Guide to Dye Sublimation Basics

What is dye sublimation?

Dye sublimation, or *dye sub*, is a digital printing process that uses heat and pressure to put ink into a product instead of on it.

It utilizes a special dye and a molecular bonding process to apply and permanently adhere HD images, graphics and photos to polymers and polyesters at a sub-surface level.

Equipment used in the lab for dye sublimation:

Dye Sublimation Printer | Sawgrass SG500 Printer

Heat Press | HIX SwingMan 20 Digital Swing Away 16" x 20" Heat Press Machine

Preparing for your dye sublimation project:

SELECT DESIGN

Create a design using your preferred graphic design software or find a design online; make sure the size and quality of the image will fit properly on your item.

- Supported file types: .jpg, .jpeg, .png, .bmp, .heic, .heif, .tiff, .pdf, .eps, .ps

- Minimum Resolution: 300DPI

- Transfer paper size: 8.5" x 11" and 8.5" x 14" (your design should not exceed these dimensions)

CHOOSE ITEM

Polyester and polyester blend fabrics yield best results as dye sub ink is designed to bond to these materials. Designs will show up best on a white surface. The item should be flat so the heat press can apply pressure and heat uniformly on the item.

Examples of items include:

- Shirts

- Tote bags

- Aprons

- Pillow cases

- Pot holders

- Socks

DETERMINE HEAT PRESS SETTINGS

Refer to the *Sawgrass Quick Reference Guide Sublimation Heat Press Settings* or use recommended settings from your item's manufacturer.

① Pre-heating Process

**Start the pre-heating process for the heat press
as soon as possible since this will take a while.**

1. Turn on the heat press by pushing the on/off switch.

2. Configure desired settings (timer and temperature) on the digital touch screen.

Set the temperature:

TEMPERATURE ADJUSTMENT SCREEN

TEMPERATURE READOUT/SETTING → 100 °F ÷ 0 — UP ARROW
(Preset 1) (Preset 2) ▲
0:10 MIN:SEC ▼ — DOWN ARROW
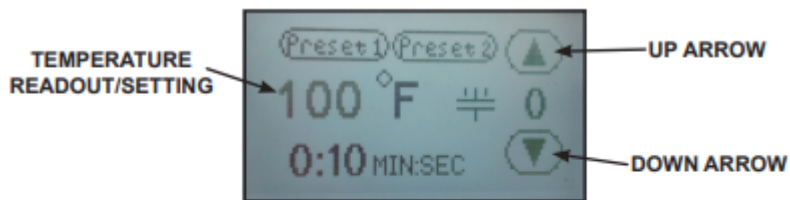
1. Touch the temperature readout on the display. "UP" ▲ and "DOWN" ▼ arrows will appear on the right side of the display and the temperature value will start flashing and to indicate it is in set mode.
2. Press the "UP" ▲ or "DOWN" ▼ arrow to change the temperature value. Holding down on an arrow will change the temperature in 1 degree increments for 10 values; then change to 10 degrees incremental changes.
3. Once the desired temperature value is set, either press the temperature value to lock the set temperature or simply wait for 2 seconds and it will lock in the new value automatically.

Set the timer:

TEMPERATURE ADJUSTMENT SCREEN

TIME READOUT/SETTING → 0:10 MIN:SEC — UP ARROW
(Preset 1) (Preset 2) ▲
100 °F ÷ 0 ▼ — DOWN ARROW
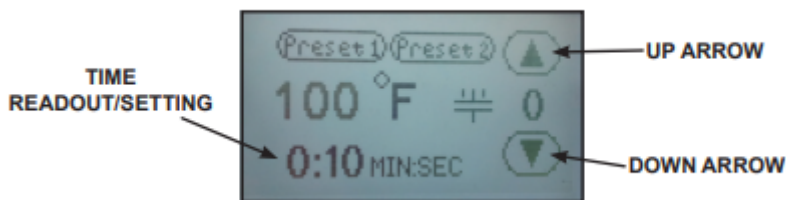
1. Touch the time readout on the display. "UP" ▲ and "DOWN" ▼ arrows will appear on the right side of the display and the cycle time value will start flashing and to indicate it is in set mode.
2. Press the "UP" ▲ or "DOWN" ▼ arrow to change the cycle time value. Holding down on an arrow will change the time in 1 second increments for 5 values; then change to 10 seconds incremental changes.
3. Once the desired cycle time value is set, either press the time readout to lock the cycle time or simply wait for 2 seconds and it will lock in the new value automatically.

