

M a t c h P r i n t I I

User Reference manual

Version 6.70

Indice generale

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Installation

The software is compatible with the operating systems Windows® XP, Windows® Vista 32/64 bit, Windows® 7 32/64 bit.

To install the program is enough to execute the installation procedure. Automatically the files necessary to its working will be copied on the computer, a connection for the start of the program will be created in the menu *Start-Programs-DUAsoft* of Windows®.

Our program is protected from copy through a system of license founded on hardware keys, therefore without it the software cannot work. To receive a dongle is necessary to contact us. The management of the licenses and the hardware keys will be treated in detail in the relative paragraph.

Introduction

The software MatchPrint II has been designed to control large format textile printers with a particular focus an optimizing color quality and accuracy of the images reproduced on fabric.

MatchPrint II disposes of the same friendly, immediate and flexible user interface as all software products developed by MS Printing Solutions.

A highly sophisticated characterization and calibration system represents the core of MatchPrint II, ths allowing the user to employ any given set of dyes and any given type of fabric on the printer in use. The lecture of a series of test pages by spectrophotometer assures the calibration of the printer in terms of linearization and reproduction fidelity.

The applied technology goes beyond the optimization of traditional four-color printing and makes thus out of MatchPrint II an ulterior evolution of the color-matching systems already integrated in MS Printing Solutions software products.

User license and limitation of responsibility

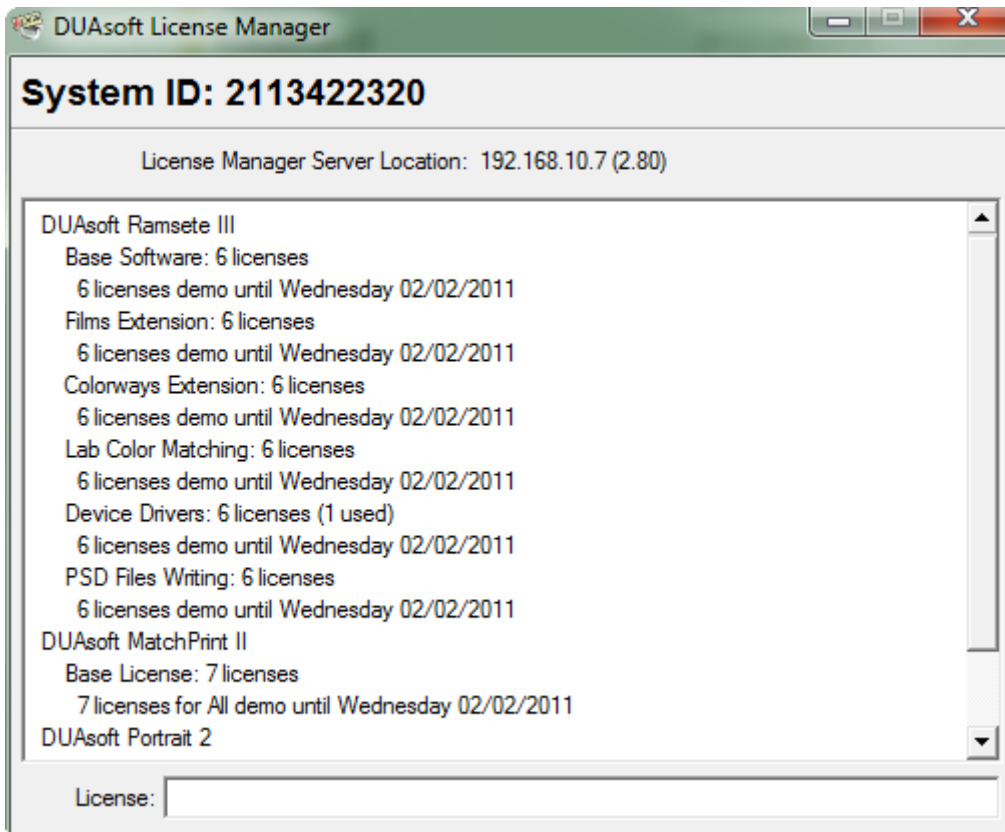
The MS Printing Solutions S.r.l. reserve itself the right to modify the specifications of this program without obligation of communication with the purpose to make it more efficient. The software described in this manual is supplied under the conditions of "user license" and it cannot be copied or reproduced in some way without the specific authorization written of the MS Printing Solutions S.r.l. Also the present manual cannot be integrally or partially reproduced without specific authorization of the MS Printing Solutions S.r.l.

The MS Printing Solutions S.r.l, even though having put the maximum care in the drawing up of this manual and in the realization of the enclosed software, declines every responsibility respect to their improper or inadequate use. Besides it doesn't considers itself responsible for some loss of profits or damages consequent the wrong use of the enclosed software. In any case the MS Printing Solutions S.r.l. Will consider itself responsible of the accidental damages or consequent to the installation, execution and use of the software.

Software protection

This software product is protected with a software code and an hardware key (dongle). Without these protections is impossible to use the software.

The license check is automatic, when the program starts if you do not have the right protections, it will appear the “License manager” window where you will be able to set the dongle and the license.



The **System ID** is the unique code of the dongle. It is necessary to obtain the license code contacting MS Printing Solutions.

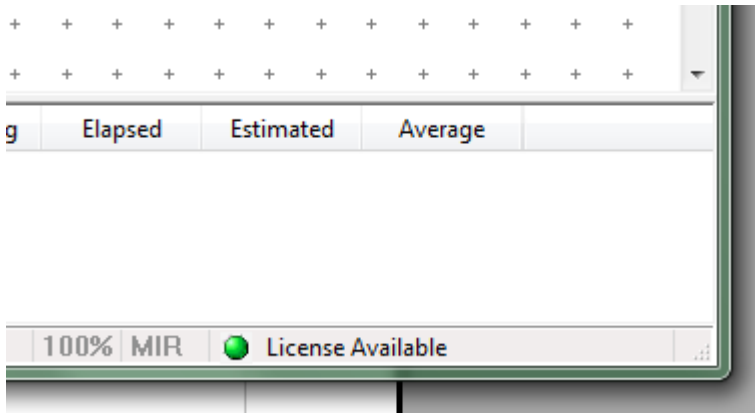
The label **License Manager Server Location** indicates where is the dongle in the local network (LAN). If it is connected to the local computer you will find the written “Local machine” vice versa you will find the IP address of the computer where the dongle has been connected.

At the first start, the program will check the hardware key on the local computer. To search the dongle inside a local network is enough to click on the words that follows the label **License Manager Server Location** holding pressed contemporaneously the ALT key and to insert the correct address.

In the list you will see all the licenses registered in the dongle, Actually each hardware key can contain more software licenses.

Nella casella in basso chiamata **License** dovrà essere inserito il codice per l’attivazione che DUAsoft vi comunicherà.

In the space below (License:) the activation code released by MS Printing Solutions must be inserted

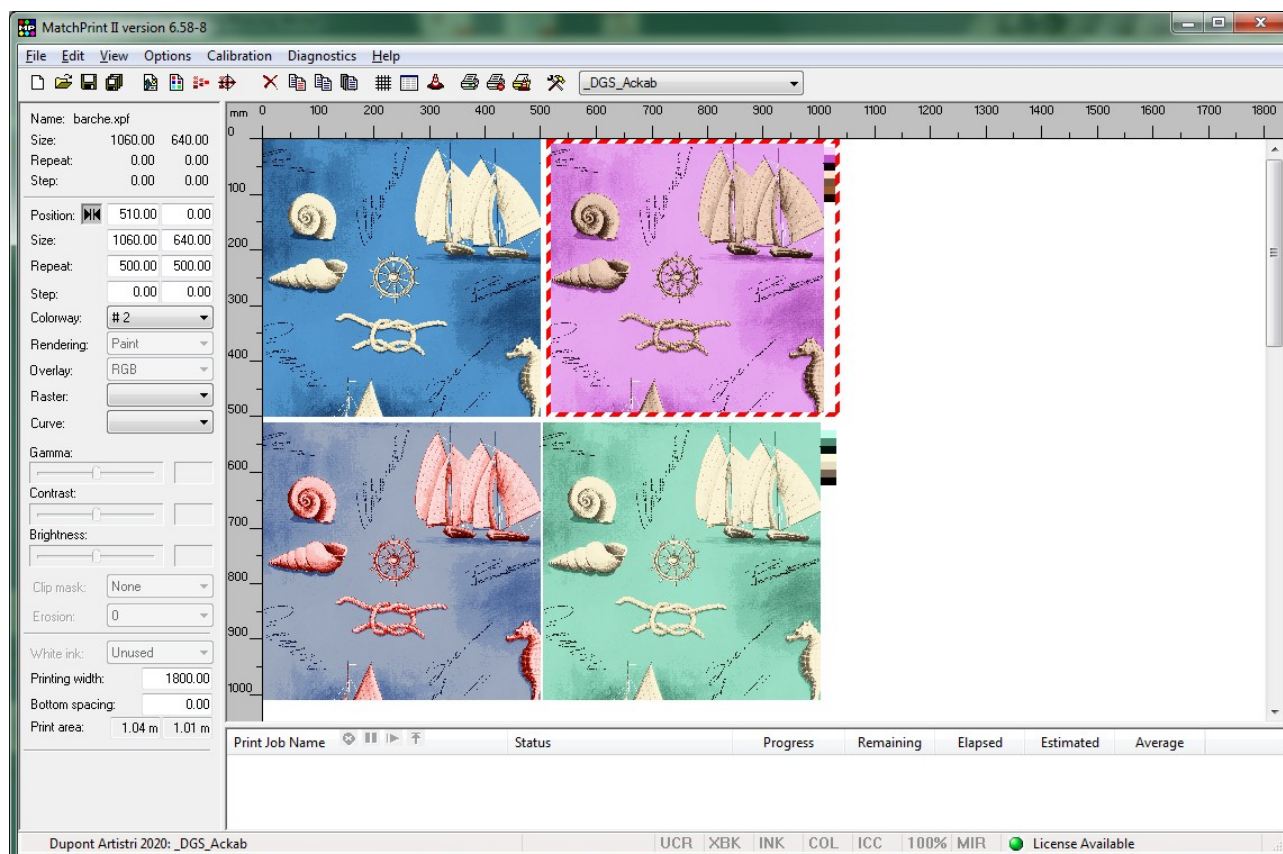


To insert a new license it is necessary to write a code in **License** text box.

