NANODIY

TECHNICAL GUIDE

Contents

PRINTERS

Epson printers are currently used on the market. Our recommendation to every customer is to buy an Epson printer due to its minimal maintenance, easy and minimal modification and easy ink filling. It is required to make a modification for some Epson printers. It is necessary to remove the small wheels at the output part of each printer. If they are not taken out, their traces will be left on the paper and on the print.

- Currently suitable printer models for Nanodiy technology are:
- **Nanodiy Basic**
- Epson L382 (A4 with a scanner)
- Epson L385 (A4 with a scanner)
- Epson L386 (A4 with a scanner)
- Epson L 1300 (A3)
- Epson L14000 (A3)
- **Nanodiy ALL IN ONE**
- Epson L800, L805, L810
- L7160, ET-7700 L805 (A4 DARK)
- Epson L1800 L1800, L7180, ET-7750 (A3 DARK)

INK FILLING

Old models of A4 and A3 printers are filled with ink without any problems while new models need to be filled with a modified plug because they are made in the form of different keys. Each printer or set of color comes with a plug that needs to be put on a Nanodiy bottle while pouring the ink into the printer. After that, the plug must be washed under tap water to allow the other ink to be poured into the printer.

PRINTER MAINTENANCE

Each printer has its own cleaning cycle. A4 printers can have up to 250 cleaning cycles and A3 to 300 cycles. After that the printer will stop and then the waste ink pad should be replaced. After that, the printer should be reset. If this is not done, ink may leak beneath the printer.

SOFTWARE

A program for the use of Nanodiy products can be any program that has the ability to use an icc profile for color correction. The most commonly used programs are CorelDraw, Adobe PhotoShop, Adobe Illustrator, Afinitiy Design, Afinity Photo and Nanodiy RIP.
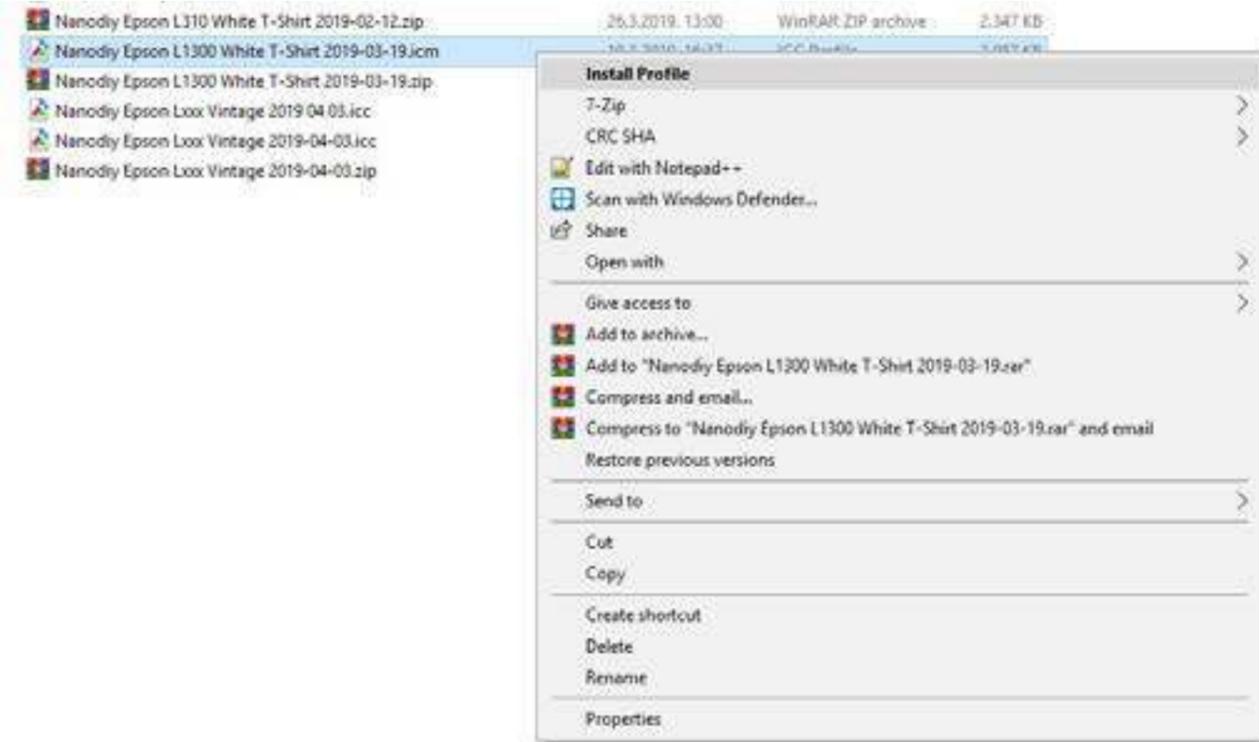
COLOR PROFILES

Nanodiy technology requires the use of icc profiles to keep the correct colors of the prints. Nanodiy technology has 3 types of profiles that are customized for specific models.

- Nanodiy Epson L310 White T-Shirt 2019-02-12.icc
- Nanodiy Epson L1300 White T-Shirt 2019-03-19.icc
- Nanodiy Epson Lxxx Vintage 2019-04-03

INSTALLING ICC PROFILES

You should download a profile from a USB stick that gets started with a right click on the profile and then click on the „Install Profile". The whole process takes about half a second, and after the installation, you need to restart the computer so that the graphics processing programs can upload the profiles..
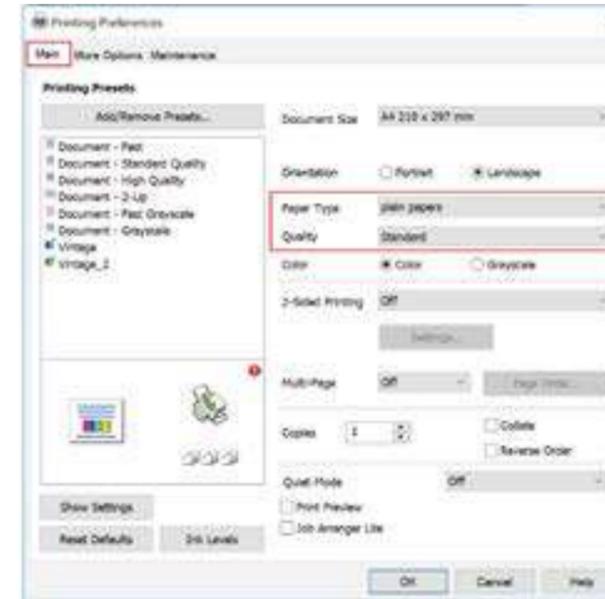
In the first ''Main'' tab you should adjust :
Type of paper : **plain**
Quality : **Standard**

In the second tab you should select '' More options '' : **Color correction >Custom**
Then you should click on **''Advanced''**.
In the new window you should select the option **''No Color Adjustment''**.