3. The heat press will start beeping when it has reached the set temperature.

2 Print Your Design

1. Launch Sawgrass Print Manager by pressing the orange "PM" icon at the bottom of the screen.
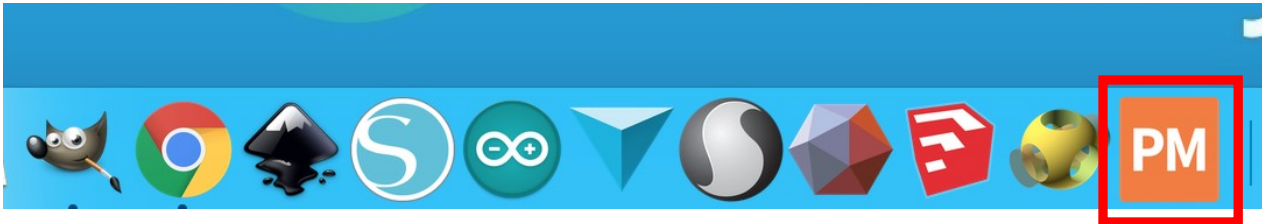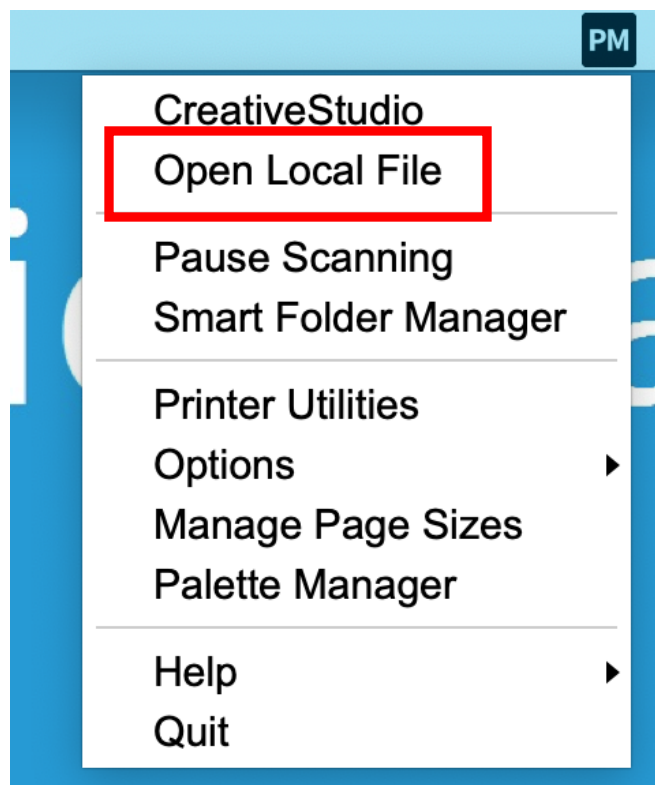

2. Click on the black "PM" icon at the top of the screen.

3. Select "Open Local File" from drop down menu.

Choose the file you wish to print from the computer or from your storage device.

4. Configure your print settings by clicking on each tab.

Material Tab

Select the material of the item here

Print Settings

Printer:

SAWGRASS SG500

Print Manager

| Material | Layout | Jobs | Color | Other |

Substrate

Polyester

Print Quality

High Quality

Paper

TruePix Classic

Source

Tray1

✅ Mirror

8.500 in

11.000 in

This option is enabled by default and will mirror the design for printing.
(The design is mirrored to transfer properly.)

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Print

Layout Tab

This setting allows you to manually change the settings below it

Print Settings

Printer:

SAWGRASS SG500

Print Manager

| Material | Layout | Jobs | Color | Other |

○ Preserve Layout from Designer

✅ Print Manager Performs Layout

Page Size: US Letter (8.500 X 11.000 in)

Spacing (in): 0.0   -   +

✅ Trim Whitespace

○ Center

○ Bleed Lines

✅ Impose Margins

8.500 in

11.000 in

This will set the paper size.
This must match the paper size in the paper tray.

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Cancel

Print

4. Configure your print settings (continued).

Jobs Tab

This allows you to change the size and pixels per inch of the design

This will show you how many copies of the design you are printing.
Press + to add a duplicate of your design to the transfer paper.

Print Settings

Printer:
SAWGRASS SG500

| | Material | Layout | **Jobs** | Color | Other | |

Name	Copies	Width	Height
little_prince	1	1124	660

"It is only with the heart that one can see rightly, what is essential is invisible to the eye."
                The Little Prince

Bit Depth: 8
Color Model: RGB
Color Space: RGB IEC61966-2.1 (assumed by SHV)

Width (in): 3.747
Height (in): 2.200
Pixels per inch: 300.0
Copies: 1 [-] [+]

8.500 in

[<<] Page 1/1 [>>]

Cancel   Print

Color Tab

Print Settings

Printer:
SAWGRASS SG500

Print Manager

| Material | Layout | Jobs | **Color** | Other |

— Color Mode —
Vivid
  Photographic
✓ Vivid

— Color Adjustment —

	0	
	0	
	0	
	0	
	0	
	0	

Reset

8.500 in

Set a color setting depending on the type of design.

Photographic: Mostly used for photos

Vivid: Good for graphics and illustrations

Cancel   Print

4. Configure your print settings (continued).

Other Tab

Enable this to create .prn files.
This is intended for support and diagnostic purposes.