In the status bar of the program there is an icon like a semaphore. It will be green if there is a valid license, yellow when the software is looking for the license, red when the software is not activated.

1 User interface

MatchPrint II presents an easy user interface divided in four main parts: the main menu and the relative tool bar, the images layout window, the image information panel containing the parameters of the loaded image and the list of printing jobs in the printing queue with the relative (printing) status.



MatchPrint II manages two types of “documents”: images (in various formats) and layout.

Layout is the result of previously saved page setup. Layout contains only the link to the original image placed on the layout window. Due to this, the original image has to remain saved in the original directory in order to be printable.

1.1 Main menu, “tool bar” and “status bar”

This paragraph explains the commands of the main menu. In some case additional parameters or operations have to be specified in order to explain the full functionality of a command. In these cases reference is made to the paragraph or chapter which treats the respective argument

The commands are described in the following way:

“MainMenu_Item->SubMenu->Submenu”

MainMenu_Item refers to the items in the main menu bar while *SubMenu* refers to the items that appear when selecting the menu itself.

Through the tool bar the user gets direct access to the most frequently used commands. Some commands can be also carried out by a sequence of the keys indicated in the various menu

<i>File->New</i>	Delete the current layout and creates a new empty page.
<i>File->Load...</i>	Load a previously saved layout.
<i>File->Save...</i>	Save the current layout as file.
<i>File->Archive...</i>	Save the current layout the image and the calibration selected as file.
<i>File->Open image...</i>	Open an image to be inserted in the layout window.
<i>File->Open color chart...</i>	Open a color chart (generated with Ramsete III) to be inserted in the layout window.
<i>File->Print</i>	Add the current layout to the printing queue.
<i>File->Print (suspended)</i>	Add the current layout to the printing queue. The printout of the added printing jobs is suspended until the additional command “Resume” is carried out (See paragraph “Management of the printing queue”). In this way, the user can carry out necessary operations like cleaning the printing heads or changing fabric before starting to print out the printing jobs.
<i>File->Print (add to new jobs)</i>	Add the current layout to the list of the new jobs to print, manageable with the command “ <i>View->New jobs list</i> ”
<i>File->Printer properties</i>	Set the specific parameters of the printer. For each printer the number and type of variable parameters are different. See chapter “Supported printers” for the description of the various parameters. Is you keep the CTRL key pressed during the selection of this command the printer selection window appears instead with the possibility to choose the active printer.
<i>File->Spectrophotometer configuration</i>	Configure the model of spectrophotometer and the port where it is connected.
<i>File->Exit</i>	Exit from the program.
<hr/>	
<i>Edit->Duplicate</i>	Duplicate the selected image and select the next colorway if present.
<i>Edit-> Copy</i>	Duplicate the selected image. colorway of the original image.
<i>Edit->Delete</i>	Delete the selected image.
<i>Edit->Crop</i>	Allows to cut a part of the selected image
<i>Edit->Objects auto positioning</i>	Replace all objects in the layout automatically
<i>Edit->Sort object by names</i>	Reorganise the objects on the layout according to their file name.

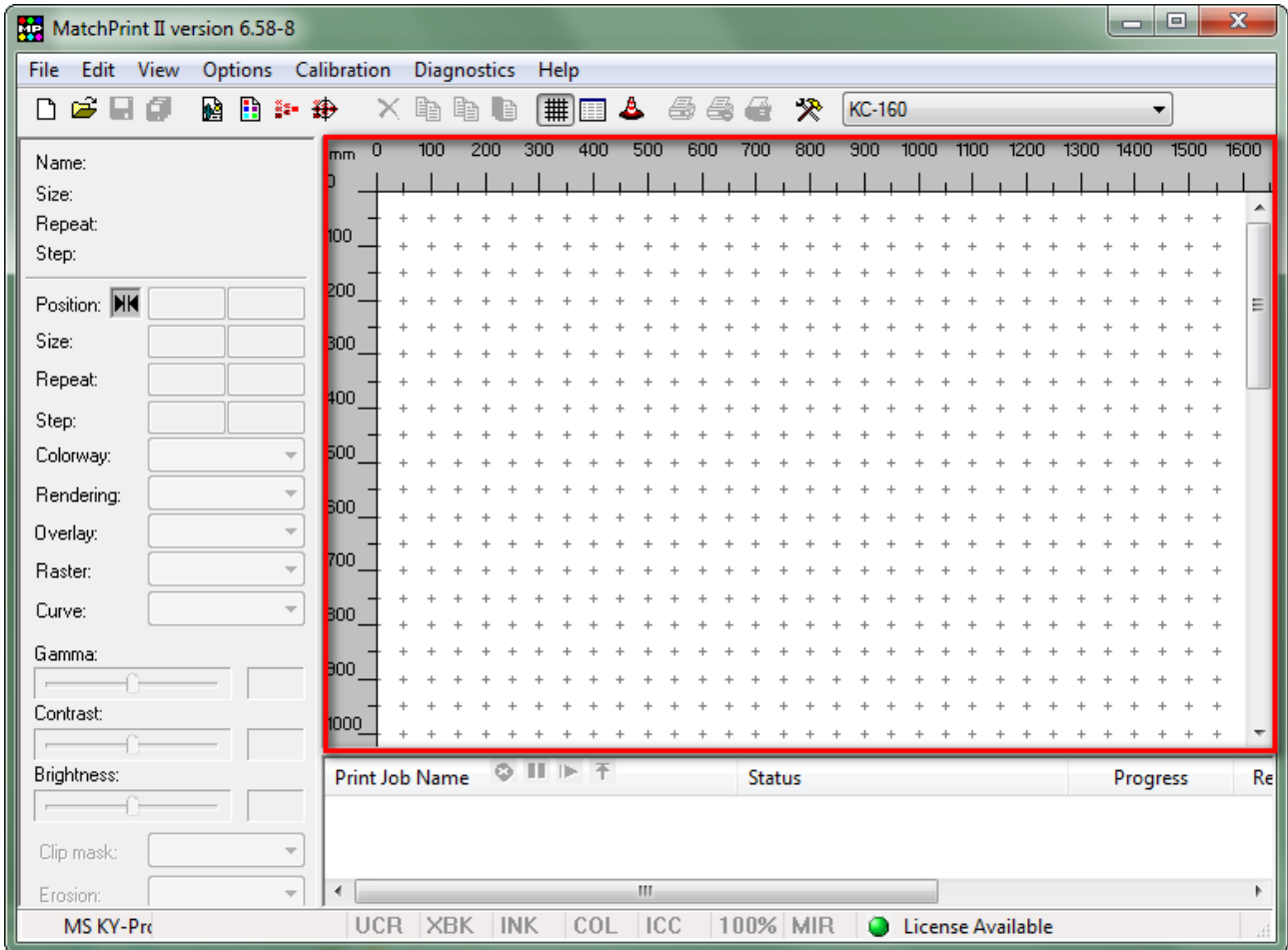
<i>Edit->Select all</i>	Select all objects in the layout.
<i>Edit->Color atlas</i>	Recall the window for the management of the internal color atlas (see paragraph “Color atlas management”).
<i>Edit->Color search</i>	Recall the tool to improve the manual search of a particular color (see paragraph “color search”).
<i>Edit->Edit text object...</i>	Momentanily this function is not active. It will allow to print an object composed only from a text.
<hr/>	
<i>View->Grid setup...</i>	Recall the grid line setup window to modify the parameters of the grid line.
<i>View->Autoplace setup</i>	Allow defining the space between the images placed in automatic in the layout window.
<i>View->Guide manager</i>	Open the interface of the guide line management.
<i>View->Positioning mask</i>	Open the interface of the positioning mask management.
<i>View->Unit of measure</i>	Allow to change the unit of measure. (mm, inches, cm, meters)
<i>View->Printed job list</i>	Visualize the list of the printed jobs (see paragraph “Management of the printing queue”)
<i>View->Ink usage</i>	Visualize the interface of the ink consumption.
<hr/>	
<i>Options->Print color chips...</i>	<p>This command adds on the printout also the basic color chips of the image. The user can define the position (above, below, on the right, on the left of the image) and the size. It is possible to repeat the sequence of the color chips for all the size of the image. The specific color code can be inserted inside the color chip.</p> <p>NOTE: in case that during the execution of this command an image is selected, the defined options will be only applied to this image; otherwise they will be valid for the whole layout. This means that they will be also applied to new images which will be loaded in the current layout.</p>
<i>Options->Print remarks...</i>	<p>It is possible to add comments (several test lines) for each image of the layout. In order to facilitate the entry of the comments, macros are available, which refer to some image information. These macros are identified by “\$” symbol; for example “\$n” stands for the name of the image. It is also possible to define the character size and the position (above or below the image).</p> <p>NOTE: in case that during the execution of this command an image is selected, the defined options will be only applied to this image; otherwise they will be valid for the whole layout. This means that they will be also applied to new images which will be loaded in the current layout.</p>

<i>Options->Print head band</i>	Enables the printing of all the basic colors outside the image in order to control the proper working of the heads. For bubble-jet printers this is also useful to maintain the right temperature of the heads.
<i>Options->Mirror layout on X axis</i>	Mirrors during printing the image layout on the x- axis. This option is very useful for transfer printing.
<i>Options->Customer selection</i>	Select the customer whom the job is in progress. This information will be saved on the <i>Printed job list</i> .
<i>Options->Proofing profile</i>	Allows to select the profile of the device to simulate.
<hr/>	
<i>Calibration->Step 1 ... Step 4</i>	These are the steps to follow for the calibration of the printer. The calibration procedure is described in detail in paragraph "Calibration".
<i>Calibration->Advanced calibration settings</i>	It allows to set some advanced parameters for every calibration. The complete description is in the paragraph "Calibration".
<i>Calibration->Calibration Manager</i>	Recalls the calibration manager window, where the calibration files can be imported, exported, renamed, copied and deleted (see paragraph "Calibration Management").
<hr/>	
<i>Diagnostic->Print head order test</i>	Prints the color sequence of the basic colors inside the printing heads.
<i>Diagnostic->Print heads test draw</i>	Prints the check pattern of the nozzles (available for some printers only)
<i>Diagnostic->Heads cleaning</i>	Starts the cleaning procedure of the heads (available for some printers only)
<i>Diagnostic->Linear test pattern</i>	It allows to print a shaded strip for every ink to check the linearization.
<hr/>	
<i>Help->About MatchPrint II</i>	Shows the information about MatchPrint II.
<i>Help->License manager</i>	Open the Software license manager window in order to view or change the activation key.
<i>Help->User reference manual</i>	Displays the on-line manual.

