Summa nv
Rochesterlaan 6
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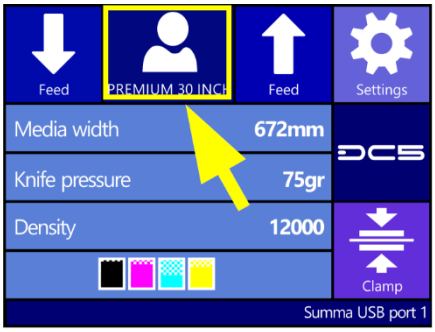
Determining media profile on a DC5-series

Introduction

Before defining the parameters needed to obtain good printing results, it is advised to switch to another user configuration (user profile). On the DC-series printers there are 16 selectable user configurations (profiles), for which the first 3 or 4 user configurations were set for the 3M foil used by Summa. By preference, do not change those user configurations.

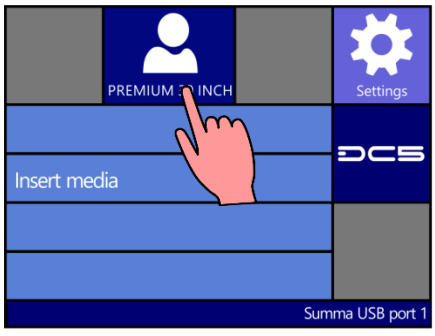


Change configuration (profile)

When using a different media, then it is best to change to another “Configuration”, as all configurations and settings will be stored in the selected “Configuration”. By doing so, it is not necessary to always repeat the calibrations if the same media is being used again.

It is also a good idea to start the configuration from a known good working profile, and copy this profile to the new configuration. Click [Settings] – [System menu] – [Copy user settings]. Select the known good configuration, select the new to use configuration, and click [Apply]. Click [Yes] to confirm. Click [Home] to return to the main menu.

Click on the configuration button, and select the appropriate configuration you like to use for this kind of media. The name of the selected configuration can be changed from Summa Printer Control to easy identify the configuration (profile) setting to use when using this kind of media again.



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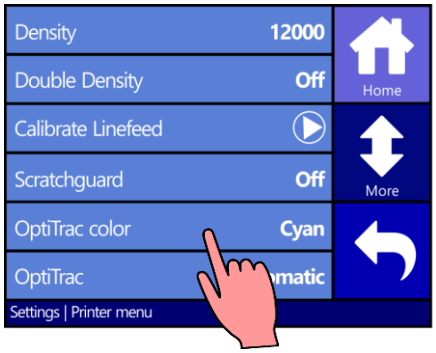
OptiTrac color



The printer prints on the edges of the media the OptiTrac lines. Those lines are used to determine how much the media needs to be fed to print the second band. To be able to detect those OptiTrac lines, there must be enough contrast between the media and the OptiTrac lines. By default, the color used is cyan or black. Select a color having a good contrast to the media, and which is used in the design. Do not use a reddish color, as the OptiTrac sensor uses a red light, and can therefore not see the difference between the OptiTrac line and the media.

To set the OptiTrac color, click [Settings], [Printer menu], [OptiTrac color], and select the color having enough contrast with the media used.

Print Quality

Some parameters influences the ink coverage of the ribbon on the media:

- The **Density** defines temperature of the print head, which influences the amount of ink to be transferred.
- The **Double Density** option splits each dot is two parts to increase ink coverage on uneven media.
- The **Low Density** parameter controls the temperature of the print head.
- The **Ribbon Tension** parameters stretches the ribbon.

Density

User parameter.

Use the density test to check ink coverage.

Using the monochrome test will print the density test in the color chosen for the OptiTrac lines, which may be a good choice to start with.

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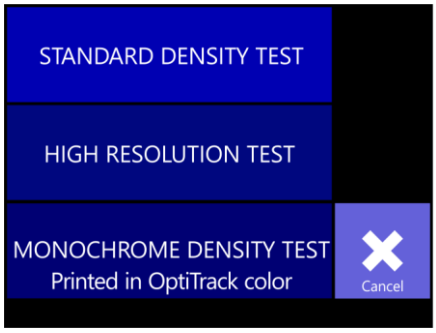


On the gradient test part of the test pattern, the fill starts with 5%, and ends with 95%.