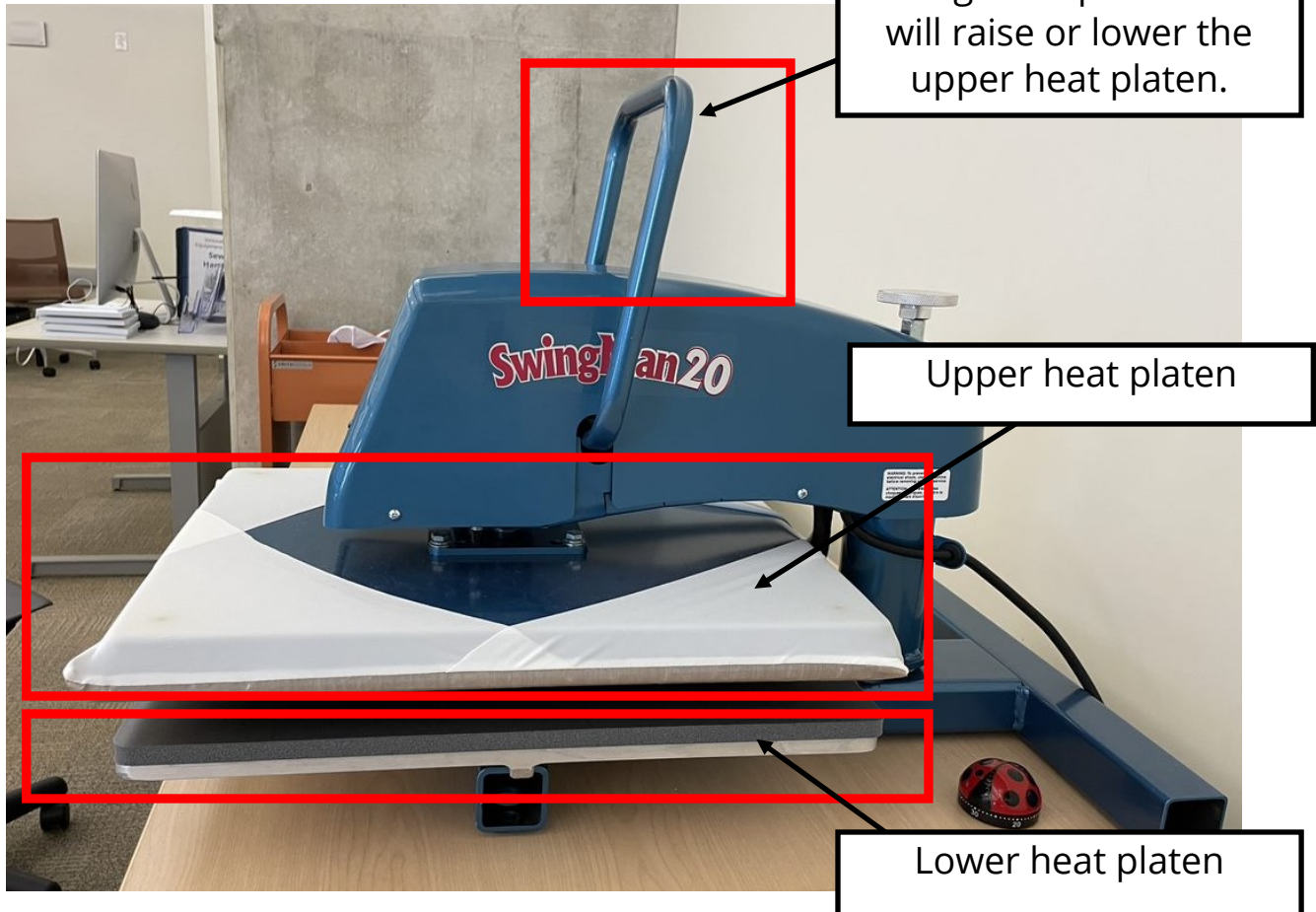(Only needed for technical support ticket.)
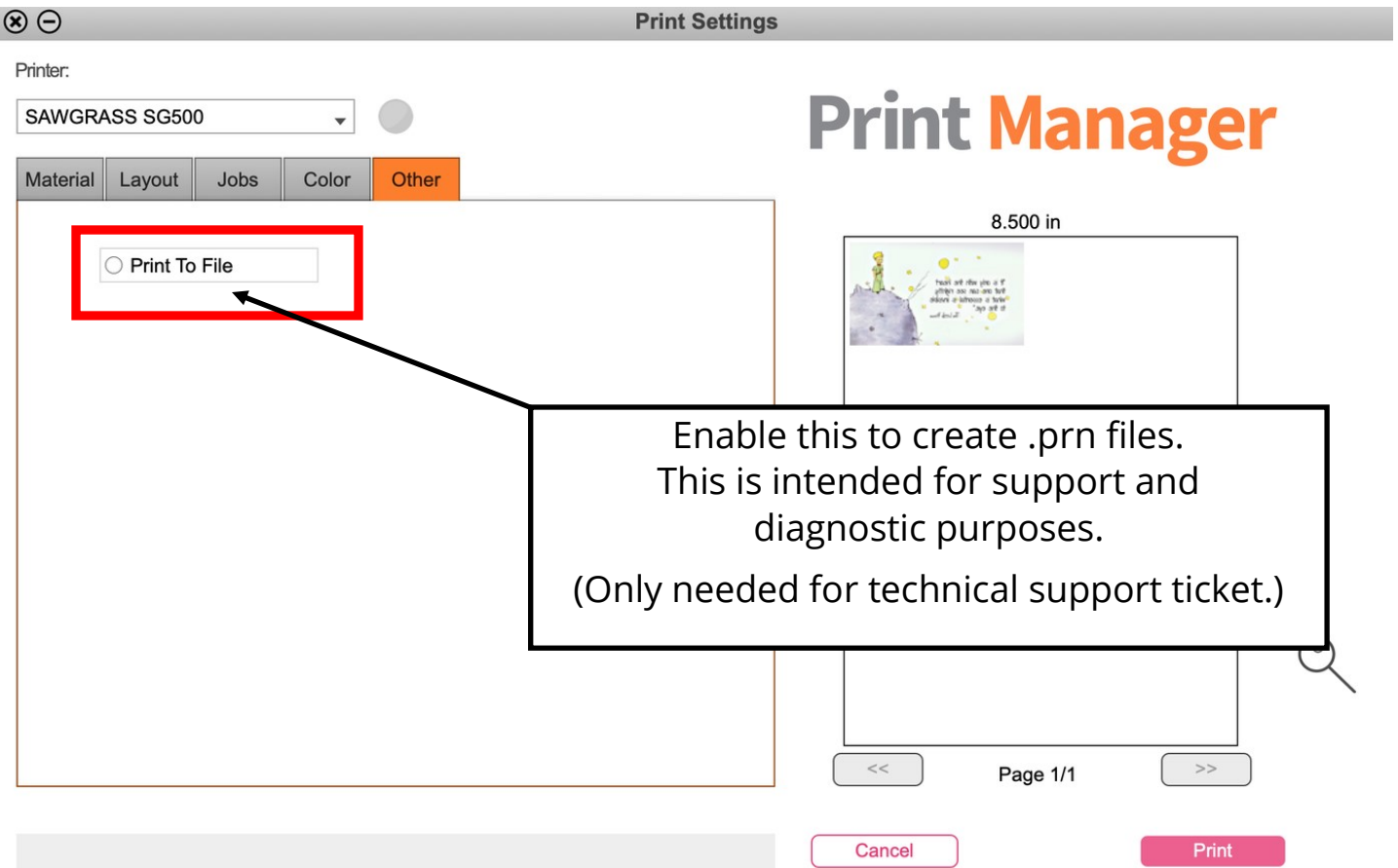
5. Click "Print" to print your design on transfer