

# HOW TO USE THE HEAT TRANSFER PRINTER

## What do you need with you?

- The image you want to print.
- The textile on which you want to print the image. The recommended option is cotton but polyester etc. can be used as well.
- Be sure to book the machine in advance to ensure its availability.

## Preparing the file

Before loading your image to the printer software TransferRIP, you have to prepare the file. The print page size is A4 in portrait orientation and the easiest way to prepare your image is to do a layout in vector graphics app (Adobe Illustrator, Inkscape...). This can be done either on a computer with Illustrator here in Fablab or by downloading the free Inkscape software to your own computer. After you have changed the image to its printing size, save the file as format of your choice (Preferable options for the program is PNG, JPEG, PDF).

**Hint:** You can already put the INSTA heat press to warm up while you prepare your image for printing. Directions to how to do it can be found in the section “**Pressing your print on fabric**”.

## Using the printer software

### Step 1:

Open the TransferRIP at the computer next to the printer. Step 1 is choosing either a dark or light profile. Choose dark profile for coloured fabrics and light profile for white fabrics. Afterwards click Select.

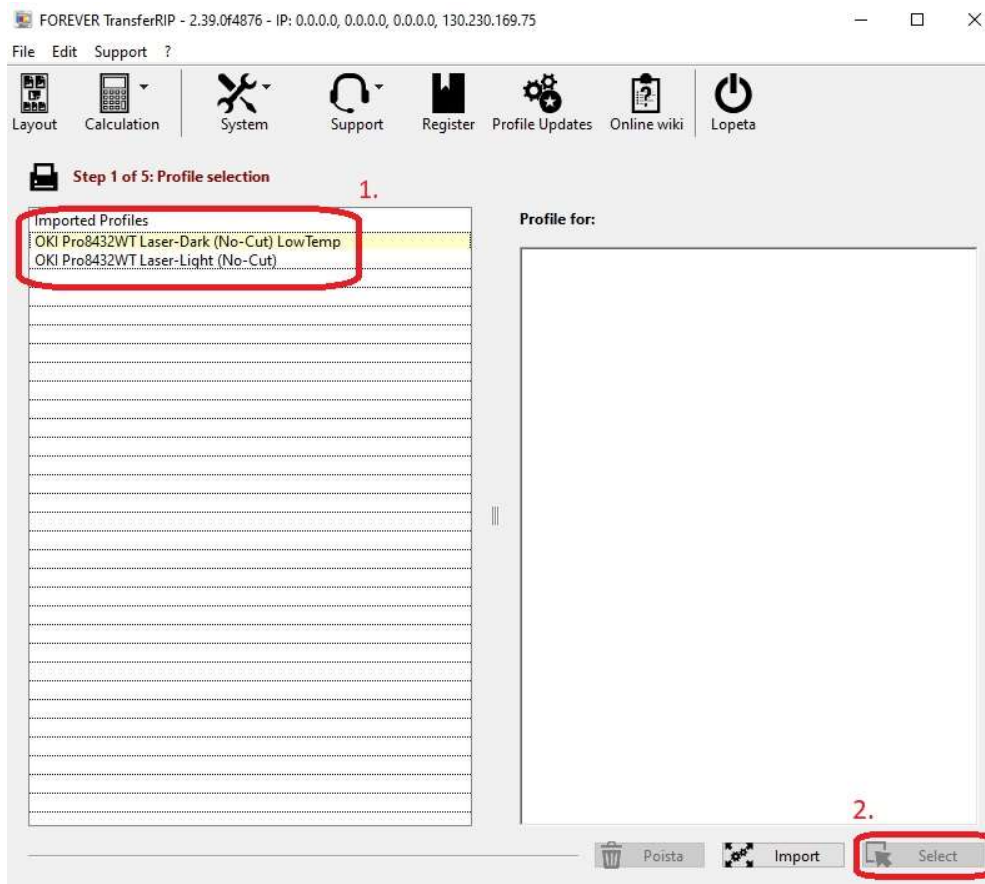


Figure 1: Profile selection (Step 1).

### Step 2:

Load your file to the software by clicking the load image icon in the lower right corner of the screen. Then select your image from the list above. A preview of that image should then appear below. Double click the image.

