



# Application Notes

## File Preparation For White Ink: VUTEK QS2000, QS3200 & PV200

It is possible to use white ink in a variety of useful and creative ways—it can be printed as a solid area or applied as a tint or gradation. While some intended uses require no prepress intervention, some preparation is necessary for spot and shape white printing. The prepress procedures are not complicated, but they do need to be done in a specific way to ensure success at the printer.

### File Preparation

The application of white ink can be divided into 5 categories for easier understanding. Following is a brief description of each one.

#### Pre-Coat Flood

This mode applies white ink to the substrate first, followed by CMYK inks printed on top. The dimensions of the area to be coated is determined by the dimensions of the file itself. This mode does not require prepress intervention; Pre-Coat Flood is selected at the press by the operator. Typically used for printing on colored stock.

#### Post-Coat Flood

This mode applies CMYK inks to the substrate first, followed by white ink printed on top. The dimensions of the area to be coated is determined by the dimensions of the file itself. This mode does not require prepress intervention; Post-Coat Flood is selected at the press by the operator. Typically used for mirrored printing on clear stock, with white acting as a backer or diffuser.

#### Pre-Coat Shape

This mode of white can be applied to the substrate with some prepress work ahead of time. File preparation is the same as post-coat white. Whether the white is under the CMYK or on top of it is determined at the press.

#### Post-Coat Shape

This mode of white can be applied to the substrate with some prepress work ahead of time. File preparation is the same as pre-coat white. Whether the white is under the CMYK or on top of it is determined at the press.

#### Spot White

In this instance, white ink prints at the same time as the CMYK inks. Areas of white are knocked out of the CMYK areas in the file. The spot white mode can also be used to print an image, text or shape entirely with white ink. If a shape is required, such as a logo or type on a colored or clear substrate, this needs to be prepared using the Spot White instructions.

File preparation for Pre-Coat Shape, Post-Coat Shape and Spot White will be outlined for Photoshop, Illustrator, Quark and InDesign.

### Prepress Procedures for Creating White Ink Data

In normal printing processes, white data areas in image files are translated as <none> or the absence of ink. The white paper, or ground, serves as white in process printing. When printing on non-white stock, a white layer needs to be applied first, or last in the case of clear material.

Prepressing white ink will require typing the name "White\_Ink". The naming convention, including upper and lower case usage is important if it is to be successful. This name for a spot white will be intercepted in the RIP.

It is recommended to build white in the same program as the final print document. For Adobe InDesign and Quark, guidelines have been provided on how to create compatible placed or imported image files that contain white. Following the recommended procedures in this document will ensure predictable results at the RIP.



# Application Notes



## Adobe Photoshop CS2—Pre-Coat/Post-Coat Shape

To utilize the white ink function using a Photoshop file, a spot color channel must be created. To do this, you will need to make a selection and save that selection as a channel.

- For Colorburst, convert the file to CMYK. For XF, RGB and CMYK files are acceptable.
- Make a selection in the document using normal selection tools (Wand, Lasso, Quick Mask, Color Range, etc.) of the areas that you want to contain white.

*Tip: To manually choke the white ink, go to Select > Modify > Contract and contract by one pixel.*

- Go to Select > Save Selection, naming the new channel White\_Ink.
- Open the Channel Palette under Window > Channels.
- Double-click on the name of the new channel to open the channel options dialog box.



Figure 1. Change the options to Spot Color

- Change the channel options so that color indicates Spot Color (see Figure 1).
- Save the document:
  - For Colorburst, the file must be saved as a TIF with channels checked on.
  - For XF, the file must be saved as a DCS 2.0 EPS with spot colors checked on.



## Adobe Photoshop CS2—Spot White

The steps are exactly the same as Pre-Coat/Post-Coat Shape:

- For Colorburst, convert the file to CMYK. For XF, RGB and CMYK files are acceptable.
- Make a selection in the document using normal selection tools (Wand, Lasso, Quick Mask, Color Range, etc.) of the areas that you want to contain white.

*Tip: To manually choke the white ink, go to Select > Modify > Contract and contract by one pixel.*

- Go to Select > Save Selection, naming the new channel White\_Ink.
- Open the Channel Palette under Window > Channels.
- Double-click on the name of the new channel to open the channel options dialog box.

- Change the channel options so that color indicates Spot Color.

However, Spot White mode prints CMYK ink and white ink simultaneously. Any areas where white intersects CMYK data, white and CMYK inks will blend together when printed.

For areas that are intended to print pure white, one must ensure that these areas are pure white in the file (i.e., all CMYK values at zero, RGB values at 255). This can easily be accomplished by making a selection of the spot white channel and deleting the CMYK/RGB information (with the background color set to white) or applying a fill of white. This will knock out the intended white areas from the CMYK/RGB data, creating a seamless transition.



View all channels together to show where the white ink will be in the final print. The White\_Ink channel is displayed green for visibility.