paper. (After clicking "Print", it may take a few seconds for the printer to start working.)
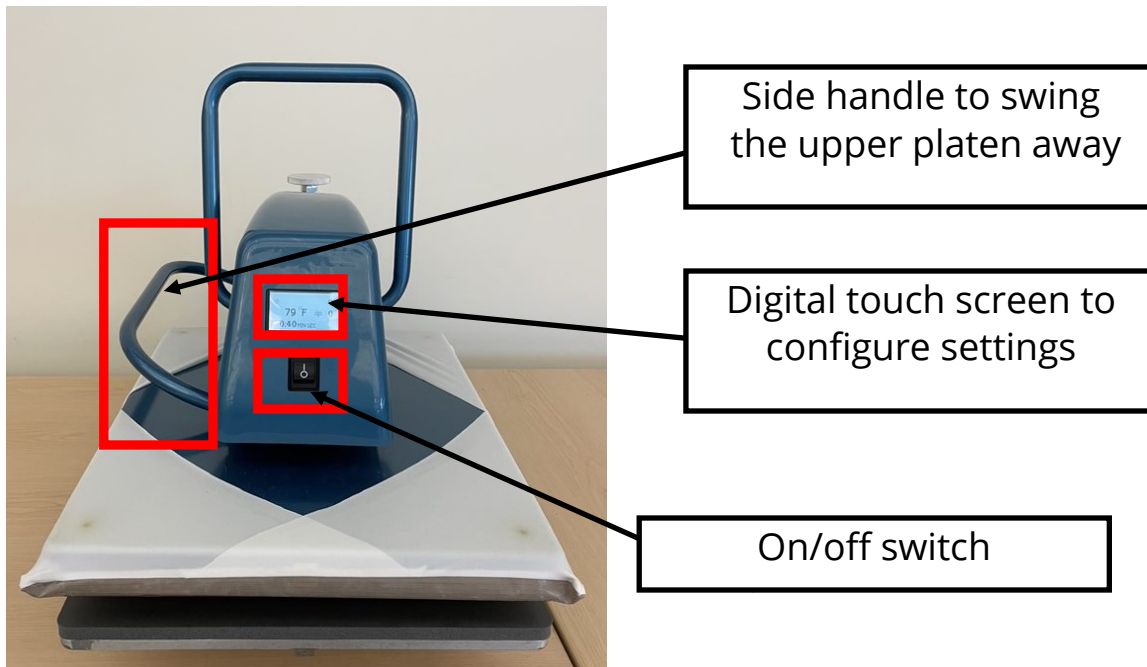
Trim white space as needed (see below).