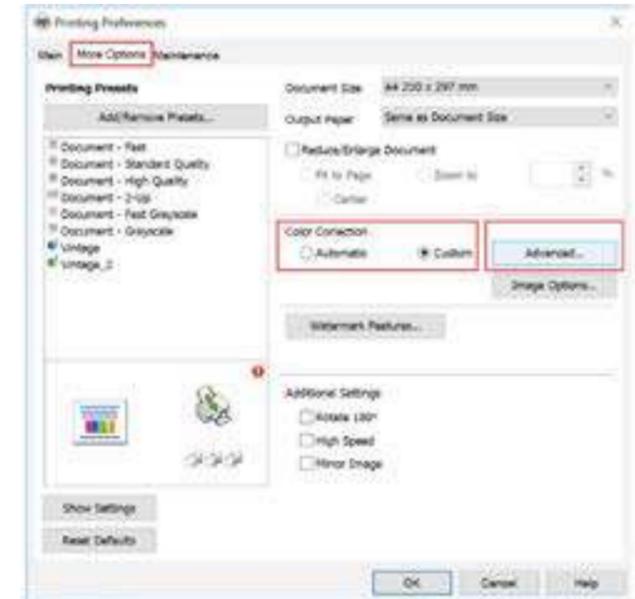
SETTING THE PRINTER PROFILE FOR PRINTING ON LIGHT-COLORED T-SHIRTS

You should click on the **Start button> Settings> Control Panel> Printers & Scanners (win10)> Click on the desired printer (Epson L series)> Manage Printer> Printing Preferences.**
In the new open dialog window, you need to set up several parameters and create a profile, so you could use it faster and more easily later on
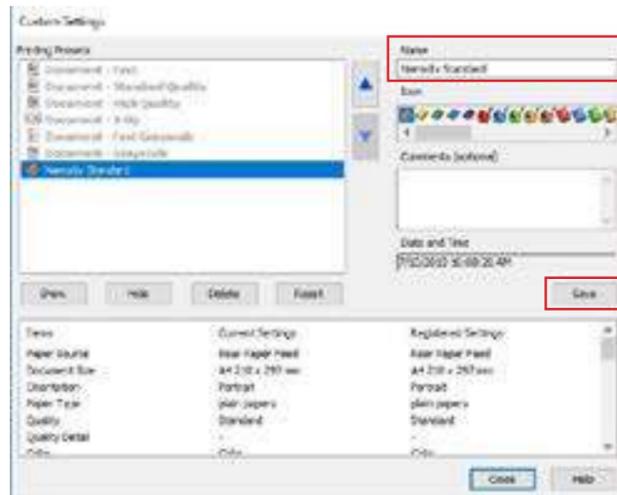.

PRINTING

Heatpresses are used for printing on textiles and other materials (ordinary iron cannot be used). Temperature and pressure are important to ensure the best results.

TEMPERATURE

The temperature for all print models (standard, gold, silver, vintage) is 170-175° C.
Regardless of the press manufacturer, there is no press showing the exact temperature. Some displays show 185° C while the actual temperature on the heating panel is 167° C.

PRESSURE

Thermic Pressure is a very important factor that affects the quality of the print. If the pressure is not good, there may be no separation of the print from the substrate. Also, colors can be uneven or there may be even holes in the print. The pressure (depending on the press) would have to be from 3 to 5 bars.

MATERIALS THAT CAN BE PRINTED ON

Materials that can be printed on include cotton, polyester, cotton and polyester blends, nylon etc. These are mainly materials that can withstand a temperature of 175° C for 30 seconds.
It can be printed on shirts, bags, jeans, umbrellas etc.

NANODIY PRODUCTS

Nanodiy products are combination of 3 different components. The main components are **PAPER,**

INK, STABILIZER (standard, gold, silver, vintage) and **MTF** (Metal Transfer Foil).

PAPER

Paper as the main component has a thin layer of silicon that does not allow paper to absorb ink droplets from the surface. The paper has two sides of which the blue side is intended for printing and it is **always printed on the BLUE side.** After the graphics are printed using the ink-jet printer on the paper, the print must not be touched by the fingers or in any other way because the print will be damaged and transmitted on the substrate since the ink on the paper is fresh and the ink drops are not absorbed into the paper.

INK

The NANODIY ink base is water. It consists of pigments and binders. All colors are ecologically acceptable and do not cause allergic reactions. They are very suitable for use in small inkjet printers which are used due to small particles of pigments that do not clog the printhead after a long stand and no use.

STABILIZER STANDARD

Stabilizer Standard (and other stabilizers) is a powder that serves as a binding agent and color activator. Color and dust when not in contact are inactive. However, when they mix, they bind and activate at a certain point and eventually make one component. The standard stabilizer is used for white and light-colored materials. It is also used as a binding agent for MTFs. Moreover, it can be used to print photos and vector formats.

Demanding to use: 4/10

STABILIZERS GOLD AND SILVER

Stabilizers Gold and Silver are stabilizers that contain gold glitter while the silver one contains several different types of glitter which, depending on the color you print, gives a different effect. It is used to achieve the print with an effect. They can also be used on light-colored and dark materials while the greatest effect is achieved on dark materials.

Demanding to use: 6/10

STABILIZER VINTAGE

The Vintage Stabilizer is used for printing on dark materials and can only print vector formats and some graphics that do not contain gradients and fine transitions between colors. The photo cannot be printed. The stabilizer contains particles of white pigment. The Vintage name is due to the reason that the printers used for printing because of a technical structure cannot print a sufficient amount of ink on the paper to paint all the white pigment in the stabilizer. Therefore the result printed on the dark background gives the impression of pastel and unsaturated colors.

Difficulty level: 9/10

GRAPHICS FOR PRINTING

With Nanodiy technology you can print almost everything on light-colored t-shirts, from raster graphics (photos) to vector formats. Nanodiy technology includes a wide range of colors that can be printed on a white background. However, a photo cannot be printed on dark materials with Nanodiy technology. Only vector formats or simple graphics (e.g. pencil drawing) can be printed on dark materials..

