EPSON

DTF Film Printing Guide

CMP0437-00 EN

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Introduction

Meaning of Symbols

This manual uses the following symbols to indicate dangerous operations or handling procedures to prevent harm to users or other people or damage to property. Make sure you understand these warnings before reading the content of this manual.

⚠ ***Warning:***	Warnings must be followed to avoid serious bodily injury.
⚠ ***Caution:***	Cautions must be followed to avoid bodily injury.
Important:	Important must be followed to avoid damage to this product.
Note:	Notes contain useful or additional information on the operation of this product.
☞	Indicates related content.

Screenshots

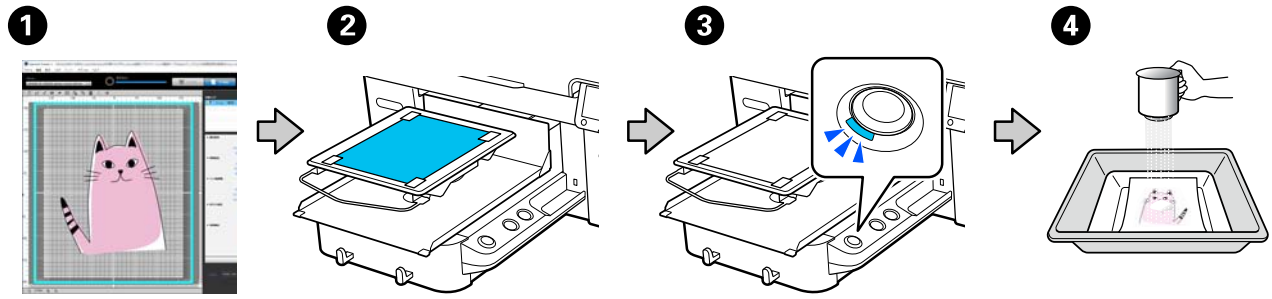
The screenshots used in this manual may differ slightly from the actual screens.

Illustrations

The illustrations may differ slightly from the model you are using. Please be aware of this when using the manual.

Overview

When using a model that supports DTF film printing, you can print on commercially available DTF film as well as T-shirts and other media. The following illustration shows the process of printing a job on film to completing the final printed product (such as a T-shirt).



Work Item		Summary
❶	Creating/Sending Jobs	Send a print job for film printing created in Garment Creator 2 to the printer. See the Garment Creator 2 help for more details.
❷	Loading the Film	Attach the platen to the printer, and then load the film. You cannot use a grip pad covered platen. "Loading the Film" on page 7
❸	Printing	Confirm that the job has been received and the ◈ button on the printer is lit before you start printing. "Start Printing" on page 9
❹	Post-processing	Perform post-processing for the printed film and media in the following order to complete the printed product. ① Place the film in a tray or other suitable container, apply the powder, and then heat it in an oven, and so on. ② Transfer images from the film to the media with a heat press. ③ Peel off the film and fix the ink using a heat press. "Post-processing" on page 10

When performing DTF film printing, you need to use additional tools to those used when printing directly onto media. See the next section for more details.

Preparation

To print on DTF film, you need the following devices and parts. Some of these are specific to the film or powder you are using. Make sure you check the instructions provided with the film and powder.

Items you need when printing

Platen (provided with the printer or option)
Prepare a platen with a printable area larger than the film to be printed. You cannot use the sleeve platen, the medium grooved platen, or the grip pad covered platen.

DTF film and powder (commercially available)
Opaque adhesive tape (commercially available)
Used to secure the film to the platen. Using transparent adhesive tape may cause head striking.

A tray larger than the film (commercially available)
Used to apply powder to the printed film.

Sieve/powder shaker (commercially available)
Used to apply powder to the printed film. Allows you to sprinkle powder evenly without lumps.

Mask and protective eye-wear (commercially available)
Prevents powder from getting into your eyes and mouth.

Make sure you check the instructions provided with the powder for details.

Device for heat transfer and fixing ink

Heat press/Oven (commercially available)
Used in post-processing, such as film heating, image heat transfer, and ink fixing.

Heat-resistant release sheet (commercially available)
Place this over the loaded film or media to prevent any ink from touching the press side of the heat press.

Prepare silicon paper, fluoro-resin sheets, and so on.