In the status bar are displayed: on the left corner, the printer and the calibration active, in the middle, the saturation compression parameter (% in red when active), the under color removing (UCR in black when active), the extra black (XBK in black when active), a value of ink limitation (INK in black when active), the manual correction of some color (COL in black when active), the use of the ICC profile (ICC in black when active). Moreover, the zoom layout value is indicated and also the image mirroring function (MIR in red when active). Finally, the state of the user license of the software.



1.2 Layout window

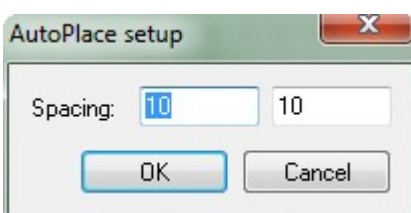


The loaded images or layout are displayed in the layout window. With the mouse it is possible to select the images and change their position inside the layout window.

This window represents the media on which will be printed. The width is defined in the “printing width” parameter (on the left part), while the length is indefinite (it increases, adding images).

The images are automatically positioned optimizing the printing area. It is possible to set a spacing among the images using the option **Auto place setup...** of the menu **View**.

The first parameter refers to the horizontal spacing, the second to the vertical spacing. The measure is in millimeters, inches, centimeters or meters according to the unit of measure settings.



If the grid is active, the images move according to the shape of the grid line. On the settings window it is possible to define the distance among the vertexes around two axes, to choose the grid visualization and to activate the “Snap” (anchorage).

Selecting “Type/Lines”, it is possible to print the grid according to the size “Width and Height” set.

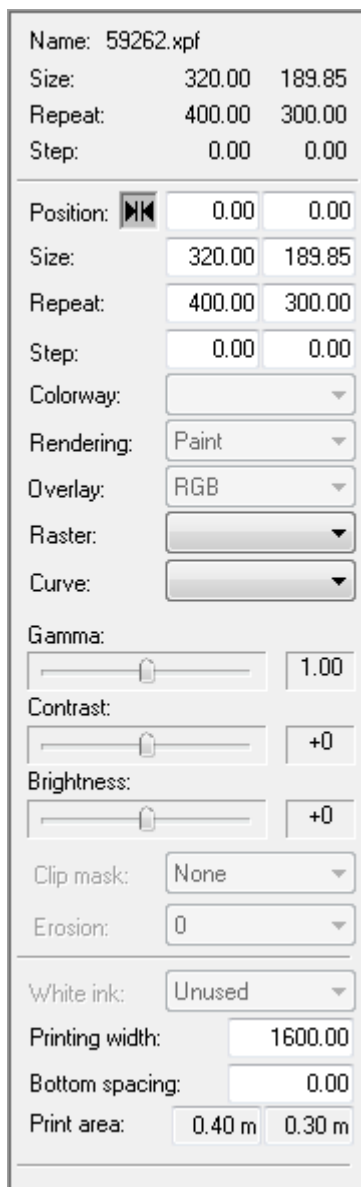
Clicking with the left key of the mouse on one of the two rulers, a **guide line** will be created that can be used to make easier the images positioning.

The image will be automatically centered by dragging it on the guide lines cross point

To open the “Guide settings” window, click with the right key of the mouse on the guide line indicator on the ruler. In this window it is possible to set the exact position of the guide lines, to activate/deactivate the magnet effect and activate and deactivate all guide lines

With F9 and F10 keys, it is possible to manage the zoom level of the layout. Pressing F8 key, you can view a preview of the complete layout set.

1.3 Panel of image parameters



The panel of image parameters is on the left of the layout window; the upper rectangle contains static information about the original image: name, image size, repeat and step. These informations are indicated with the defined unit of measure.

The lower rectangle allows to modify the parameters about position, dimension, repeat, step and colorways of the active image in the layout. Modifying only a value on the “Size” field, the image will be proportionally scaled on both axis, while editing both the fields the scaling of the image will not be proportional.

The parameter **Repeat** shows the real dimension of printing, that in case it is bigger then the original dimension of the design allows a design repetition. (On both axis)

The parameter **Step** indicates the misalignment the repeat has been built with.

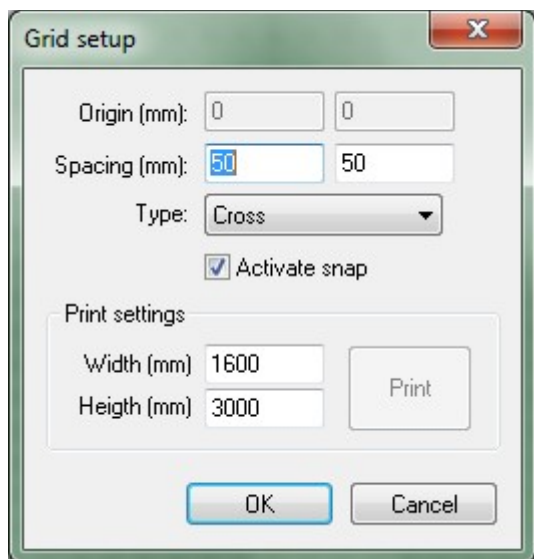
In the repeat and step fields, it is possible to use the symbols “%” and “/” respectively to modify the value in percentage (e.g. *2) or dividing (e.g. 2/3) by a number. The letter “m” after the number indicates the number of meters (e.g. 50M means 50 meters)

The parameter **Rendering** allows to change the method of color management for the RGB images. The possible choices are “Paint” recommended to print textile designs, “ICC” to print photographic images. Using calibrations preceding the version 6, the option “Photo” appears (old mode of photographic printing).

This parameters could be disabled if the calibration used is not complete (State-STEP 2)

The parameters **Overlay** allows to modify the calculation of the overlaps for the XPF images with layers and colorways or

with PSD images (Photoshop®) multichannel. The available options are “*RGB*” that is the same calculation used for the monitor display and “*Spectrum*” suitable to simulate the result obtained in the traditional printing.



The following parameters **Rasters** and **Curves**, are enabled only selecting XPF images with layers or PSD images (Photoshop®) multichannel because they are used for the screening of the image during the printing. **Rasters** allows to select the screen to use, **Curves** allows to select and applied the linearization curve. To see in the list Raster files (.EFX) and Curve files (.CRV), they must have been saved in the path “Documents/(Ramsete)/Rasters”. This function is available only with a particular license.

The three scroll bar allow to modify Gamma, Contrast and Brightness; these options are applicable to images without colorways inside.

The parameter **Clip mask** allows to mask (do not print) some parts of the image. The available options are:

“*Use alpha*” usable only if the image has been created with an alpha channel which defines the transparency of some parts of the image. This function supports the shaded transparency also.

The other option, “*Create mask*”, allows to create a mask for every image that doesn't already have an alpha channel. The transparency is generated considering the color of the pixels to the four vertexes of the image and masking the contiguous pixels with the same color.

“**Erosion**” parameter specifies the quantity of pixels to remove from the edge of the image.

The next panel contains the layout general parameters.

The parameter **White ink** is active only if the calibration has been created with a head with white ink. The available options are “*White matte*” that prints for every a white rectangle for every image. “*White shaded*” that prints a white shade based on the image colors, “*White & colors*” allows to print the image in standard mode mixed to the white where it is necessary, “*Matte & colors*” allows to print simultaneously a white matte and the colors of the image, finally “*Shade & colors*” that allows to print simultaneously the white shade automatically calculated and the colors of the image.

The **Printing width** parameter allows to set the maximum width of the layout limiting the printing to that measure.

The **Bottom spacing** parameter sets the dimension of a white band (not printed) between a printing and the following one.

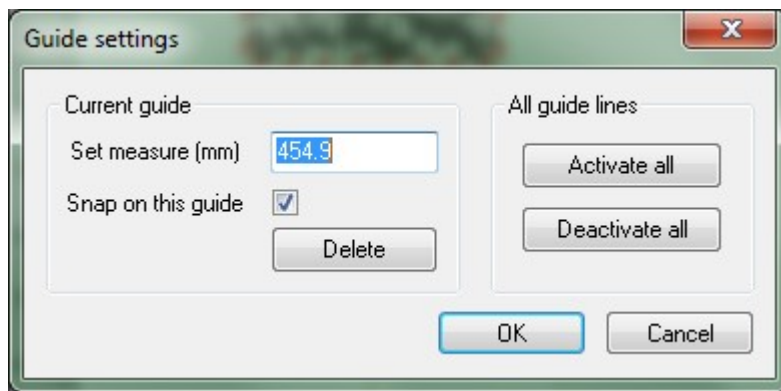
1.4 Printing queue

The panel under the layout window shows the printing queue.

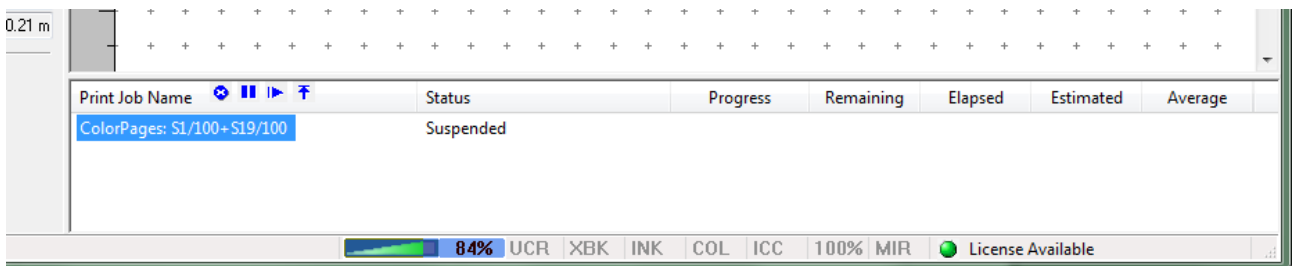
MatchPrint allows to set and start more printing simultaneously, the queue manager will automatically send in printing the jobs.

