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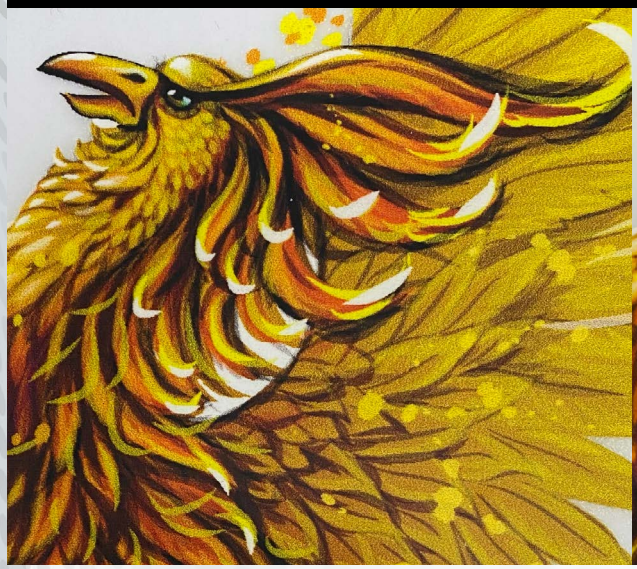
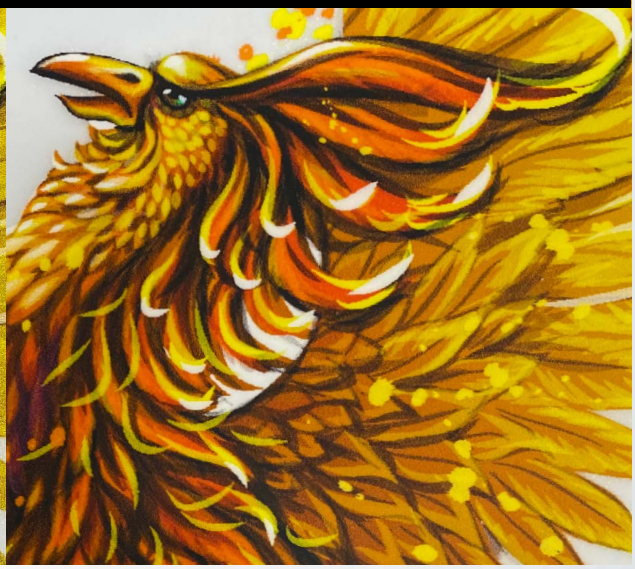
GTX600 VARIABLE DROPLET DIRECT TO FILM TRANSFER

GUIDE

Version 1.0

ABOUT VARIABLE DROPLET

After updating your firmware, driver and GTX Graphics Lab to the latest version, your GTX printer will support variable droplet for DTF Cut sheet printing. This change is to reduce the graininess in DTF cut-sheet printing by utilizing a combination of small, medium, and large droplets resulting in a smoother output. There is no change to DTG printing.

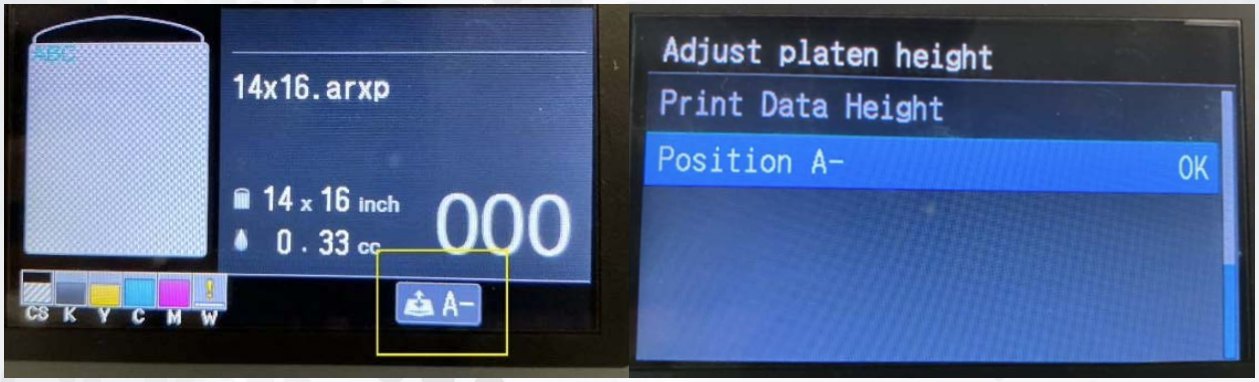
Without Variable Droplet	Variable Droplet
	

NOTES:
Prior ARX files created may have a color shift and should be recreated for best output. Due to additional data being written, the time to create and transfer a printable file will increase. This will all depend on your PC or Mac computer specs.