Precautions when Printing on DTF Film

Note the following points in addition to the precautions described in the *User's Guide* (online manual) for your printer. Also, make sure you check the precautions in the instructions provided with the film and powder in advance.

Always send jobs for film printing.
See the Garment Creator 2 help for more details.

Select White ink mode as the Printer Mode.
The powder will not stick to the film unless White ink is used when printing. Change the setting if you are using the printer in **Color ink mode**. Printers used in **High speed color mode** cannot print DTF film because White ink is not available.

Do not apply pre-treatment liquid to the media.
White ink is used in DTF film printing but does not require pre-treatment.

Use a platen without a grip pad.
You cannot load film correctly on a grip pad covered platen.

Use a platen that is larger than the film.
If you use a platen that is smaller than the film, the overhanging parts will be bent or rise up and will not be printed correctly. Also, the edges of the film may strike against the print head and be damaged.

Do not allow powder to enter the printer.
Do not apply powder near the printer. If powder gets inside the printer, it may cause the printer to malfunction.

Printing on Film

Loading the Film

1 Check that a platen without a grip pad is loaded, and then press the ⏻ button to turn on the printer.

If a frame is attached, remove the frame.

If a grip pad covered platen or a sleeve or medium grooved platen is attached, replace it with a platen without a grip pad.

Replacing the Platen *User's Guide* (online manual)

> ***Note:***
> *If the platen does not move forward, press the ↧ button to move it forward.*

2 Check the following status.

Platen Gap is set to **Auto**

If it is set to **Manual**, tap this area to change the setting to **Auto**.

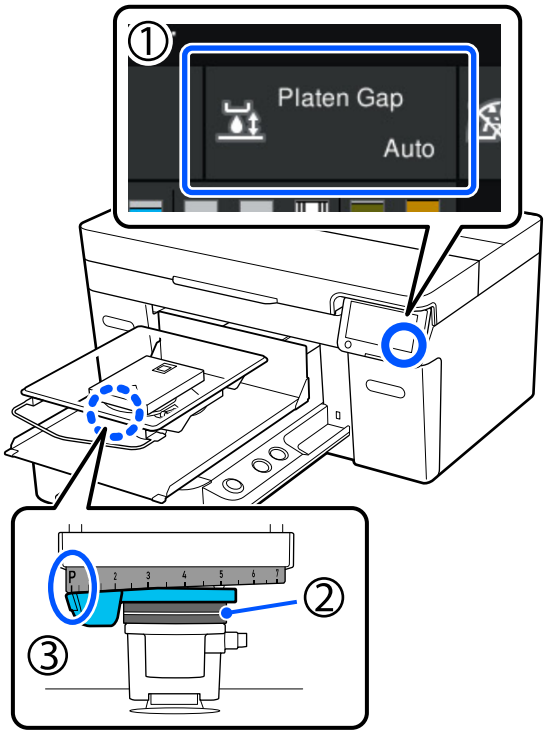
Spacers A and B are installed

If only one of the spacers is installed, see the *User's Guide* (online manual) and install both spacers.

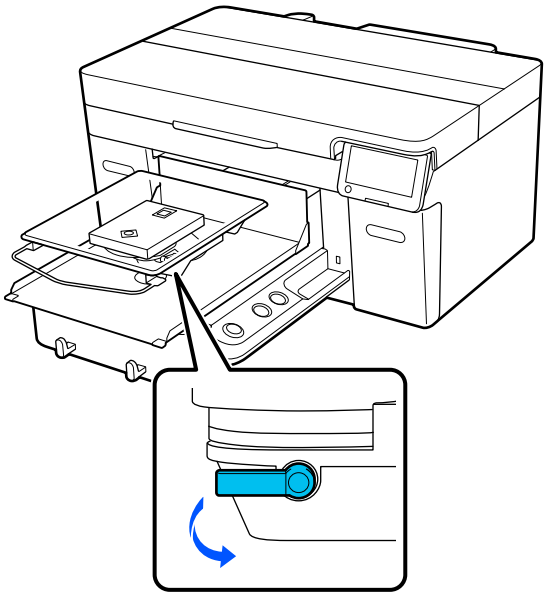
The platen gap lever is set to P on the scale

If it is set to anything other than P, go to the next step.

