



Test Drive

BY SKIP GRANT

White Ideas

Digital printing white, with Roland's Soljet SC-545EX.

Skip Grant has been a consultant and manufacturer's rep for digital graphic technologies since 1983. His main focus is to innovate and teach digital printing and cutting technologies to the sign, screen and label industries. His digital printing service bureau, Grant Graphics, is an equipment dealer dedicated to research and development. Contact him via email at Skip@grantgraphics.com.

AT A GLANCE...

Roland Soljet SC-545EX, with white Eco-SOL INK

Manufacturer: Roland DGA Inc., Irvine, Calif.

Price: \$29,995

Connectivity: Ethernet (10BASE-T/100Base-TX, automatic switching)

Acceptable media width: up to 54"

Printable Area: to 53" wide

Print Resolution: Max of 1440 x 1440 dpi

Media Type: coated and uncoated

Ink: Roland Eco-SOL INK

Printing/Cutting method: Piezo Printhead & Swivel Blade

Printing Speed: CMYK: up to 315 ft²/hr; CMYK+White: 19.2 ft²/hr; White: 37.67 ft²/hr

Cutting Speed: up to 11.8 ips

Media Handling: Friction feed, 2" and 3" media cores and up to 44 lb. rolls.

Additional features: Integrated platen heater and controls, automatic and hands-free manual cleaning system. Optional take-up system.

WHITE INK IS NOT NEW, but combining it with the flexibility of digital inkjet printing is! With a new launch of white eco-solvent inks from Roland, a whole new set of possibilities are unveiled when operating with a print-and-cut Roland Soljet SC-545EX.

Our enthusiasm stems from the fact that until recently, digital printing with white was only available for small format thermal transfer printers using expensive ribbon to transfer the white resin pigment to the roll of printable substrate (vinyl, etc).

Other options to get white would be to conventionally screen a flood coat of white in registration with the print or to laminate adhesive backed white vinyl to act as a backcoat when printing reverse on clear for those graphics that go on the inside of the window. It is exciting to see white ink become available not only for eco-sol machines, but standard solvent and UV inkjets as well.

Our test drive specifically focuses on using our Roland Soljet SC-545EX along with the Roland VersaWorks RIP. Keep in mind that Eco-sol white ink from Roland loads, flows and prints just like the other

colors. Printing with white requires that you create percentages of black in your artwork file and the Roland VersaWorks RIP will convert the file to print as white where specified. You can lay down solids, tints, gradations and even monochrome photographic images. Cleaning and maintaining your Soljet remains the same as before.

STRATEGIES FOR WHITE

White only... Printing "white only" is the first of three main strategies for using white ink in a digital solvent inkjet printer. The obvious application is for creating white text and graphics onto clear or non-white films. The printable substrate may be clear adhesive backed vinyl, clear static cling or clear PVC-based film. One should note that the opacity will vary depending on the type and color of the media. Printing on specialty films like holographic film, reflectives, fluorescents and metallics can really provide unique products. Even industrial markings can benefit by using white on brushed aluminum, shiny gold or security label stock.

White primer... The second angle for using white revolves around its ability to be





a “primer” (a.k.a. “CMYK on White”). When printing on clear or on the non-white films mentioned above, this undercoat of white creates a base for the color ink to go on top. This two-step process is done by having two layers in your design and sending the base white .eps file first, letting it dry, then sending the color print layer second as a separate job. This base coat of white really helps brighten up the color and helps reduce the color shift from the clear or non-white background. The density of the white eco-sol ink is sufficient for “priming” in most cases.

