

# 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 maximum image size is A3 and the easiest way to prepare your image is to do a layout in vector graphics app (Adobe Illustrator, Inkscape...) for that desired A4 or A3 size. 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 PDF and EPS).

**Hint:** You can already put your 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.

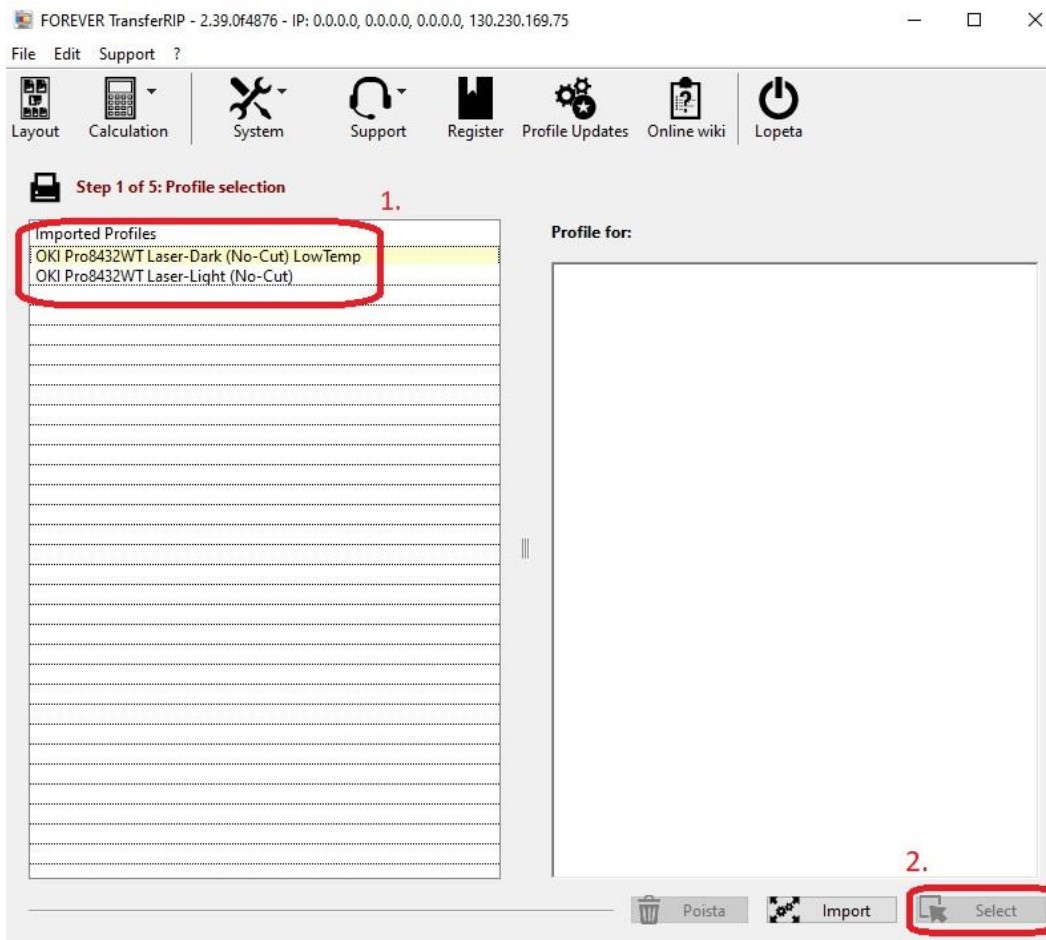


Figure 1: Profile selection (Step 1).

