How to do Direct to Fabric Backlits on HP Stitch S1000

This document will explain the Direct to Fabric (DTF) printing process for backlight applications: advantages and disadvantages, as well as tips and tricks to avoid common issues.

What you will need

- Before printing
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  - DTF Printing
  - Decide the fabric type
  - Preparing the job
- Printing
  - The printing process
- After printing
  - Recommendations
  - Calendering
  - Post-print finishing

Textile

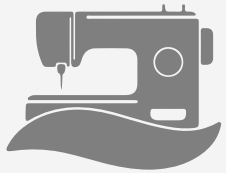
Tissue Paper

Cutting device

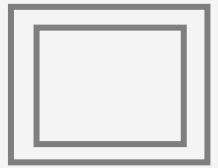
SW tools (RIP, edition, etc.)

Printer

Calender



Sewing machine (optional)



Lightbox

Direct to Fabric printing

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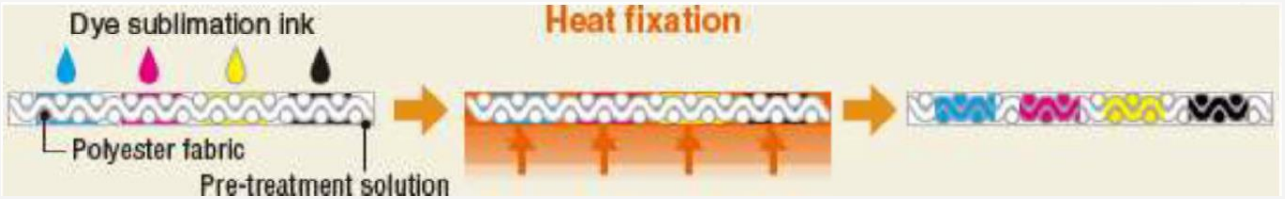
DTF Printing Process