Get to know the heat press

Side view

Handle:

Pulling this up and down will raise or lower the upper heat platen.

Upper heat platen

Lower heat platen

Front view

Side handle to swing the upper platen away

Digital touch screen to configure settings

On/off switch

③ Heat Transfer Process

Make sure heat press is pre-heated before proceeding.

1. Swing the upper heat platen away from the lower heat platen using the side handle.

2. Place these in the following order on the lower platen, starting from bottom to top:

Protective paper > Item > Transfer Sheet > Protective Paper
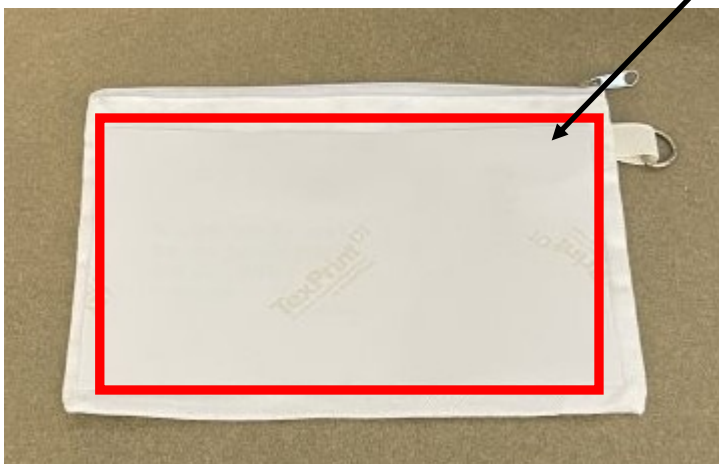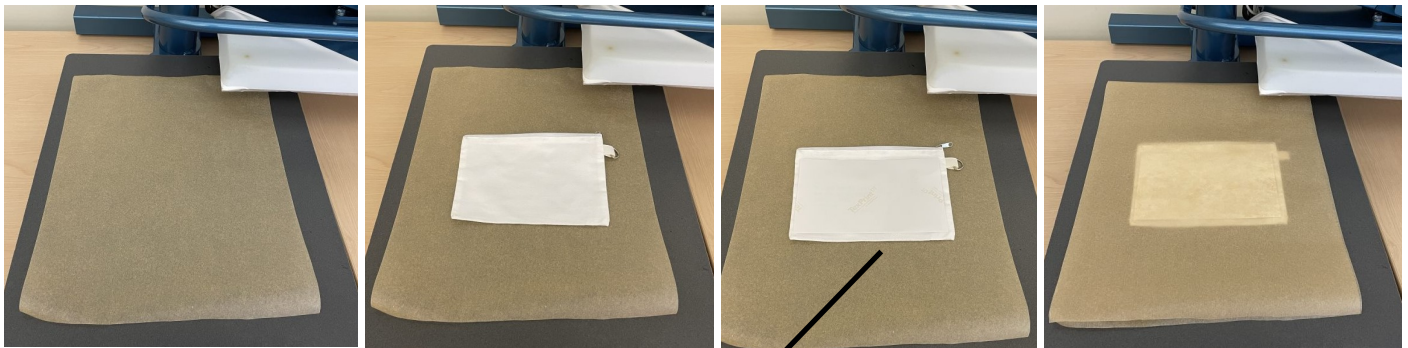
Close up view:

The transfer paper should be on top of the item with the design facing down. The transfer paper watermark should be facing up.

3. Swing the upper heat platen back over the lower platen.

4. Pull the handle down until the handle locks.

5. The timer on the digital screen will start counting down. The timer will beep when it reaches 0:00.

6. Pull up the handle; swing the upper heat platen away.

7. Remove the protective paper and then the transfer sheet; remove your item.

Your design has been transferred to the item!

Caution: Handle carefully as item will be hot.
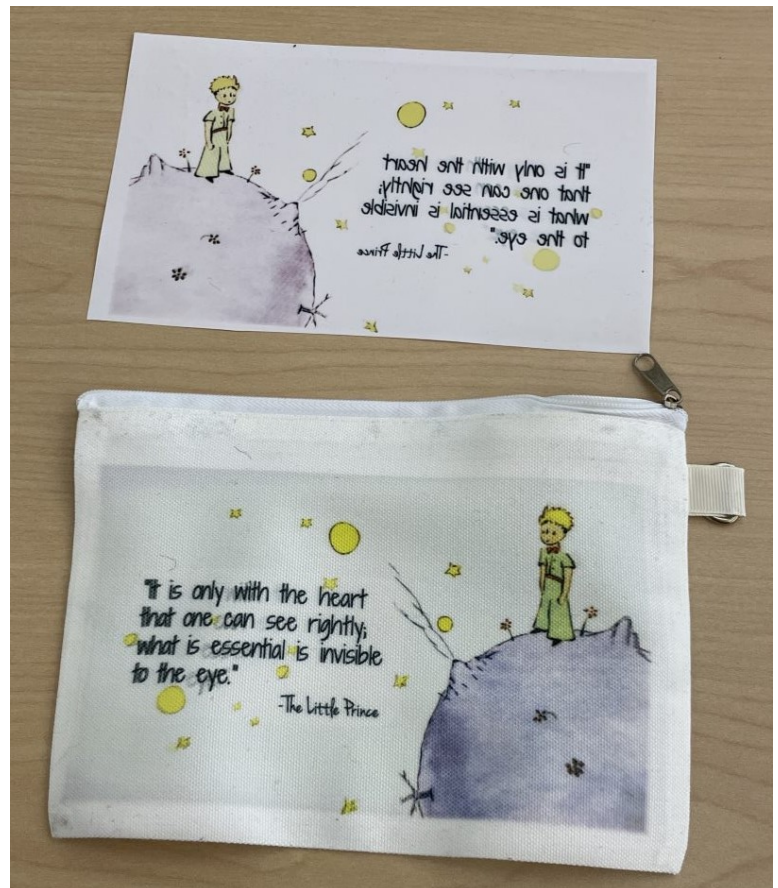
*How do I print multiple designs on one sheet of transfer paper?

Method 1:

In a word processing program (such as Microsoft Word), add images to a blank document sized 8.5" x 11" or 8.5" x 14" and save as PDF.

Method 2:

In a graphic design program (such as Adobe Photoshop, Adobe Illustrator, Canva), add images to a blank document sized 8.5" x 11" or 8.5" x 14".

Save as one of the following supported file types:

.jpg, .jpeg, .png, .bmp, .heic, .heif, .tiff, .pdf, .eps, .ps

*How do I print on 8.5" x 14" size transfer paper?

<u>Step 1</u>: Extend the paper tray on the printer and load the 8.5" x 14" size transfer paper.