PREPARING GRAPHICS FOR PRINTING (STANDARD)

When preparing graphics for printing on white and light-colored materials, it is not necessary to convert graphics from RGB> CMYK or vice versa. You need to position the graphics on a format (A3 or A4) with a margin of 1cm on all sides in A4 format, and 3cm in A3 format. Such a margin is needed so you can easily take the paper because the paint on the surface of the paper should not be touched. Before printing in the graphic program (AI or Corel), it is necessary to enable the color correction. You do that with Nanodiy .icc profiles that serve to correct colors and to make colors look as faithful as possible to what you see on the screen. The profile should be selected in the print dialog box ; choose the „Color Management Option" (Adobe) or the „Color tab" (Corel Draw). You should also select additional printer settings and activate the STANDARD profile which you have created earlier and then you can confirm printing.

PREPARING GRAPHICS FOR PRINTING WITH GOLD AND SILVER STABILIZERS

The preparation for printing with the glitter effect is most pronounced if you use the color most similar to the glitter. For example, if you use Gold, then you need to prepare a yellow graphic and print it on paper, sprinkle it with Gold Stabilizer and then put it on the T-shirt.
For Silver Stabilizer, it is necessary to put the color similar to the glitter in preparation; the greatest effect is being obtained with the print preparation in blue or gray.

PREPARING GRAPHICS FOR PRINTING WITH VINTAGE STABILIZER

The Vintage Stabilizer is a stabilizer that contains a white pigment and therefore it is the most demanding to work with. It is possible to achieve a simple 2-3-color print on dark materials with this stabilizer. The disadvantage of this print is that strong print color saturation cannot be achieved. By using Nanodiy Vintage Lxxx .icc profile and regardless of the print mode, the colors will be pastel-looking. If you use Nanodiy Vintage, it is recommended to use vector shapes with simple color combinations with such printer driver settings to maximize the saturation of the print. Pictures with settings can be found on the web.

SETTING THE PRINTER FOR PRINTING ON DARK-COLORED T-SHIRTS WITH VINTAGE STABILIZER

Go to Printer Settings and select the Windows Environment.
Click on the **Start button> Settings> Control Panel> Printers & Scanners (win10)> Click on the desired printer (Epson L Series)> Manage Printer> Printing Preferences.**

In the new open dialog window, you need to set up several parameters.
In the first **"Main"** tab you should adjust :
Type of paper : **Epson matte**
Quality : **Standard or High qualilty**
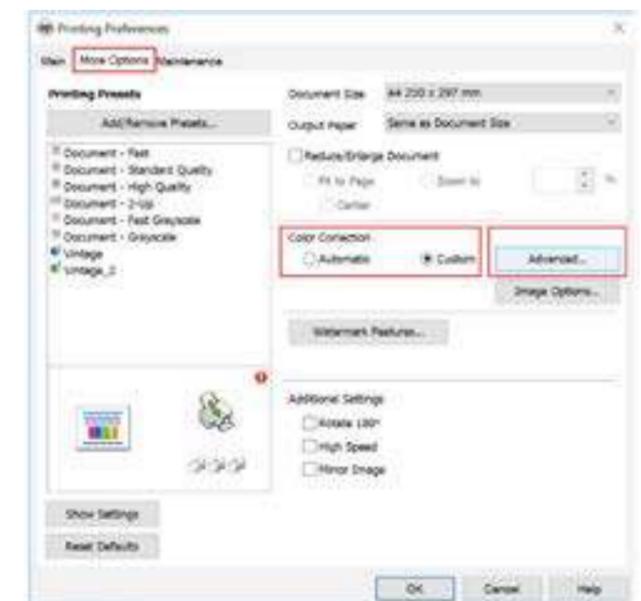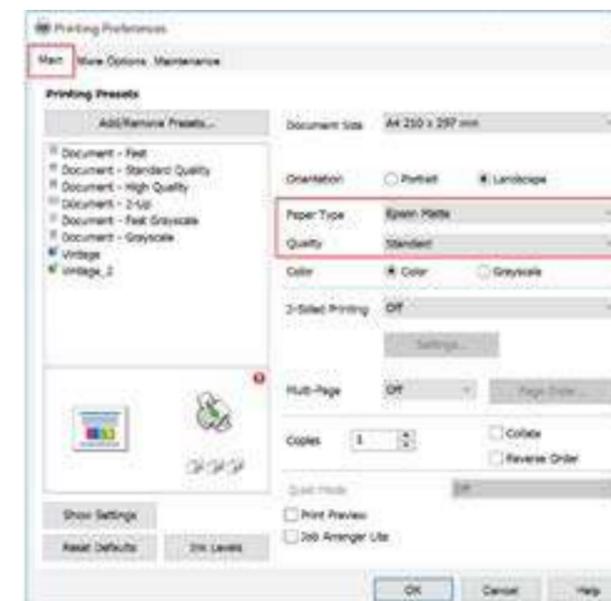In the second tab you should select **"More options"** :
Color correction >**Custom**
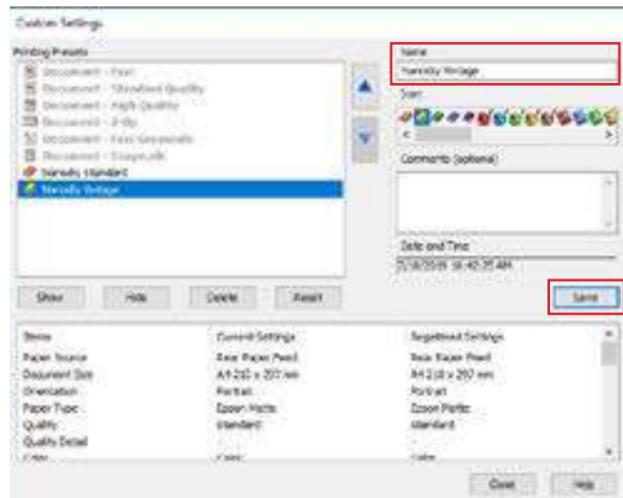Then you should click on **"Advanced"**.
Option: **Color control**
Color Mode: **Adobe RGB**
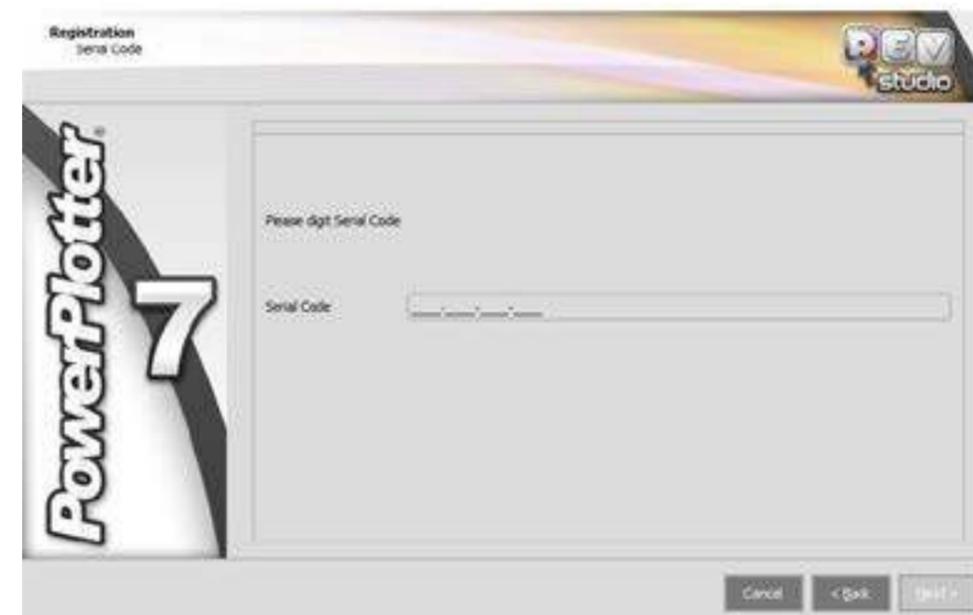Saturation: **25**
Density: **25**