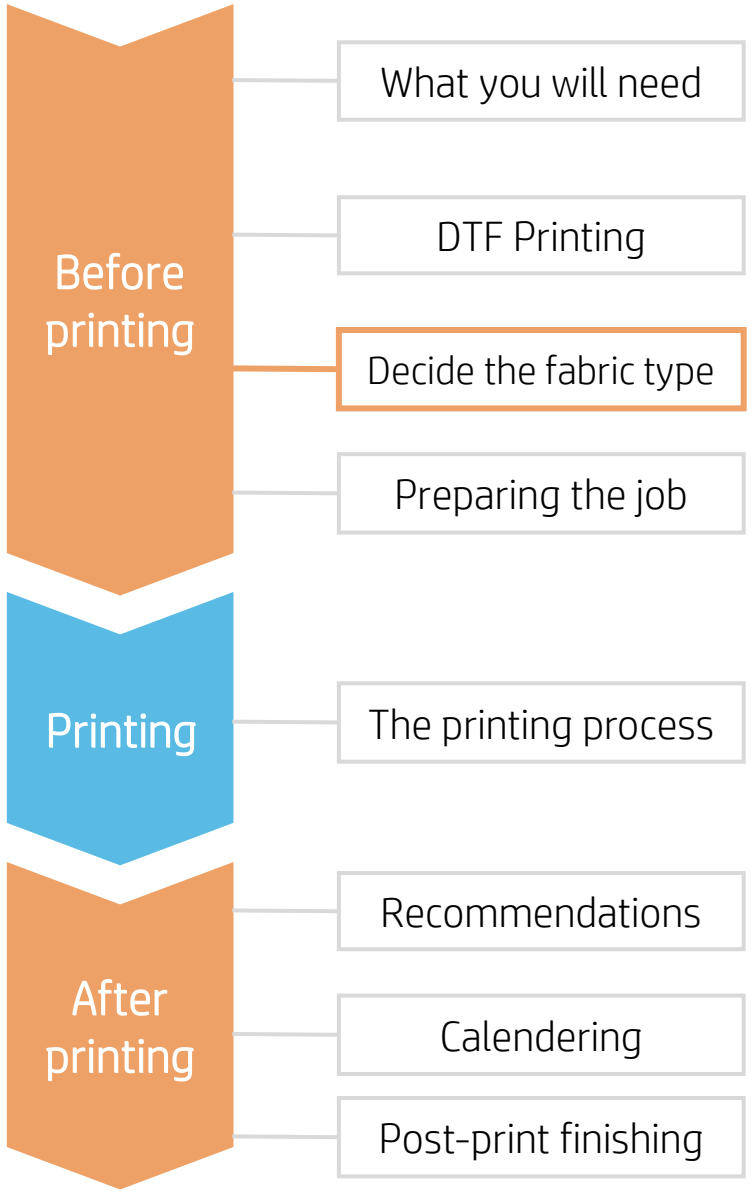
Advantages

- ✓ **Ink coverage** – Better saturation with the same amount of ink (or even less)
- ✓ **Materials** – DTF only requires one media (the transfer paper is not required)
- ✓ **Calendering** – Easy to manage, only 1 material (1 or 2 tissue papers still needed)

Disadvantages

- ✓ **Stretchable materials** – Only low stretchability materials are possible to be printed on, due to media deformation caused by tension
- ✓ **Details** – Text and details are sharper when printing with transfer paper

Decide the fabric type



Fabric requirements for direct printing

DTF fabrics need to be specially developed and produced for this process

Many manufactures offer a dedicated version for DTF Printing.

Starting with a similar fabric structure, these materials are specially treated to improve their performance regarding:

- Anti-static
- Bleeding / Sharpness
- Ink drying / Transfer
- Color boost

Check HP Media Solutions Locator for dedicated approved DTF materials or contact your manufacturers for recommendations.

Both treated and coated materials are available.

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Coated vs Treated

Coated

Woven textile (normally) with a layer of polymer applied by knife-coating process only on one side of the material.

DTF Dye Sub printing **ALWAYS prints from the textile side** (coated side for UV & Latex)

Advantages:
- Better light diffusion
- Less pin holing (improved perceptual saturation)
- Lighter fabrics

Disadvantages:
- Higher stiffness
- Sensitive to folding

Treated

Woven and Knitted textiles. Most of these are treated, with a heavier grammage. The treatment is a dip treatment that keeps the original touch and feel.

The printing side can depend on the structure and shiny effect desired.

Advantages:
- Soft textile surface
- Less sensitive to folding marks

Disadvantages:
- More pin holing
- Heavier fabrics

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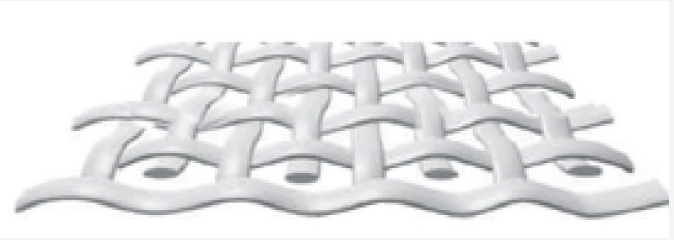
HP Media Solutions Locator presents the list of validated materials.
Here you can find some examples from this dynamic list:

Coated

- George and Otto Friedrich 7019 NLUXX

Treated

- Aberdeen 7777 Coated (Quad7)
- Fisher DD3300 Prime Backlit
- TTS Polaris Stretch



Preparing the job

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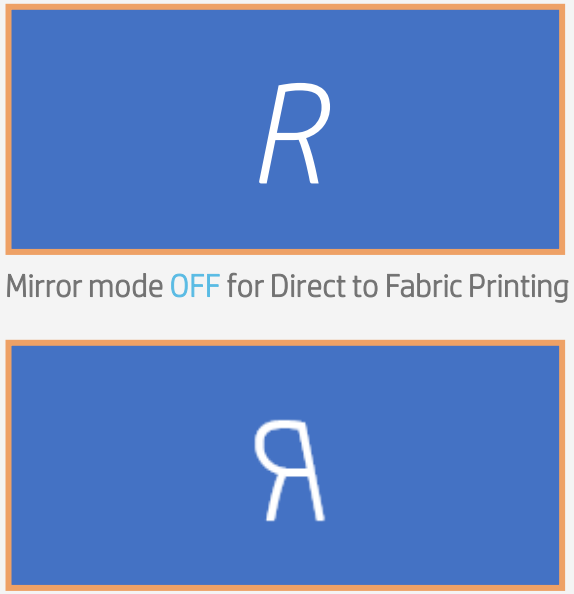
When Ripping the files check Mirror mode