### 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.

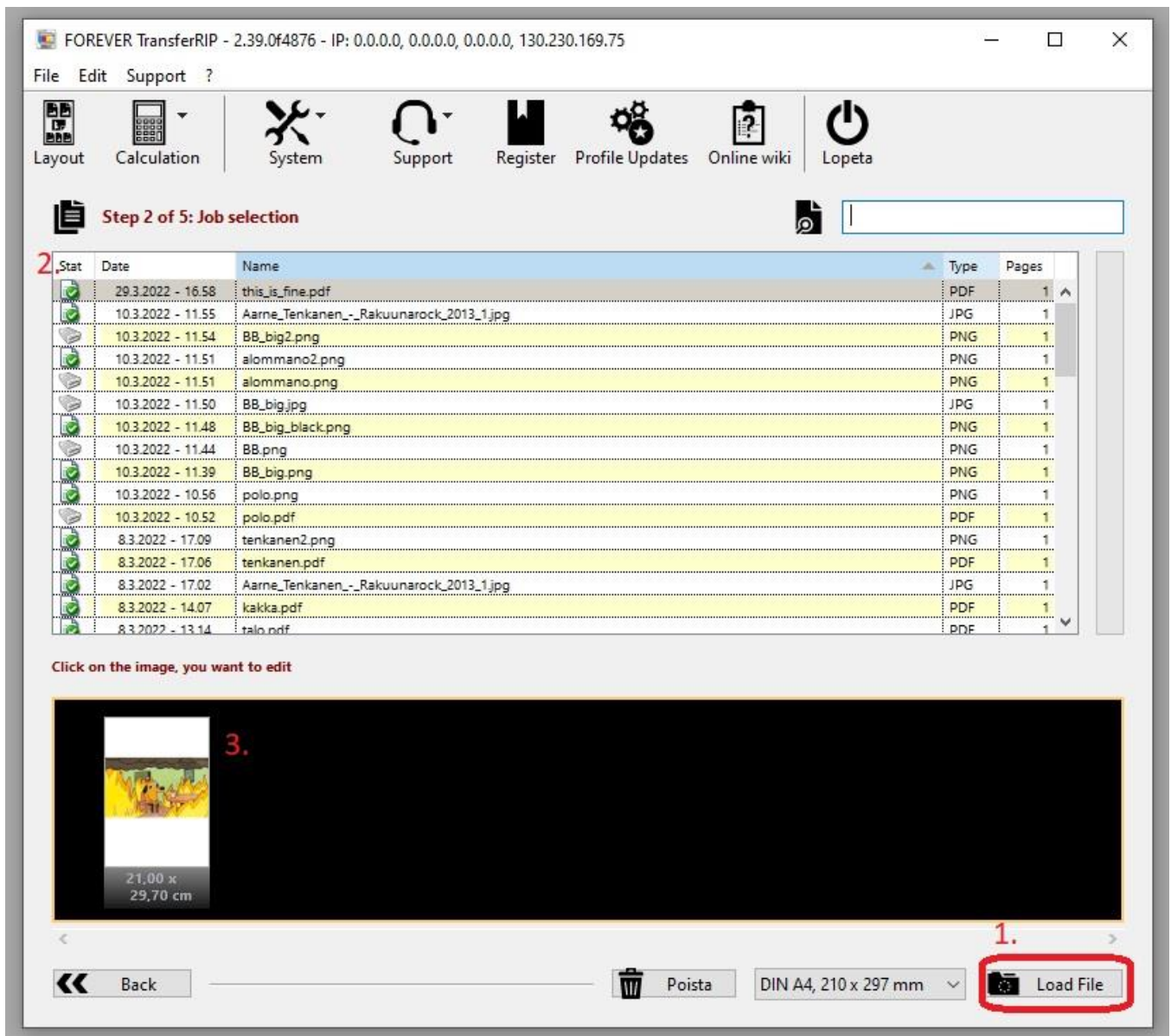


Figure 2: Loading your image.

### Step 3:

Now it is time to edit the image.

First, change the saturation of the image to 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.

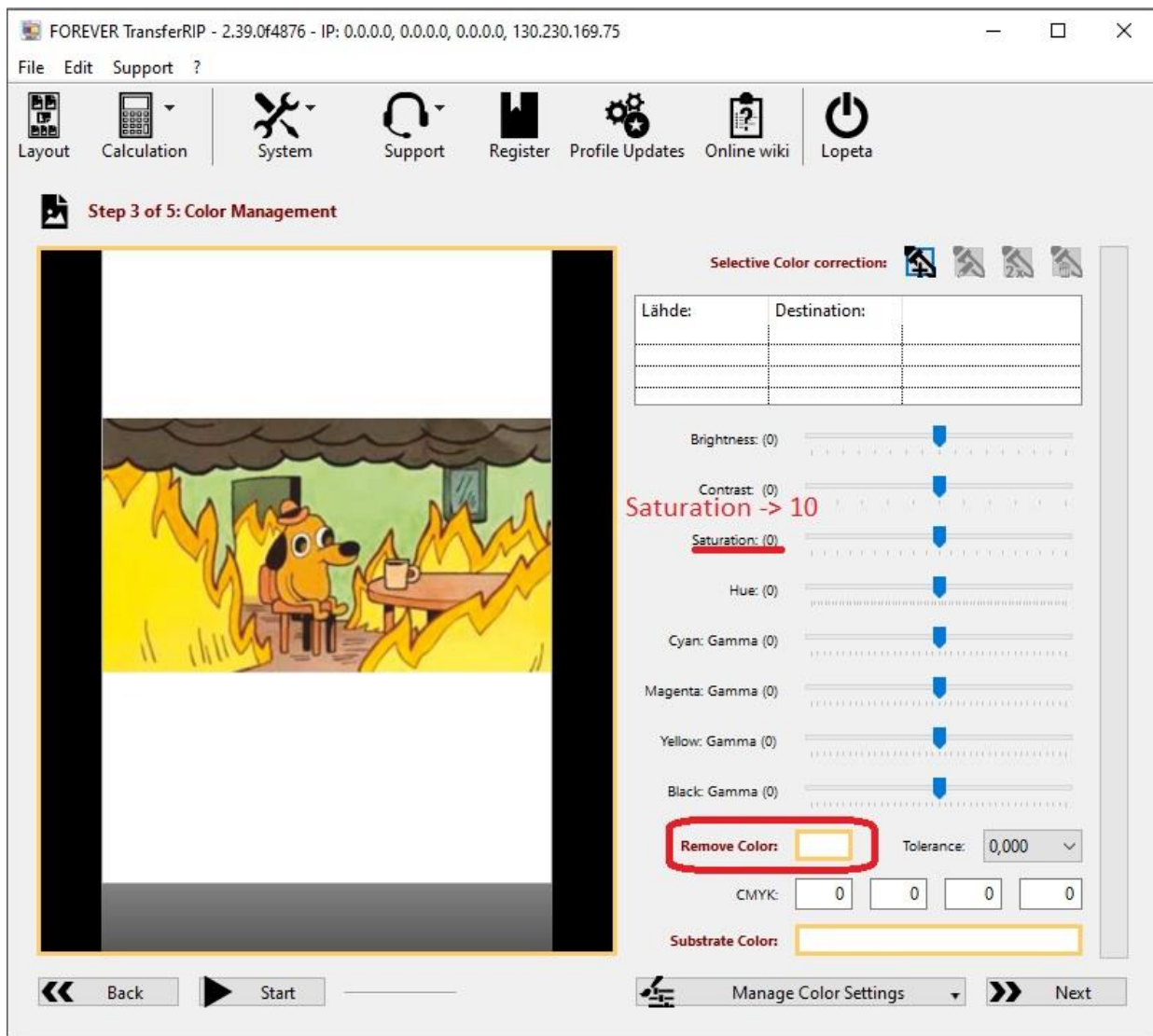


Figure 3: Editing the colours of the image.

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).