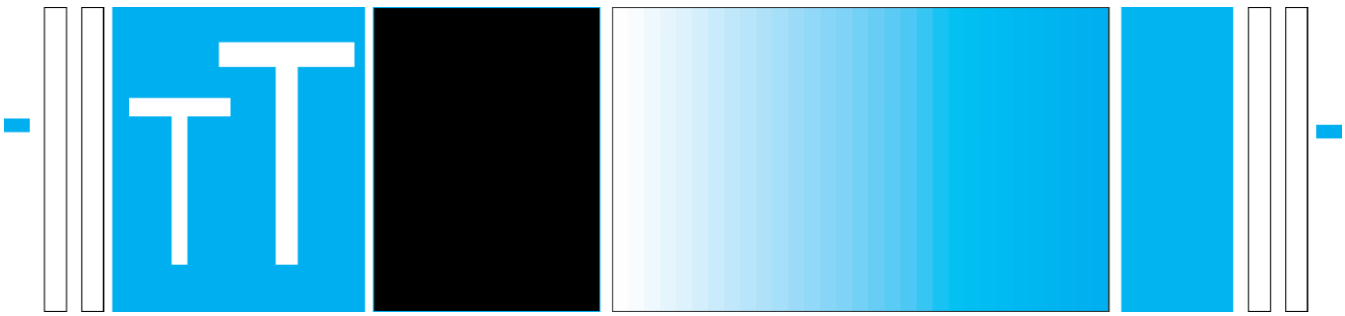
At the start an uniform pattern should be visible, without missing dots. In case dots are missing, then increase the density.

At the end an uniform pattern should be visible, without missing white dots. In case white dots are missing due to neighboring dots melting together, then lower the density.

Monochrome density test pattern using the OptiTrac color set to cyan:

Monochrome density test pattern using the OptiTrac color set to black:

The standard density test pattern using 3 process colors (Cyan, Magenta, Yellow):



The standard test pattern should have a uniform filled black area. The gradient fill should meet the requirements of the monochrome density test pattern.

Double Density

User parameter.

When the parameter “Double Density” has been activated, then each dot is split in two half dots.

Some (calendered) vinyl’s have a less flat surface. This may result in white spots. Activate “Double Density” to improve coverage of the media. After activating this parameter check the “Density”, which usually can be lowered.

Low Density

System parameter.

The parameter can be changed from Summa Printer Control running in service mode (press and hold the [Shift] key while launching the program).

This parameter controls the temperature of the print head (dots) when it does not need to print.

Depending on the media used, you may need to increase or decrease this parameter (use steps of 100 units).

By increasing this parameter, the print head becomes warmer, and as a result, less power increase is needed to increase the temperature to transfer the ink from the ribbon to the media, reducing the risk for wrinkling.

However, setting this parameter too high may result in the ink also to be transferred to the media when nothing has to be printed.

Ribbon tension

System parameter.

The parameter can be changed from Summa Printer Control running in service mode (press and hold the [Shift] key while launching the program).

How to set the ribbon tension parameters is a job of try and error.

The default values of the brakes system parameters are as follows:

TA ER: 35, TA FR: 60, TB ER: 10, TB FR: 30

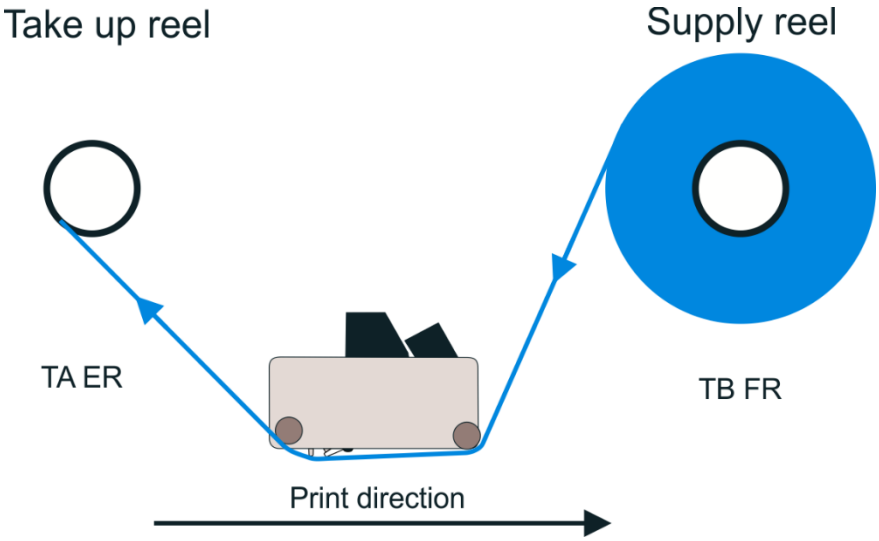
TA is for the take up reel, TB is for the supply reel.