Every line of the list shows the name of the job in the queue, the state of the printing with the possible error messages, the part of the image already printed in percentage and in linear meters, the remaining time to complete the printing, the elapsed time and the esteemed time necessary to complete the job.

Selecting the name of the job with a “double-click” is possible to bring it inside the layout window where it can be modified and reprinted.



ATTENTION: the changes made in this way don't have repercussions on the job already in the printing queue.

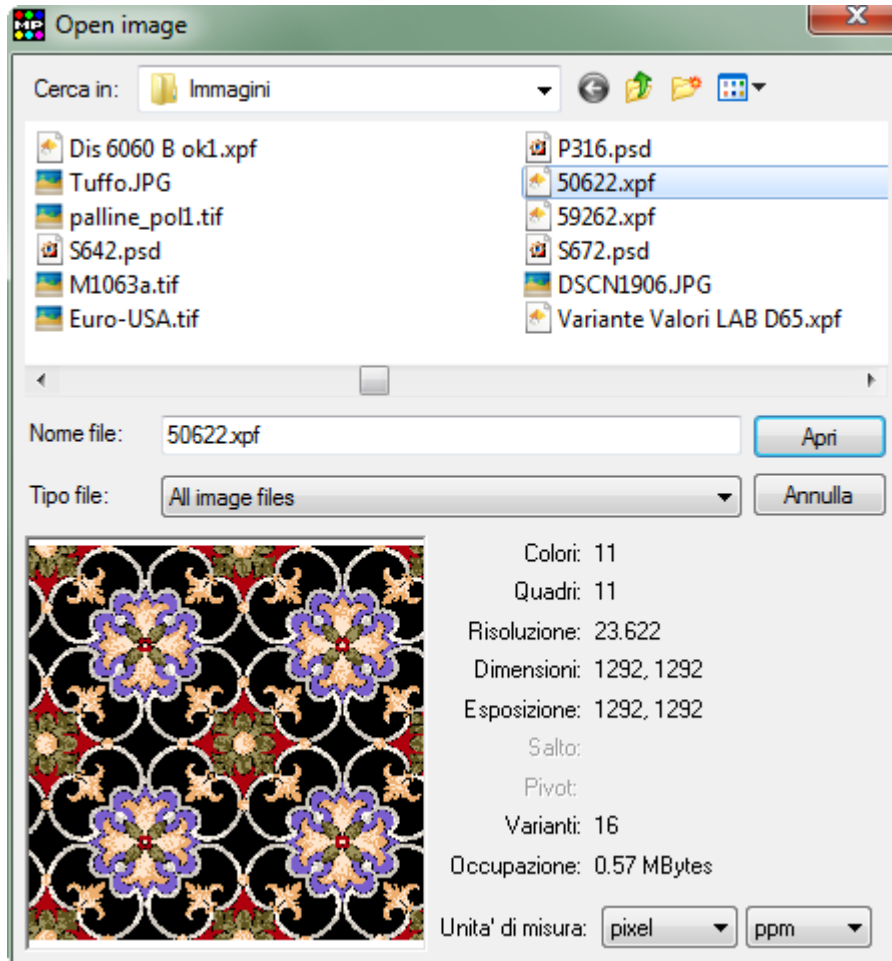


Selecting the name of a printing job with the right mouse key, a menu containing the following options shows up:

<i>Delete</i>	Deletes the selected job in the printing queue. Deleting the printing job in progress, the message “ <i>Deleting</i> ” will appear under the printing status and the printer will start to reset. The reset procedure will take some second.
<i>Suspend</i>	If this command is active on the job in printing, it is finished and the printing queue is suspended (it remains waiting for the command <i>Resume</i>). This function is very useful in case is necessary, for example, to change fabric without having to eliminate all the jobs in queue. Besides it allows to abort a press in progress without removing it from the queue allowing to execute some operations of cleaning or maintenance of the printer reprinting the job subsequently.
<i>Resume</i>	Allows to resume a suspended print.
<i>Move to top</i>	Moves the selected job on top of the printing queue.

2 Functionalities

2.1 Open image



From the “Open Image” window it is possible to select the images to load in the print layout. The image selected and the relative parameters are displayed at the bottom of the interface.

Some of these parameters are active only for images created with Ramsete III (XPF): **Colors**, that indicates the total number of colors in the image; **Layers**, that indicates the possible number of layers; **Virtual size**, that indicates the final dimension of the image; **Step**, that indicates the misalignment among the repetition of the repeat; **Pivot**, is an information that is not used by MatchPrint; **Colorways**, indicates the number of colorways in the image.

The other parameters are active for all the image types: **Resolution**, that indicates the resolution of the design based on the second parameter sets in **Unit of measure** (ppm=points per millimetre, dpi=dot per inch); **Size**, that indicates the original dimensions of the images based on the first parameter selected in **Unit of measure** (pixel, millimetres,inch); **Occupation**, that indicates the dimension of the file in bytes.

The supported file formats are:

- Ramsete III image (*.xpf)
- Btree image format (*.scn, *.gof)
- JPEG Image format (*.jpg)
- Photoshop Image (*.psd)
- TIFF image format (*.tif, *.tiff)
- PDF Portable Document Format (*.pdf, *.eps, *.ps, *.ai)

2.2 Layout management

The layout is the set of images loaded to video and their settings. Once created, a layout can be saved on disk to be recalled and subsequently printed. This functionality results convenient when it is necessary to print-out more images contemporaneously with different parameters, even on different fabrics.

When the layout is saved selecting “**Save**” in the *File* menu, the information saved do not include the file image but only a reference regarding where they are saved on disk.

Example:

loading two images that are saved in the path (C:\designs\ties), once saved the layout it won't be possible to move the images in another path (C:\designs\fabrics) without lose the reference about them. Moving the files in another folder, opening the layout file (.LDF) the user will be informed that the images associated are not available.

For this reason, the layout files are very small, in order of Kbytes even if they refer to images of MB or GB.

To reload a saved layout is enough to use the command **Load...** in the *File* menu.

The command **Archive...** can be used to save both the layout and the data of the image. It allows to create a single file that contains all these information and it will allow therefore to reload the images also after having canceled her from the disk or moved by the original position. This type of file can be of notable dimensions, according to the loaded images. It results very suitable to make the backup of the printing saving both the design and the settings of the executed job.

2.3 Duplication or deleting of the images

With the command **Delete** (Delete key) it is possible to eliminate the image selected from the layout. With the command stampa associati. With the command “CTRL+Ins”, it is possible to **duplicate** an image with a different colorway (XPF files only). The image duplicated are positioned beside if the white space is enough, otherwise below the position of the original one.

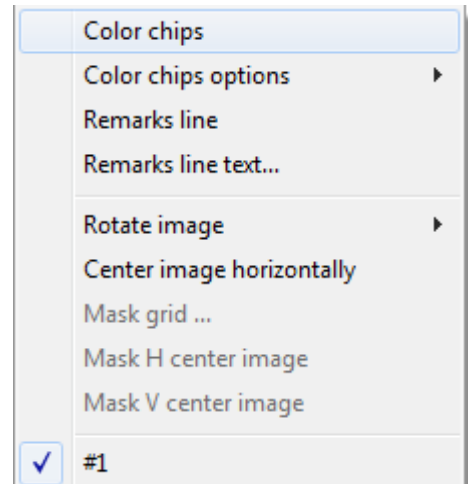
All these commands are also accessible also through the relative buttons of the tool bar. Besides there is the possibility to set an automatic spacing, the minimum distance among the duplicated images (see paragraph “Layout window”).

2.4 Colour chips, remarks and image rotation

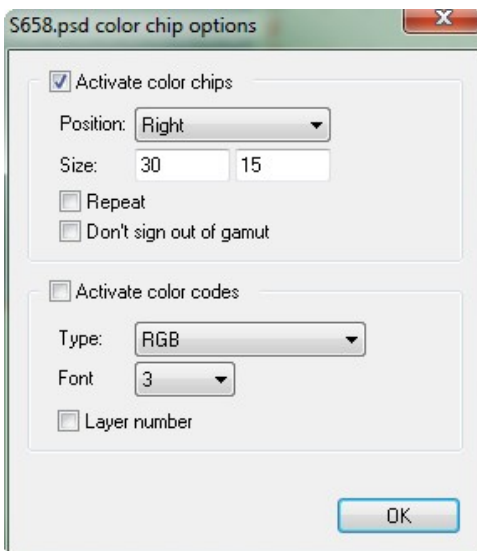
Clicking with the right key of the mouse on an image, the following contextual menu will appear.

- **Color chips** option allows to enable and disable the printing of the color chips that compose the image.