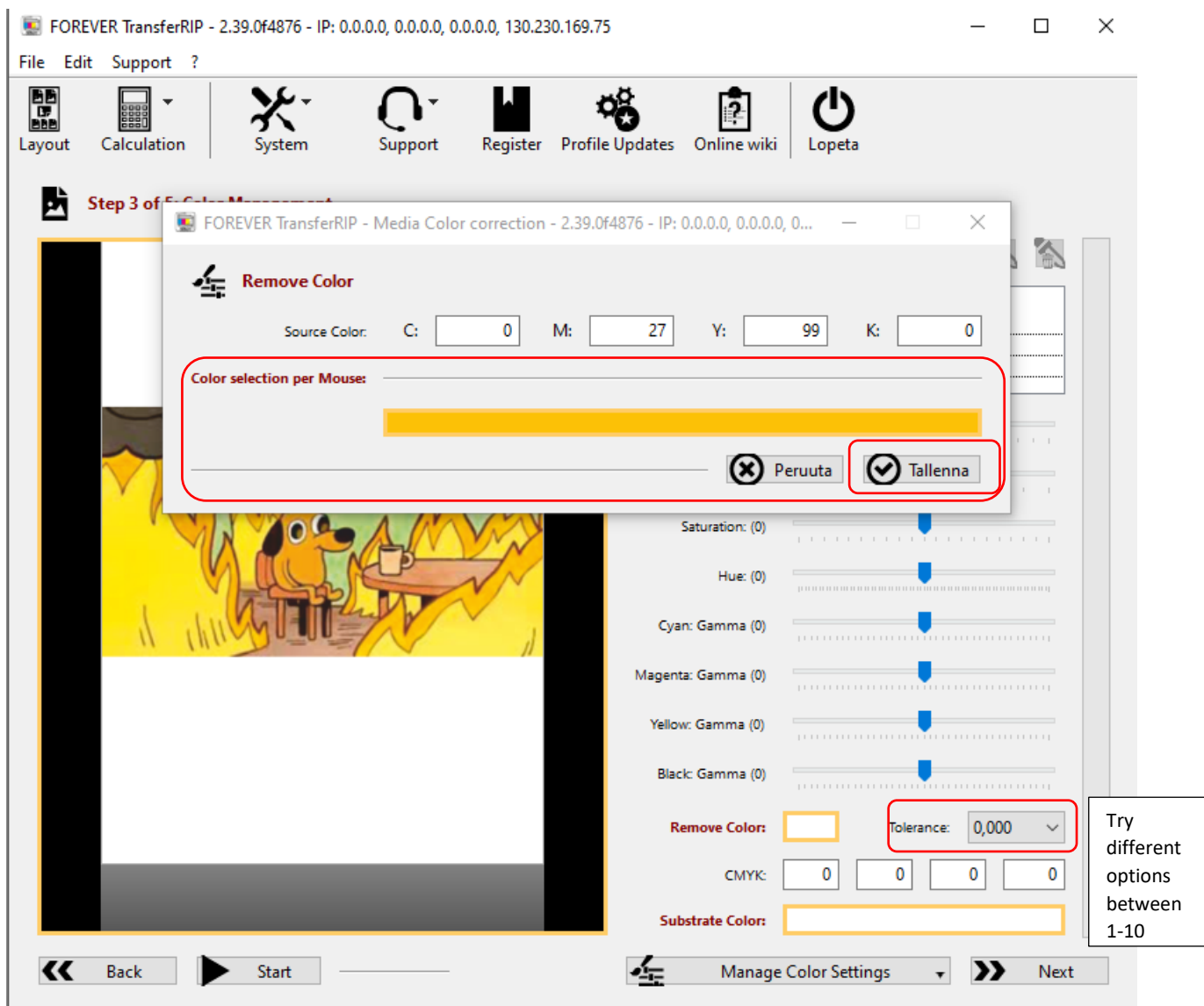


Figure 4: Removing colour from the image

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).

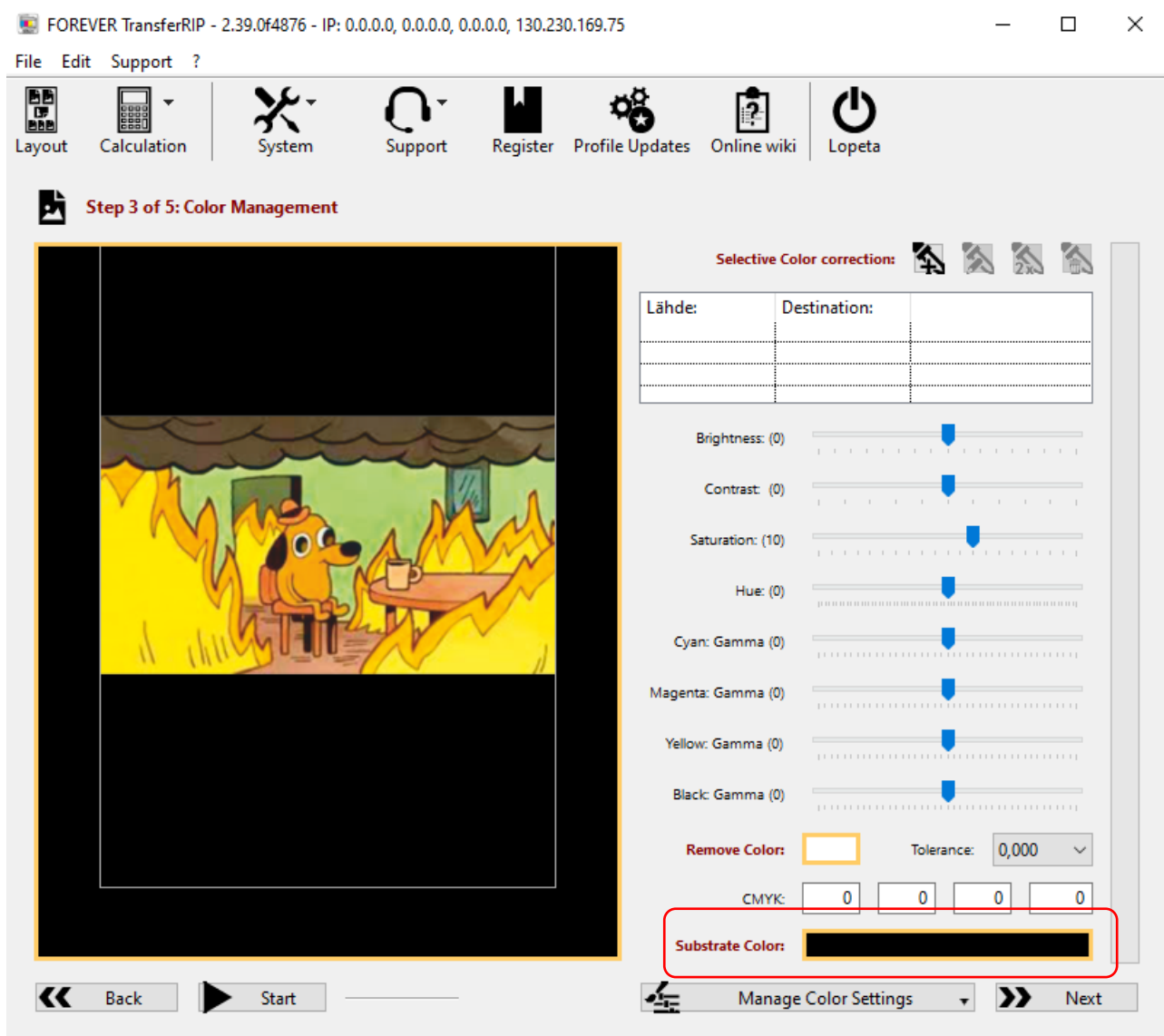


Figure 5: Changing the substrate colour

When you are happy with the results press Next.