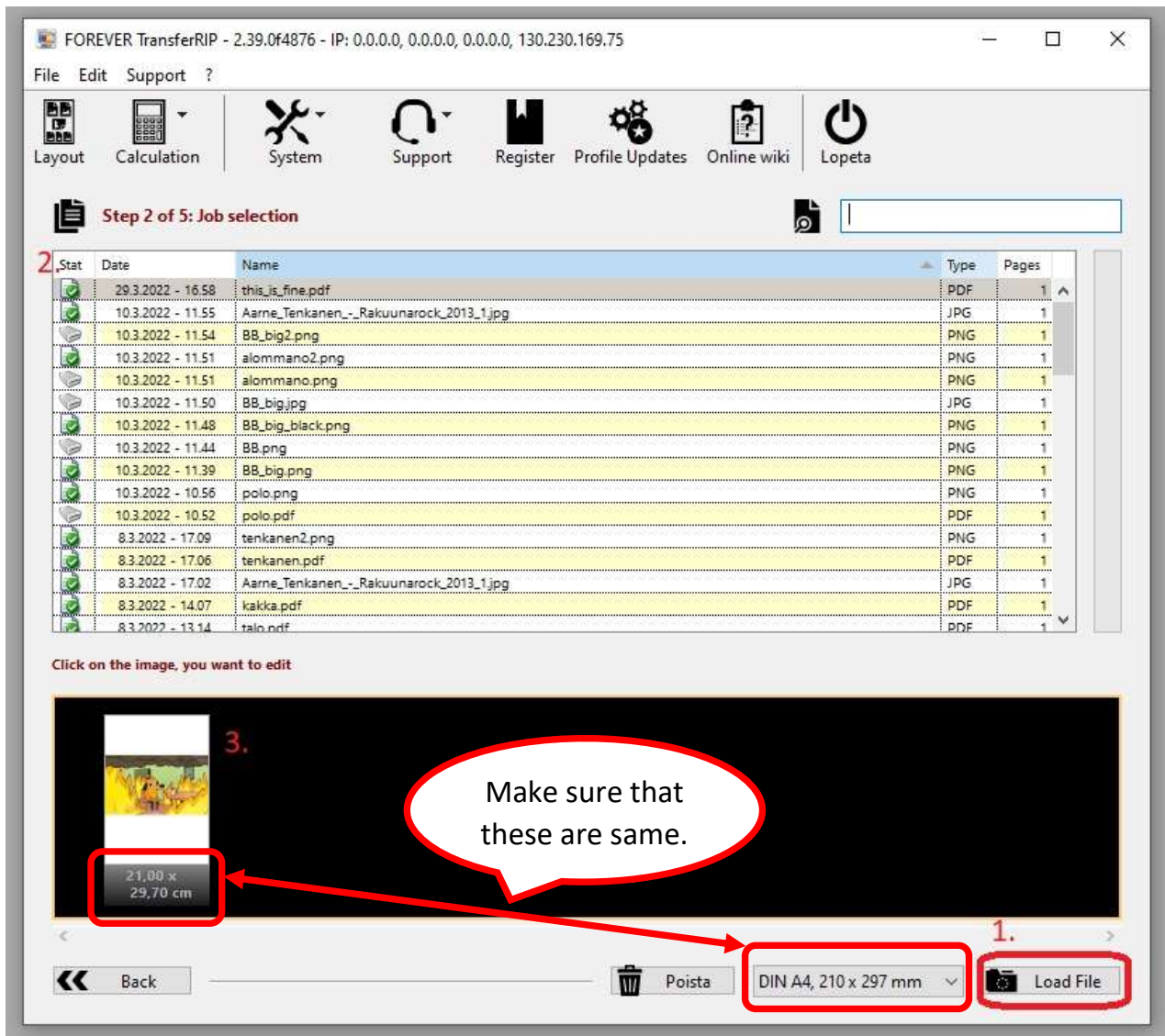


Figure 2: Loading your image.

### Step 3:

Now it is time to edit the image. You can adjust brightness, contrast etc.

Saturation is good to be something like 10. This will give you a brighter result.

Then we can move on to optional edits. If you have background color (or any other color) in your image that you do not wish for the final result, you can remove it by clicking Remove Color.

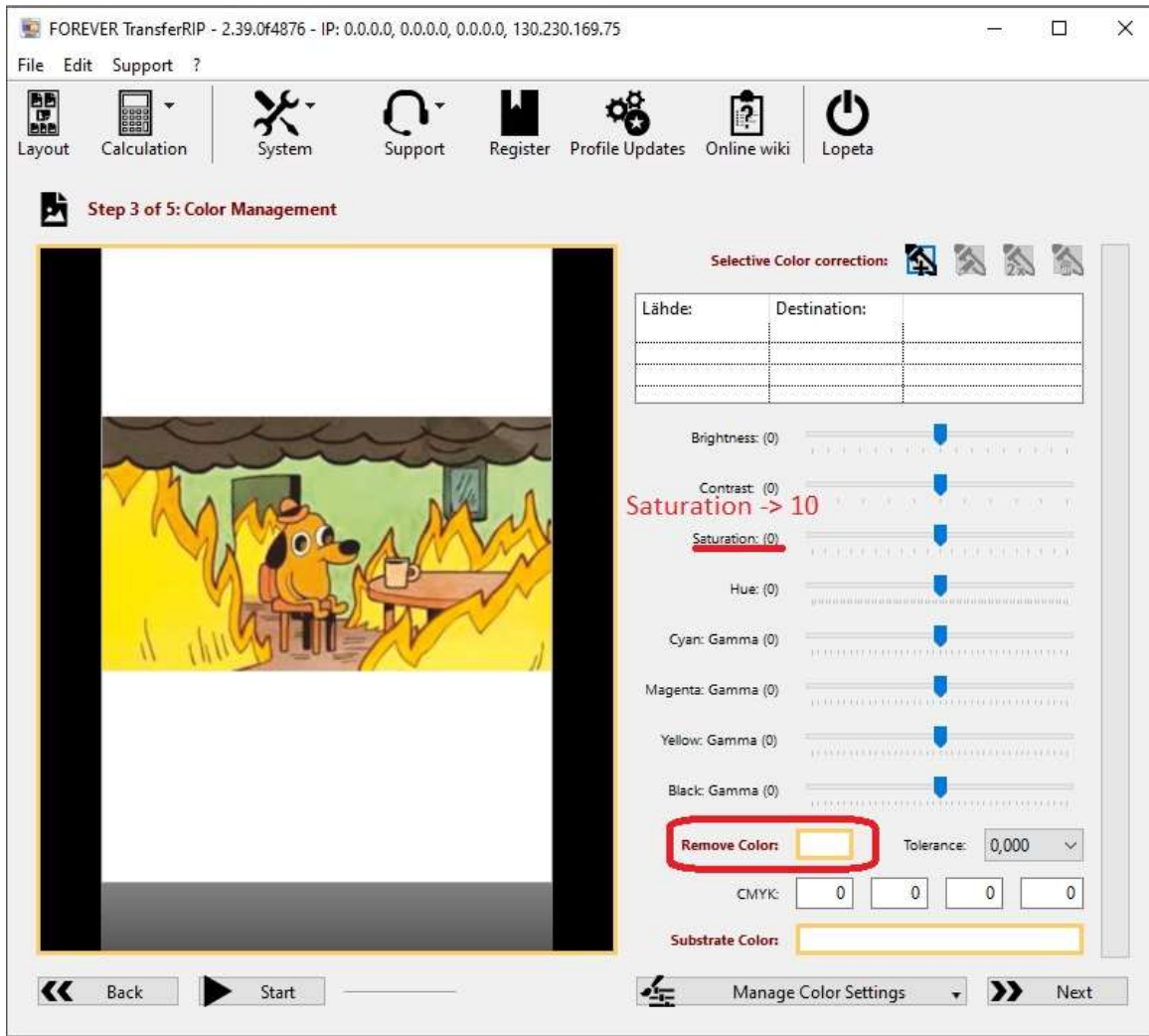


Figure 3: Editing the colours of the image.

A pop-up window will appear, and you can choose the color you would like to be removed by clicking it in your image (Figure 4). Then press save (tallenna).