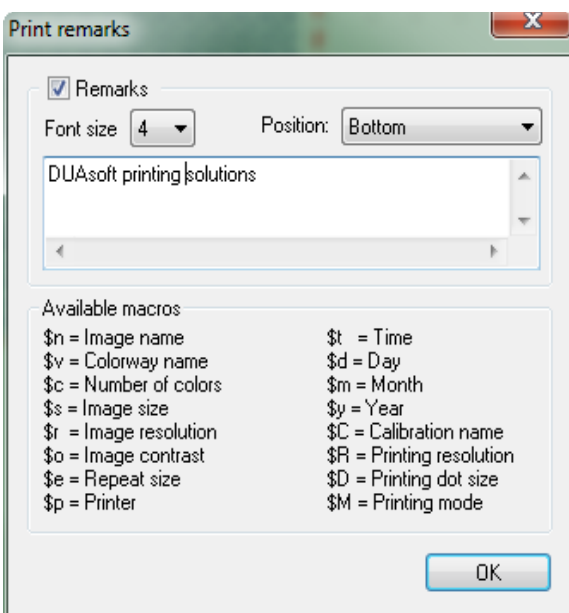
- **Color chips** option shows the following window where besides to enable and disable the printing of the color chips it is also possible to set their characteristics: **Position** is the position in which they will be printed-out (top, bottom, right or left), **Size** is the dimension in millimeters or inches according to the unit of measure already set. **Repeat** allows to repeat the series of the color chips on the whole height or length of the image (according to their position), **Don't sign out of**



gamut enables or not the indication with an exclamation mark for the colors that are not contained in the gamut of the printer,



It is also possible to print the color code in every color chip, in case in which the color does not belong to a color chart and therefore does not have a code, it can be identified choosing the format in the field **Type** (RGB, HSV-HSB, Ramsete, PhotoShop®, Ramsete-RGB, Ramsete-PhotoShop®, PhotoShop®-RGB, Lab, Lch). The field **Font** indicates the dimension in millimeters of the character used for the code. With **Layer number** it is possible to print the number of the layer corresponding to the color.



Remarks line allows to enable or disable the printing of the remarks.

Remarks line text... allows to write the remarks and also to set their characteristics. **Font size** indicates the dimension in millimeters of the character used. **Position** is the position in which they will be printed-out (top or bottom). In the following field it is possible to write the comment. The program recognizes besides some "macro" that begin with the symbol "\$"; for instance the writing "\$n" is repalced with the name of the design.

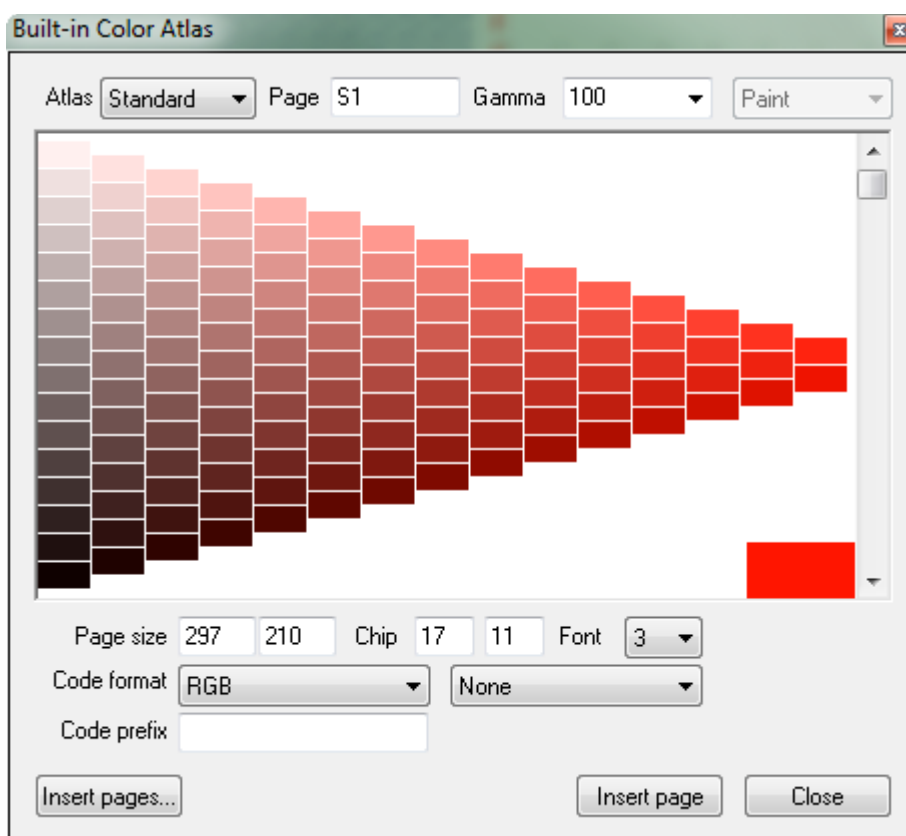
The option **Rotate image** allows to rotate the image of 90, 180 or 270 degrees.

If the image contains some colorways, they will be listed under the option rotation to allow a more rapid selection.

If the image is RGB and contains an incorporated ICC profile, the name of the this profile is displayed with the possibility to enable it so that the software print-out the image using it as input ICC.

2.5 Colour Atlas

MatchPrint II integrates the possibility to print-out a specific Color atlas for the printer in use. As the type of fabric and dyes influences in a significant way the chromatic result, it is impossible to use a generated Color atlas for another calibration profile also.



Through the combo box **Atlas** it is possible to select the atlas type among the following options: "Index", "Standard" and "Extended".

Atlas "Index" is composed by 7 pages: the first one shows the grey tones and the other six show the colors with the maximum density.

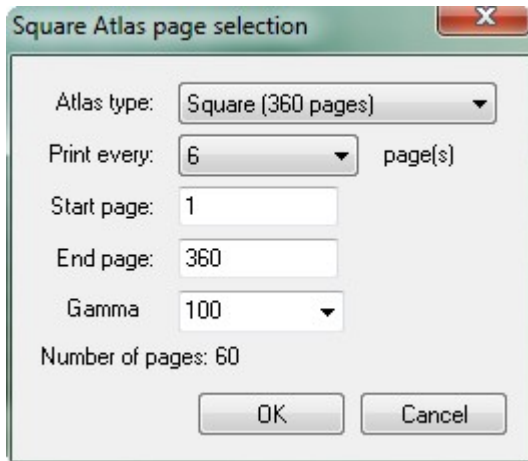
The atlas "Standard" is composed by 72 triangular pages, for each page the color reference changes that is shaded toward the black and toward the white.

The atlas "extended" is structured as the "Standard" one but it is composed by 1530 pages.

Besides it is possible to produce a great deal of intermediary atlas pages to facilitate the search of particular colors selecting (clickind with the left key of the mouse) one of the color chips present in the page.

The atlas pages are indentedified by an unique name that allows to be able to print them again in every time to face the normal chromatic color gradient. The syntax of the pages name is "pg.subpg" where the value "subpg" is optional. The number of pages (pg) vary from 1 to 72 (or to 1530 if the atlas is extended), the sub-pages (subpg) from 1 to 135.

The **Gamma** value can be set from 5 to 195 with increases of 5. There is a default list of parameters but it is binding.



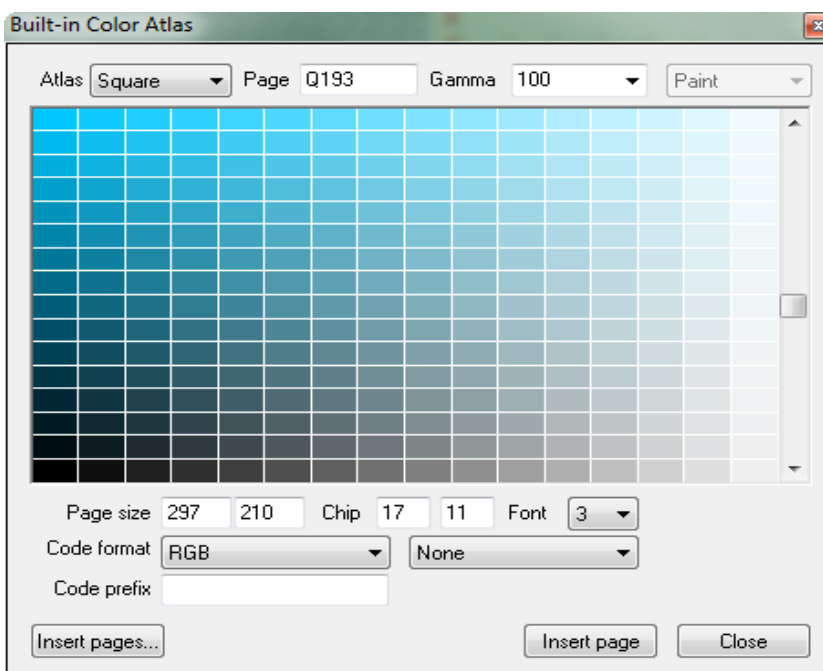
The input field **Page** allows to insert the name of a page previously printed and/or to change some parameters of the page currently displayed.

To change page it is also possible to use the scroll bar on the right of the window.

It is possible to personalize the dimensions of the page and the color chip (in millimeters or inches) and to select the code type that will be printed on each color (codes Ramsete, Ramsete page, RGB, HSV_HSB, PhotoShop®). On each color can be printed two different codes.

The button **Insert page** inserts the selected page in the layout window; **Close** closes the atlas window.

Pressing the button **Insert pages...** is displayed the window beside where is possible to select the atlas type to manage the range of pages to print-out, the possible step between the pages and the gamma to be applied. At the bottom of the window is displayed the reality number of pages that will be inserted in the layout pressing on the OK button.



2.6 Square colour atlas

The square color atlas differs from triangular one in the form of the pages that are 20x20 chips. For this type of atlas can be printed 360 pages.

The input field **Page** allows to insert the number of the pages currently displayed. To change page it is also possible to use the scroll bar on the right of the window.

As for the triangular atlas, it is possible to personalize the dimensions of the page and of the color chips, it is also possible to select the type of code that will be printed on each color (codes Ramsete, Ramsete page, RGB, HSV_HSB, PhotoShop®). On each color can be printed two different codes.

The button **Insert page** inserts the selected page in the layout window; **Close** closes the atlas window.