NANODIY ALL IN ONE

INSTALLATION OF NANODIY RIP SOFTWARE

First of all register on Nanodiy web site under this >>>LINK<<<.
After account is confirmed by website admin, go to download section and download latest version of Nanodiy RIP software, printer driver and Nanodiy RIP profiles based on printer model.

First start installation of printer driver and after that start installation of Nanodiy RIP software. After installation in complete it is necssary to register your Nanodiy RIP to your company. On USB drive is written serial key of your RIP. It can be used only for one PC.

After install select "internet code" to write serial number provided from your distributor

Fill registration form with your company data.

Note: all field marked with * is required

Select printer model with ink setup.

Usually is CMYK + T + Fluo
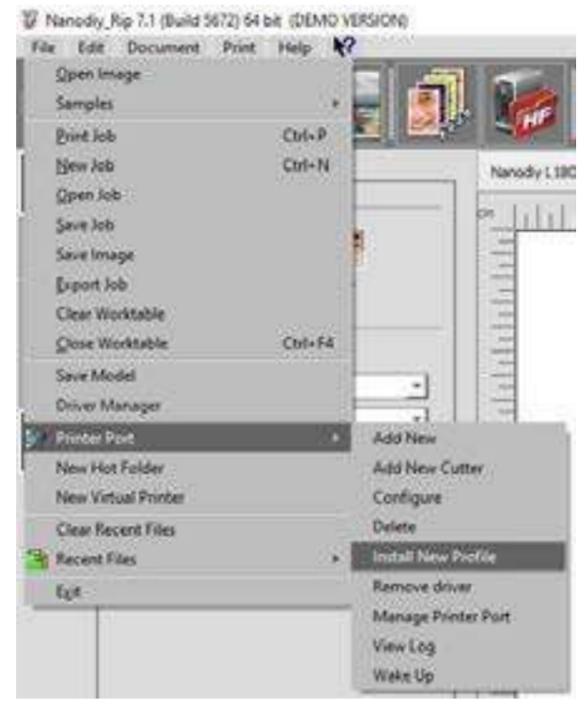
From connection tab select USB and click "Enquire" and select installed printer.

Finsh setup

To install new printer profiles or update old one go to File>Printer Port>Install New Profile.

In new window select load fro "Local Device"
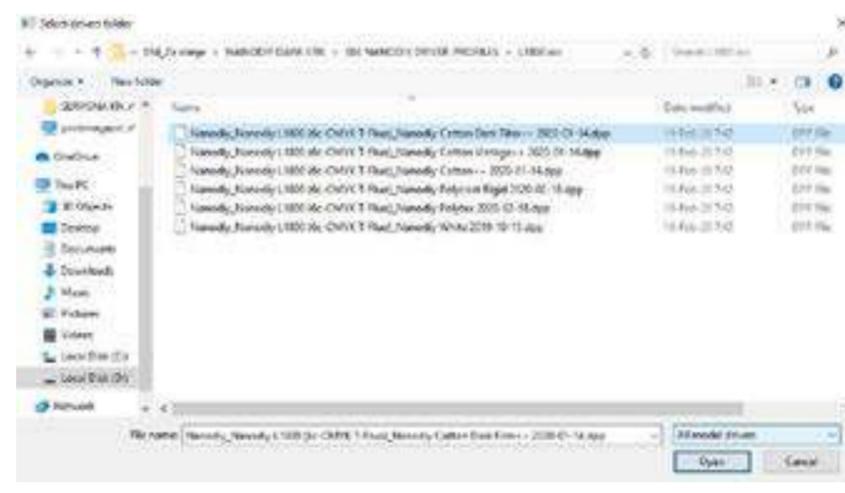
Navigate to downloaded profiles or USB drive and select profiles>Open
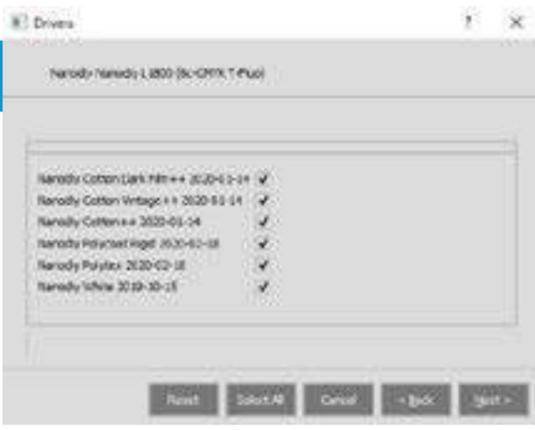
Check all profiles in window and click on "Next"
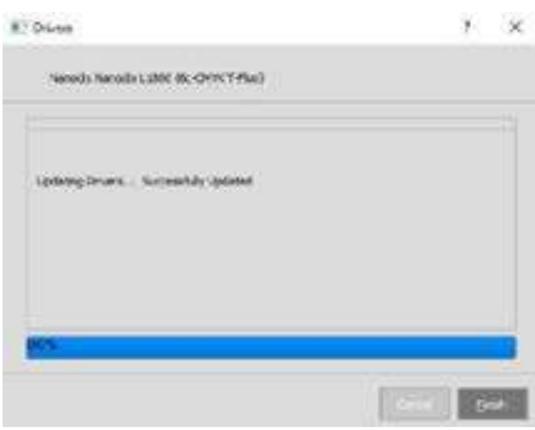
Finish install.