## Step 4:

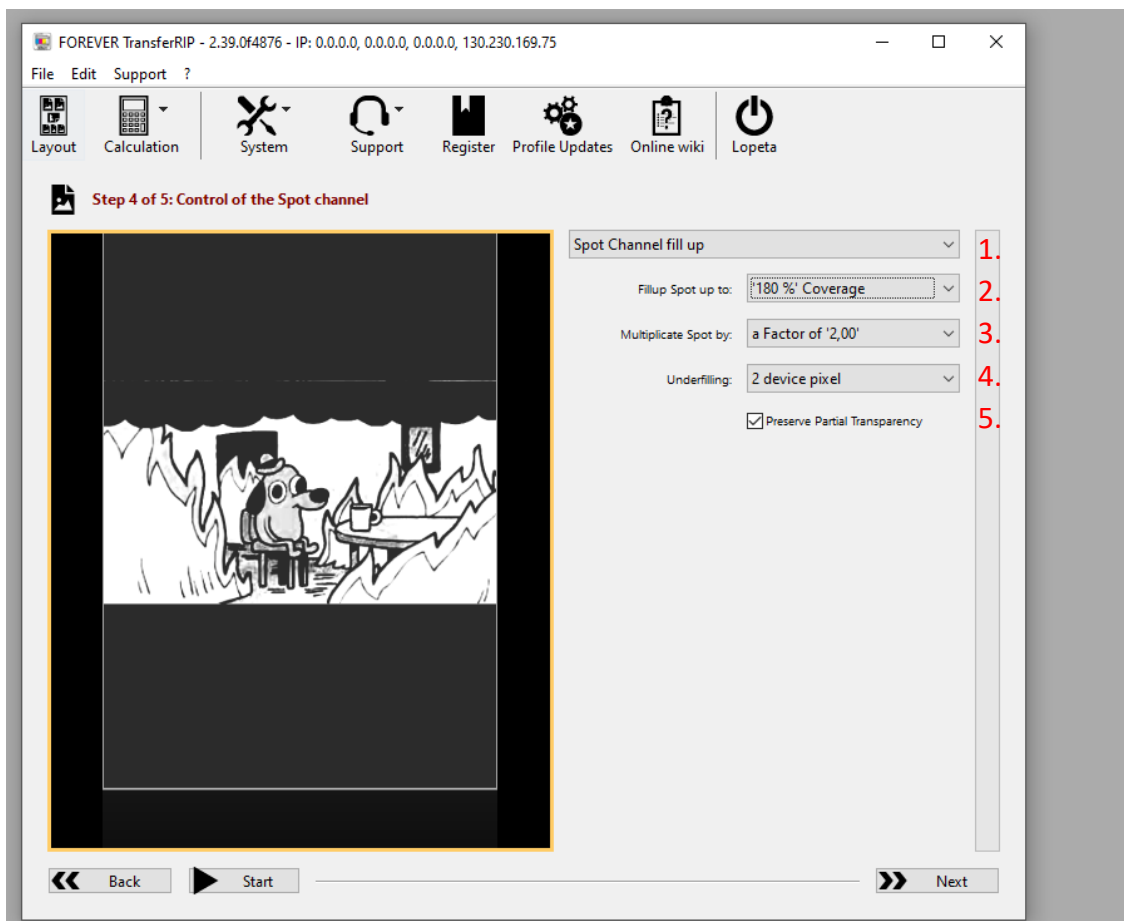


Figure 6: Control of the Spot channel

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:

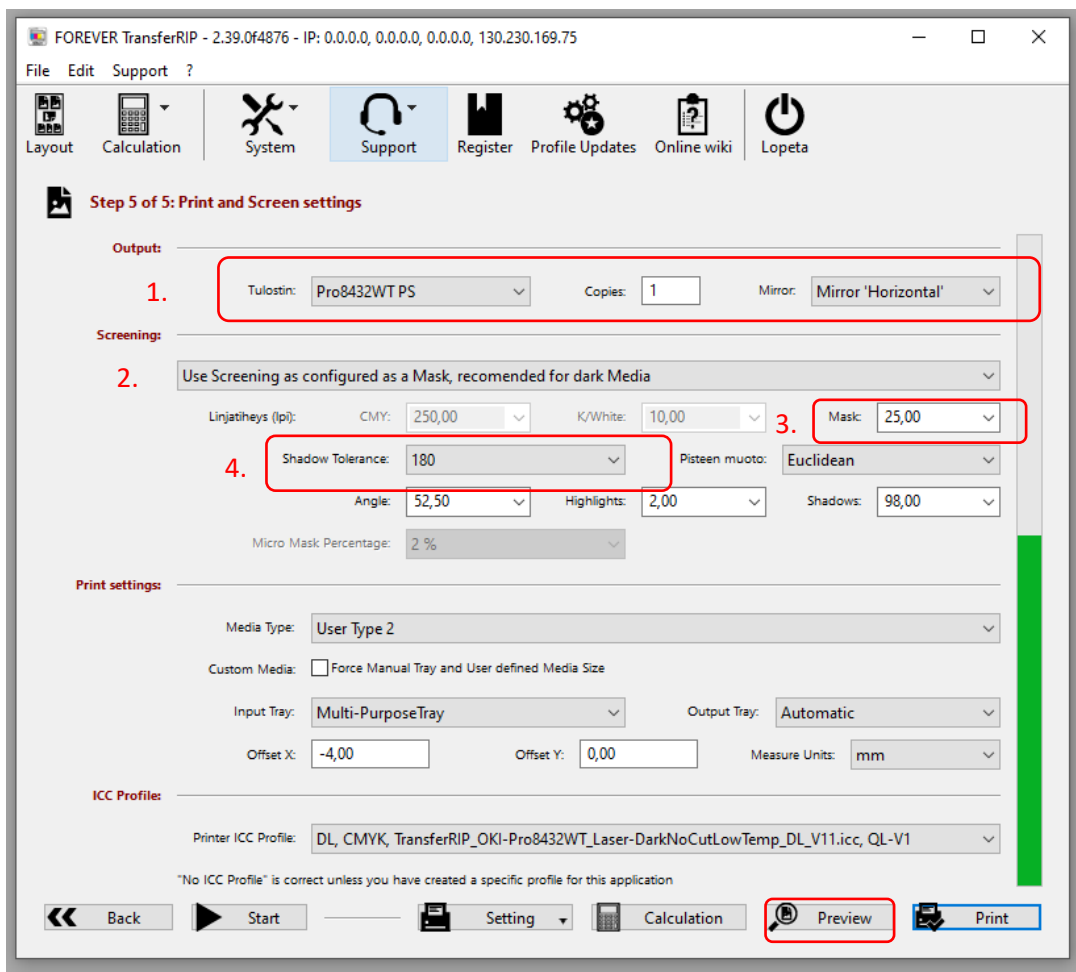


Figure 7: Printing settings

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).
3. Next choose mask. It means rasteration 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. Usually, 25 is suitable option.
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.

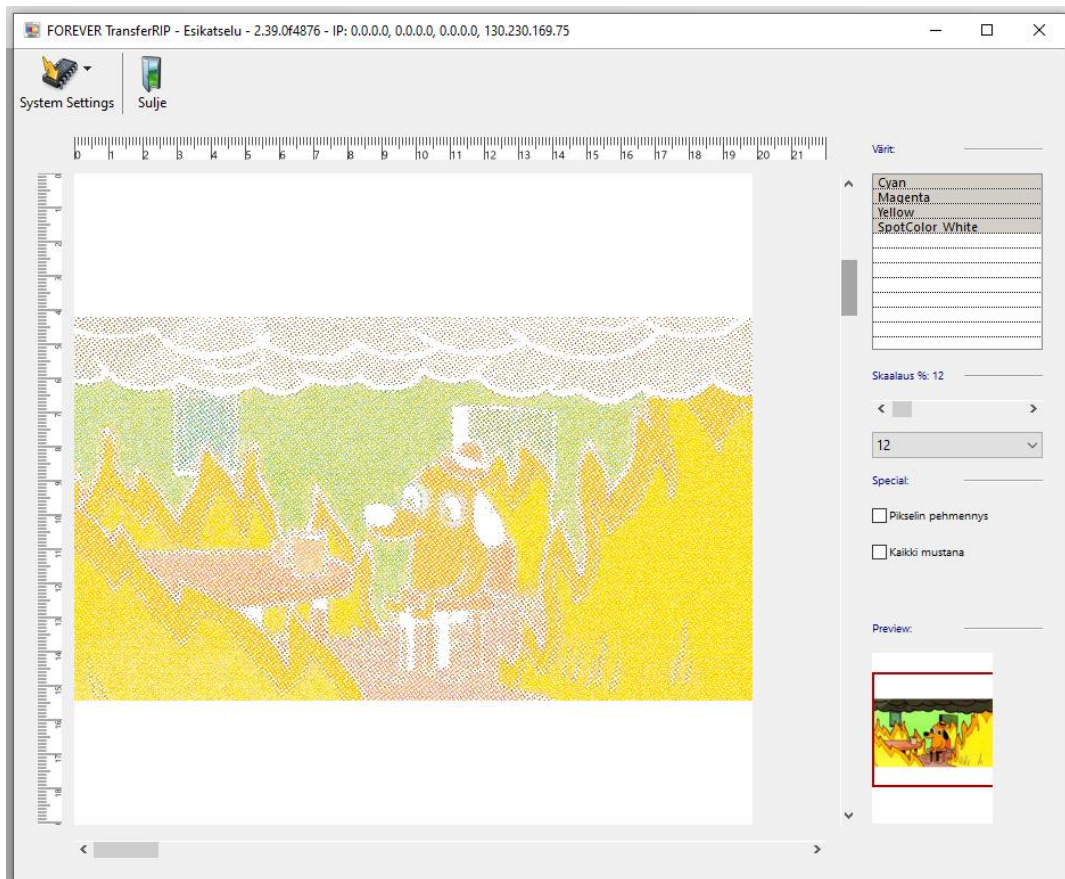


Figure 8: Final preview

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

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. For white fabrics there is only one foil but for coloured/black fabrics you need two: A- and B-foil. For printing phase use A-foil.

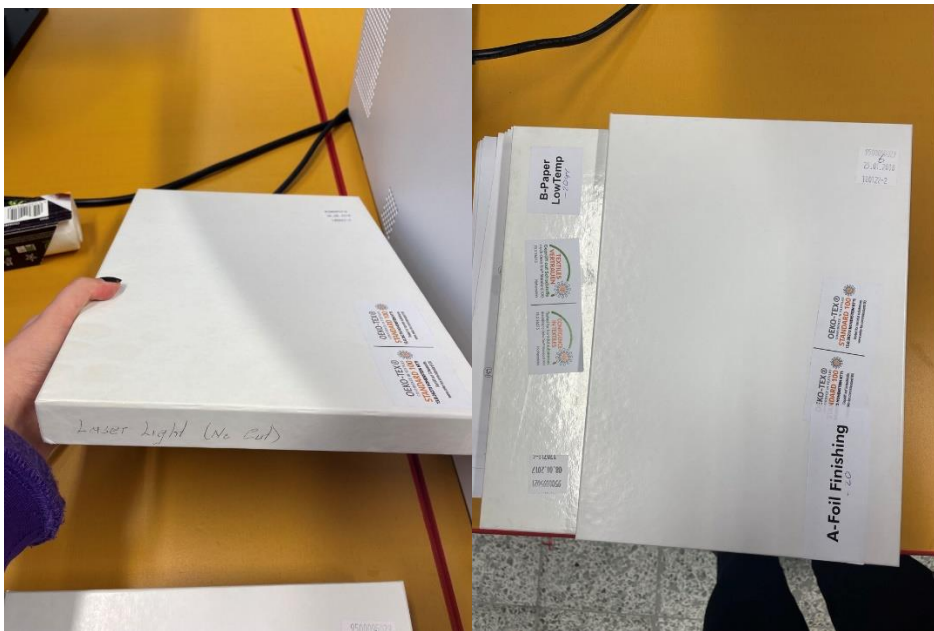


Figure 9: On the left: Foil for white fabric. On the right: Foils for black/coloured fabrics.