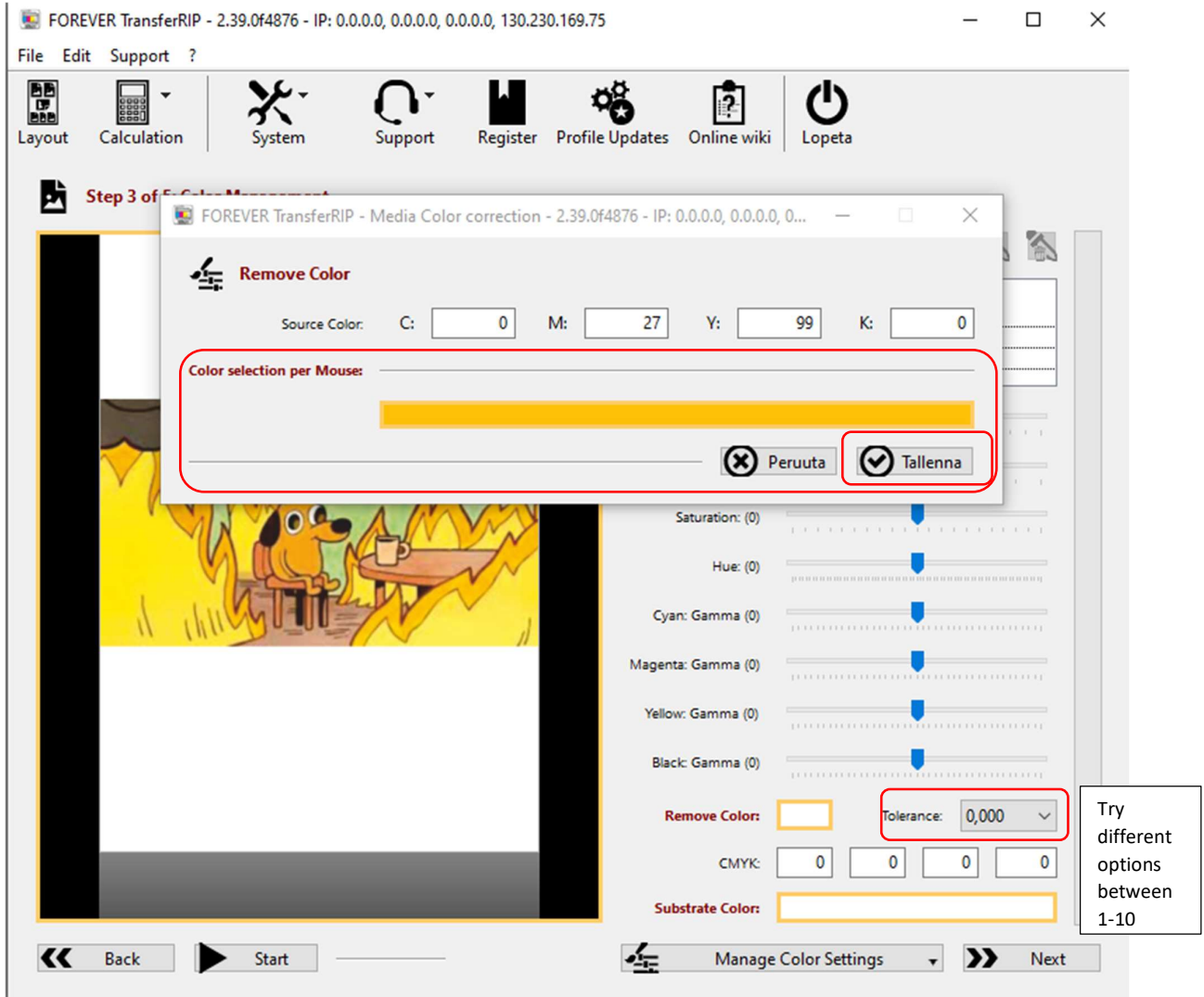


Figure 4: Removing colour from the image

The intensity of the deleted colour can be selected by trying different tolerance numbers between 1 and 10 next to the Remove Color box. Choose the level that looks the best in the preview of your image. The software offers a lot of other editing options for your image, which you are free to make as you like, but to keep these instructions easy to read they are not covered here. We recommend that you come in with as finalized picture as possible.

Finally, from the bottom of the screen you can change substrate color to match the color of the fabric you are going to print your image. This way you can see how the image will look like in the particular color (Figure 5).

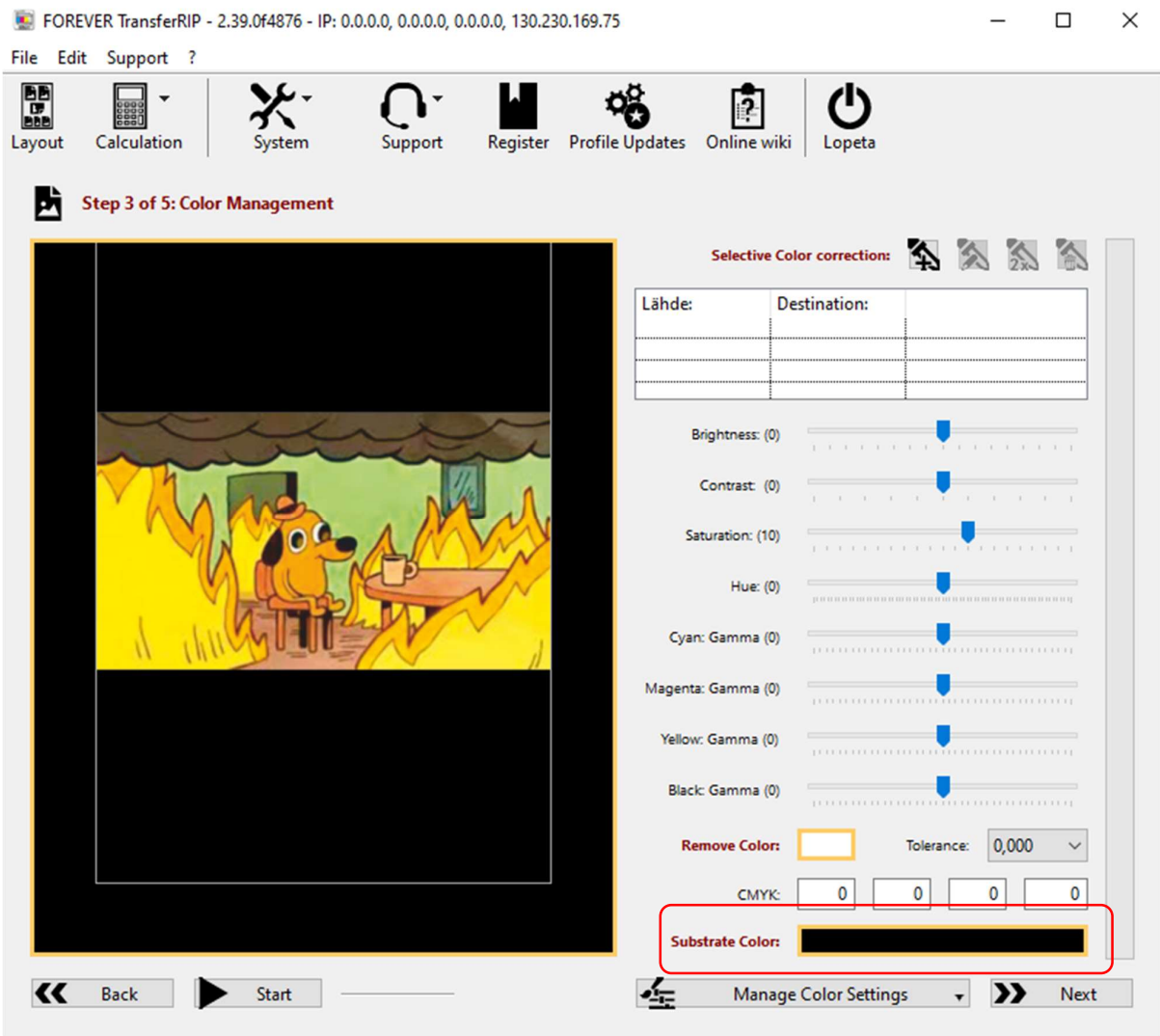


Figure 5: Changing the substrate colour

When you are happy with the results press Next.

