

WASATCH COMPUTER TECHNOLOGY, LLC TECHNICAL BULLETIN

USING WASATCH SOFTRIP FOR DYE SUBLIMATION WITH POLYESTER COATED ALUMINUM PLATES

Printer and SoftRIP Setup

Dye sublimation printing, like other printing, requires that the printer being used is in optimal condition to achieve the best results. In our testing, we have found the following steps should be taken to optimize the quality of the final print.

1. Perform any required media feed calibrations, unidirectional/bidirectional head alignments, and other printer-specific adjustments.
2. Configure any printer specific settings necessary for the transfer paper that is being used.

This may include setting up a media type, heater settings, head height, and other printer/media specific settings. The settings used for a Wasatch Imaging Configuration can be found by selecting **Setup** under the **Print** drop-down menu; select **Edit** by Imaging Configuration; then select the **Info** button. (Illustration 1)

3. Perform a nozzle check/test print before sending print jobs to the printer. If there are nozzles that are not firing properly, perform any required maintenance/cleaning to correct this.

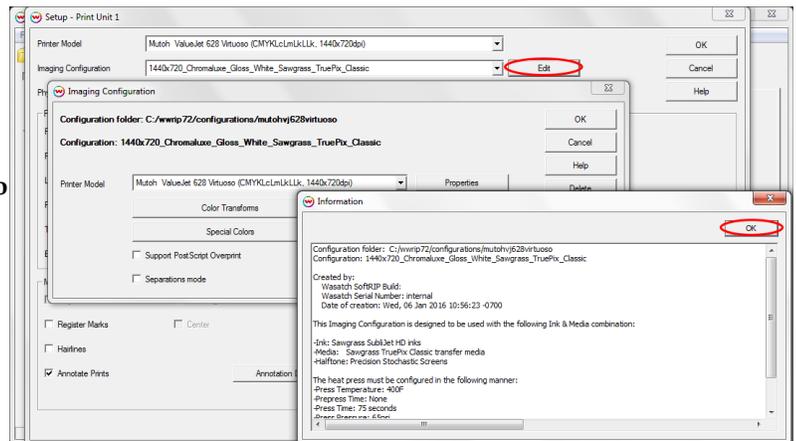


Illustration 1

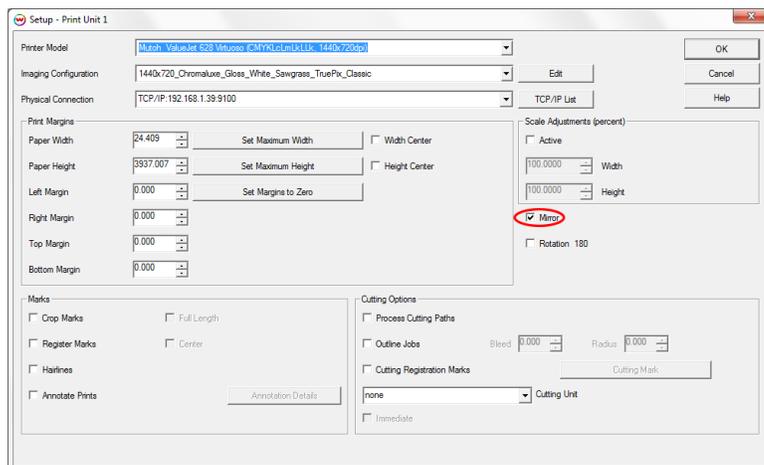


Illustration 2

4. The **Mirror** control in the **Setup – Print Unit** window in SoftRIP allows all jobs processed through a specific print unit to be automatically mirrored before printing. This eliminates the need to manually mirror each image that is opened in SoftRIP for dye sublimation printing. (Illustration 2)

5. Be sure to store printed transfer images in a dry, dark and dust-free area if you are not immediately pressing them onto a substrate. Extended exposure to fluorescent lights may cause a color change when the images are pressed. Also, dust or oils from too much handling and other contaminants can affect the transfer process.

Transfer of Image onto Polyester Coated Aluminum Plates

In our testing, we have found that the following steps should be taken to optimize the quality of dye sublimation to polyester coated aluminum plates.

1. Dye sublimation to polyester coated aluminum plates requires additional items for the heat press compared to dye sublimation to fabric. In our testing, we use the following layering of items inside the heat press from bottom to top:

- Nomex pad
- Two sheets of craft paper
- Polyester coated aluminum plate
- Transfer paper
- One sheet of craft paper
- Fabric (appropriate for heat press use)

This layering can reduce any artifacts caused by steam from the sublimation ink while transferring the image. The craft paper and fabric between the transfer paper and heat platen will absorb some ink and water during the transfer process. We recommend replacing the craft paper and/or fabric as needed.

2. The transparent protective film covering the coated aluminum plate must be removed before pressing. Removing the protective film from the substrate sheet needs to be done with care, as the edge of the substrate can be damaged or chipped.