Mirror mode OFF for Direct to Fabric Printing

The printing process

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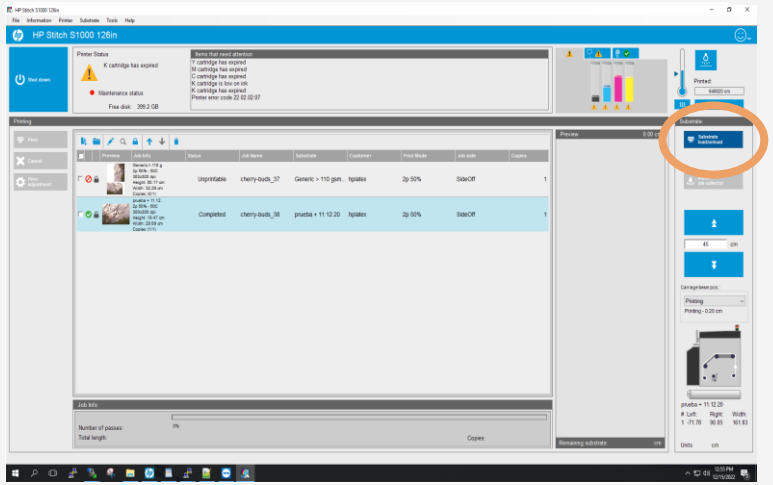
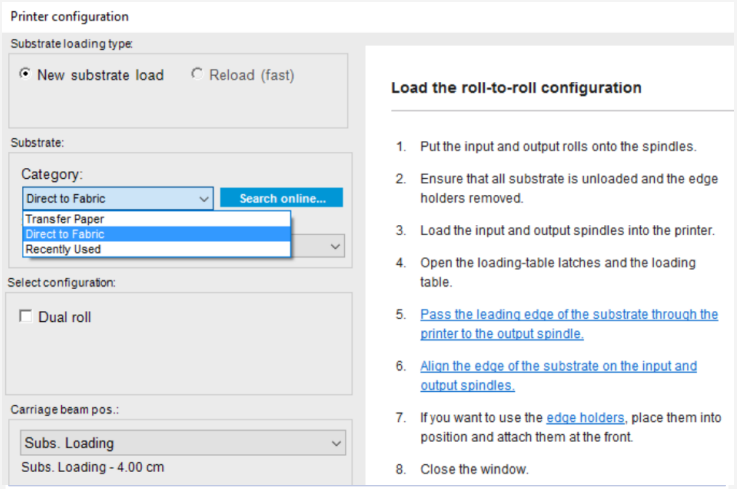
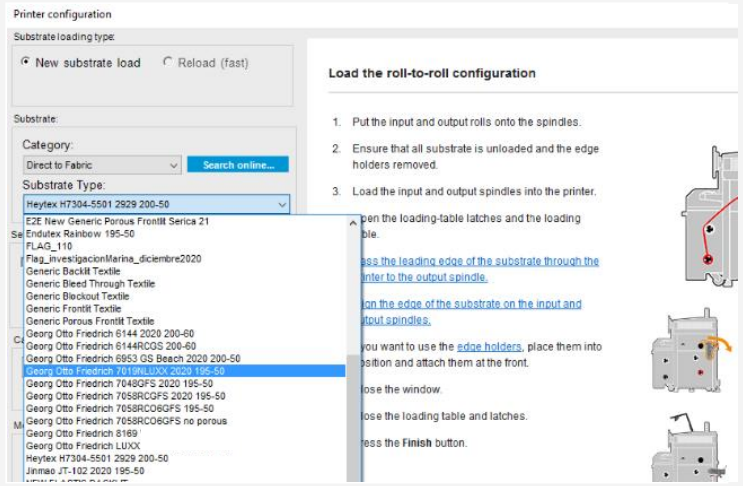
1. Load the roll on the IPS.