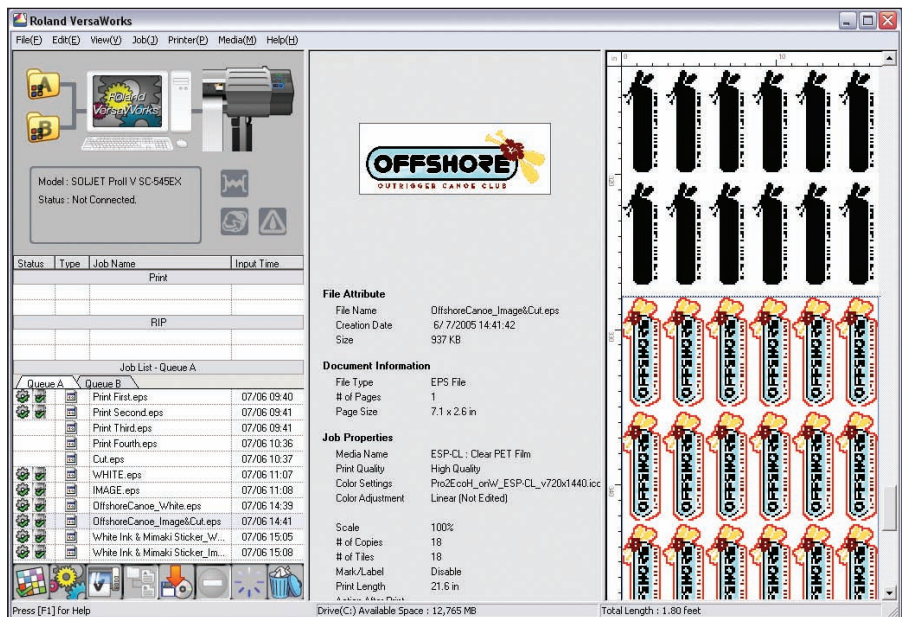
White backcoat... Backcoating with white for reverse printing on clear is the third method of utilizing white ink. In the RIP they refer to this as “CMYK over White”. Typically, one would print the image in reverse (mirrored) onto clear, let it rewind in registration and dry, then send the second layer of white. This backcoat layer can be a full flood coat or done as a selective spot color in certain areas only—even with gradients and tints.

PRINTING & CUTTING

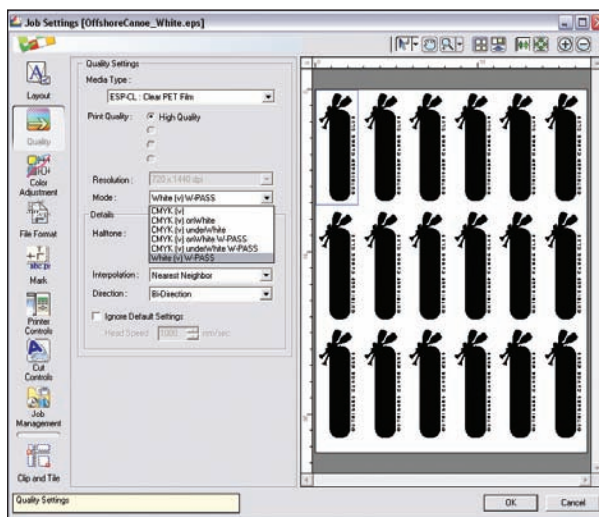
Having a printer/cutter is really a critical part to the success of printing with white. A Roland Soljet 545EX has the ability to print high quality and then cut the labels or decals cleanly with real tight print-to-cut registration. Note that the printer must print the first layer of an entire matrix of decals that might be 52" wide by 48" deep or so (i.e. 500 2" x 2" decals)—and then reprint the second layer of white or color directly on top. After that, the swivel knife addresses the task of contour cutting all the labels following the vector path “CutContour” set up in the file.

Amazingly enough, the equipment can do it all—quickly, accurately and dependably—but having a good dealer teach and support you during your learning curve has never been so important.

Samples of prints made with Roland's SC-545EX, with white ink.



Roland VersaWorks RIP comes with the Soljet and has built-in features to handle white as a spot color.



Your dealer will need to change internal settings to configure the printer as well as the Roland VersaWorks software to handle white ink.

Test Drive

CONTINUED

WHAT YOU USE TO DO IT...

• **Roland Soljet 545EX**—This six color printer/cutter is a good choice for working with eco-sol inks. On a new machine you will load in 12 cartridges—two each of C,M,Y,K plus four of White. Your dealer will need to change internal settings to configure the printer as well as the Roland VersaWorks software to handle white ink. Having a post-print dryer like a BBC DigiDryer or Benes on-line dryer is a mandatory addition to doing major production runs.

• **Roland VersaWorks**—This RIP software comes with the Soljet and has specific features built into the RIP to handle white as a spot color. It is very intuitive the way Roland organized the way in which you send the various batches of ink as well as making it easy to separate printing and cutting steps for handling the “print then laminate then cut” workflow. Little tricks are learned through experience like how to set preferences for modes, profiles, dry times, double hits, heat settings, repeats, etc. Keep in mind that other RIP manufacturers will be or already do support spot color printing on large format inkjet devices.

• **Profiles for Eco-Solvent materials**—Keep in mind the importance of having good dependable profiles for printing on all these various uncoated materials. Eco-Sol inks have become extremely popular and many of us have nailed down solid color management and steadfast printing production methods. Remember, however, that a white ink unit now switches to a CMYKWW unit, and fewer profiles exist for a Soljet driver with that configuration. This is another reason you need a good on-going relationship with your support team (local Roland dealer).