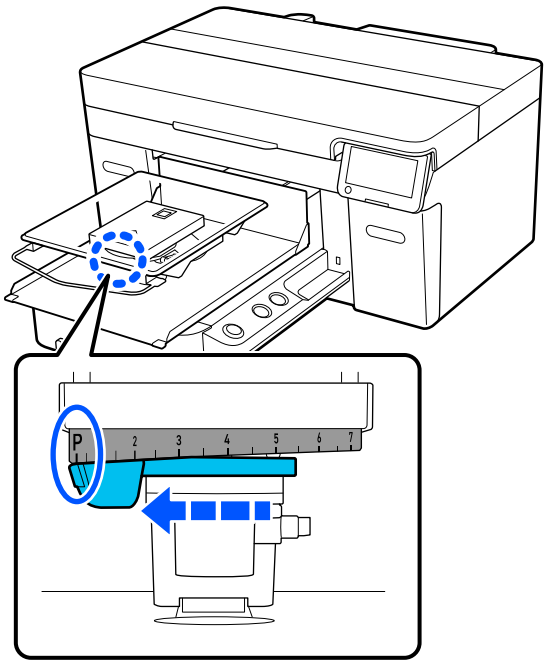
If there are no issues with steps ① to ③, go to step 6.



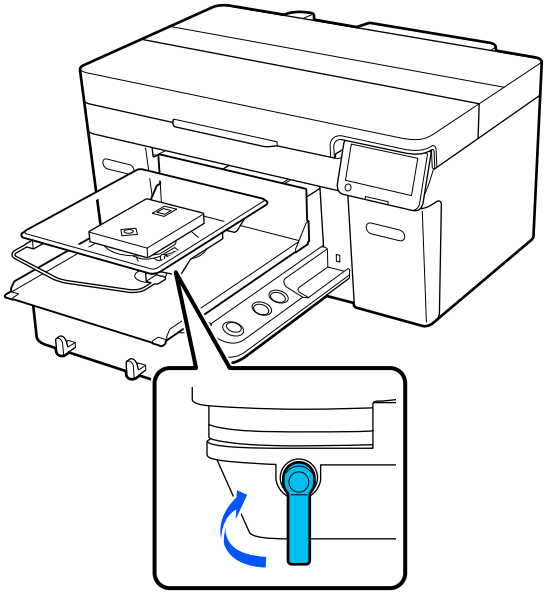
3 Loosen the fixing lever.



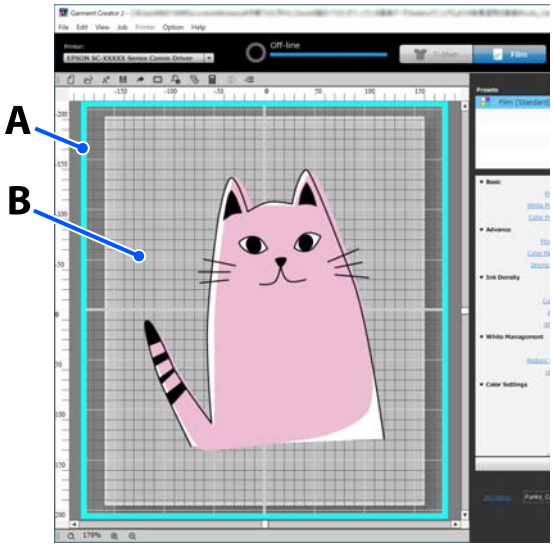
4 Move the platen gap lever to the left to set the scale to P.



5 Tighten the fixing lever, and then secure the platen gap lever.



6 Place the film on the platen while checking the preview display area in Garment Creator 2.

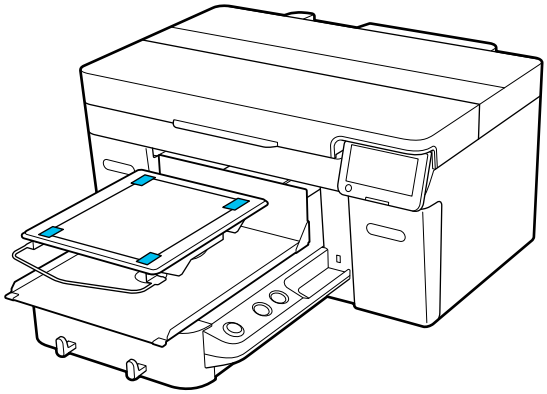


A: Printing area of the platen selected when creating the job
B: Image of the DTF film used for printing