## Step 4:

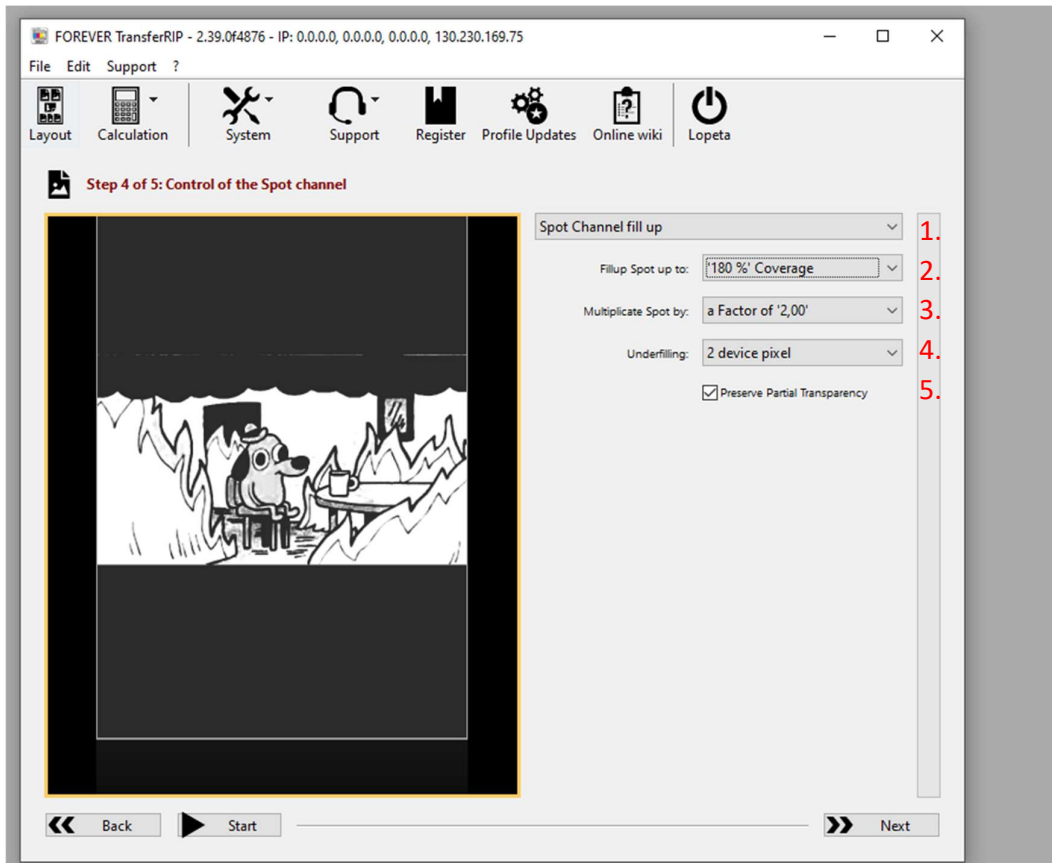


Figure 6: Control of the Spot channel

The next step is to control the spot channel.

1. First, choose Spot Channel fill up. If you choose no spot channel, printer will not print any white.
2. Fillup Spot up to box determines the amount of white in the image. The default is 150 % Coverage, but you can try different options to find your preferred outcome.
3. Next is Multiply Spot by a factor. '1,00' is the default, which works for most of the fabrics. For black/very dark fabrics, we recommend selecting '2,00', which will provide more white behind lighter colours and make the image brighter.
4. With underfilling you can avoid white edges around shapes. Usually, 1 or 2 device pixel is good.
5. Always preserve partial transparency.

When you are ready click Next.

## Step 5:

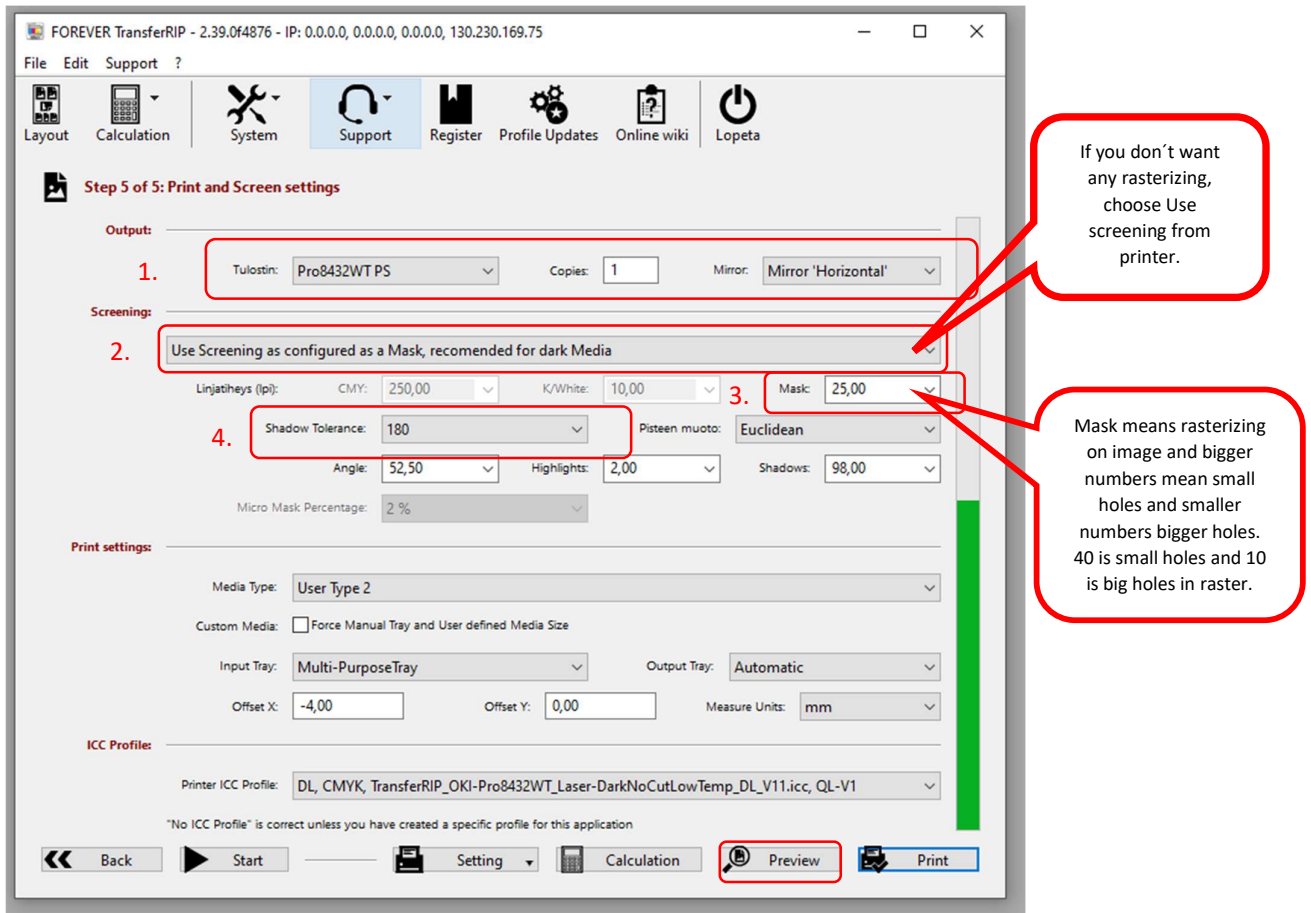


Figure 7: Printing settings

The last step is choosing some final settings and approving your preview image.