• **Design Software**—A good vector based design program like Adobe Illustrator is perfect for handling the layers and other technical aspects. Other design programs like Corel, FlexiSign or SignLab that save .eps files work smoothly and can be managed through the RIP. The need to apply traps and bleeds becomes important due to the fact that the printer is technically sending multiple “jobs” on top of one another and very slight drift may occur depending on the printing distance. A strong working knowledge of both the design program and the tolerances of the printer are required for the more advanced production tricks.

Digital printing is an art as well as a science and perhaps a little bit of magic thrown in.

AREAS TO LEARN MORE ABOUT...

We have all learned that through our years of wrestling the pros and cons of large format inkjet that digital printing is an art as well as a science and perhaps a little bit of magic thrown in. Working with white is no different. One must have a solid understanding of correctly tweaked output profiles and there will be a short-term hurdle involved in obtaining good profiles for various materials we test.

This knowledge of editing output profiles compounds itself by introducing the second layer. Tricks revolve around setting drying time with the pause between layers, printing double hits of white for improved opacity, and complex file set-up for selective spot color with the appropriate traps that allow for slight misregistrations due to media movement when printing and cutting. Overall, these are all things we will overcome, but needless to say, need to be understood and approached with confidence and experience.

THE UPSIDE OF ALL THIS...

The bottom line is that digital printing with white solves difficult problems of the past while also opening up new opportunities. Roland has done a great job making the step to white ink easy and convenient. The cartridges load in the same way and the steps to cleaning the heads, capping stations and wipers remain the same. We still benefit from great high speed printing and cutting and we very much look forward to what lies ahead.

Now we can start thinking about other materials and applications! How would white work with printing on fabrics? How about T-shirt transfers, specialty window tinting or even used as a backlit diffuser? So many common uses are already known, but here at Grant Graphics we seem to be thinking of a new use everyday.

The Roland Soljet 545EX is a real winner and for those needing it, white ink makes it a one-of-a-kind machine! For the Grant Graphics service bureau division, the Soljet and white ink let our imaginations run wild!

SOLJET PRO II V SC-545EX INKJET PRINTER/CUTTER WITH WHITE INK OPTION



SC-545EX KEY FEATURES

- Integrated print/cut capabilities
- Vibrant 5-color CMYK + White printing
- Roland VersaWorks™ software included
- 54" maximum media width
- Advanced Eco-SOL INK
 - > Bonds to both uncoated and coated media
 - > Vibrant water, scratch and UV resistant graphics
 - > Durable up to 3-years outdoors*
 - > Contains no harmful VOCs
 - > No special ventilation equipment required
- Up to 1440 dpi resolution for photorealistic graphics
- Variable Droplet Technology for superb detail
- Ink running costs as low as 45¢ per sq. ft.
- Advanced heating and media handling systems
- Quadralign™ four-point optical registration system
- Also functions as a stand-alone vinyl cutter



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SB

INTRODUCING THE WORLD'S FIRST WHITE ECO-SOL INK



Revolutionary new
White Eco-SOL INK
is more than just
the industry's first
eco-solvent™ white ink.
It's the foundation
of a whole new
business opportunity,
pure and simple.

Unleash an avalanche of opportunity

Offered as an option for SOLJET™ SC-545EX integrated printer/cutters, White Eco-SOL INK transforms these inkjets into full-fledged production machines for a world awash in white.

What can white ink do for you?

White ink isn't just for printing white letters. The opacity and brightness of other colors are greatly increased by printing white in the background. White ink also allows you to combine small text and vivid images onto a single piece of transparent media to create one graphic that can be applied with virtually no weeding. All brightened with the crisp boldness of white!

Imagine the possibilities

Choose from a wide selection of transparent substrates for window signs, POP, packaging comps, labels and decals. This list of substrates – and the opportunities that come with it – is continually growing, so be sure to look for the latest updates at www.rolanddga.com/whiteink.

White Eco-SOL INK is the only solution on the market today that allows you to take advantage of Roland's award-winning inkjet technology – all in an eco-solvent environment that does not require special environmental equipment. Best of all, White Eco-SOL INK comes from Roland and is backed by our legendary standards for quality, service and reliability.

White on!

White Eco-SOL INK Features:

- Industry's first eco-solvent white ink
- Prints crisp, white graphics onto specialty vinyls, including transparent substrates
- Safe to use and virtually odor free
- Requires no special environmental or ventilation equipment
- Available as an option for SC-545EX printer/cutters
- Comes in convenient, no-mess 220 ml cartridge

Built with precision. Backed with passion.™

Roland®

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