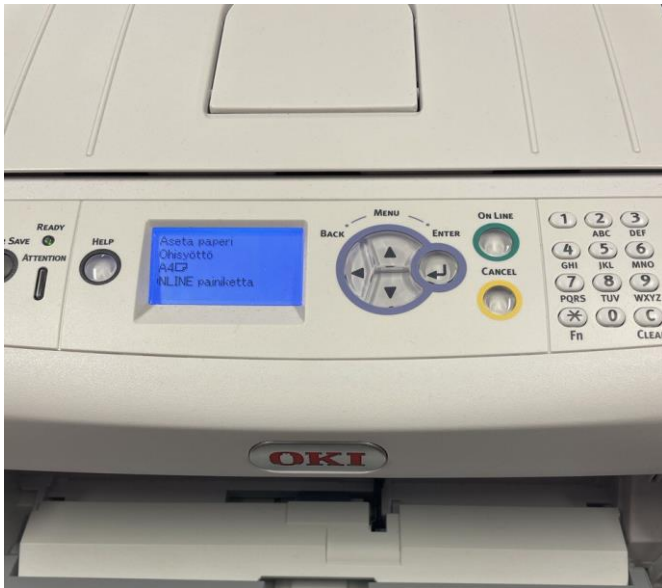
Open the front station of the printer for inserting the foil. Insert the foil **printing side up** by carefully lifting the lid pointed in the figure 10:

- For white fabric: The side with no text facing up.
- For coloured/black: The **matt side** of the **A-foil** facing up.



Figure 10: 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 11: 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:

- For coloured/black fabrics: temperature to 150 °C and timer to 90 seconds.
- For white fabrics: temperature to 190 °C and timer to 30 seconds.

**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.**



Figure 12: Settings for the heat press.

If you have a coloured/black textile the pressing part includes additional step to attach A- and B-foil together. If you have a white textile, you can already move on to step 2.

### Step 1 (Only for coloured/black fabrics):

**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 to get white color in your print.

Open your 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).



Figure 13: 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. When this happens move the small certifier (Figure 14) and open the press by pulling the lever up and moving the upper plate aside.



Figure 14: On the left: Remove the small certifier to this position to open the press. 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 but instead as quickly as possible remove the B-paper from the A-foil with one rolling motion. Work in **SLOW, LOW AND FLUID MOTION**. (Figure 15).

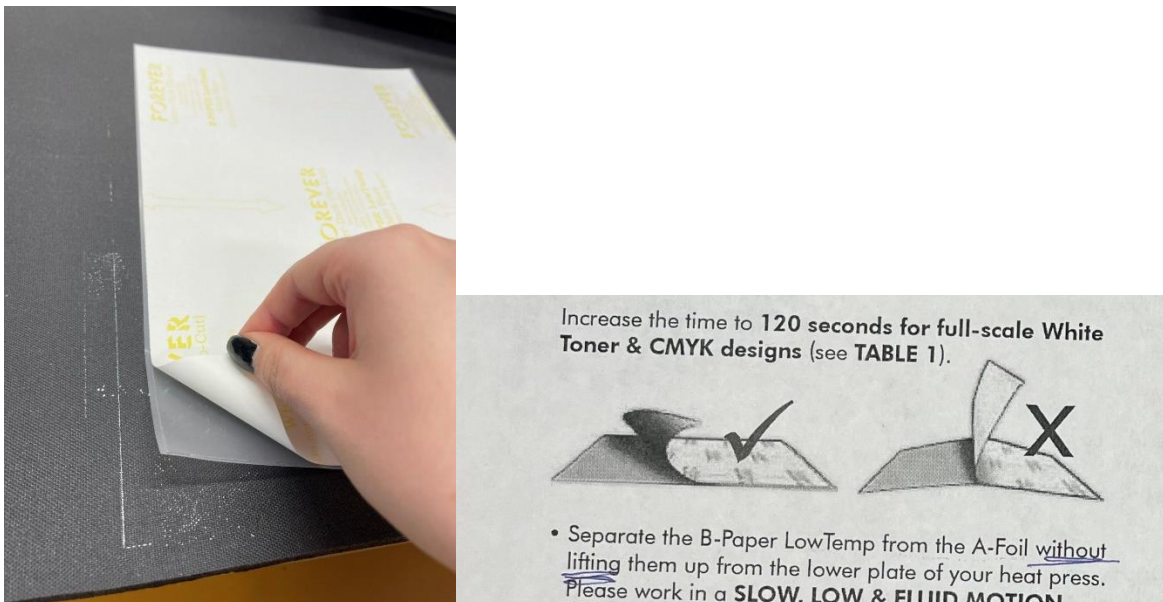


Figure 15: Remove the B-paper gently from the A-foil with one smooth motion.

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 (to all):

Now it is time to press the image to textile. Open your heat press by sliding the upper plate into right. Be careful as the top plate is very hot. 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 16: Setting up your print for the press.*

- For coloured/black **cotton** fabrics the temperature should be 150 °C and timer **30 seconds**. Set the timer as you did before.
- For white **cotton** fabrics the temperature was 190 °C and timer 30 seconds.

Again, **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. When this happens move the small certifier (Figure 14) and open the press by pulling the liver up and moving the upper plate aside.

Remove your fabric carefully from the press and set it down to table next to it. Start rubbing the transfer paper with enough pressure and work with round motions. Go thoroughly the whole paper and rub 5 to 10 seconds (figure 17). **Use the mitten to protect your hand.**



*Figure 17: Rub the print thoroughly with a mitten. When the paper is ready for removal, remove it with smooth and low motion.*

If you have a white fabric, you can right after rubbing, gently remove the paper with slow, low, and fluid motion described in figure 17. **However, if you have coloured or black fabric do not remove the foil until the whole thing is completely cold!**

Do the removing part extremely carefully, because as you can see in figure 18, you can easily rip your image.