3. Unlike dye sublimation to fabric, coated aluminum plates do not always need to be pre-pressed to remove moisture from the surface of the substrate. In our testing, we have seen a subtle but noticeable shift in the color of the substrate when the substrate was pre-pressed. Larger substrate sheets (larger than 16x20 inches) are more likely to need to be pre-pressed (to remove any moisture from manufacturing or storage) to produce the best results.

4. After the protective film is removed from the coated aluminum plate, remove any small particulate matter from the surface by using a lint-free cloth. Foreign material may be present beneath the protective film, which can result in the ink not transferring to the substrate, which can produce 'holes' in the image. Also, the removal of the protective film can produce a static charge which may attract foreign material to the surface of the substrate.

5. When printing the image to the transfer paper, adding a 'bleed' (printing the image fractionally larger than the substrate) allows you to more accurately position the transfer paper on the substrate and significantly reduce the chances of a white/un-transferred border occurring.

6. We do not recommend attempting to use an adhesive/thermal tack transfer paper with coated aluminum plates, as the texture of the transfer paper will be visible on the substrate. This will produce a cloudy effect on the substrate.

7. To avoid ghosting/double images, we recommend ensuring that the transfer paper is larger than the substrate that is being transferred to. This will allow the transfer paper to be secured to the substrate with heat-resistant tape. The transfer paper can either be folded around the edges of the substrate and taped to the rear of the substrate or secured at the edges of the substrate to the transfer paper. We recommend securing the transfer paper to two or three sides of the substrate.

8. Press the transfer paper and the polyester coated aluminum plate at **400° F. for 75 seconds at 55 PSI**. Please note as the coated aluminum plate is removed from the heat press, the plate is hot enough to cause potentially serious burns. We recommend the use of insulated/thermal gloves while handling the heated substrate.

10. Remove the transfer paper immediately after it is pressed. Care must be taken when removing the substrate from the heat press, as the surface of the substrate can be more easily marked/damaged when the substrate is hot.

11. In our testing, we have found that rapidly cooling the aluminum plate after it has been pressed reduces the dot-gain. To accomplish this, using insulated gloves, we promptly remove the transferred substrate from the heat press, remove the transfer paper, and place the substrate into a fan assembly which blows air at top and bottom of the heated substrate. With this, we can cool the substrate to near room temperature in about 2-3 minutes.



Illustration 3

FINAL NOTES:

In our testing, we used the Sawgrass VJ 628 Virtuoso® printer, Sawgrass SubliJet HD Ink, Sawgrass TruePix Classic Transfer Paper, Gloss White Unisub® ChromaLuxe Connections™, and a Geo Knight DK25SP heat press. We have also tested using Epson SureColor® Dye Sublimation printers, Epson UltraChrome DS Ink, Epson DS Multi-Purpose Transfer Paper, and Gloss White Unisub® ChromaLuxe Connections™.

For optimal results on your Epson SureColor® F6000/F7000/F7100 printer, select ‘High Quality Mode’ on the front panel.

The imaging configurations provided on our website were created at our office in Salt Lake City, Utah. Because environmental factors can affect the dye sublimation process, you may need to adjust the settings we used so they will work for your specific production environment. The following are some of the factors that may affect your output:

- Humidity (higher humidity typically requires longer press time)
- Pre-press time
- Press time
- Temperature of the press

For information regarding the required printer settings for the particular transfer paper and substrate combination in use, use the **Info** button displayed on the **Imaging Configuration** window in Wasatch SoftRIP, for the particular Imaging Configuration that you have downloaded from the Wasatch website. (Illustration 1)
(Select your imaging configuration in the Print Setup window, and click Edit > Info.)

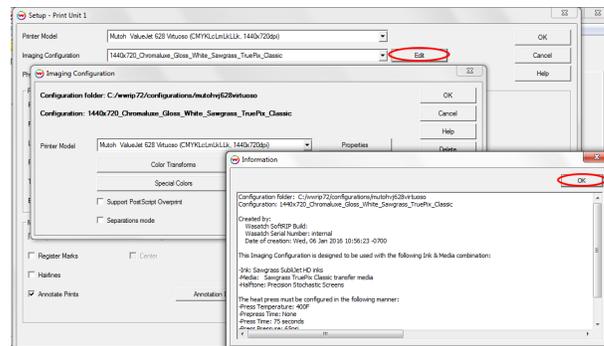


Illustration 1

PROFILING TIP:

If you are profiling polyester coated aluminum plates on a CMYK printer, we recommend using the ‘Error Diffusion’ halftone method with a small fixed Dot Size. This can improve the smoothness of the print. When profiling with light inks (e.g. LcLmLkLlk), using the ‘Precision Stochastic Screens’ (PSS) halftone method will produce optimal results.