Change of Print Method: The printing method (platen movement and printing order) for DTF cut sheets has been changed.

Platen height at DTF printing: To aide in the graininess reduction in DTF printing, the platen gap will be narrowed by 1mm. (Current 4.3 mm to NEW 3.3 mm: A position)
The GTX600 series will automatically changes the platen height when it receives a DTF Cut Sheet ARX file.

In this case, the platen gap is 3.3 mm and “A-” is displayed. This platen height “A-” is also displayed in the menu “Adjust Platen Height”.



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REQUIREMENTS

a. COMPUTER SPECS

i. Windows
1. Windows 10 and 11 - 64 bit only
2. CPU with 2 GHz or above
3. RAM with 8 GB or above (16 GB or more of RAM is recommended for DTF data creation.)
4. SXGA (1280× 1024) or higher

ii. macOS
1. mac OS 13.0 Ventura, mac OS 14.0 Sonoma
2. CPU: Intel and M1 chip

b. GTX SERIES PRINTER

i. Must have the following printer driver and firmware or higher
GTX600 - Driver = Ver. 3.0.0 or later
GTX600 - Firmware = Ver. 3.0.0

ii. DTF Software
- GTX Graphics Lab Ver. 8.0.0 or later for the GTX600 Series
(Download at www.ProductionDTG.com/Support)

c. INNOBELLA TEXTILE INKS

Only use Innobella Textile inks

d. DIRECT TO FILM SUPPLIES INCLUDING FILM AND POWDER

To order products, visit partnerportal.brother-usa.com

e. EQUIPMENT

Heat Press (pneumatic style recommended) - To cure and apply film to garment
Conveyor Dryer (optional) - To cure printed direct to film sheets
Schulze DTF Sheet Curing Station - To cure printed direct to film sheets
Schulze DTF Sheet Adhesive Applicator - To evenly distribute adhesive powder on printed direct to film sheets

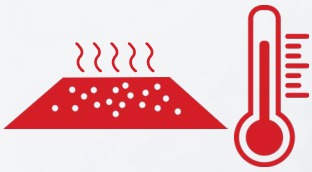
THE PROCESS

OVERVIEW

STEP 1 Print on the film

STEP 2 Evenly coat the film with powder

STEP 3 Dry the film + powder



STEP 4 Heat press film to garment and remove film

STEP 5 Repress the garment

The Direct To Film Process

The term 'recommended' in this document refers to the articles and machines used when tested by Brother and does not guarantee that direct to film printing is possible by using these. Please test it thoroughly before using. This method has only been tested on a limited number of substrates.