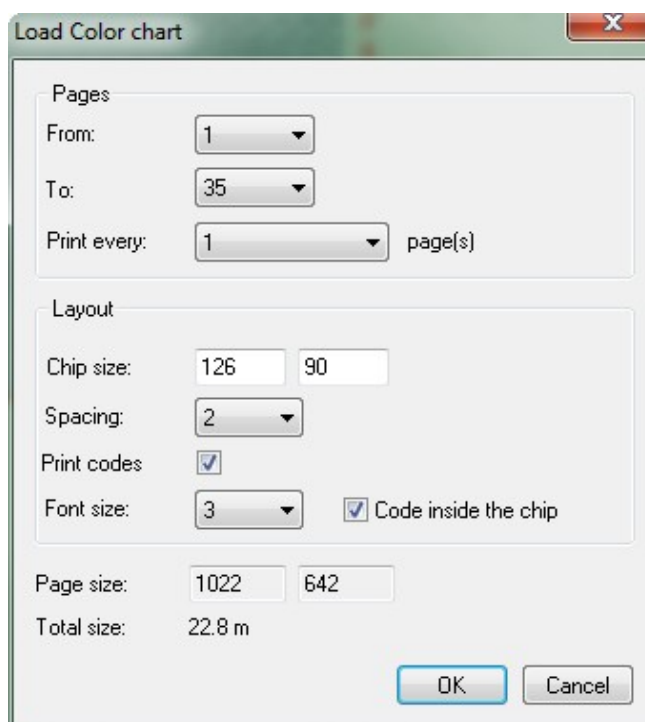
The button **Insert pages...** gives the possibility to insert in the layout window a range of pages also foreseeing a possible step among the pages.

2.7 Colour chart

MatchPrint offers also the possibility to print color charts created with Ramsete III from the menu **File-Open color chart...**

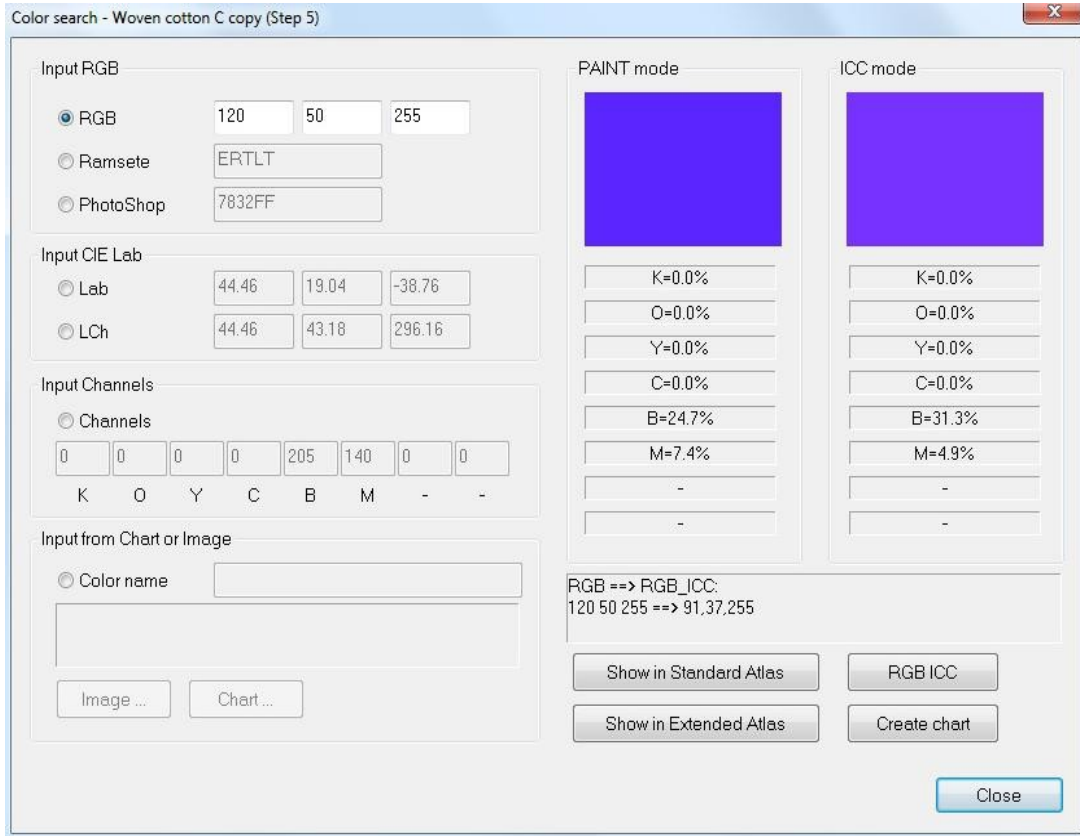
After having selected the colour chart desired the following window appears where it is possible to choose the range of pages to print-out, the dimensions of the color chips, the white space between the chips and the dimensions of the codes character (in millimeters)

The field **Size** shows the real printing dimensions of a page.



2.8 Colour search

This function allows to select a reference colour and to print-out some pages of similar colours, in which tonality, saturation and brightness are changed.



In one of the “Input” sections it is possible to enter the reference color of the available modes that is wanted to verify: RGB, Ramsete code, Photoshop code, Lab value (can be activated only if the calibration is complete – Step 5), value Lch (only if the calibration is complete – Step 5), or by entering the channel values for a reverse conversion, Finally, it is possible to select a color into a folder.

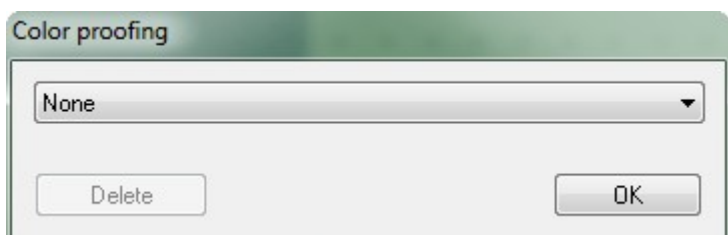
Once inserted the values, (e.g. RGB) in the channel fields are displayed the quantity used for each basic color of the machine (range 0-255)

The button “Show in Standard Atlas” allows to show the color reference selected inside the color atlas to facilitate his research.

2.9 Proofing profile

This functionality allows to use the ICC profiles in the proofing mode that has the purpose to simulate on the plotter/calibration in use the behaviour of another device or another calibration.

From the interface it is possible to choose the ICC profile of the device to emulate. To add a profile to the list, it is enough to choose the option “Open” from the list and select the file.



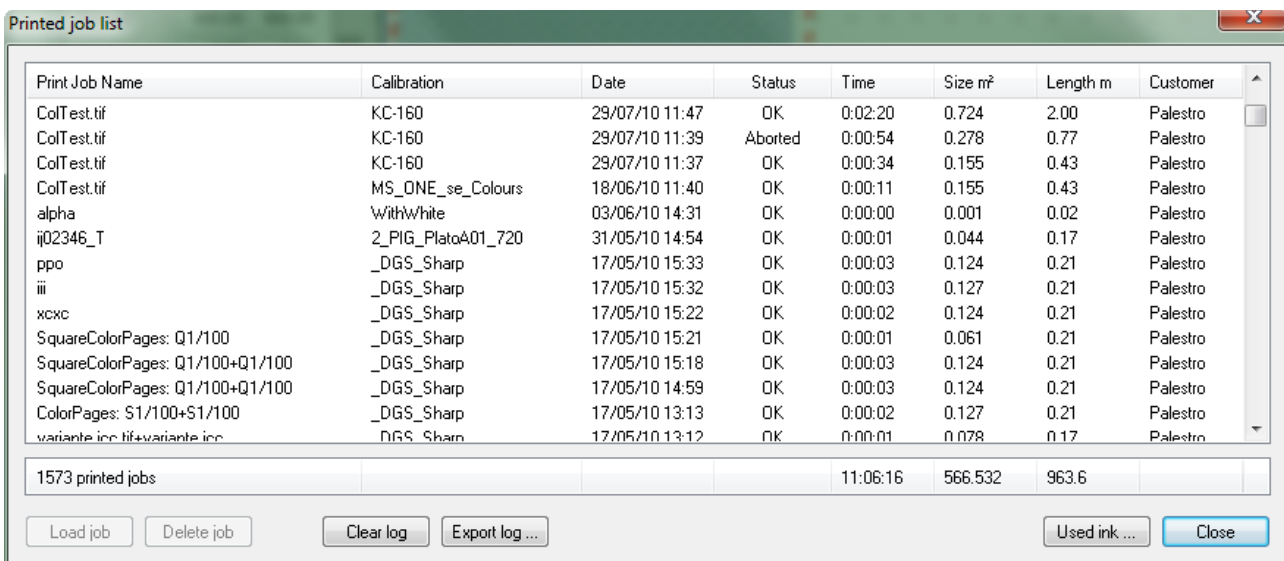
2.10 Printed job management

The window in the image below lists all prints made with the system. The table shows the image name for each print (or group of pictures), the calibration, the date the start time, the result the total time, the size in square meters, the length in linear meters and the customer which the printing has made. Selecting the job name and pressing “Load job”, it is possible to reload it in the layout window or delete it from the list (**Delete job**).

It is possible to load a job in the layout window also selecting the name with a “double-click”.

Pressing **Clear log...** the list will be completely deleted.

The button **Export log...** produces a printable file that contains the information of the list in PDF format, it is contained in the “Documents” folder of Windows®.



Print Job Name	Calibration	Date	Status	Time	Size m²	Length m	Customer
ColTest.tif	KC-160	29/07/10 11:47	OK	0:02:20	0.724	2.00	Palestro
ColTest.tif	KC-160	29/07/10 11:39	Aborted	0:00:54	0.278	0.77	Palestro
ColTest.tif	KC-160	29/07/10 11:37	OK	0:00:34	0.155	0.43	Palestro
ColTest.tif	MS_DNE_se_Colours	18/06/10 11:40	OK	0:00:11	0.155	0.43	Palestro
alpha	WithWhite	03/06/10 14:31	OK	0:00:00	0.001	0.02	Palestro
ij02346_T	2_PIG_PlatoA01_720	31/05/10 14:54	OK	0:00:01	0.044	0.17	Palestro
ppo	_DGS_Sharp	17/05/10 15:33	OK	0:00:03	0.124	0.21	Palestro
iii	_DGS_Sharp	17/05/10 15:32	OK	0:00:03	0.127	0.21	Palestro
xcxc	_DGS_Sharp	17/05/10 15:22	OK	0:00:02	0.124	0.21	Palestro
SquareColorPages: Q1/100	_DGS_Sharp	17/05/10 15:21	OK	0:00:01	0.061	0.21	Palestro
SquareColorPages: Q1/100+Q1/100	_DGS_Sharp	17/05/10 15:18	OK	0:00:03	0.124	0.21	Palestro
SquareColorPages: Q1/100+Q1/100	_DGS_Sharp	17/05/10 14:59	OK	0:00:03	0.124	0.21	Palestro
ColorPages: S1/100+S1/100	_DGS_Sharp	17/05/10 13:13	OK	0:00:02	0.127	0.21	Palestro
variante.icc.tif+variante.icc	_DGS_Sharp	17/05/10 13:12	OK	0:00:01	0.078	0.17	Palestro
1573 printed jobs				11:06:16	566.532	963.6	

Buttons: Load job, Delete job, Clear log, Export log..., Used ink..., Close

At the end of the list it is possible to find a report of the number of printed jobs, the total time and the sum of the dimensions of the designs.