1. Check that correct printer is selected and that the image will be printed as a mirror image. This will ensure that the image is printed on the fabric facing the right way.
2. Next choose dark or light media depending on your fabric (Dark for black and coloured, light for white). If you don't want any rasterizing, choose Use screening from printer.
3. Next choose mask. It means rasterizing for your image and bigger numbers mean small holes in raster and smaller numbers bigger holes. For example, 40 is small holes and 10 is big holes in raster.
4. Shadow tolerance tells how much black color are taken away from the image. Bigger numbers take more black color off. If you like to remove black completely (in black fabrics) choose 180-210. Default is 100 which is okay for white fabrics.



Finally, choose preview.

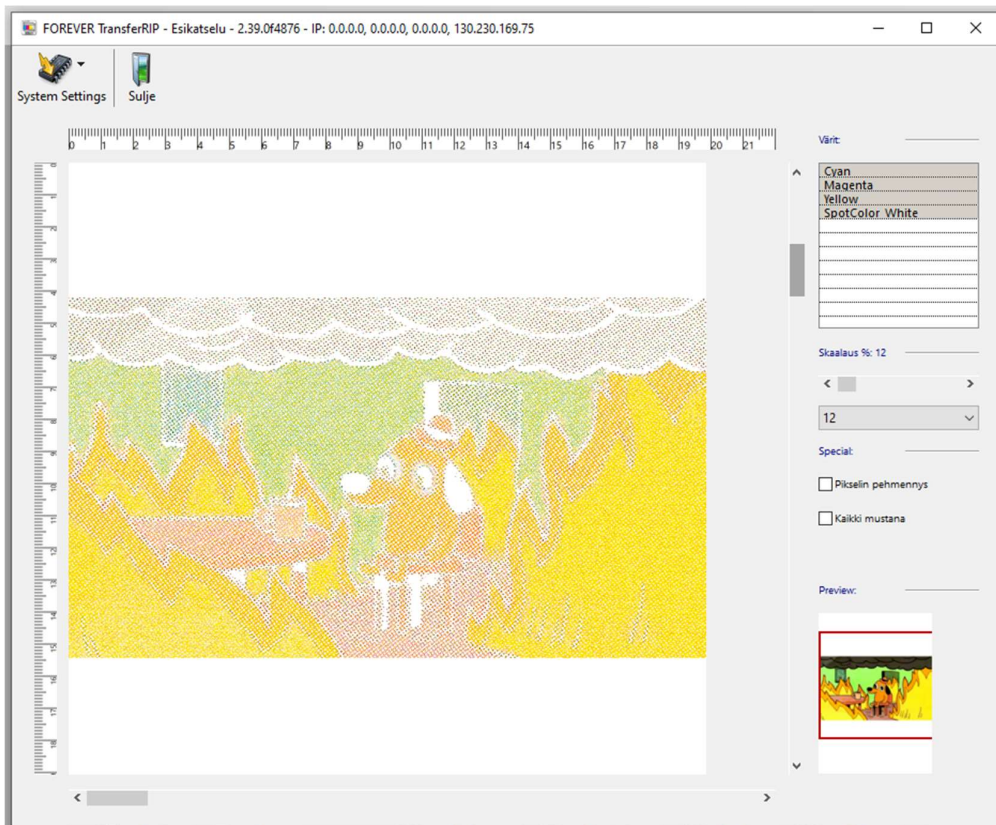


Figure 8: Final preview

In this example preview, you can see that all the black is removed because the black fabric will then provide that colour. If you are unhappy with your preview, you can always go back and change some settings. However, when you are happy with the result you can move on to printing.

## Using the printer

If you are not sure of outcome, print first on regular copy paper!

Turn on the printer from the bottom left of the machine. The staff of Fablab will provide you with the foils you need to print your image.

Open the front station of the printer for inserting the foil. Insert in portrait orientation the **matt side** of the **A-foil** facing up by carefully lifting the lid pointed in the figure 10:



Figure 9: Put the foil printing side up by carefully lifting the lid.

Press print in the printer software. The processing can take a while. The printer will notify it is ready to print your image when this screen shows up (figure 11):



Figure 10: Printer ready to print.

If the foil is on its place, you can press the **on line** button to start printing. The printed image will come out from the top.

## Pressing your print on fabric

Next you need to press your image with the heat press to get it stick to fabric. **Use the INSTA heat press**, which is also shown in the figures. First step is to turn it on.

Next set its temperature and timer. You can switch between time and temperature by pressing mode button on the left. If time/temp. is not correct you can change it by pressing set while lowering/increasing the temperature or time with the arrow keys. For **cotton** the temperatures and timers are:

- temperature to 150 °C and timer to 90 seconds  
**This temperature is for transferring B-foil to A-foil!**



Figure 11: Settings for the heat press.

### Step 1

**Read all the instructions in this step before starting the work.**

Before pressing your image to textile, you need to transfer B-foil to A-foil

**Temperature to 150 °C and timer to 90 seconds.**

Press the lever of the heat press down to preheat the lower plate. Open the heat press by sliding the upper plate into right. Be careful as the top plate is very hot at this point. Place the A-foil in the middle of the lower plate **printed side facing up**. Then place the B-foil on top of the A-foil **text side facing up**. Then cover foils with baking paper (can be found next to heat press).



**IMPORTANT!!!!  
PRESS THE  
LEVER ALL THE  
WAY DOWN!**

*Figure 12: Setting for the first press. Lock the press down with the lever.*

Turn the press back into its place and press it down with the lever. The timer will automatically start to count time and the press will start to make noise when it is ready. Open the press by pulling the lever up and moving the upper plate aside.



*Figure 13: Open press by lifting the lever and sliding the top part to right.*

When you open the press, you have to work fast. **Do not remove the foils from the lower plate!** Remove as quickly as possible B-paper from A-foil with one rolling motion. Work in **SLOW, LOW AND FLUID MOTION.** (Figure 15).