THE PROCESS

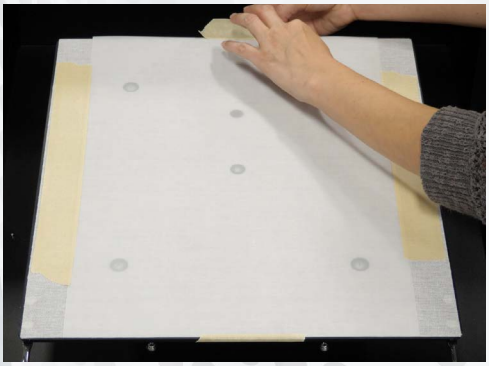
DETAILS

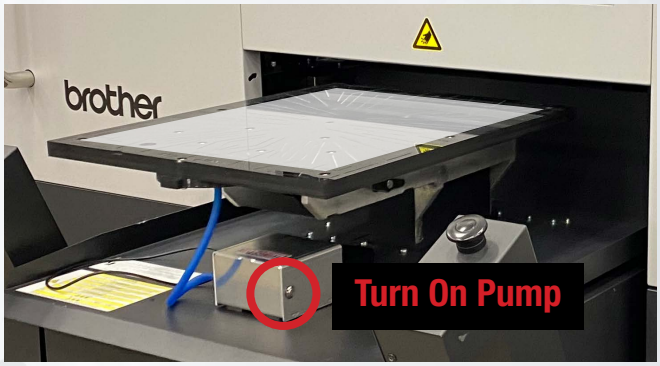
STEP 1 Print on the film

1. **Recommended ink settings:** Ink settings may vary based on the design.
If you leave color multi-pass turned on for CMYK+W from the beginning, banding will be less likely to occur, but the printing time will be longer.

• CMYK+White, set the ink volume to 4 or 5. Set the highlight to 3 or 4 and the mask to 2 or 3. Then set the minimum whiteness to 1. Depending on your film, you can additionally print the HighlightCheckPattern for DTF Cut Sheet to further dial in your settings. This is found under the Useful Tools in the GTX driver.

2. **Put film on the platen:** The film will have a shiny side and a matte side. Always print on the matte side. With the matte side face up, tape down the film to the platen to keep it from lifting or shifting during the printing process. If using the 3-in-1 Vacuum Platen, simply turn on the vacuum pump, set film on platen and align the film.





TIP: Several images can be placed on one sheet and then cut out to be applied to different style garments or objects.

IMPORTANT: Avoid setting the ink volume to 6 or higher because colors, including reds and oranges, will puddle when the white ink is applied.

NOTE ON TRANSPARENT FADES: Where the CMYK+White film print doesn't do as well is in the transparent fade areas. One other drawback is the white ink takes on a slight grey tint and not an ultra-bright white. When printing an image that fades from solid to transparent, the area will appear slightly choppy.

STEP 2 Evenly coat the film with powder

ATTENTION: Before working with the adhesive powder, please make sure to wear gloves, an N95 mask and protective eyewear.

A. Manual Method

1. Place film within a large plastic container to contain excess powder.
2. Use either a salt/pepper shaker, powder sugar shaker or a glitter shaker for convenience.
3. Apply an even coat of powder to the printed film.

B. Schulze DTF Sheet Adhesive Applicator

1. Open doors of powder filled Adhesive Applicator and set printed film inside
2. Close doors and press the side levers to apply an evenly distributed flow of powder over the sheet.
3. After vibration stops, open the doors and remove printed film.

IMPORTANT: Any residual powder left on the film will transfer to the garment/fabric and does not wash out.

STEP 3 Dry the film + powder

There are three methods that can be followed for this step: the use of heat from the heat press and the use of a conveyor dryer to cure the ink and melt the powder and the Schulze DTF Sheet Curing Station.

A. Heat Press Method: When using a heat press, place the printed film and powder so that there is a 1/4 inch gap between the heating plate and the film. The ideal gap can be acheived by using pressing pillows or other objects that are heat resistant to evenly raise the height of the film up to the heating plate. Set the temperature between 284°-302°F and cure for 3-5 minutes. Remove any non-stick cover from the upper heating element to prevent it from making contact with the film.

B. Conveyor Dryer Method: When using a conveyor dryer, cure the printed film and powder between 212° - 248°F for 2 to 3 minutes. When using a Firefly conveyor dryer, make sure convection top and convection bottom are set to 100% and exhaust and cooler are set to 0%. For other forced air dryers, ensure the fans are set to the lowest possible setting to minimize the movement of the paper.

C. Schulze DTF Sheet Curing Station Method: Open the Curing Station and set printed and powdered film inside. Close the cover and press the “Setup” button to commence the timer for curing the printed film and powder. The digital temperature control and timer can be set 110°C - 125°C for 2 to 3 minutes. Please refer to your DTF media application guide for best settings. Open the Curing Station and remove the film with plastic tweezers once the machine’s timer beeps.

TIP: If you have excess powder on the film in the non-printed areas after the film and powder has been cured, you can very carefully buff it off with a small scrap of a t-shirt or an artists paintbrush. Be careful not to accidently rub off the printed areas as they are delicate.