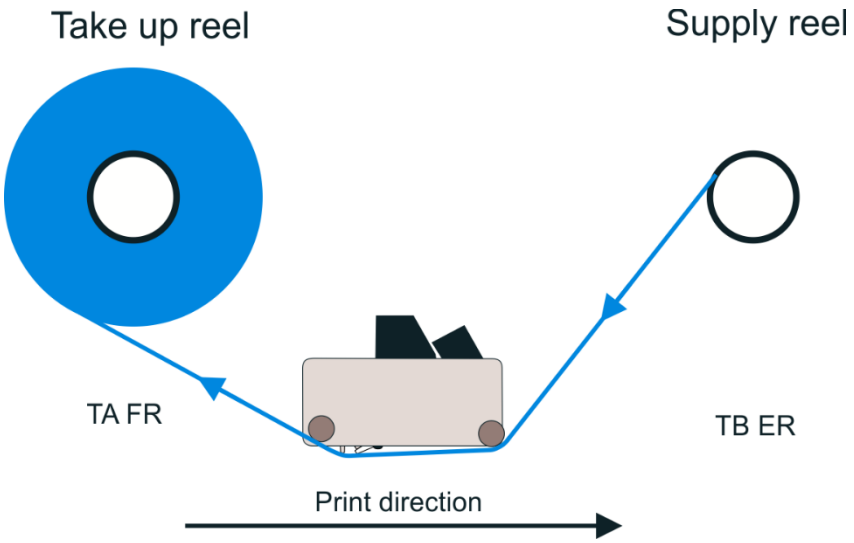
ER is for the empty reel, FR, is for the full reel.

Actual break values are interpolated depending on the amount of ribbon on the reels.

Wrong brake settings cause a wrong tension of the ribbon. This can result in wrinkling, or even broken ribbons. Only in some cases you can change the tension of the ribbon:

- When you get wrinkling with almost empty ribbons (< 15%) then set TB ER on 5, eventually gradually lower to 0.
- When you get wrinkling with new ribbons (> 85%) then set the TA ER on 45 to 55.
- When you see that density is almost Ok but the printout is a little matt (not glossy) than you can increase the values of TA ER and TA FR with 5 to 10 units.
- Increasing the ribbon tension parameter results in a higher ribbon tension.





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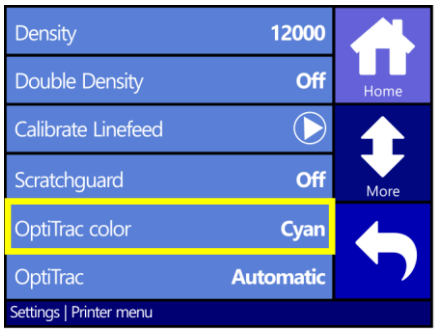
Media compatibility

Not all media is compatible with the machine.

E.g. coated media for use with inkjet printers usually cannot be used as the ink from the ribbon does not stick on the coating.

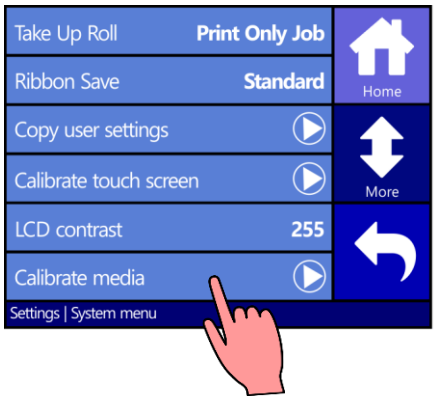
Media calibration

The OptiTrac sensor parameters need to be defined for the media used. Those parameters are set by running the media calibration test. This test prints a test pattern in the color set as the OptiTrac color.



The test pattern is then scanned by the OptiTrac sensor.