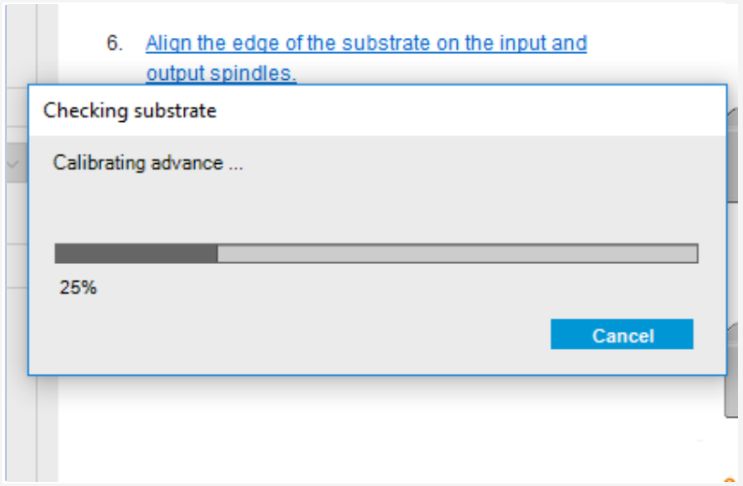
2. Select Direct to Fabric.



3. Select the Substrate.



4. Run the calibration.



5. Prepare the job.

nº of copies, size, nesting

6. Ready to Print.

Post-printing

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Recommendations after printing

Time from Printing to Calendering (sublimation process)

The sooner printed fabrics are sublimated the better.
There is the risk of ink migration because the ink is not fixed yet.
Performance depends on the material used.

Handling

It's very important to handle printed rolls with care during transportation to the calender.
Minimum pressure should be applied to the printed areas.
Holding the rolls by the edges or using a roll transporter is recommended.

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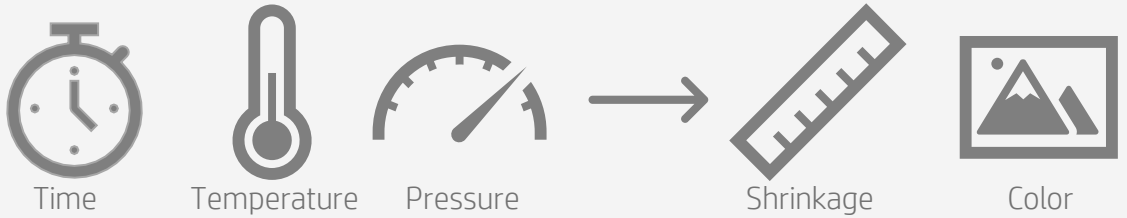
Calendering Process

Validate Calender settings



Controlling these 3 parameters should help avoid:

- Excessive fabric deformation / shrinkage
- Low color saturation
- Fabric yellowing
- Coating degradation

You will find the recommended settings at HP Media Solutions Locator.

Protective Paper

Double tissue paper is recommended. (Sandwich - 1 each side of the fabric)
Siliconized tissue paper may be needed for some coated fabrics.

Calender side

The printed side should be facing the heated drum.

Post-print finishing

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Finishing process

Cutting

The cutting process should be done as soon as possible after calendering and adapted to the fabric properties.
Check the Material Technical Data Sheet (MTDS) from the manufacturer to chose between Knife, laser, or ultrasonic cut.

Mounting in a lightbox

Different frame systems require different fixing techniques:

Stitched Silicone Edge

Hammer Edge

free Edge

Sewing

When Stitched SEG are used, it is important to know the type of polymer of the SEG as this can impact the IQ during shipping.
Non-PVC Strips are recommended, for example Silicone or TPE.

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Recommendations after finishing

Packing

It is recommended to send backlights rolled up to avoid folding marks mostly with the coated materials.
If folded, avoid severe folds

Don't stack several backlights in the same box.

Use steam to diminish any folding marks if necessary.

Place **tissue paper** to protect from **Ink Migration**.

Shipping

Avoid **High Temperature** and **High humidity** as this will speed up any ink migration.

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Finishing - Partners

Cutting and/or sewing devices:

FOTOBA

MATIC

Summa
Legendary Performance

ZÜND
swiss cutting systems

Silicon-free frames:

SignComp™

Calenders and/or heat fixation units:

GEO Knight & CO, INC

PRACTIX MFG. - U.S.A.

MONTI ANTONIO
STANDARD & CUSTOM HEATING SOLUTIONS

KLIEVERIK

Sefa
Heat Transfer Technologies