Using the grip, pull the tray halfway out, lift it slightly, then pull it out completely.
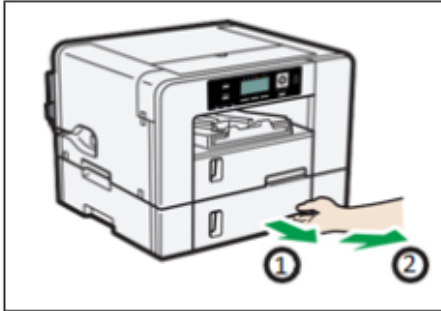
Slide the tabs on both sides of the tray, then release the lock.
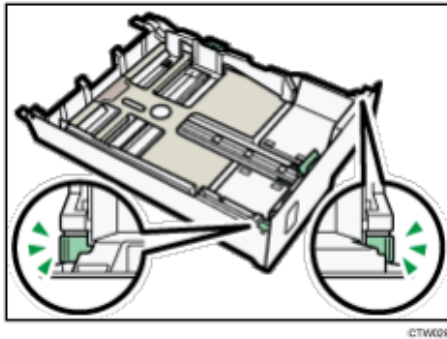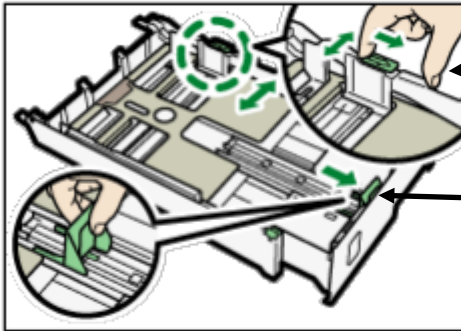

Pull out the tray extension.
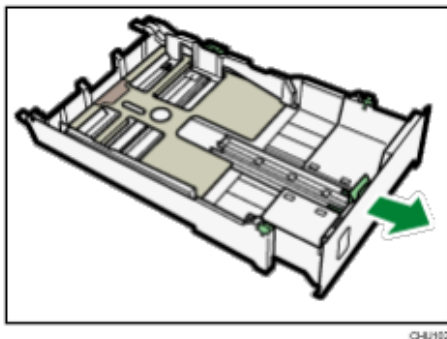
Slide both tabs to the original positions, then lock the tray.
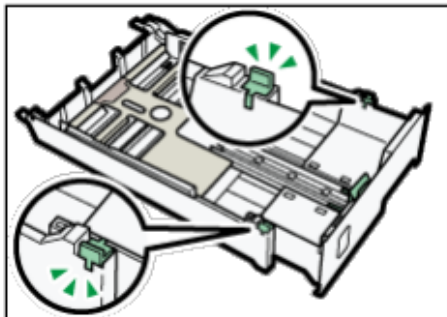
*How do I print on 8.5" x 14" size transfer paper? (Continued)

Pinch the catch of the paper guide on the right side, slide the paper guides to match the size of paper to load, then push the end paper guide out until there is space between them.


Move this to match the paper width

Move this to match the paper length

Load paper with the print side face down but not over the limit mark.

Print side is the bright, white side or side without watermark or logo and should be placed face down, with the shorter edge pointing in the paper feed direction.
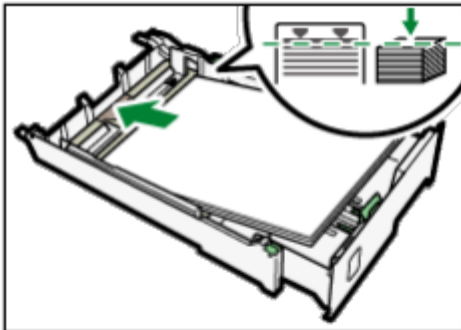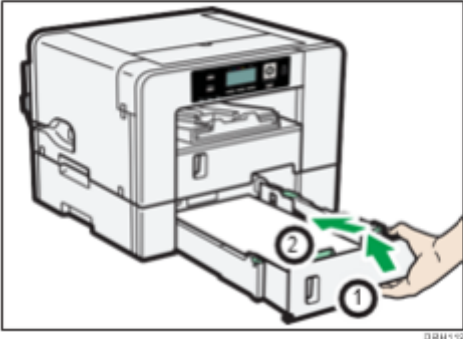

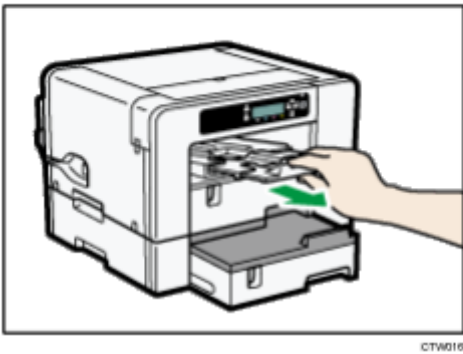Squeeze the front-end paper guide, then slide it to touch the edge of the paper.
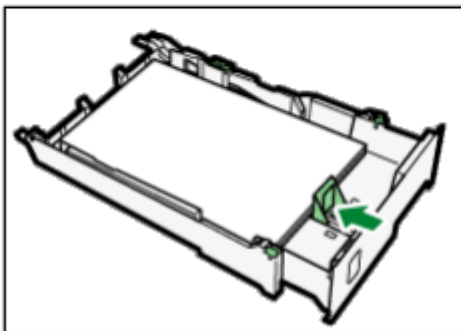
*How do I print on 8.5" x 14" size transfer paper? (Continued)