To calibrate the OptiTrac sensor, click [Settings], then [System menu] and finally [Calibrate media]. While the OptiTrac sensor scans the printed test pattern, some values are displayed. You may have to note those values when the machine has problems calibrating the OptiTrac sensor to report those values to a Summa certified service engineer.



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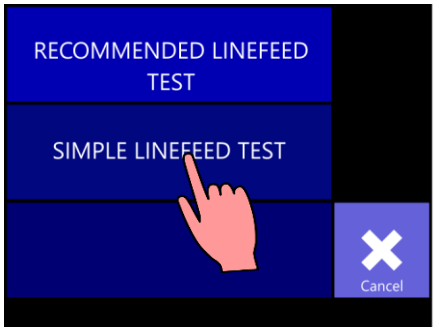
Line feed calibration



When using another kind of media, then the line feed needs to be calibrated to compensate for the media thickness. To start this calibration, click [Setting]", then [Printer menu], and choose [Calibrate linefeed]. You are then presented the option to perform the [Recommended linefeed test], or the [Simple linefeed test]. Select the [Simple linefeed test] in case the "Media Calibration" test has been run before. The linefeed test is printed in the OptiTrac color selected previously (e.g. cyan). The "Recommended Linefeed Test" combines the "Media Calibration" test followed by the "Simple Linefeed Test".

Head alignment

Due to different media parameters (difference in media roll up tension, thickness of media) there might also be a need for an extra calibration in the direction of the movement of the head. This test will make vertical lines to match between multiple printed bands.

To start this test, click [Settings], then [Printer menu]. Advance to the next page: click [More]. Click [Head alignment]. You will be presented two options: [Manual test] and [Automatic test]. Use the [Automatic test]. A test pattern will be printed in the OptiTrac color, and then this pattern is scanned by the OptiTrac sensor to configure the head alignment parameter.

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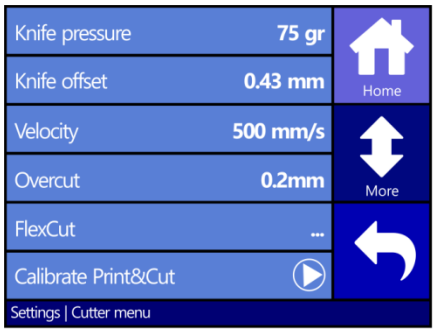
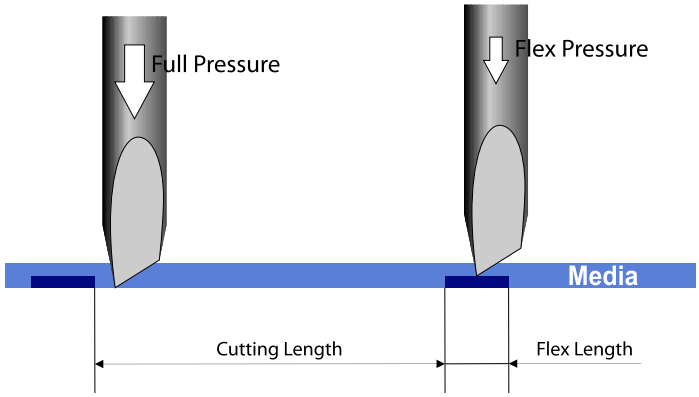
Knife parameters

Set the knife pressure and knife offset of the knife. The knife offset is a knife depended parameter. The knife pressure is a media depended parameter. Each time the media is changed, the knife pressure needs to be checked and possibly adjusted. To adjust the knife settings, click [Settings], then [Cutter menu], finally select the parameter to change, and verify the result by clicking the [Test]-button.



In case the cutting through functionality (FlexCut) is to be used, then set those parameters correct, which depends on the kind of media used.



Print and cut alignment

The print head and the cutting head each have their own origin point. This may change depending on the media width. Perform this test to have a correct match of the contour to the printed design. To start this test, click [Settings], then [Printer menu]. Advance to the next page by clicking on [More]. Click [Calibrate Print&Cut] to start the test: a test pattern is printed, and then another pattern is cut on top of the printed test pattern. Check for the squares where the cut line is situated just above the printed line. Use those values to insert via the control panel. If the values were too far off, then use the best matching value, and then redo the test.

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