*Figure 18: 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.**

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



*Figure 19: Ready print.*





*Figure 20: 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.

## Transfer Instructions for printing: **FOREVER Laser-Light (No-Cut)** on LIGHT COLORED TEXTILES

### 1-PAPER-SYSTEM

For LED-Printers With White Toner



#### PRINT SETTINGS: VECTORS & PHOTOS (ONLY for OKI Printers working with White Toner)

- **Image Mode:** Mirror Image, CMYK Mode (not RGB), Color Print, White: On
- **OKI Pro8432WT:**
  - Paper Settings: **USER TYPE 2**, Multi-Purpose Tray
  - Color Paper Setting: **+2**
- **ALL OTHER OKI White Toner Printers:**
  - Paper Settings: Label 1, Multi-Purpose Tray
  - Color Density Settings: **W=-0, C=0, M=0, Y=0**
  - **TransferRIP** Software Color Density settings: **W=0, C=0, M=0, Y=0**



#### TRANSFER SETTINGS:

COTTON	SWING AWAY PRESS	SANDWICH PRESS
TRANSFER	180-200°C (356-392°F), 15 sec. <b>2-3 bar (30-43 psi) MEDIUM Pressure</b>	180-200°C (356-392°F), 30 sec. <b>HIGH Pressure</b>
FIXING	180-200°C (356-392°F), 30 sec. <b>5 bar (72 psi) HIGH Pressure</b>	180-200°C (356-392°F), 30 sec. <b>HIGH Pressure</b>



#### APPLICATION SETTINGS: SWING AWAY PRESS

- Place the Transfer on your textile.
- Press between **180-200°C (356-392°F) for 15 seconds with 2-3 bar (30-43 psi) MEDIUM Pressure.**
- Rub the transfer with a piece of cloth, then wait between 5-10 seconds before removing the backing paper.
- Cover the transfer with a sheet of **Silicone or Baking paper.**
- For perfect Washability: Press between **180-200°C (356-392°F) for 30 seconds with 5 bar (72 psi) HIGH Pressure.**



#### APPLICATION SETTINGS: SANDWICH PRESS

- Place the Transfer on your textile.
- Press between **180-200°C (356-392°F) for 30 seconds with 5 bar (72 psi) HIGH Pressure.**
- Rub the transfer with a piece of cloth for 5-10 seconds, then remove your transfer from the heat press and start peeling the backing paper immediately.
- Cover the transfer with a sheet of **Silicone or Baking paper.**
- For perfect Washability: Press between **180-200°C (356-392°F) for 40 seconds with 5 bar (72 psi) HIGH Pressure.**



#### TIPS & TRICKS:

- **Place the textile completely flat onto the lower plate.** (Please make sure the collar, creases or bumps are NOT on the lower plate. If this is not possible, please slide your textile over the lower plate).
- If you see a **light background around your transfer** after the transfer process, **reduce the pressure slightly** to minimize or to eliminate the background completely. **If the toner is not transferred completely, increase the pressure slightly** to achieve a complete transfer.
- Because there are so many different heat presses on the market and even heat presses of the same brand can differentiate in the actual heat and pressure applied to the garment. **It is essential that you setup your own transfer application parameters on your heat press.** Depending on the heat and the pressure of your heat press, the transfer time can be between 10 to 15 seconds more.
- **For optimal washability** please keep the pressure, the temperature or the time of the fixing application recommended by FOREVER.
- The **Clam-shot presses usually have less pressure**, that's why it is necessary to increase the press time.



#### WASHING:

- Upto 30°C (86°F) on a warm wash cycle.

## Transfer Instructions for printing: **FOREVER Laser-Light (No-Cut)** on DARK PAPER & CARDBOARD

### 1-PAPER-SYSTEM

For LED-Printers With White Toner



#### **PRINT SETTINGS:** VECTORS & PHOTOS (ONLY for OKI Printers working with White Toner)

- **Image Mode:** Mirror Image, CMYK Mode (not RGB), Color Print, White: On
- **OKI Pro8432WT:**
  - Paper Settings: **USER TYPE 2**, Multi-Purpose Tray
  - Color Paper Setting: **+2**
- **ALL OTHER OKI White Toner Printers:**
  - Paper Settings: Label 1, Multi-Purpose Tray
  - Color Density Settings: **W=0, C=0, M=0, Y=0**
  - **TransferRIP** Software Color Density settings: **W=0, C=0, M=0, Y=0**



#### **TRANSFER SETTINGS:**

	<b>AUTOMATIC HEAT PRESS</b>	<b>MANUAL HEAT PRESS</b>
TRANSFER	180-200°C (356-392°F), 15 sec. <b>2-3 bar (30-43 psi) MEDIUM Pressure</b>	180-200°C (356-392°F), 30 sec. <b>MEDIUM Pressure</b>



#### **APPLICATION SETTINGS:**

- Place the transfer on to a piece of cardboard or paper.
- Press with **180°C (356°F) for 15 seconds with 2-3 bar (30-43 psi) MEDIUM pressure.**
- **Separate the paper after 5-10 seconds.**

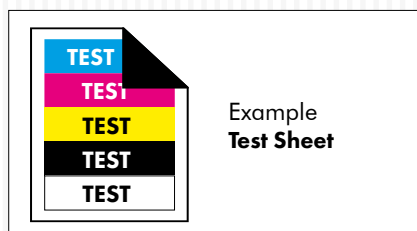
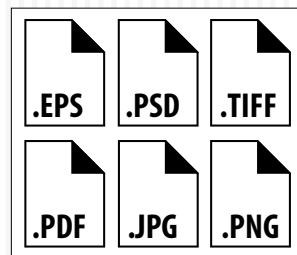
## FOREVER Laser-Dark (No-Cut ) LowTemp for BLACK & DARK COLOURED TEXTILES



### 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 **Transfer RIP**, 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.

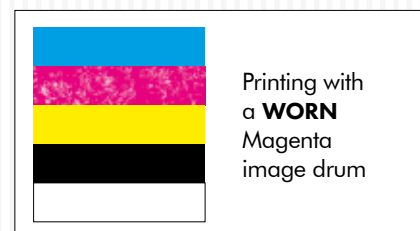
### PRINTABLE FILE FORMATS:



Example  
Test Sheet



Printing with  
**INTACT**  
image drums



Printing with  
a **WORN**  
Magenta  
image drum



### 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 colours 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 colour closely and to have a spare drum ready just in case.

