

Mastering Mounting



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Mounting Digitals: Part 2

Giclée fine art images are all digitally captured, color calibrated, corrected, and sized prior to printing on fine art paper. They evolved from a proofing system for traditional lithographic printing presses when it became apparent that the presses were having a hard time delivering the equivalent end product image quality and brilliant color of the giclée proofs. Giclées have become the hottest printing

medium and are coveted by collectors for their fidelity and quality. Galleries and artists like them because of their print-on-demand capabilities, in-house control, and limited inventory requirements. Today's

Once the type of digital print is determined, then it's time to use the appropriate method to mount that print

giclées may also be printed to a variety of ink receptive substrates including canvas, silk, vinyl, bamboo, acrylic, and aluminum composite allowing for a variety of display possibilities. Soft silk and vinyl may be suspended by rods, canvas may be stretched or mounted and the rigid printing media are designed to be their own substrate often exhibited using stand-offs or lifters. Fine art photo stock may require flat mounting to acrylic or aluminum composite for frameless display.

Epson wide format piezo printing currently dominates the in-studio and print-on-demand market for much fine art. This is not to say that other manufacturers do not print fine art giclée, it



Thermal inkjet using pigment inks prints fine art and photographic media on HP Z series, Canon PROGRAF iPF series and others.

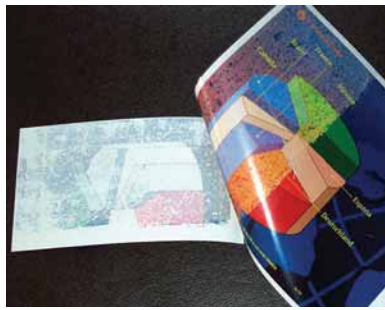
is just they are not the most common. HP-Z series and Canon iPF series thermal inkjet pigment printers are also popular for fine art and all of these may be safely dry mounted.

Digital Canvases

Digital images come from scanned art images translated into data that is stored in a computer until needed, so they are prints and are considered replaceable. When digital canvases first hit the scene, they were usually stretched. But the practice of mounting them to a rigid substrate is becoming more the norm. Inkjet canvases are often coated, allowing them to be pulled and twisted during stretching. The handling also depends on the quality of the materials and the printing technology. Although digital canvases will tolerate the heat of dry mounting, not all dry mount adhesives or pressure-sensitive ones will firmly bond digital canvas. Bainbridge Heat Activated Foam and Drytac GicleeMount film are the top performers for dry mounting, while Bainbridge Self Adhesive Foamboard, Elmer's Quick Stick HT, Drytac P-S



Inkjet giclée (left) canvas doesn't show cracking or flaking when worked, while mismatched inkjet materials often result in lesser quality with possible cracking, flaking, or damage when stretched (right).



Solid wax stick to liquid to solid makes this solid inkjet very heat sensitive. This mounted image has melted onto the release paper.



Sensitivity to heat and/or release paper silicone on an Eco-Solvent inkjet shows mottling of the ink surface.



Borders as this one are common with these dye sublimation photos, which are heat and laminate safe.



Dry toner laser prints are very susceptible to electrophotographic damage under heat (right).



Heidelberg Electrophotographic offset digital press open edition prints are heat and laminate sensitive. Top left is the unmounted original; (bottom) mounted print shows mottled coloring in cream background; (right) print is yellowed by vinyl heat laminate.

Boards, and Drytac Media-Tac film create the strongest bond among pressure-sensitive products.

Solid, Solvent and UV Curable Inks

- Piezo (also called micropiezo and piezoelectric) prints are produced by aqueous inkjet and are all heat tolerant.
- Solid ink (phase change) is like a solid wax stick that is liquefied for spraying and then re-solidifies, so it is very heat sensitive and should never be treated with any heat.
- Solvent inks do not need special coatings because they are waterproof, extremely durable, and resistant to ultraviolet light, making them highly suitable for outdoor use. Though not commonly framed, there are exceptions, and they may be sensitive to silicone damage from release papers if dry mounted though they do tolerate heat and lamination.
- UV Curable inks are used dominantly in large signs and billboards and other outdoor installations. By irradiating UV light, the ink polymerizes and firmly fixes onto materials. Inks do not contain VOCs (volatile organic compounds), are environmentally friendly, and able to directly print onto plastics and nonabsorbent materials.

Thermal Transfer

A dye-sublimation printer employs a printing process that uses heat to transfer dye onto materials such as plastic, paper, or fabric. The name comes from the inks being transformed, or sublimed, from a solid into a gas without going through a liquid stage. It is also referred to as dye diffusion and dye transfer. Most dye-sublimation printers use CMYO (Cyan, Magenta, Yellow, Overcoating) colors rather than CMYK colors, with the black dye eliminated in favor of a clear overcoating. This overcoating is stored and applied as a thin laminate that protects the print from discoloration, UV light, pollution, and makes the print water-resistant.