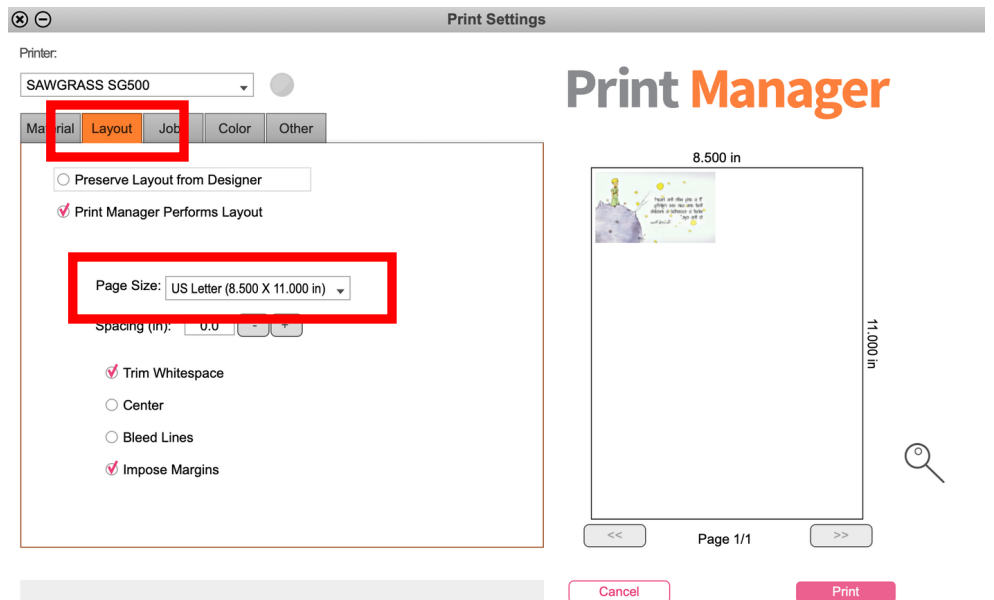**Push the tray gently in until it stops.**

Pull out the output ramp extension.

<u>Step 2</u>: Expand the printable area in the Sawgrass Print Manager settings.

This is under the Layout tab > Page Size.

In the drop down, select: "US Legal (8.500 X 14.000 in)"

Print Settings

Print Manager

Printer:

SAWGRASS SG500

Material | Layout | Job | Color | Other

○ Preserve Layout from Designer

☑ Print Manager Performs Layout

Page Size: US Letter (8.500 X 11.000 in)

Spacing (in): 0.0 − +

☑ Trim Whitespace

○ Center

○ Bleed Lines

☑ Impose Margins

8.500 in

11.000 in

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Cancel | Print

Troubleshooting (Sawgrass Printer)

"Warning Layout" message in Sawgrass Printer Manager window:

Make sure the size of the design fits within the dimensions of the selected paper size.

The width and height will be highlighted in red to notify you that it needs to be changed.

Troubleshooting (Sawgrass Printer)

If after a print, the "Alert" light turns on with this message below:
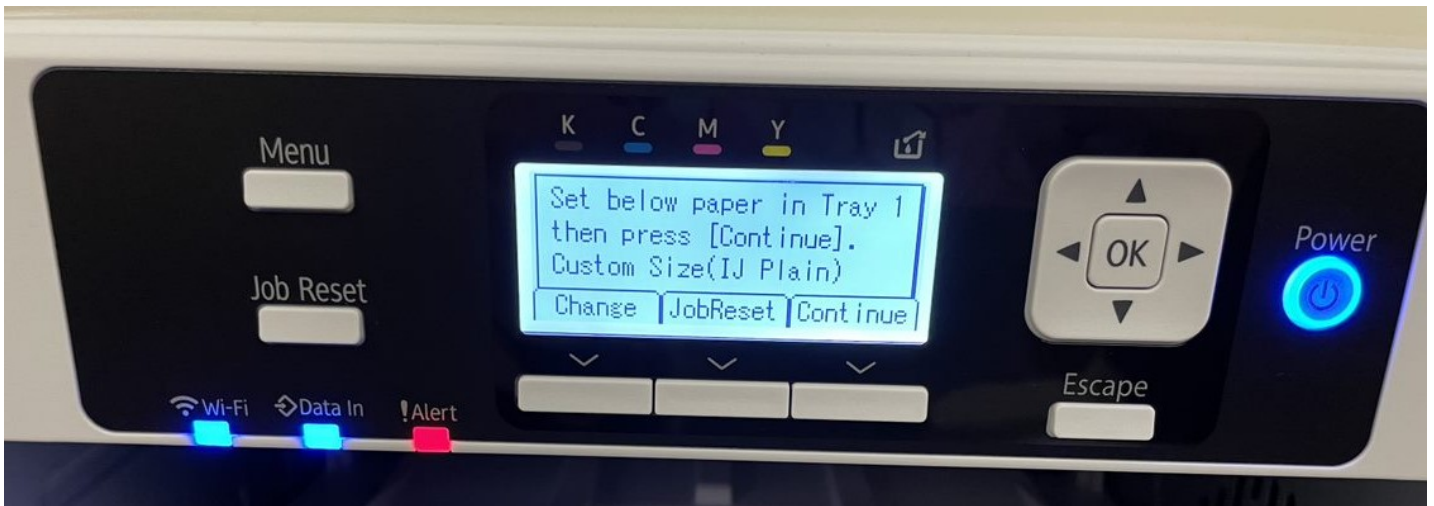
Click "Job Reset" to cancel the print.

This occurs if the Page Size in Sawgrass Print Manager is set to 8.5" x 14" and the actual paper size in the tray is 8.5" x 11". The printer "thinks" there is more to print and will try to print a second sheet.