PAPER ACTIVATION

With every package of Nanodiy paper comes one NTP QR code which allows you to print from Nanodiy RIP software. One QR code gives you 55 prints.

To activate paper prints go to link www.nano-diy.com/activation/

Write your NTP Code
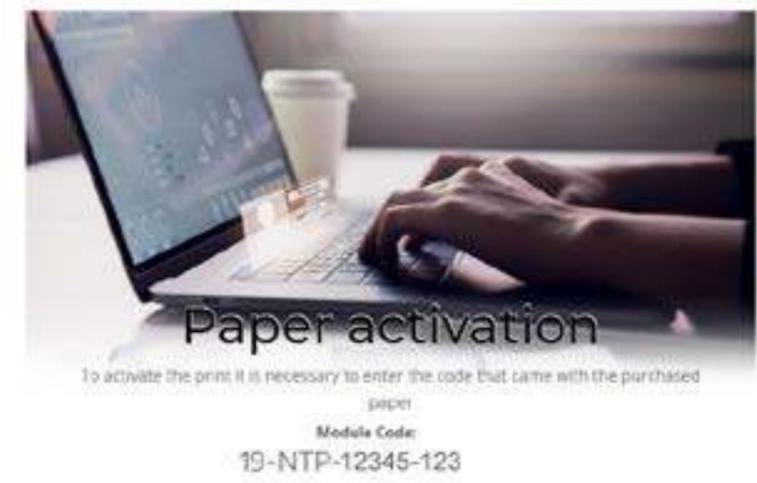
Write your NANODIY RIP serial number from USB.

Nanodiy Dark is a new technology that has been developed with a 6-color printer. Compatible printers are :
- ◦ **Epson L805**
- ◦ **Epson L1800**

Nanodiy Dark technology consists of Epson L805 printers (6 colors) and Nanodiy Rip software. The other components are the same as for a 4-color printer. Epson L805 or L1800 printers use a 6-color system comprising 4 standard colors (CMYK) plus 2 transparent colors or later upgraded Fluo colors.
Filling of the color printer is done with the CMYK colors. Instead of the LC color, you pour a transparent color and instead of LM, you pour Fluo or transparent colors as well. It is then necessary to initiate a printer filling process which takes approximately 20 minutes. After the filling has been completed, you can start printing. By running RIP, you open the file that you have previously prepared. Nanodiy RIP supports .jpeg .jpg .png .pdf .eps .tiff and other files.

NANODIY COTTON – This mode is used for printing on light-colored materials such as white t-shirts. This printing uses Nanodiy paper. Nanodiy Standard stabilizer is used to transfer the print onto the desired material.

**NANODIY VINTAGE** - This mode uses a CMYK print. Vintage Stabilizer is used to get a print on dark materials. All printed materials are pastel.

NANODIY COTTON DARK – This mode is used for printing on dark materials in all colors with a white underbase using Vintage Stabilizer and Standard Stabilizer.

NANODIY COTTON DARK FILM – It is a mode used for printing on dark materials using Vintage Stabilizer and white film to get more whiteness and then Standard Stabilizer on top for color print.

NANODIY WHITE – It is a mode used for printing with transparent printing to get a white print as a base for color or just a white print.

NANODIY POLYTEX - Profile made for printing on Nanodiy sublimation paper to transfer on sublimation materials.

NANODIY POLYCOAT RIGID - Profile is made for printing on Nanodiy Sublimation paper to print on sublimation mugs, ceramics etc.

PRINT PROCEDURE WITH RIP SOFTWARE ON VARIOUS MATERIALS

Recommended Thermo Pressure Settings:
- ◦ **Temperature: 170-175C°C**
- ◦ **Pressure: 3-5bar**

Note: Please check your heat press with laser thermometer. Precise heat is necessary to gain best results