Dye-sublimation printing is a continuous-tone technology in which each dot can be any color. In contrast, inkjet printers can vary the location and size of ink droplets, but each drop of ink is limited to the colors of the inks installed. Consequently, a dye-sublimation printer appears much like a solid tone chemical photograph, and under magnification the individual droplets of an inkjet may be seen.

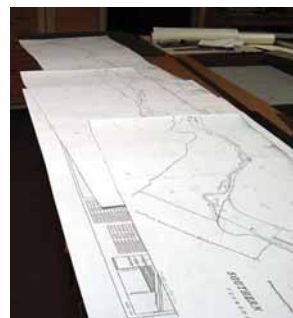
These prints are often found in free standing kiosks at drug stores and allow you to crop, alter, or add borders to images prior to printing. Common desktop dye sub print-



Dry toner was lifted from this print when the laminate was repositioned.



Electrophotographic Liquid toner Indigo photos are used by commercial labs for schools and advertising.



Electrostatic plotter blueprint is 24"x9' long and is ready to mount and laminate for permanent display.

ers include Epson R1900, Canon, Kodak-Easy Share, FujiASK, Sony, and Mitsubishi Electric.

Electrophotography/Electrostatic Printing

Digital printing was born in 1978 with the introduction of the IBM and Xerox copiers. In 1993 Indigo launched digital color presses. Ten years ago, electrophotography was the only viable digital printing technology available. Today, digital photo albums and book publishing have become commonplace, with HP Indigo, Xeikon, Xerox, and Kodak all offering digital presses.

Dry Toner Laser Printers – Electrophotographic and electrostatic copies are easy to spot, as they are on 8-1/2"x11" thin 22-26# copier papers and have been copied from an existing sheet. Dry toner images from either black and white or color laser printers are very heat sensitive, and even at 150°F are damaged by dry mounting. Heidelberg Digital Presses—a.k.a. Digital Imagers—are offset presses using waterless inks called toner. Since digital files are sent to the press as computer data, the files are registered in perfect alignment, allowing printing to paper, canvas, and photo paper without moving it. There are open edition prints and digital canvases that are being printed on demand using digital offset presses. They are heat and laminate sensitive and although laminates are considered repositionable if peeled from a dry toner print can lift the pigment from the page.

Liquid Toner Laser Printers – Large scale color digital presses—HP Indigo, Mitsubishi, Ricoh—use liquid toners and are used by commercial photo labs and book printers and for industrial scale graphic prints and images.

Plotters – Electrostatic plotters print commands from a computer to produce charts, drawings, maps, sepias, diazo prints, and blueprints on paper. Unlike a regular printer, the plotter can draw continuous point-to-point lines

directly from vector graphics files with one or more automated pens using positively charged toner. These are used by architects and engineers for schematic drawings, are heat tolerant and may be laminated.

The Digital Umbrella

Digital prints encompass printing technologies from dry toner to photo chemicals. Though inkjet may be what framers are most familiar with, all of them will be items—some fine art—that a framer has to deal with.

- Most catalog pages are electrophotographic color laser copies, which are heat sensitive.
- Photos could be RA-4, dye sublimation, or electrostatic liquid toner (Indigo). These are all heat tolerant.
- Digital canvases could be either piezo inkjet (Epson Stylus Pro), which is heat tolerant, or electrostatic offset digital press (Heidelberg Press), which is heat sensitive.

The challenge is that these are nearly impossible to tell apart by just looking at them. By asking questions to identify the printer and the technology, the process may be identified. Then manufacturer information can be found online and assorted mounting guides can be referenced for

Further Sources

- Suggested Mounting Guide, pages 162-163, in *The Mounting and Laminating Handbook, 3rd Edition*, 2008. Available at the PFM online bookstore, this book provides P-S and HA mounting recommendations for all kinds of digitals. An updated version of this chart is also available as a pdf download at www.designsinkart.com/library/C-M&LHSuggestedMountingChart201104.pdf
- There is also a heat activated, pressure-sensitive, film adhesive comparison chart available at www.designsinkart.com/library/C-HAPSFilmComparisons201104.pdf

advice on suggested mounting techniques. Keep in mind that there are both invasive and non-invasive mounting methods. Any method that involves adhesive absorption that cannot be removed is considered invasive regardless of the neutrality and stability of the adhesive.

Tips and Warnings

Make certain that any digital image has had two weeks of dry down time to allow the image to fully cure and dry out. Enclosing an uncured image may ghost onto the inner side of the glass as it dries. Epson suggests laying bond paper on top of their prints for 24 hours to absorb moisture. Trade out wavy sheets, which indicate moisture, until they are dry. It's easier just to wait two weeks.

If you have no indications at all as to what type of technology the art is, do not subject it to heat. Use a preservation hinging technique or pressure-sensitive mounting method. The drying period should be honored even with pressure sensitive mounting. ■

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