### IMPORTANT:






#### FOR CMYK DESIGNS WITHOUT WHITE TONER

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

100%
100%
100%
100%



### PRINTER SETTINGS:

	OKI ES7411WT/ C711WT/PRO7411WT & OKI ES9420WT/ C920WT/PRO920WT	OKI PRO8432WT  WITH +2 COLOR PAPER SYSTEM	OKI ES9541DN OKI C941DN	OKI LED CMYK	OKI PRO 6410 NEON COLOUR
USE THE <b>MULTI-PURPOSE TRAY</b> FOR FEEDING AND THE REAR OR SIDE TRAY FOR COLLECTING					
<b>PRINT MODE</b>	Transparency	<b>UserType 1</b>	Transparency	Transparency	Transparency
<b>PAPER FEED</b>	Multi-Purpose-Tray	Multi-Purpose-Tray	Multi-Purpose-Tray	Multi-Purpose-Tray	Multi-Purpose-Tray
<b>COLOUR SETTINGS:</b> CYAN MAGENTA YELLOW WHITE BLACK	0 +2 +1 -3 -	0 0 0 0 -	Use only with <b>FOREVER Transfer RIP5C</b>	0 0 0 - 0	0 0 0 0 0

**IMPORTANT! If you use Transfer RIP make sure that the printer is set to the 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.





### 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 LowTemp** on top of the A-Foil (coated side **facing down**).
- Cover with a sheet of **Silicone or Baking Paper**.

The **B-Paper LowTemp** can be 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.

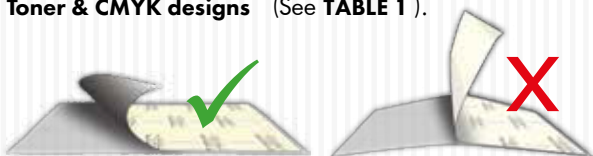


### 3. TRANSFER B-PAPER TO A-FOIL

- Press the A-Foil & B-Paper together at **150°C (300°F)** for **90 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 LowTemp 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 LowTemp.



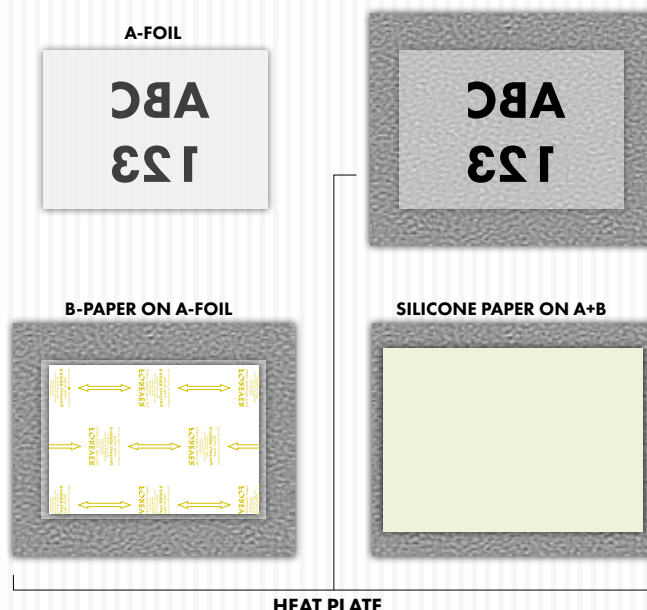
### 4. APPLICATION TO TEXTILES & OTHER SUBSTRATES

- 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

- To ensure a **Matt Finish** and **Good Washability**, it is absolutely **important** that you repress with a sheet of **Matt Finish Economy** (See **TABLE 3**).



**TABLE 1: B-PAPER TO A-FOIL**

<b>OKI WHITE TONER</b>	<b>150 - 160°C 300 - 320°F</b>	<b>90 - 120 sec.</b>	<b>2 - 3 Bar 29 - 43.5 PSI</b>
<b>CMYK</b>	<b>150 - 160°C 300 - 320°F</b>	<b>120 sec.</b>	<b>2 - 3 Bar 29 - 43.5 PSI</b>

**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.

**TABLE 2: TEXTILES & OTHER SUBSTRATES**

<b>COTTON</b>	<b>150 - 160°C 300 - 320°F</b>	<b>30 sec.</b>	<b>2 - 3 Bar 29 - 43.5 PSI</b>
<b>POLYESTER</b>	<b>120 - 130°C 248 - 266°F</b>	<b>30 sec.</b>	<b>2 - 3 Bar 29 - 43.5 PSI</b>
<b>POLYPROPYLENE</b>	<b>105°C 220°F</b>	<b>30 sec.</b>	<b>2 - 3 Bar 29 - 43.5 PSI</b>
<b>BLEND FABRIC</b>	<b>120 - 130°C 248 - 266°F</b>	<b>30 sec.</b>	<b>2 - 3 Bar 29 - 43.5 PSI</b>
<b>PAPER/CARTON</b>	<b>100°C 210°F</b>	<b>15 sec.</b>	<b>1 - 2 Bar 14.5 - 29 PSI</b>
<b>BOOK COVERS</b>	<b>110 - 120°C 230 - 250°F</b>	<b>15 sec.</b>	<b>1 - 2 Bar 14.5 - 29 PSI</b>

**TABLE 3: MATT FINISHING + FIXING**

<b>COTTON (FULL-SCALE)</b>	<b>150 - 200°C 300 - 392°F</b>	<b>30 Sec.</b>
<b>COTTON (RASTER/VECTOR)</b>	<b>150 - 160°C 300 - 320°F</b>	<b>30 Sec.</b>
<b>POLYESTER</b>	<b>120 - 130°C 248 - 266°F</b>	<b>10 Sec.</b>



## 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) LowTemp. In this case, we recommend to rasterize the design to achieve a soft touch on the fabric. With the help of our "Transfer 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 cotton fabrics (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 LowTemp 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 and 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:

The CMYK colours 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 incomplete and faulty edges.



## 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: Turn garments Inside-out. Up to 40°C (cold wash cycle). Do not use bleach. Do not tumble dry.