STEP 4 Heat press film to garment and remove film

1. Prepress garment or object for 2-5 seconds to flatten wrinkles.

2. Flip film to ensure the printed (matte) side is touching the garment or object to be transferred on. Using a heat press, apply film to the garment or object. For the best time and temperature settings refer to your DTF media application guide. If using hot peel film, 320°F for 15 seconds at 45 PSI is a good starting point (Kodak Hot Peel can not be pressed above 356°F).

3. Remove film from the garment after pressing or wait until cool. Refer to your DTF media application guide if not using a Hot Peel.

SPECIAL MATERIALS: For printing on a hoodie, you cannot place the print transfer over a zipper unless you take the time to cut the zipper area free.

STEP 5 Repress the garment

To remove visible powder residue on the shirt, ensure non-stick covers are installed on your heat press and repress the garment after peeling off the transfer. With the film transfer sheet removed, repress the garment at 320°-356°F for 10-20 seconds at medium pressure (40-50 PSI). Also, on materials with medium to deep ridges (i.e. Blue jean, canvas bags, mouse pads, pocket seams) a better bond is created and contours to the fabric ridges if the print is pressed a second time without the film transfer paper covering it.

Before Repress **After Repress**

PRE-INSTALLATION CHECKLIST

FIRMWARE

Make sure that the firmware requirments listed on page 4 are met or that the most current firmware is installed on your GTX600 series printer.

DRIVER

Make sure to **download** and **install** the **latest** Printer Driver on your Computer (Windows & macOS).
Download the lastest version of the Print Driver from www.ProductionDTG.com/Support.

DIRECT TO FILM SUPPLIES INCLUDING FILM AND POWDER

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The **product handling** of the **Transfer Film** and **Adhesive Powder** could be different from brand to brand. Different brands of transfer films could be coated with different chemicals and the composition of their adhesive powder may vary. Therefore, always make sure to **carefully read** the **Instruction Manual** of the product in advance. **Curing times, temperatures** and **hot or cold peel** are among the main features which may vary. Print tests are **highly recommended** to meet the individual requirements and to achieve high quality DTF printing results.

GTX Graphics Lab DTF Cut Sheet Setting

Here we give an overview of the GTX Graphics Lab 8.0.0 DTF Cut Sheet setting. It will give you the ability to use your **GTX600 Series** printer for Direct to Film (DTF) printing.

This is a guideline on how to **use** the GTX Graphics Lab 8.0.0 DTF Cut Sheet setting on the GTX600 Series printer computer (Windows & macOS). The GTX Graphics Lab 8.0.0 DTF Cut Sheet setting is a solution to **automatically mirror the print data**. GTX Graphics Lab 8.0.0 offers **print settings** which meet DTF requirements of reversed CMYK + White and allows you to print in **one efficient job**.

To begin, install GTX Graphics Lab 8.0.0 on your computer.

If this is the first time updating your PC or Mac to version 3.0 or later, you must do the following calibrations after updating the firmware and driver:

Scan to view the Initial Settings After Head Replacement Video

Scan to view the Color Adjustment Between Two Color Heads Video

Scan to view the Color Adjustment Between OR/GR Heads Video

Scan to view the Firing Adjustment Video

Scan to view the 2 Same Color Heads Position Adjustment Video

Scan to view the Platen Rolling Adjustment Video

Scan to view the White/Color Alignment Video

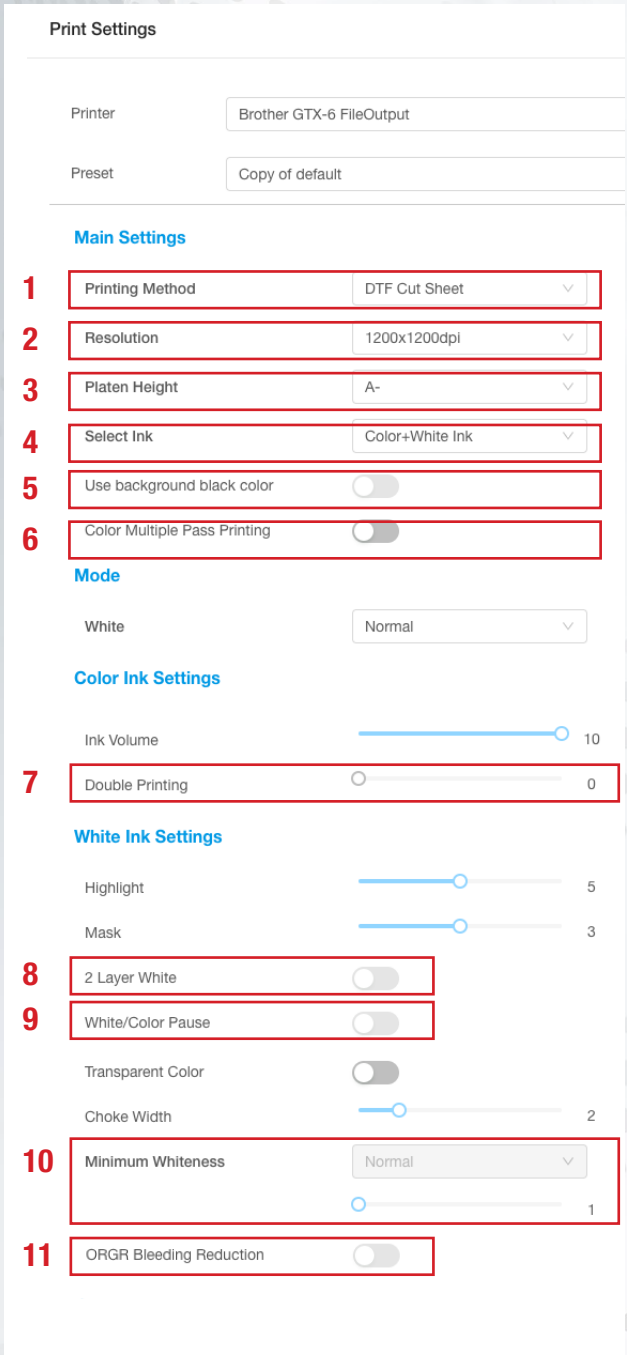
Using GTX Graphics Lab 8.0.0 DTF Cut Sheet Setting

ADJUSTING THE SETTINGS

Below is an example of the GTX Graphics Lab 8.0.0 showing the Printing Method selected for **DTF Cut Sheet.** **DTF Cut Sheet** under "Printing Method" MUST be selected for Reversal Printing to occur.

By creating print data or sending the design directly to the printer, the sequence of the print data will be **reversed automatically** while also mirror imaging the design.

Below is an example of the GTX Graphics Lab 8.0.0. The basic operations are the same as those in previous Graphics Labs, but the sections related to this improved version of DTF cut-sheet printing are explained below. The following 10 areas are involved in the print setup. They are explained in the following order.



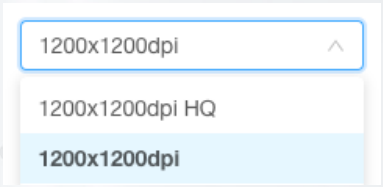
GTX Graphics Lab 8.0.0 offers several print settings which will optimize individual requirements to achieve high quality DTF printing results.

1. Printing Method

"DTF Cut Sheet" should be selected under Printing Method in order to print on DTF film sheets. When this option is selected, certain settings are selected by default and are adjustable, while other settings become greyed out or are unable to be changed.

2. Resolution

"Resolution" uses the default setting of "1200 x 1200 dpi". If you do not see the banding in DTG printing, but only in DTF Cut Sheet printing, setting the "Resolution" to "1200 x 1200 dpi HQ" may improve the situation.



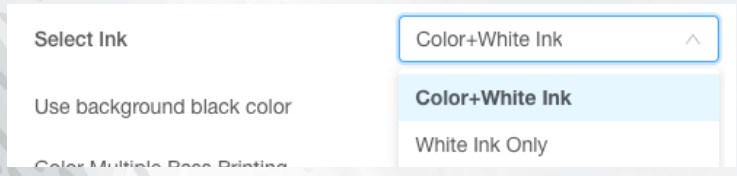
3. Platen Height

When "DTF CUT Sheet" is selected for "Printing Method", "Platen Height" is selected as "A-" by default and cannot be changed. "A-" moves the platen position 1mm closer to the print head than the "A" platen height, resulting in higher quality printing (less graininess).