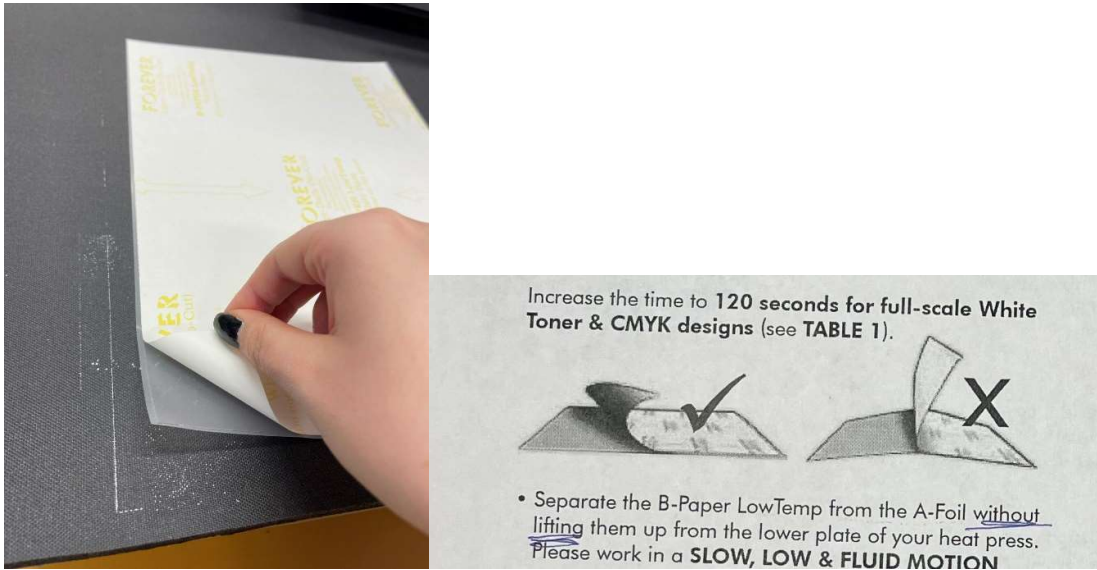


Figure 14: Remove the B-paper gently from the A-foil with one smooth motion.

When you have separated the foils, the image is ready to be pressed on the fabric. However, **cut extra foil off** from the sides so that possible white scratches won't be transferred into fabric as well.

### Step 2:

Now it is time to press the image to textile. Put your textile on the lower plate of the heat press and place baking paper between the textile and lower plate. Make sure that the fabric is clean and straighten out. Then place your print printing side down on the fabric and adjust its position to your liking. Lastly, put another piece of baking paper on top.



*Figure 15: Setting up your print for the press.*

Pressing your image to the fabric, temperature should be 150 °C and timer **30 seconds**. Set the timer as you did before.

**If you are using some other fabric material, please see appendix A and B, which have the TransferRIP own directions for pressing and will give you the correct temperature and pressing time for different materials.**

When everything is ready, turn the press back into its place and press it down with the lever. The timer will automatically start to count time and the press will start to make noise when it is ready. Open the press by pulling the liver up and moving the upper plate aside.

**Remove the A-foil after it is completely cold.**



Figure 16: When the paper is ready for removal, remove it with smooth and low motion.



Figure 17: Freshly pressed image that has ripped slightly.

After removal the image is glossy and not secured enough. To improve its washability and to get rid of the glossy look, the fabric needs to be repressed. For this, place the fabric again on the lower plate of the press and put baking paper both under and top of it. **Press for 30 seconds 150 °C.**

Open the press, take the fabric off and that is it! Enjoy your freshly customized textile.

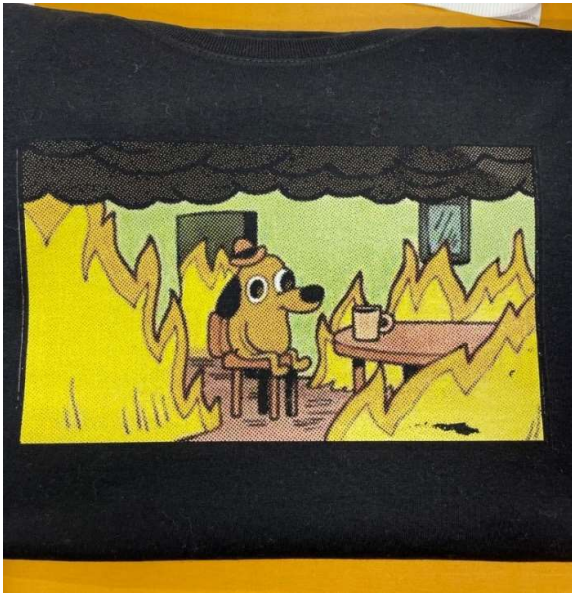


Figure 18: Ready print.



Figure 19: Comparison of the print on white and black fabric.

Here next is the TransferRIP own directions for pressing the image. First one is for light profile and the next for dark profile.



# LASER-DARK (NO-CUT)

## FOR BLACK & DARK COLORED SURFACES

# 2-PAPER-SYSTEM

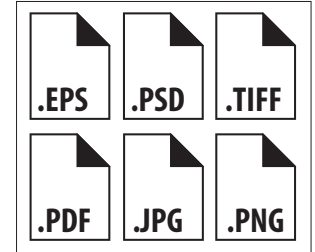
For LED-Printers With & Without White Toner



### SUPPORTED FILE FORMATS

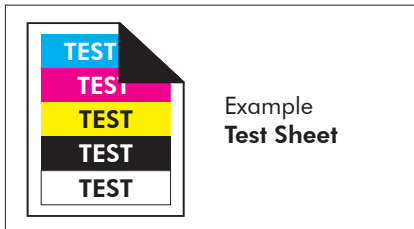
Generally, all common file formats can be used when printing with a White Toner OKI printer on to our transfer media. If you are not using a RIP software, we recommend printing from CorelDraw. CorelDraw can import most of the popular file formats. For example, you can create and save your designs in any Adobe program or create and print directly from CorelDraw. Printing detailed designs from Photoshop requires more effort and is only possible with high-end graphic computers.

### PRINTABLE FILE FORMATS:



### BEFORE YOU PRINT

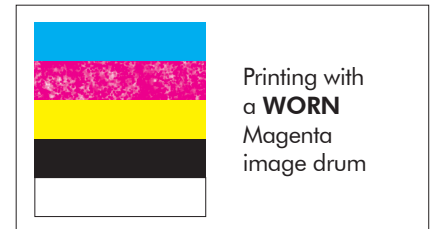
- Switch on your device.
- Go into the Calibration Menu, select **"Reg. Adjust"** and confirm to correct the color registration.
- Print a **test design**, preferably, with the primary colors Cyan, Magenta, Yellow, Black/White (if you do not have one at hand, please refer to our website at [www.forever-ots.com](http://www.forever-ots.com))
- A **worn drum** may lead to poor toner coverage. When the message **"Image drum near end of life"** appears, we recommend that you observe the print quality of the respective color closely and to have a spare drum ready just in case.