When a job, which has been printed with parameters different from the current ones (calibration or print parameters) is loaded, the program asks if the user wants to keep the current ones or replace it.

3 Calibration

This paragraph describes the calibration procedure of MatchPrint II. The calibration is the process through which MatchPrint II understands the chromatic behaviour of the printer that is driving; equal to the data sent to the printer, the color rendering changes depending on the model of the plotter the setting of the quality parameters or the resolution, number and type of dyes and the type of fabric to print on. Unlike for traditional printers where the main parameter to consider is the type of paper (glossy, opaque and transparent); the number of variables for textile printers is a lot higher and their influence on the chromatic result a lot more complex. However, MatchPrint II allows the user to decide at his pleasure which colours and type of dyes to employ.

Besides the chromatic performance is strongly influenced from the chemical pre-treatment spread out on the fabrics to make them ready to receive the inks.

Once the calibration procedure has been carried out, MatchPrint II reproduces in the best way RGB colors (originating from a normal computer image) as well as Lab colours (originating from a colorways CAD like Ramsete III). In the second case MatchPrint II even assures the exact reproduction of the desired colour (if within the limits of the dyes used).

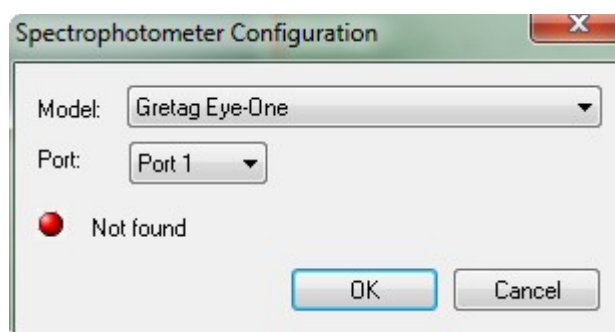
The calibration procedure is independent from the model of the printer used.

3.1 Creation of a calibration

The calibration process is divided in 5 separate phases. To complete this procedure is essential to use a spectrophotometer for the reading of the printed samples of colors.

3.1.1 Spectrophotometer configuration

MatchPrint II supports several models that is possible to configure in the following interface (command **Spectrophotometer configuration** of the menu *File*).

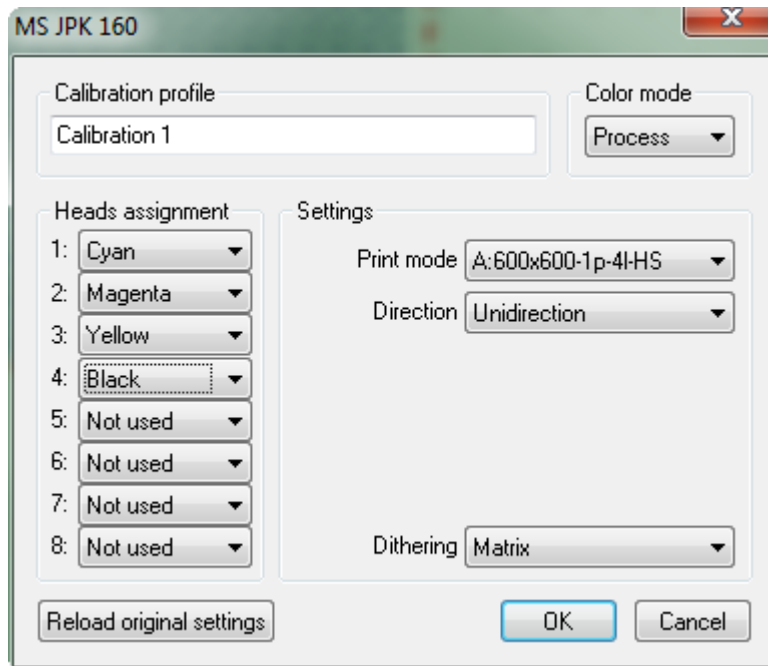


To configure the spectrophotometer it is necessary to connect the tool: the type of connection of the computer depends on the model (usually USB or serial). Subsequently choose the name corresponding to the model in the available list. If the operation is correct the LED in the window will appear of green color. Otherwise it is possible to try to change the number of connection port.

3.1.2 Procedure

Calibration->Step 1: Print density test

Initially it is required the format of the printing to execute. The options are: Small (chips size 30x20 mm), Medium (chips size 30x40 mm), Large (chips size 30x60 mm). The number of chips per line is always of 24.



Subsequently it is required the name of the calibration (it is not possible to use the name of an already existing calibration), the indication of the loaded inks and the setting of the parameters of the active printer (for more details see chapter “Supported printers”) They have to be indicated as *Spot* colours for instance the colours fluorescent, golden or the black pigment to be used for the outlines when these colours must have managed with dedicated layers. The spot colours will be used only in case in which in the design (created with Ramsete III) is present a layer with the same name of the Spot color (field *Ink name* in the window “Read density test”).

White and *Engraving* colours are managed automatically by the software to print-out on black backgrounds or for the digital engraving of layers.

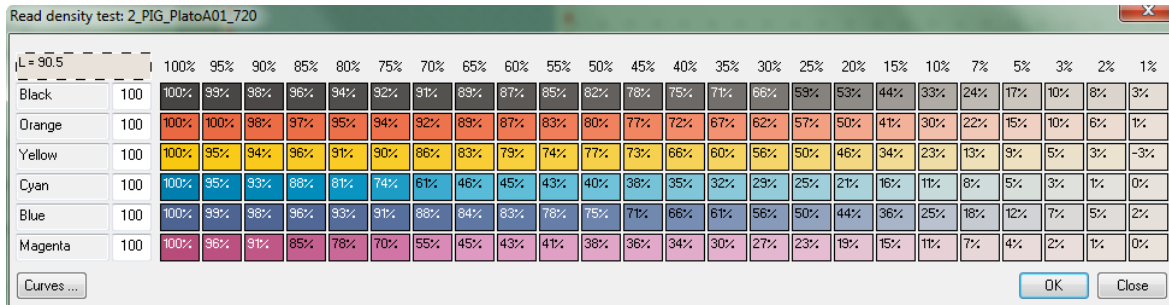
The set parameters will be saved inside the calibration. Confirming these parameters will be printed-out the pattern of test (Density test). Once obtained the printing, it is necessary to complete the finishing process of the fabric (steaming, washing, etc.) before proceeding phase.

Calibration->Step 2: Read density test

Initially it is required to calibrate the spectrophotometer; the spectrophotometer calibration is made positioning it on the white's table furnished with the instrument and pressing OK in the window.

When the spectrophotometer is calibrated, it is required the calibration name (it is possible to choose only existing calibrations) and it is necessary to indicate exactly the name wrote at the top of the pattern to read.

Chosen the calibration, the following window will be displayed, where the number of lines depends on the number of heads used by the printer and by the presence of inks “cut” (that are printed with the corresponding pure).



Initially it is required to read the fabric color. Afterwards it is necessary to read the stripes of colors (in everything 24 color chips). The procedure is performed pressing the key of reading of the spectrophotometer after having positioned it on the color chip. If a wrong color was read, it is possible to select it with the mouse and read it one more time.

Once completed the sequence for each colour, the software calculates the “bleed point” and proposes it in the input field. This parameter specifies how many colors in the dark part of the stripe are very similar; the indication of this parameter allows to limit the problem of “spreading” of the inks and/or to save consumption of ink in the case the maximum saturation is reached with percentages of coverage inferior to 100%

It is very important to find the best compromise between saturation and ink quantity to correctly set this parameter because it influences meaningfully the quality of the printed outlines. If is inserted, for example, the value 90%, the system will use the third colour read as maximum threshold for that colour and as starting point of the grey scale.

The reading of the spot colours is not obligatory. In case in which this was not effected the software uses the colour applying a default curve of linearization and the value of the bleed point proposed will be always 100%.

The flag **Stripes reading** must be activated only in case in which is used the spectrophotometer “i1”, that supports the continuous reading of more colours. In this way it is possible to read with a fast wipe a whole line of colour chips, speeding up notably the reading of the calibration pages.

The procedure to read “by stripes” is the following:

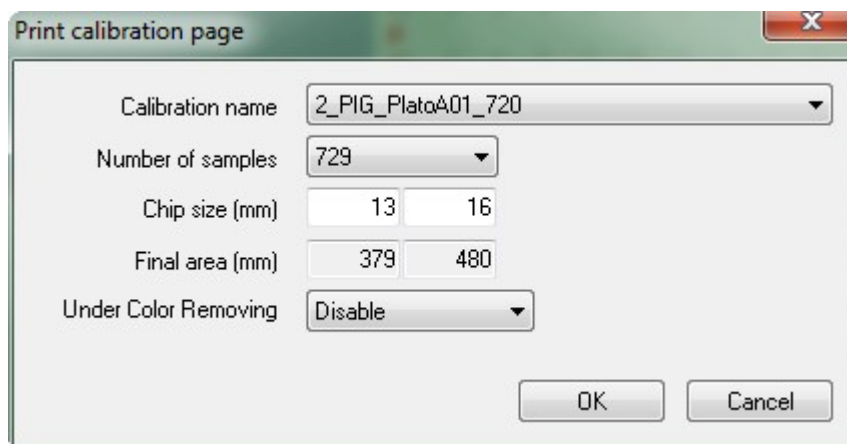
- read the fabric (“Fabric” field on top left corner) disabling the flag **Stripes reading**;
- activate the flag **Stripes reading**
- position the spectrophotometer on the white part of the fabric on left of the first chip;
- press (and hold press) the key of reading of the spectrophotometer and attend the sound of start (will pass 1 or 2 seconds);
- once heard the sound it is possible to horizontally move the spectrophotometer passing on all the chips of the line, always holding pressed the key of the spectrophotometer;

- reached the end of the line get over the last chip, stop on the white part and release the key of the spectrophotometer
- if the reading is correct, all the chips of the line on the display will become coloured otherwise it will be necessary to repeat the operation.