Note:

- ❏ *The top of the preview display area is the front of the printer (the part with the hanger when using a hanger platen).*
- ❏ *You can print within the entire A frame. Adjust the placement position while checking the layout result to avoid printing beyond the edges of the film.*
- ❏ *Although you can zoom B in or out, the aspect ratio cannot be changed to match the actual film.*

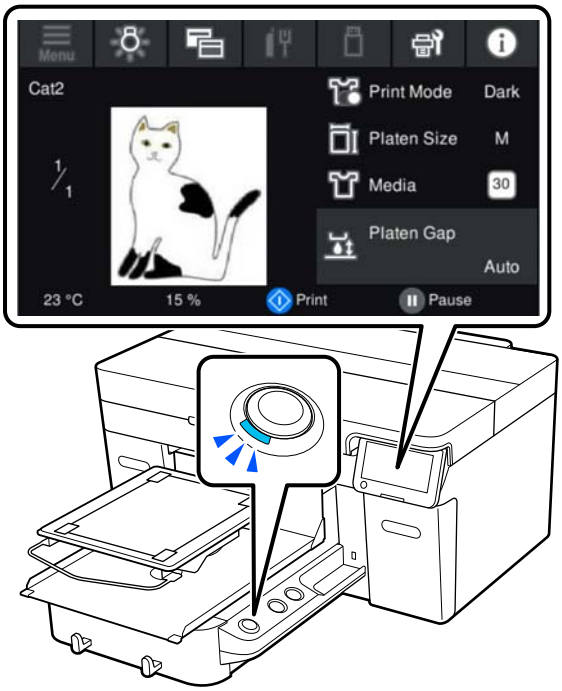
7 Secure the film with opaque tape to keep it in place.



Important:
Do not use transparent tape to secure the film. Printing with transparent tape peeled off may cause head rubbing.

Start Printing

1 When a job has been completely received, the preview display opens on the screen and the lamp on the ◇ button turns on.



2 Check that the film is loaded, and then press the ◇ button.

Post-processing

Perform post-processing for the printed film in the following order to complete the printed product.

Applying powder and heat

Transferring images from the film to the media using heat

Fixing the Ink

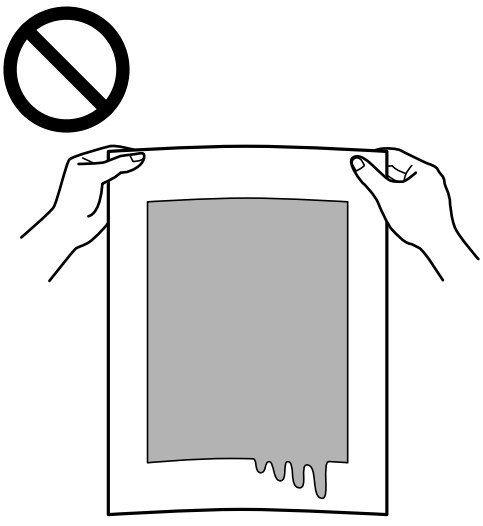
Applying Powder and Heat

Before the printed film dries, apply powder and heat the film. This section explains the procedure when using an oven.

> ***Important:***
> *Do not apply powder near the printer to prevent powder from getting inside the printer.*

1 Remove the printed film from the platen while it is flat.

> ***Important:***
> *Tilting or raising the film straight up may cause ink to drip.*



2 Place the film with the printed side facing up in a tray or other container that is larger than the film.

3 Sprinkle powder over the entire printed surface.

> ***Note:***
> ❏ *We recommend being generous when sprinkling the powder on the printed area, as it will not transfer well if some areas are not covered in powder.*
>
> ❏ *Use a sieve or a powder shaker to apply the powder evenly.*

4 Lift the film and flick it with your finger from the back to remove excess powder onto the tray so that the powder evenly covers the printed area.

> ***Note:***
> *We recommend removing as much excess powder as possible. If powder remains outside the printed area, it may melt and remain when the image is transferred in the next process.*

5 Heat the film in the oven.

Use the following values as a guide.