Nanodiy Cotton – You should open the desired graphics in the Nanodiy RIP program, adjust the size according to the print format and select the Nanodiy Cotton mode and print it on ND paper. The RIP software automatically turns every graphic into a mirror mode. Then, you choose Nanodiy Cotton print mode and start the printing process. After printing, the paper that came out of the printer should be stabilized with Standard Powder and put in the desired position on the material. After that, you close the heatpress for 30 seconds at a temperature of 175 C °. This type of printing applies only to white or light-colored materials. After 30 seconds you take the printed graphics together with the material out of the heatpress and let it cool. The paper is removed when it is cooled to room temperature.
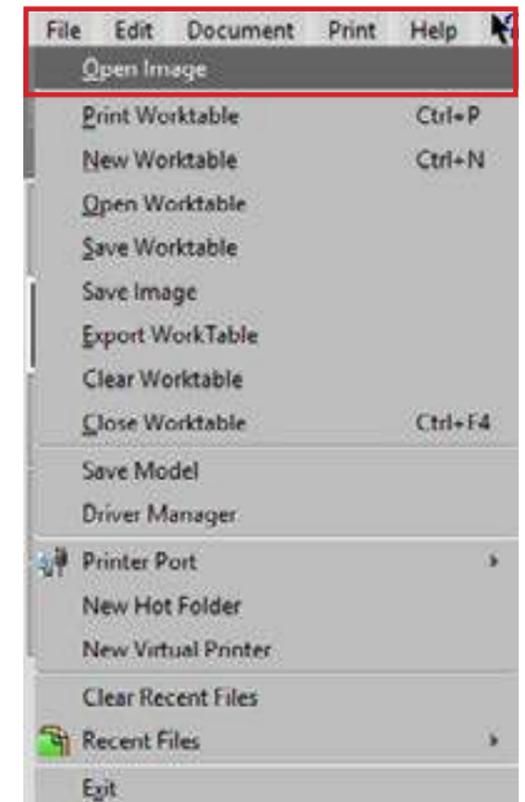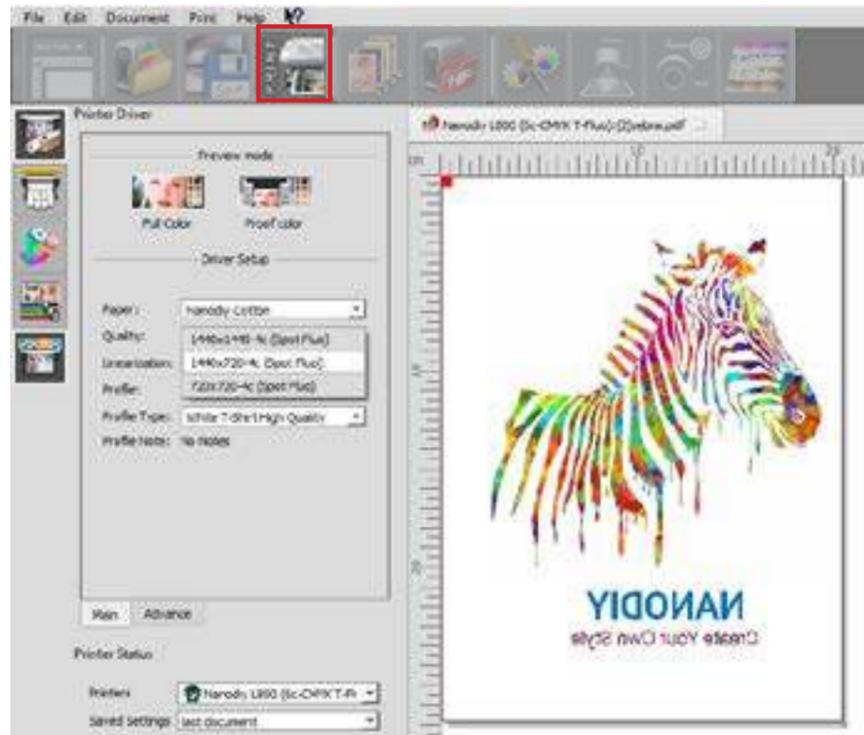
Nanodiy Vintage – Open the desired graphics in the RIP program, adjust the format and select Nanodiy Vintage mode, and then print it. After printing the desired graphics should be stabilized with the Vintage Stabilizer. Stabilized graphics should be placed at the desired position and pressed at **170-175°C for 30 sec**onds. The printed graphics should be taken together with the material out of the heatpress and be cooled. The paper is removed when it is cooled to room temperature.

Nanodiy Cotton Dark – It is a print mode used for color printing on dark materials. The process starts by adjusting the graphics. To make the work easier, it is necessary to prepare the same graphics in two copies in one of the graphic programs.
The first copy must be a graphic that will serve as a white background. It is recommended to use the same graphics for both color and white background. The second graphic must be the same as the first one, but it must be mirrored and stored in a pdf file.
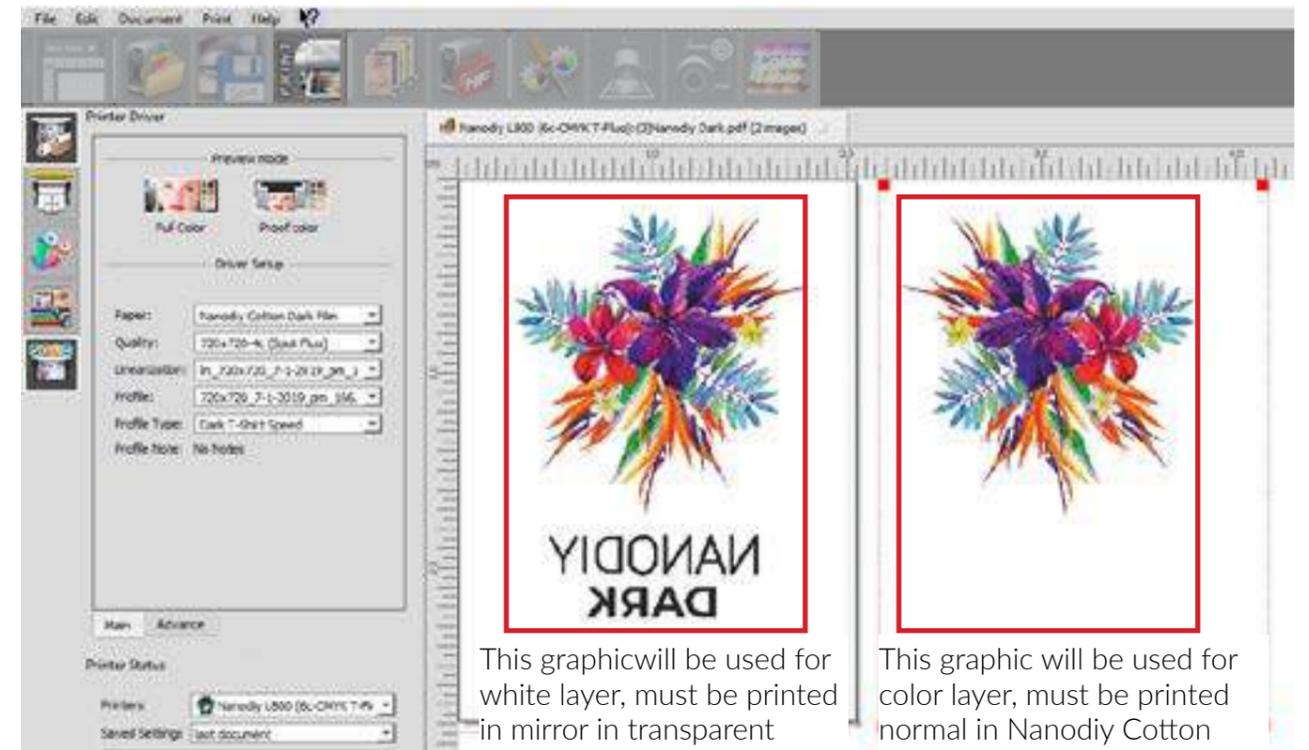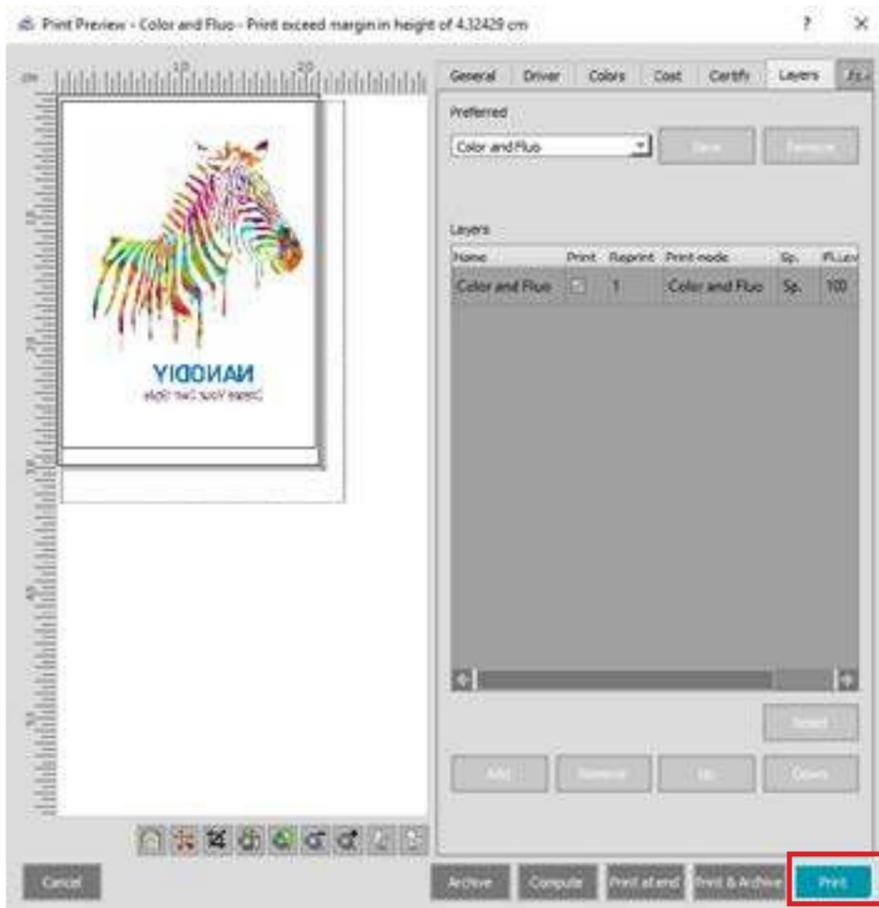