Using GTX Graphics Lab 8.0.0 DTF Cut Sheet Setting

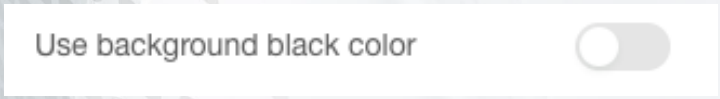
4. Select Ink

When “DTF CUT Sheet” is selected for “Printing Method”, “Color + White Ink” and “White Ink Only” can be selected for “Select Ink”, and “Color Ink Only” and “Black Ink Only” cannot be selected.



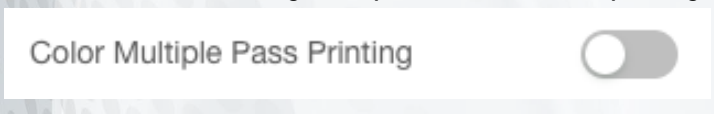
5. Use Background Black Color

When “DTF CUT Sheet” is selected for “Printing Method”, “Use background black color” cannot be selected.



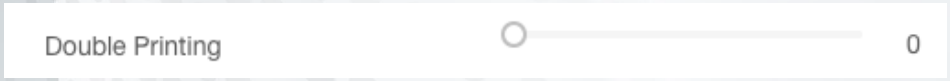
6. Color Multiple Pass Printing

When “DTF CUT Sheet” is selected for “Printing Method”, “Color Multiple Pass Printing” can be selected to resolve issues with banding if changing the “Resolution” to “1200 x 1200 dpi HQ” did not improve upon the issue. However, selecting this option will cause the printing time to be longer.



7. Double Printing

When “DTF CUT Sheet” is selected for “Printing Method”, “Double Printing” is grayed out and cannot be selected.



8. 2 Layer White

When “DTF CUT Sheet” is selected for “Printing Method”, “2 Layer White” is grayed out and cannot be selected.

9. White/Color Pause

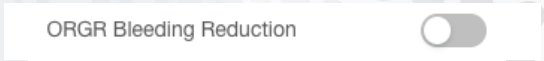
When “DTF CUT Sheet” is selected for “Printing Method”, “White/Color Pause” is grayed out and cannot be selected.

10. Minimum Whiteness

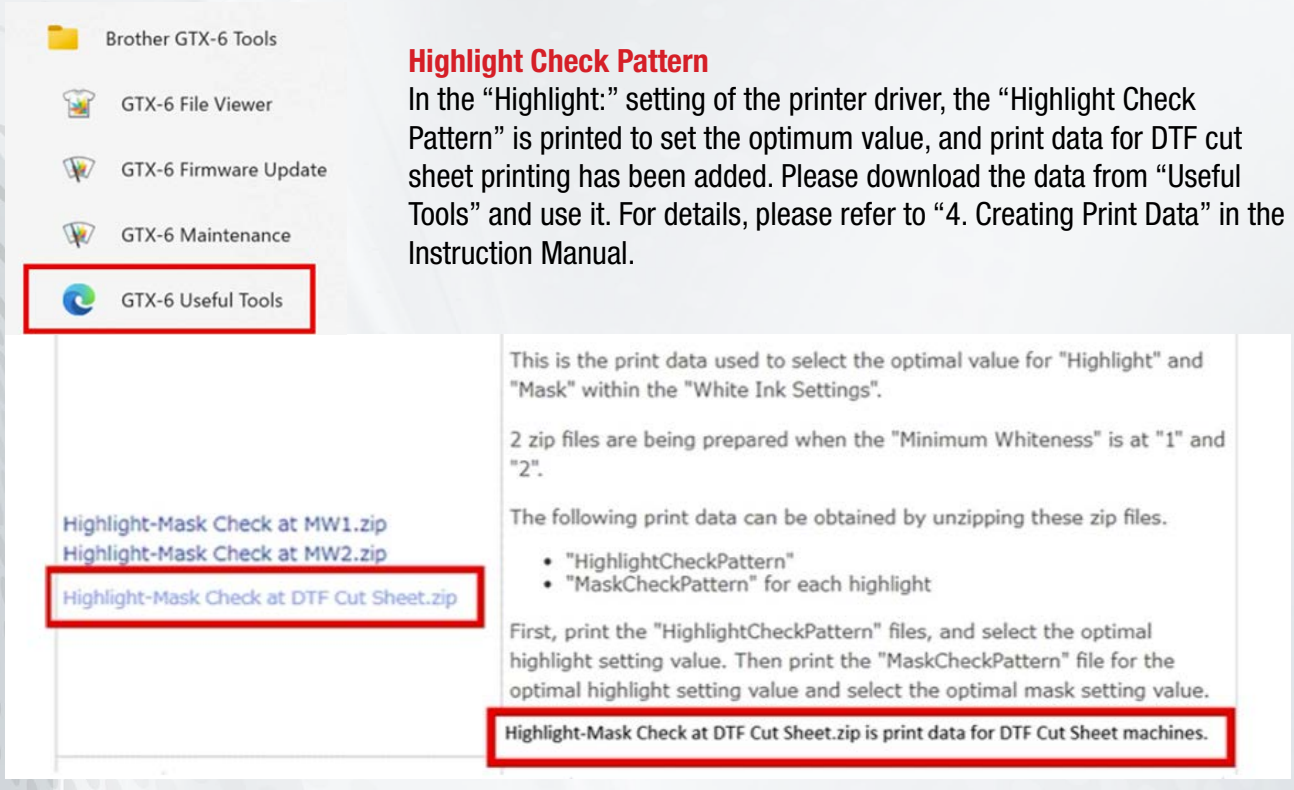
When “DTF CUT Sheet” is selected for “Printing Method”, “Minimum Whiteness” is grayed out and cannot be selected.