Type of Oven	Temperature*	Time
Conveyor type	170˚C (338˚F)	150 seconds

* Temperature of the fixing surface of the T-shirt. Not the internal temperature.

> ***Note:***
> *Conditions such as temperature and time will vary depending on the type of film or powder being used, the type of device for fixing ink, and the amount of ink used.*

Heat Transfer for Film

Place the heated film and media in the heat press, and heat-transfer the image onto the media. You cannot use an oven to perform heat transfer.

1 Place the printed side of the film on top of the media so that it is in close contact with the media, and then place silicon paper or similar material on top of the film.

2 Apply heat using the heat press.

Use the following values as a guide.

Cotton T-shirts

Temperature	Time	Pressure*
170˚C (338˚F)	25 seconds	4.2 N/cm^2

Polyester T-shirts

Temperature	Time	Pressure*
140˚C (284˚F)	25 seconds	4.2 N/cm^2

* The optimum conditions vary depending on the type of heat press such as the manual adjustment type. Be sure to test the ink status in advance to find the right pressure.

Note:
Conditions such as temperature and time will vary depending on the type of film or powder being used, the type of device for fixing ink, the media fabric, and the amount of ink used.

3 Remove the film from the media.

Depending on the film you are using, you may need to allow the media to cool before removing the film.

See the instructions supplied with the film for details.

Fixing the Ink

To fix the ink, use a heat press to apply heat again to the media to which the image has been heat-transferred. You cannot use an oven to fix the ink.

1 Place silicon paper or similar material on top of the media.

2 Apply heat using the heat press.

Use the following values as a guide.

Cotton T-shirts

Temperature	Time	Pressure*
170˚C (338˚F)	5 seconds	4.2 N/cm^2

Polyester T-shirts

Temperature	Time	Pressure*
140˚C (284˚F)	5 seconds	4.2 N/cm^2

* The optimum conditions vary depending on the type of heat press such as the manual adjustment type. Be sure to test the ink fixing result in advance to find the right pressure.

Note:
Conditions such as temperature and time will vary depending on the type of film or powder being used, the type of device for fixing ink, the media fabric, and the amount of ink used.

Troubleshooting

This section only explains troubleshooting methods specific to film printing. Also see the *User's Guide* (online manual) for your printer.

Print Results are not what you Expected

Noticeable horizontal stripes (banding)/uneven coloring

Are the print head nozzles clogged?
If the nozzles are clogged, the corresponding colors do not fire and the print quality declines. Perform **Print Head Nozzle Check** to print a nozzle check pattern. See the *User's Guide* (online manual) for more details.

Perform Media Feed Adjustment.
You may be able to reduce stripes and unevenness by adjusting the amount (width) that the platen is fed each time the print head moves. If the lines are dark, adjust to the + side, and if the lines are faint, adjust to the - side.

The optimal **Media Feed Adjustment** value for film and other media, such as T-shirts, may vary. We recommend registering separate media settings for film and T-shirts.

See the *User's Guide* (online manual) for more details.

Ink is overflowing/The under-base White ink is showing outside the image

Check the following points.

❏ Are you printing on the printing side of the film?

Ink will overflow if you are not printing on the printing side.

❏ Are you printing a job that is intended for film?

Printing jobs for T-shirts may cause ink overflow.

If none of these points apply, use Garment Creator 2 to adjust the **Ink Density**.

See the Garment Creator 2 help for more details.

Print results are too light or blurred

Note the following points when printing.
If these points are not observed, printing will not be performed correctly.

❏ Install spacers for A and B

❏ Set the platen gap lever scale to "P"

❏ Set **Platen Gap** to **Auto**

❏ Place the film flat on the platen and secure it firmly with opaque adhesive tape

If all of these points are being observed, try performing **Print Head Alignment**. Note that you should select **Light Media** for **Standard**.

The optimal **Print Head Alignment** value for film and other media, such as T-shirts, may vary. We recommend registering separate media settings for film and T-shirts.

See the *User's Guide* (online manual) for more details.

Image quality is not stable even when printing under the same conditions

Check the film loading conditions.
Under the following conditions, the printing surface may not be detected correctly, and the image quality may deteriorate. Load the film correctly so that it is flat.

- ❏ The film is curled or warped
- ❏ The film is damaged or bent
- ❏ The adhesive tape is peeling off and rising up