This graphicwill be used for white layer, must be printed in mirror in transparent mode

This graphic will be used for color layer, must be printed normal in Nanodiy Cotton Dark mode

A prepared PDF file with graphics needs to be opened in the RIP program. When you open the graphics, mark the first one, and take a right click on the "Use image as transparent" option.

In the printing mode menu, select Nanodiy Transparent (White) mode to print the graphics in transparent color that is stabilized with the Vintage Stabilizer after printing.
After stabilization, it is necessary to start printing on the desired t-shirt and remove it to cool. Remove the paper after being cooled as well.

Select Nanodiy White mode for printing
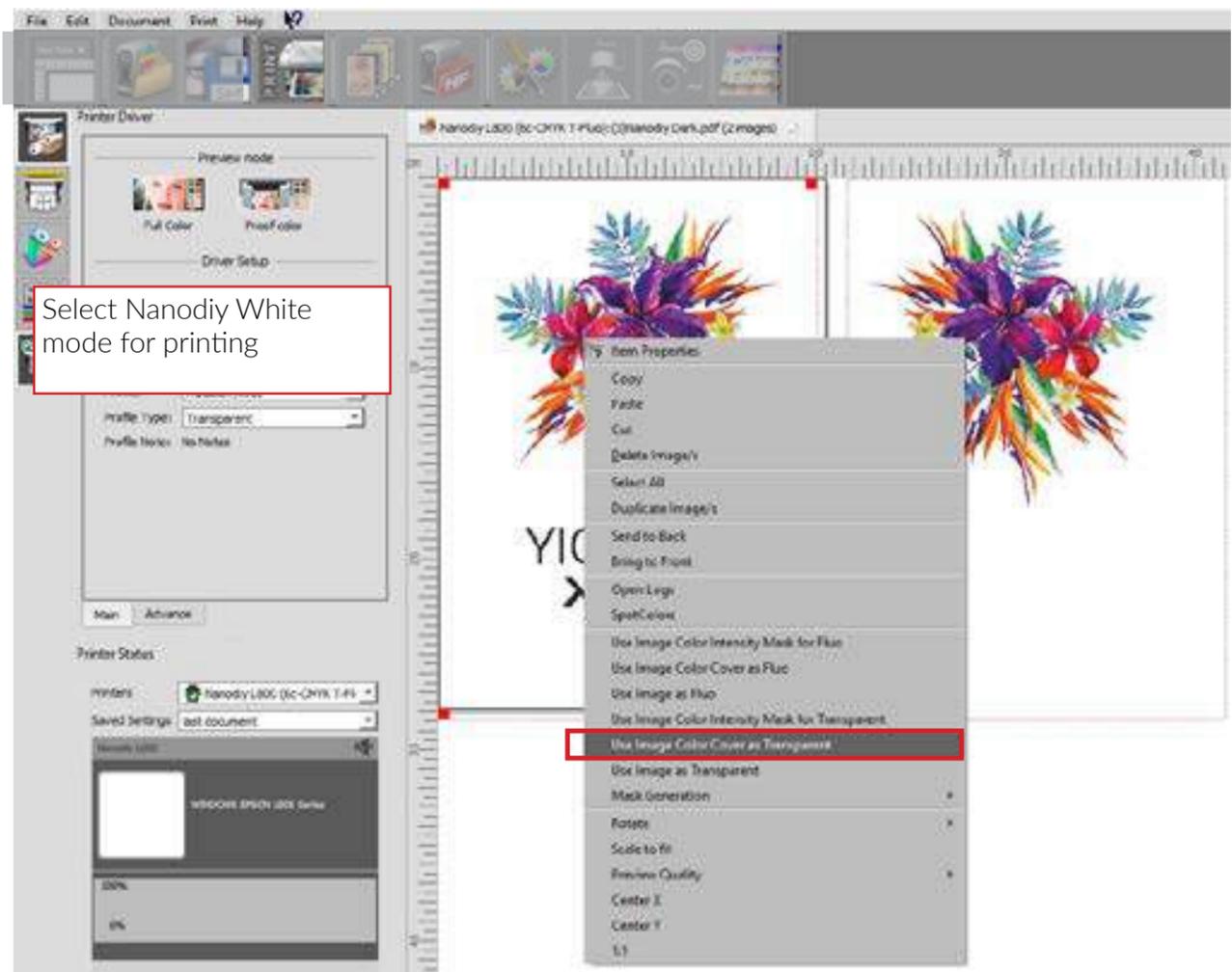
Select image with Left Click, than Right click and click on **"Use Image Color Cover as Transparent"**. After that we can print.