Example Test Sheet



Printing with **INTACT** image drums



Printing with a **WORN** Magenta image drum

### IMPORTANT: FOR CMYK DESIGNS WITHOUT WHITE TONER

Please note the Color Density (on the right) which is needed to achieve optimal results.



### PRINTER SETTINGS:

	OKI ES7411WT/ C711WT/PRO7411WT & OKI ES9420WT/ C920WT/PRO920WT	OKI PRO8432WT	OKI ES9541DN OKI C941DN	OKI PRO9541WT	OKI PRO 6410 NEON COLOR & OKI LED CMYK
USE THE <b>MULTI-PURPOSE TRAY</b> FOR FEEDING AND THE REAR OR SIDE TRAY FOR COLLECTING					
<b>PRINT MODE</b>	Transparency	UserType 1	Transparency	UserType 1 / FOREVLDLT	Transparency
<b>PAPER FEED</b>	Multi-Purpose-Tray	Multi-Purpose-Tray	Multi-Purpose-Tray	Multi-Purpose-Tray	Multi-Purpose-Tray
<b>COLOR SETTINGS:</b> CYAN MAGENTA YELLOW WHITE BLACK	0 +2 +1 -3 -	COLOR PAPER SETTING: +2 0 0 0 0 -	*Recommended only with a RIP software	0 0 0 - 0	0 0 0 0 0

**\*ATTENTION! When using a RIP software, the printer must be in factory settings.**

**IMPORTANT: FOR ES7411WT / C711WT / PRO7411WT** - If you have used a different print mode other than "transparent foil", turn off your printer completely for at least 20 Minutes before printing on A-Foil.



### RASTERIZING PHOTOS & GRAPHICS FOR A SOFT TOUCH

- *Why do we recommend rasterization?*

**Reason:** Even photos or designs with a background can be transferred with Laser-Dark (No-Cut). In this case, we recommend to rasterize the design to achieve a soft touch on the fabric. With the help of a RIP software, you can rasterize your design with a few clicks and benefit from many other features.

A rasterized design on the fabric feels even softer than a screen print and has also extremely good wash-fastness. Since the surface is limited to the raster points, a rasterized print has much better washability than a print with larger or full-scale areas.



### TEXTILE SELECTION

- *Always select a less stretchy fabric when working with textiles (no spandex or lycra).*

**Reason:** This helps to prevent cracking when pulling or stretching the fabric apart.



### TRANSFER PRESS

- *If existing, remove the Teflon sheet from the upper and lower plates of your heat press.*

**Reason:** Teflon absorbs too much heat and leads to faulty and inconsistent results.

- *Make sure that your silicone pad is faultless and is glued to the lower plate.*

**Reason:** If the upper and the lower plate of the heat presses are not touching each other in a pure vertical movement, but also partially in a horizontal (slide) movement, this may lead to an incomplete transfer of the B-Coating to the A-Foil, especially by large, full-scale designs or pictures. This might happen due to a mechanical fault, where the closing device is worn out, loosened or defect.

- *Make sure that the press has reached the set temperature on the heat plate. Leave your Swing-Away press closed until the lower metal plate is hot to the touch.*

**Reason:** Only with sufficient heat on both plates, can you get consistent results. We advise that you keep your Heat Press in the closed position when not in use. This keeps the Lower Plate hot and ready for your next application.

- *The bottom silicone pad of your heat press should not be too soft.*

**Reason:** Extremely Soft silicone pads might lead to problems in the separation of A & B Media.

- *Always place the transfer media in the middle of your heat press.*

**Reason:** Some heat presses do not have uniform heat and pressure distribution on the edges. The further you go to the edges, the more likely processing errors will occur, due to this lack of pressure on and around these areas.



### SEPARATION OF THE A & B MEDIA

- *It is necessary to leave the A & B Media on the press during the separation.*

**Reason:** Otherwise, cold air will flow under the media and will cause the transfer to cool down rapidly. If the media cools down too fast, parts of the design may transfer from your A-Foil to the B-Paper which is not desired.

- *Do not separate the A & B Media too fast.*

**Reason:** A too fast separation may lead to torn-out areas on round edges or other critical areas in your design.

- *Separate the A & B Media in a flat angle with constant motion.*

**Reason:** The media remains flat on the press and the separation works perfectly.

- **Please note following information during the separation of print-outs from the OKI ES9541DN/C941DN/PRO9541WT:**

The CMYK colors consists of polymer toner. This kind of toner stays longer hot than crushed toner which is used in the other OKI White Toner Printers. Therefore it is important to rub strongly with a piece of textile for 3-5 seconds all over the B-Paper to remove some residual heat, before starting the separation of A and B.



### TRANSFER TO THE SUBSTRATE

- *Tape all four corners of the transfer (A-Foil) with a heat resistant tape.*

**Reason:** While opening the press or removing the textile from your press, it may happen that the corners of the A-Foil lift up from the fabric. This leads to undesired hot-peeling and to an incomplete and faulty transfer.



### AFTER THE PRESS PROCESS

- *Peel the A-Foil when absolutely cold.*

**Reason:** If you remove the A-Foil while still warm, it will lead to an incomplete and faulty transfer.



### WASHING

- **Up to 40°C/104°F (cold wash cycle).** Do not use fabric softener or liquid detergent. **Do not tumble dry.**



### STORAGE

- Please store the unprinted media away from dust, moisture and heat.
- The printed A-Foils can often be stored for several months, when not scratched or bent.
- The married transfers can also be stored for longer, when protected from dust, moisture, heat, scratches and bending.
- We recommend that you store the media in airtight sealable bags and in a box protected from sunlight (e.g. original packaging).



### 1. PRINT

- Print your design in **Mirror Image Mode** onto the **Matt Side** of the **A-Foil**.



### 2. HEAT PRESS

- Place the **A-Foil** in the middle of the lower plate (Printed side **facing up**).
- Place the **B-Paper** on top of the A-Foil (coated side **facing down**).
- Cover with a sheet of **Silicone or Baking Paper**.

The **B-Paper** is cut slightly smaller than the **A-Foil**. This prevents your transfer press from becoming dirty.

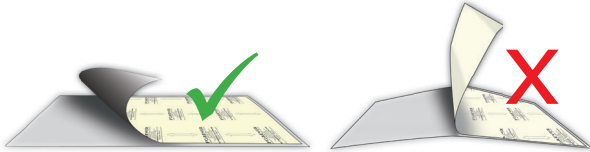
**NOTE:** It is possible that on unprinted areas some kind of white spots are appearing after pressing it with the B-Paper. To avoid that, put 5 sheets of normal copy paper onto the B-Paper.



### 3. TRANSFER B-PAPER TO A-FOIL

- Press the A-Foil & B-Paper Lite together between **135-145°C (275-293°F)** for **45-60 seconds** with **2-3 bar (29-43.5 psi) medium pressure**.

Increase the time to **120 seconds** for full-scale **White Toner & CMYK designs** (see **TABLE 1**).