How to make a selection of the spot White\_Ink channel

- When the file is ready, save the document:
- For Colorburst: the file must be saved as a TIFF with channels checked on.
  - For XF, the file must be saved as a DCS 2.0 EPS with spot colors checked on.



# Application Notes



## Adobe Photoshop CS2—White Only

To create a white-only image, this procedure involves much different steps:

- For Colorburst, convert the file to CMYK. For XF, RGB and CMYK files are acceptable.

- Open the Channel Palette under Window > Channels.
- Under the palette menu, create a New Spot Channel called White\_Ink.

Click through each channel and choose the one that most closely resembles a black and white photo of the image. Good contrast and detail will work best. This will become the final white ink image. With the channel of choice highlighted:

- Choose Select > Select All.
- Copy the channel.
- Paste into White\_Ink spot channel.

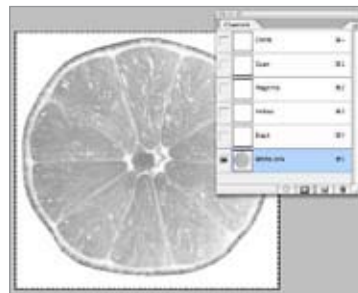
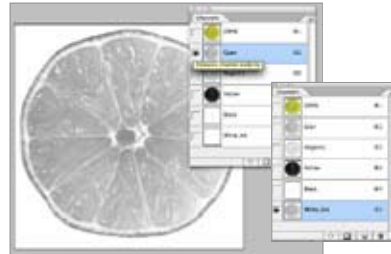
Now, go back to each CMYK/RGB channel, Select All and delete (with the background color set to white).

When the file is ready:

- Save the document:
  - For Colorburst, the file must be saved as a TIF with channels checked on.
  - For XF, the file must be saved as a DCS 2.0 EPS with spot colors checked on.

To use a black and white image, create white text or a white shape, create a new blank CMYK or RGB document. Create a new White\_Ink channel as described above. For text or shapes, create them in the White\_Ink channel. For a black and white image, copy and paste into the White\_Ink channel.

*Important: For 100% white text or shapes, use black as a fill color when working in the White\_Ink channel.*





# Application Notes



## Adobe Illustrator CS2— Pre-Coat/Post-Coat Shape

To utilize the white ink function in Illustrator, the area(s) of white ink need to be defined in the file. Start by following the steps to create a spot color named White\_Ink.

- Open the Swatches Palette (Window > Swatches).
- Set the Color Type to Spot Color and the Mode to CMYK.
- Name the new swatch "White\_Ink."
- Set the color of the swatch to a color not used in the file for easy identification.
- In this example 100% C & 50% Y—this color will translate as white at the RIP stage.
- In the file, select the shapes and elements to be duplicated for white ink coverage (see Figure 1).
- With the white areas still selected, copy the data without moving it—in the Move menu, select Object > Transform > Move or Control + Shift + M.
- Set both the horizontal and vertical positions to zero, then press the Copy button.
- With the copied elements still selected, change your fill to the White\_Ink spot color created at the start (see Figure 2).
- Continue selecting and copying elements that will be white and changing their color to spot white. It may help to use layers to organize your work.

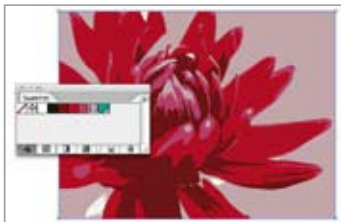


Figure 1. Background square is selected and duplicated



Figure 2. Copied background square color becomes White\_Ink



Figure 3. White ink data must be moved to the topmost layer

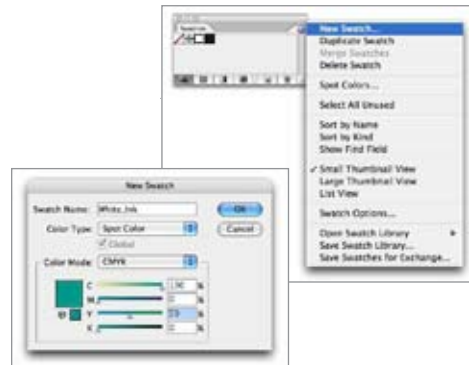


## Adobe Illustrator CS2—Spot White & Knockouts

For instances of white knockout text or white shapes on a color background, the following applies:

For Colorburst: Text or shapes colored Illustrator white will create the knockout and the duplicated White\_Ink colored text or shapes will then fill those areas with white ink. The White\_Ink layer will overprint all other colors in the file, even though it may not preview as such in the RIP. Therefore, White\_Ink cannot be used alone to create a white knockout.

Shapes or text can be knocked out of a white area by creating a Compound Path (see Figure 4). Fonts need to be converted to outlines first. Change the text or shape fill and stroke to <none> and make sure it is on top of the White\_Ink layer. With both selected, choose Object > Compound Path > Make.



Important: All White\_Ink data must be on the top layer regardless of whether it is to be used as pre-white or post-white in the print (see Figure 3).