Note: Print on Nanodiy paper will be inivisible untill Vintage stabilizer will be applied. Handle printed paper with care to not damadge print. Heatpress it on t-shirt on **170-175°C for 30 sec**

Select Nanodiy Cotton Dark mode for printing

This image will be used for color layer
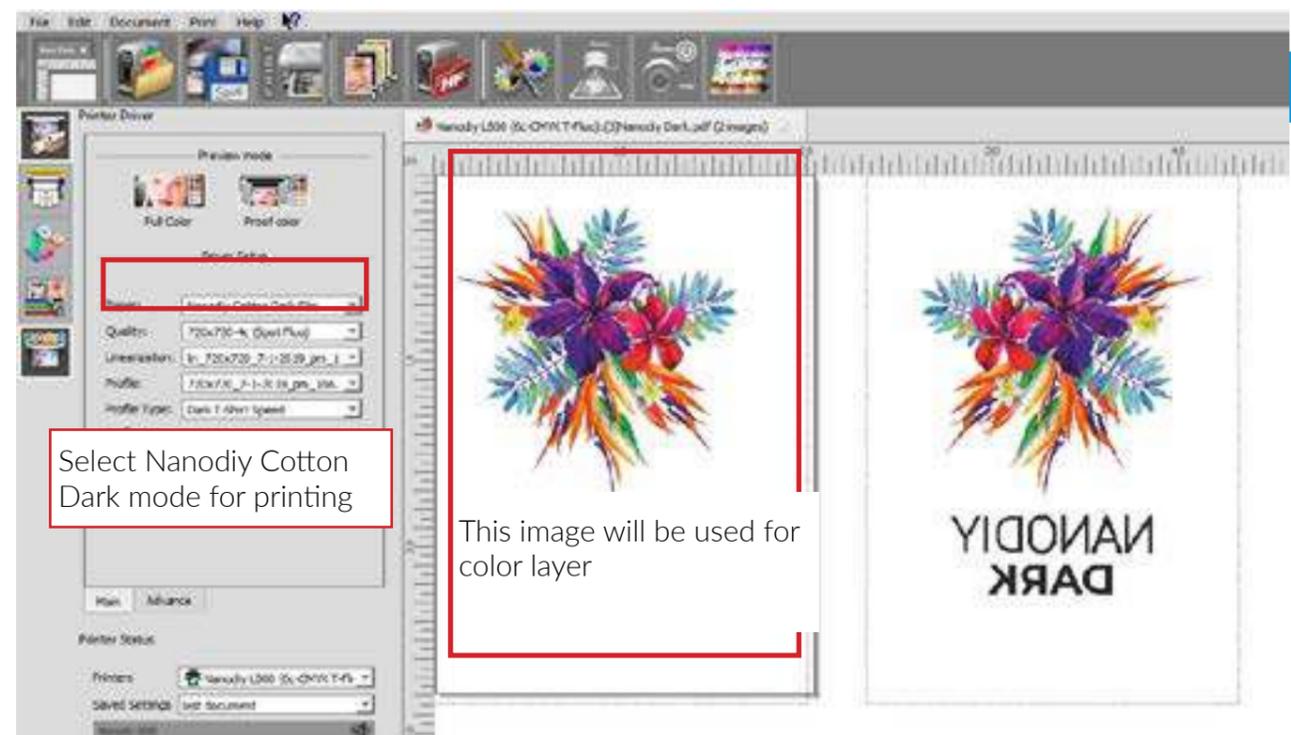
Note: Print on Nanodiy paper and put in heat press and cover with Nanodiy Transparent Transfer film and heatpress it for 20 second on temp 170-175**°C** for 20 sec.

The second graphic is printed on the ND paper in Nanodiy Cotton Dark mode. After printing, we use Nanodiy Standard stabilizer and put the graphic in a thermopress with the image facing up. We cover the graphic with Nanodiy Transfer transparent film, where the mat side is facing the graphic. It is necessary to press the graphic for 20 seconds at a temperature of 170-175°C. The film should be separated from the paper ond cold.

Return the T-shirt with white print into the thermopress and put the transparent film on the shirt. Press it for 5-7seconds at a temperature of 175 ° C. When the film gets cold, remove it from the print.

Nanodiy Cotton Dark Film – It is a process similar to the previous one, but it uses an additional white film that boosts the intensity of white color.
The first copy must be a graphic that will serve as a white background. It is recommended to use the same graphic for both color and white background.
The second graphic must be the same as the first one, but it must be mirrored and stored in a pdf file.
A prepared PDF with graphics needs to be opened in the RIP program. When you open the graphics, mark the first one, and take a right click on the "Use image as transparent" option.
In the printing mode menu, select Nanodiy White mode to print the graphics in transparent color that is stabilized by the Vintage stabilizer after printing.

After stabilization, it is necessary to start printing on the desired t-shirt and remove it to cool.

Remove the paper after being cooled as well.
After removing the paper, it is necessary to return the shirt into a thermopress and place a white MTF film on the print and cover the print. Press up to 15 seconds at a temperature of 175°C. Remove the material from the heatpress and cool it to room temperature.Then remove the remainder of the white film.

The second graphic is printed on the ND paper in Nanodiy Cotton mode. After printing, you have to use Nanodiy Standard stabilizer and put the graphic in a heatpress with the image facing up. You need to cover the graphic with Nanodiy Transfer transparent film, where the matt side is facing the graphic. It is necessary to press the graphic for 20 seconds at a temperature of 170-175 ° C. The film should be separated from the paper while still being warm.
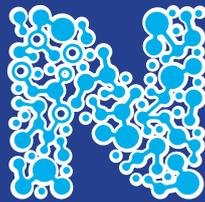
Return the T-shirt with white print into the heatpress and put the transparent film on the shirt. Press it for 5-7 seconds at a temperature of 175 ° C. When the film gets cold, remove it from the print.

Nanodiy White (TRANSPARENT) - It is a print mode that uses the graphics you want to be white. You have to open the prepared graphics in the RIP program and mark them. Take a right click on the graphics inside the RIP program and add the function "Use image as transparent". Then choose the Nanodiy White mode and start printing on ND paper and afterwards use the Vintage Stabilizer. Stabilized graphics are placed on the desired material and pressed at 175°C for 30 seconds. The finished graphics should be cooled and then the transfer paper removed.

NANODIY

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