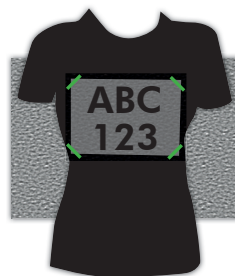
- Separate the B-Paper from the A-Foil without lifting them up from the lower plate of your heat press. Please work in a **SLOW, LOW & FLUID MOTION**.

- Cut around your design to remove the coating frame caused by the bleeding of the B-Paper.



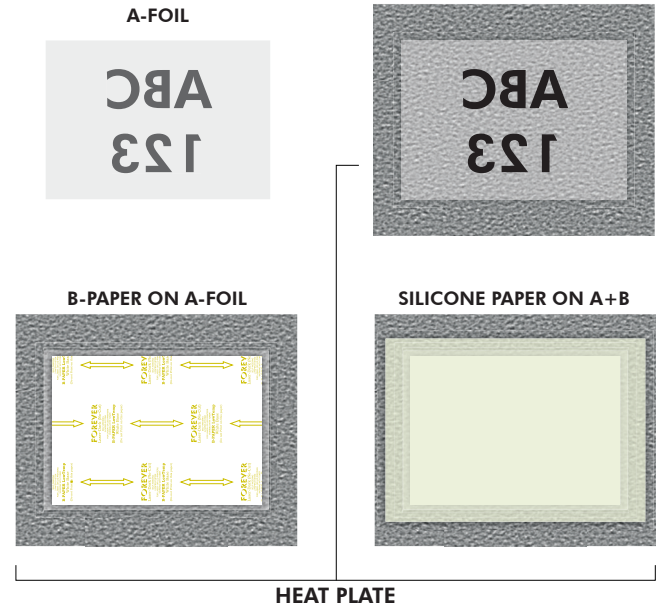
### 4. APPLICATION TO TEXTILES & OTHER SUBSTRATES

- Place the textile or another substrate on the lower plate of the heat press.
- Fix the transfer** by taping the corners of the A-Foil with **Heat Resistant Tape**.
- Press using the parameters shown in **TABLE 2**.
- Remove the A-Foil after it is **completely cold**.



### 5. FIXING

- It is important to **repress** the transfer properly to **soften the touch** and **increase the washability**.
- For a **Matte Finish** use our "**FOREVER Matte Finish Economy**" and press for 30 seconds with temperature and pressure as indicated in **TABLE 2**.
- For a **Glossy Finish** use our "**FOREVER Glossy Finish**" Paper and press for 30 seconds with temperature and pressure as indicated in **TABLE 2**.



Printer	Temperature (°C/°F)	Time	Pressure
OKI WHITE TONER	135 - 145°C 275 - 293°F	90 - 120 sec.	2 - 3 Bar 29 - 43.5 PSI
CMYK	135 - 145°C 275 - 293°F	120 sec.	2 - 3 Bar 29 - 43.5 PSI

**IMPORTANT:** Different CMYK printer manufacturers use different types of toner. The settings above are only reference values! Finding out the optimal temperature and time requires experimentation.

Substrate	Temperature (°C/°F)	Time	Pressure
COTTON	135 - 145°C 275 - 293°F	30 sec.	2 - 3 Bar 29 - 43.5 PSI
POLYESTER	120 - 130°C 248 - 266°F	30 sec.	2 - 3 Bar 29 - 43.5 PSI
POLYPROPYLEN	105°C 220°F	30 sec.	2 - 3 Bar 29 - 43.5 PSI
BLEND FABRIC	120 - 130°C 248 - 266°F	30 sec.	2 - 3 Bar 29 - 43.5 PSI
PAPER/CARTON	100°C 210°F	15 sec.	1 - 2 Bar 14.5 - 29 PSI
BOOK COVERS	110 - 120°C 230 - 250°F	15 sec.	1 - 2 Bar 14.5 - 29 PSI
WOOD	130°C 266°F	30 sec.	2 - 3 Bar 29 - 43.5 PSI
NYLON*	140°C 284°F	30 sec.	2 - 3 Bar 29 - 43.5 PSI





\* Pre-press the material for 30 seconds!

## FINISHING WITH HOT STAMPING FOILS

ONLY FOR LASER-DARK (NO-CUT) A-FOIL & OKI WHITE TONER PRINTERS



### TRANSFER SETTINGS (TABLE 3):

	 °C / °F	 L	
B-PAPER TO A-FOIL	135°C - 145°C 275°F - 293°F	90 - 120 sec.	2-3 Bar / 29-43.5 psi / <b>medium pressure</b>
TRANSFER TO TEXTILE	135°C - 145°C 275°F - 293°F	5 - 10 sec.	2 Bar / 29 psi / <b>low pressure</b>
HOT STAMPING FOIL	135°C - 145°C 275°F - 293°F	50 - 55 sec.	5 Bar / 72.5 psi / <b>high pressure</b>



### HSF FINISHING WITH HOT STAMPING FOILS:

#### PREPARATION OF THE TRANSFER:

- **Print** your design using **CMYK BLACK** (4-Color-Black\*) & **Press** with B-Paper (see table 3).
- **Separate** the B-Paper from the A-Foil while **HOT**, in a **Slow, Low & Fluid Motion**.
- **Cut** around your transfer to remove the coating frame.

#### TRANSFER TO TEXTILE

- **Place** the transfer on your textile & **press** together (see table 3).
- **Wait** until the **textile has completely cooled down**, BEFORE removing the A-Foil!

#### APPLYING THE HOT STAMPING FOIL

- **Place** the desired sheet of Hot Stamping Foil on your design, cover it with a sheet of **Matt Finish Economy** & **press** together (see table 3).
- **Wait** until the Hot Stamping Foil has **completely cooled down**, BEFORE removing.
- Wash resistant up to 40°C (Cold Wash Cycle).

**TIP:** Use a textile to rub over the finished design to remove left-over HSF particles!

\* 4-Color-Black consists of 100% Cyan, 100% Magenta, 100% Yellow & 100% Black!

#### IMPORTANT INSTRUCTIONS

- We recommend using Swing-Away and Pneumatic Presses! It is important to use heavy pressure for the best results!
- Before commencing mass production, we strongly advise conducting print and wash tests on all materials.
- Double-Sided Printing on Textiles:
  - When printing designs on both the front and back of t-shirts, ensure that the garment is positioned over the heating plate of your transfer press. This ensures that only one side of the textile is exposed to heat, preventing any unintended alteration of the initially applied design.

### Can't decide which color to choose?

Order one of our HSF Swatchbooks, complete with extra large examples of all the available colors!



**Roll Size:**  
30 cm x 12 m

**Washability:**  
Up to 40°C/104°F/Cold Wash Cycle

**TIP:**  
Do not use White as the base printing color. We recommend printing Black to achieve the best possible adhesion of the Hot Stamping Foil.