Tip: To manually choke the white ink, select all of the White\_Ink areas and go under Object > Path > Offset Path. By typing in a negative number, such as  $-.0125$ , this will pull the edges of the white areas in evenly by that amount.

- Save the file as an EPS file.

This process needs to be followed for specific reasons. If white is to be printed over or under any CMYK areas, the shapes need to be duplicated and filled with the spot color White\_Ink, as this will allow the CMYK and white ink areas to separate in the RIP and register properly when printed.



Figure 4. Text knocked out of a White\_Ink layer



# Application Notes



## Adobe InDesign CS2—White Use

The principals of utilizing white ink are the same as Adobe Illustrator. Start by creating a spot color named White\_Ink. Go to the Swatches Palette and under the side menu options choose New Color Swatch. Uncheck the Name with Color Value box, and create the White\_Ink spot color.

As InDesign is very similar to Illustrator, the same guidelines can be followed to create Pre-Coat & Post-Coat Shapes, Spot White & Knockouts. Compound Paths can also be utilized in InDesign.

*Important: As with Illustrator, all White\_Ink data must be on the top layer regardless of whether it is to be used as pre-white or post-white in the print.*

Raster imagery is often an integral component of InDesign files. Whenever possible, it is best to create any areas of white within InDesign, as opposed to creating white in Photoshop. Simple areas, like squares and circles, can easily be created on top of imagery. The Path Tool can be used to draw more complex shapes, as shown in Figure 5.



Figure 5. : Use the Path Tool in InDesign to create a White\_Ink shape

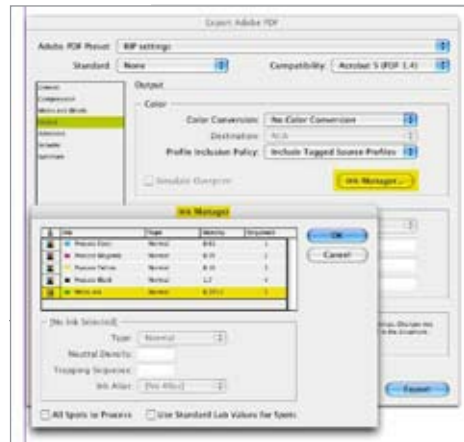


Figure 6. White\_Ink clip art can be created and placed in InDesign

White vector art can be created in Illustrator (see Figure 6), saved as an EPS file and placed in InDesign. If a White\_Ink swatch has not been created yet, the White\_Ink swatch created in the Illustrator file will import with the file. In that instance, use the imported White\_Ink swatch instead of creating a new one.

Important: All White\_Ink swatches must be created exactly the same between programs—they must both be named properly and use the same exact color break. Otherwise, some areas of white may be omitted in the RIP or not print as white ink.

When Exporting the final PDF file for printing (refer to File Preparation & Material Submission Guidelines—PDF Instructions) the color settings must also be checked to ensure that the White\_Ink spot color will be included in the final PDF file, and shows as a spot color, not process.





# Application Notes



## Quark 7.0—White Use

The principals of utilizing white ink are the same as Adobe Illustrator. Start by creating a spot color named White\_Ink. Go to Edit > Colors and create the White\_Ink spot color.

As Quark is very similar to Illustrator, the same guidelines can be followed to create Pre-Coat & Post-Coat Shapes, Spot White & Knockouts. Compound Paths can NOT be utilized In Quark, as Quark does not have an equivalent feature.

*Important: As with Illustrator, all White\_Ink data must be on the top layer regardless of whether it is to be used as pre-white or post-white in the print.*

Raster imagery is often an integral component of Quark files. Whenever possible, it is best to create any areas of white within Quark, as opposed to creating white in Photoshop. Simple areas, like squares and circles, can easily be created on top of imagery. As Quark does not have a Path Tool, complex white shapes can be created in Illustrator and the final file placed into Quark. Simply place an image into Illustrator and use the Path Tool or other drawing tools to create the White\_Ink areas (see Figure 7).



Figure 7 : Use the Path Tool in InDesign to create a White\_Ink shape

White vector art can be created in Illustrator (Fig.6, above), saved as an EPS file and placed in Quark. If a White\_Ink swatch has not been created yet, the White\_Ink swatch used in the Illustrator file will import with the file. In that instance, use the imported White\_Ink swatch instead of creating a new one.

Important: All White\_Ink swatches must be created exactly the same between programs—they must both be named properly and use the same exact color break. Otherwise, some areas of white may be omitted in the RIP or not print as white ink.

When Exporting the final PDF file for printing (refer to File Preparation & Material Submission Guidelines—PDF Instructions) the color settings must also be checked to ensure that the White\_Ink spot color will be included in the final PDF file, and shows as a spot color, not process (see Figure 8).

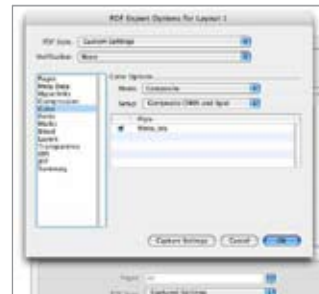


Figure 8



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