least have the option to defer some by taking orders. There is no way to defer pre-made stock that doesn't sell, except to a pile of boxes taking up valuable space and serving as nothing more than a painful reminder of your "Pre-Make Mistake."

After getting some experience under your belt on how much volume you do at certain shows, you can then make an educated calculation on what, if anything, you should pre-make. I mended my ways the second time around. Calculations based on the previous year's sales indicated it was safe to pre-make about 150 T-shirts, which we sold out of. I then made all additional shirt sales on site. A MUCH better scenario, don't you think?

Taking your imprinting business out on the road requires a great deal of planning. Next time we'll take a look at what equipment and supplies you need to do "on the road" events successfully!



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Thank You!

The membership of the DSSI forum would like to take this opportunity to express their gratitude to the vendors who graciously donated funds and support to the annual DSSI Get-Together at ARA Las Vegas. Without their help, the event would not be the same!

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Special thanks to Larry Cohn for donating his time and energy to secure a location for the DSSI Party!

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