11. ORGR Bleeding Reduction (GTX600SB Only)

On a GTX600SB when “DTF CUT Sheet” is selected for “Printing Method”, “ORGR Bleeding Reduction” is grayed out and cannot be selected.



Troubleshooting DTF Cut Sheet Printing



Highlight Check Pattern

In the “Highlight:” setting of the printer driver, the “Highlight Check Pattern” is printed to set the optimum value, and print data for DTF cut sheet printing has been added. Please download the data from “Useful Tools” and use it. For details, please refer to “4. Creating Print Data” in the Instruction Manual.

Troubleshooting Instructions

If you experience problems with DTF cut-sheet printing after changing to the improved version of DTF cut-sheet printing, please refer to the following for troubleshooting.

PROBLEM

After changing to an improved version of DTF cut sheet printing, the color is wrong in printing.

SOLUTION

STEP 1:

Start GTX-6 File Viewer and open the printed file.

Troubleshooting DTF Cut Sheet Printing

STEP 2:
Check the print method and confirm that it is “DTF Cut Sheet”. If there is a “*” on the file, such as “DTF Cut Sheet*,” the data was created in an older version of Graphics Lab.

PROBLEM
Banding is visible when printing DTF Cut Sheet.

SOLUTION
STEP 1:
Please confirm that current Software has been installed and that GTX600 or GTX600 Extra Colors Maintenance has been performed.

If banding is still visible, print a nozzle check pattern and clean the print head if necessary.

STEP 2:
If you continue to see banding, please change the settings for “2. Resolution” and “6. Color Multiple Pass Printing” as referenced above in this guide.

If you still see banding, please contact your dealer.

Troubleshooting DTF Cut Sheet Printing

PROBLEM

Longer printing times due to the system being automatically set to low-speed control to prevent quality deterioration due to environmental conditions.

SOLUTION

STEP 1:

If you have changed the settings for the banding measure when creating the print data, please restore the settings for “1. Printing Method”, “2. Resolution” and “6. Color Multiple Pass Printing” as referenced above in this guide. However, banding may occur depending on the printing environment and printing pattern.

STEP 2:

If the temperature is lower than 18°C (64°F) and the printer is set to enable the setting in the printer’s panel menu “Printing Operation Setting at Low Temperatures,” disable the setting.
However, banding may occur.

To change this setting, access the panel menu of printer and select, select Printer Settings > Low Temperature Mode> Disable.