In Sawgrass Print Manager, make sure the Paper Size matches the actual paper size in the paper tray.
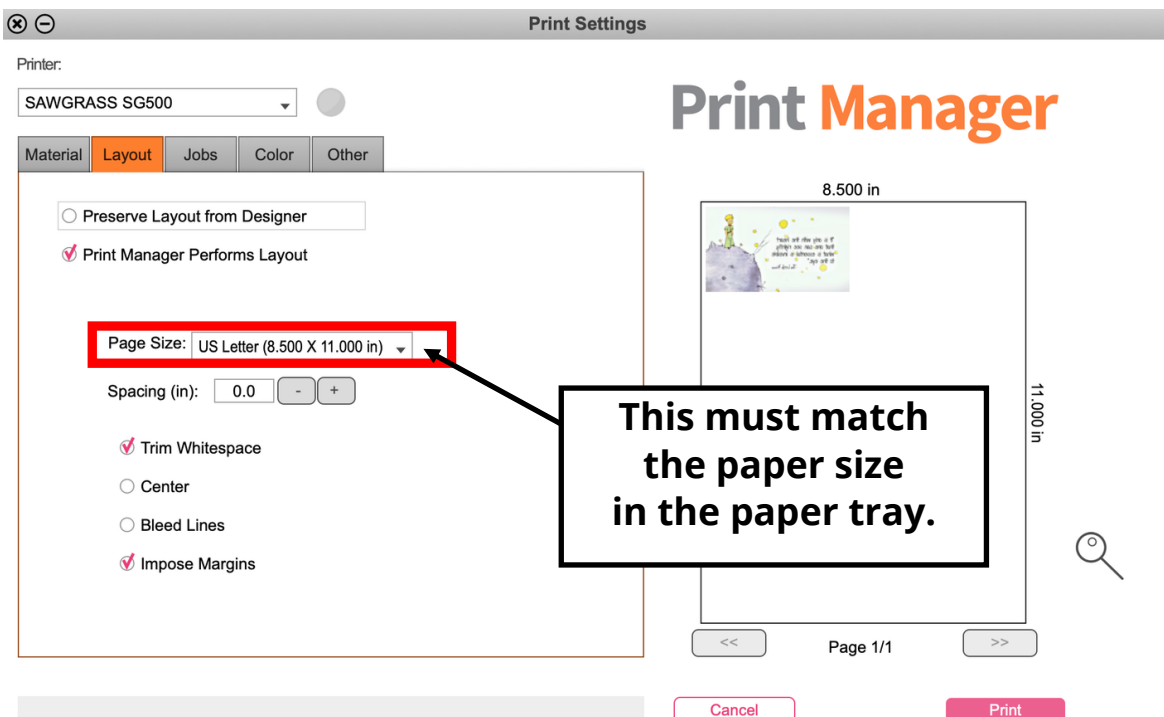
Troubleshooting (Heat Transfer)

"Ghosting" is when you see a second version of your transfer, almost like a shadow, slightly to the side of your design.

Ghosting occurs when the transfer paper shifts during the sublimation process, such as when you open or close your heat press.

You can tape down the transfer paper to the item being sublimated using thermal tape to keep the paper from moving.
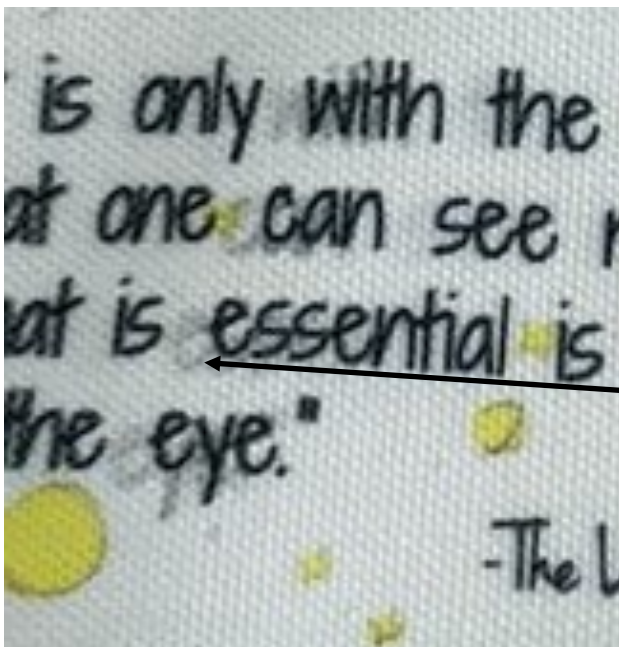
Example of ghosting:

The transfer shifted during the heating process causing this "shadow" to occur on the final product.

Additional Resources

Sawgrass Printer

Sawgrass Printer FAQ

https://www.sawgrassink.com/getting-started/faqs

Sawgrass Print Manager: Print Setting Tabs

https://care.sawgrassink.com/hc/en-us/articles/4408215630747-Sawgrass-Print-Manager-Print-Setting-Tabs

Sawgrass Print Manager: System Requirements

https://care.sawgrassink.com/hc/en-us/articles/4409218446619-Sawgrass-Print-Manager-System-Requirements

Heat Press Settings

Sawgrass Quick Reference Guide for Heat Press Settings

https://care.sawgrassink.com/hc/en-us/articles/4410142905883-Heat-Press-Settings-Guide

General Sublimation Instructions (Coastal Business Supplies)

https://support.coastalbusiness.com/hc/en-us/categories/204596667

Sublimation Heat Press Quick Guide

https://elmhurstpubliclibrary.org/lib/wp-content/uploads/Sublimation-Heat-Press-Quick-Guide-1.pdf