It is important that on the right, at the end of each line, there is a white part of fabric to allow the software to recognize the end of the reading.

Calibration->Step 3: Print color calibration

To proceed with this step it is necessary to select the name of the calibration to complete. It is possible to choose only existing calibrations



Moreover there is the possibility to decide the sampling details with the **Number of steps** parameter and the size of the colour chips (**Chip size**). Increasing the calibration details the software will print a greater number of colour chips.

Once confirmed the parameters, the pattern of the calibration will be printed-out. (Calibration page)

As for the first phase it is necessary to complete the finishing process of the fabric (steaming, washing, etc.) before proceeding to the following phase.

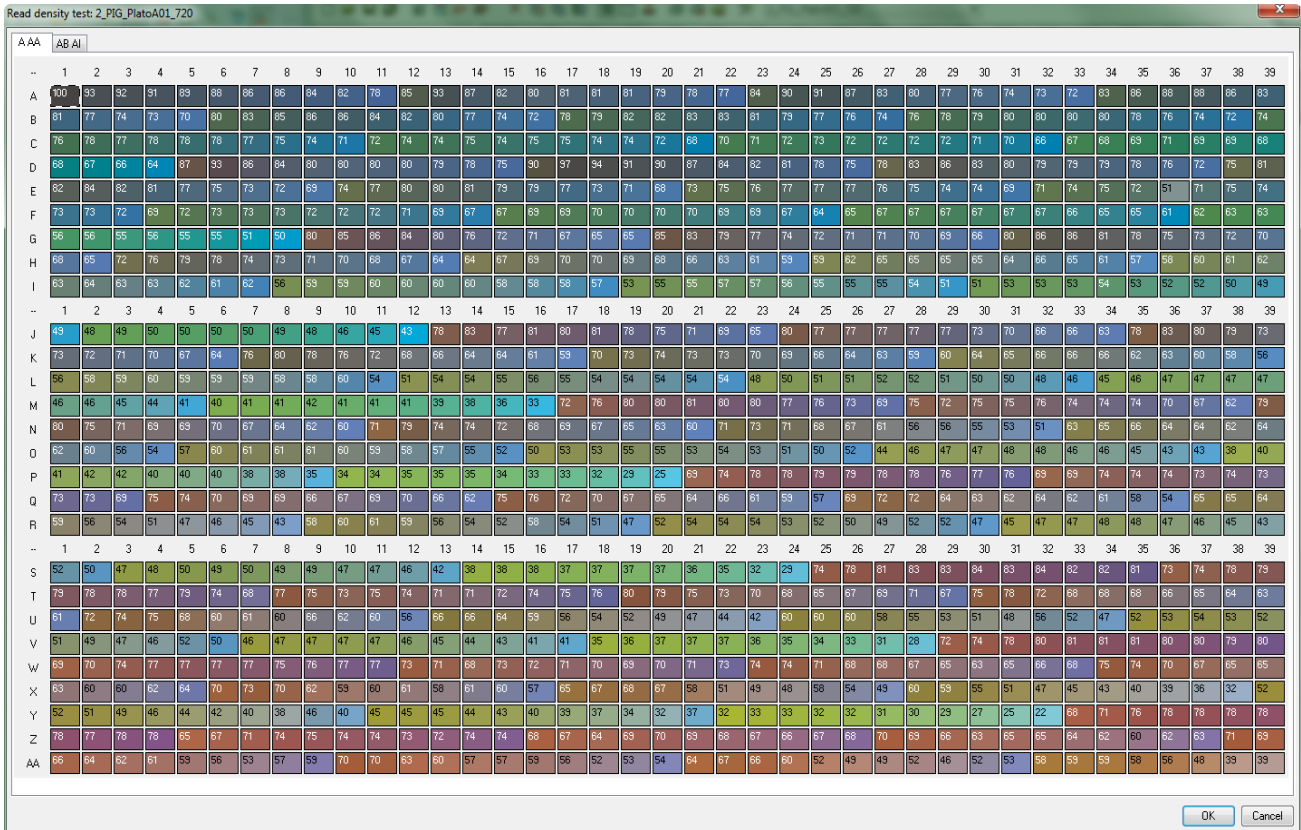
Calibration->Step 4: Read color calibration

As for the phase 2, it is required the name of the calibration (it is possible to choose only existing calibrations); it is necessary to indicate exactly the name wrote on top of the pattern to read.

Once confirmed the name, the spectrophotometer calibration will be required.

Calibrated the spectrophotometer, will be displayed the following window where the number of columns is a multiple of the value inserted as wideness of the sampling in the preceding phase.

Also in this case it is possible to effect the stripes reading.



3.2 Use of a calibration

Without a calibration profile active it won't be possible to print-out.

The user has the possibility to use a calibration modifying some printing parameters of it. If are modified parameters that alter the reproduction of the colour a message will warn that the color-matching is not more guaranteed and beside to the indication of the calibration in use a symbol of WARNING will appear. (yellow triangle)

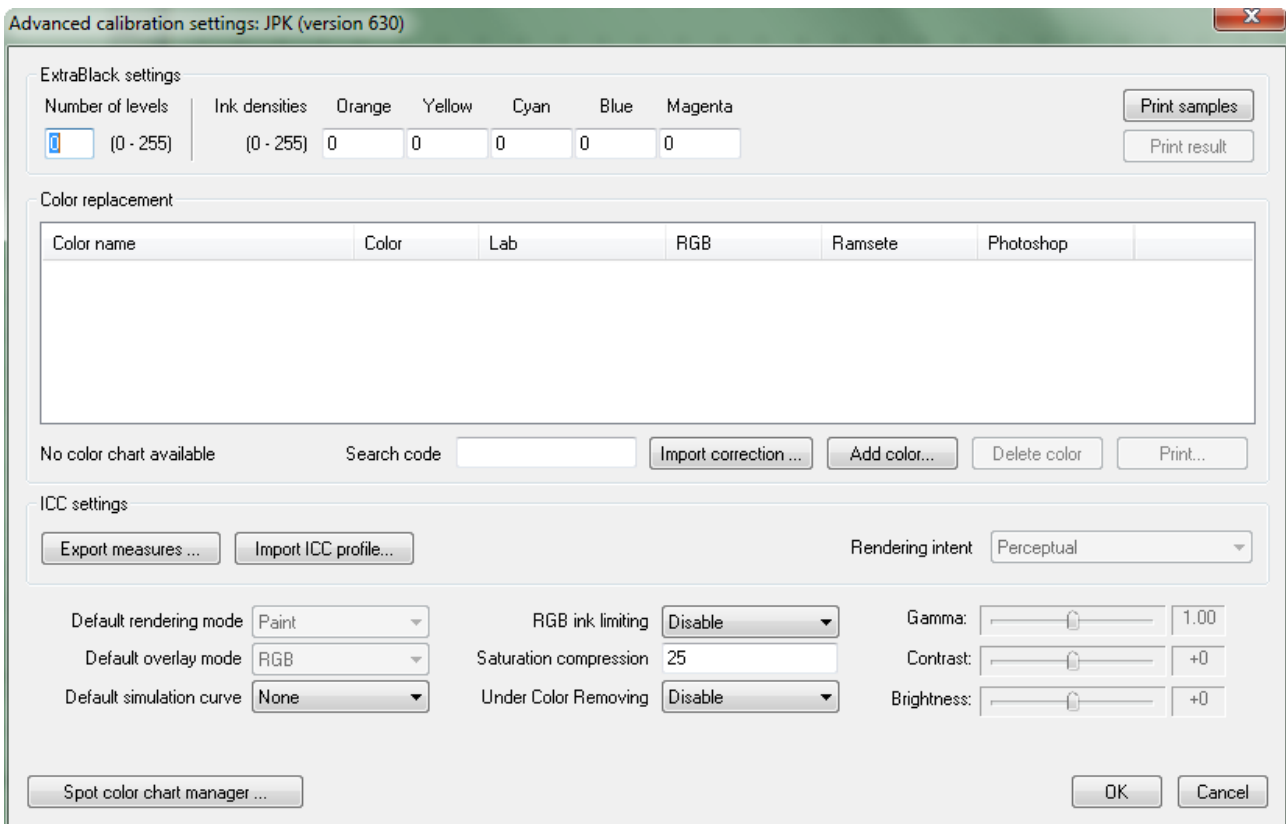
The changes to the parameters are saved in the calibration. It is possible to restore the initial values clicking on the special button in the window of the printer properties (see chapter "supported printers").

To select the calibration to use there are the following possibilities: to choose the command **Printer properties...** from the menu *File*; to do a double click with the left key of the mouse on the name of the calibration on the *Statusbar*, to directly choose the calibration from the list present in the *Toolbar*.

3.3 Advanced settings

This operation allows to set the management of the extra-black (see paragraph 3.3.1), to manage the colour correction (see paragraph 3.3.2), to manage the ICC profiles (see paragraph 3.3.3), to plan the rendering type (see paragraph 3.3.4) and the type of the overlaps calculation (see paragraph 3.3.5), of define the curve of simulation (see paragraph 3.3.6) to indicate the possible percentage to limit the use of the inks (see paragraph 3.3.7), of choose the method of search of the out of gamut colours (see

paragraph 3.3.8), to activate the under color removing (see paragraph 3.3.9) and to generate and to change colour charts using the inks in spot mode (see paragraph 3.3.10).



3.3.1 Extra-Black

The Extra-black can be used for further darkening the black if the pure ink resulted too much clear or to correct it in case in which it was not perfectly neutral. The correction is made printing with the black other colors in base to a recipe to define.

It is possible to print-out a series of samples to facilitate the individualization of the colors to use for composing the extra-black mixture with the command **Print samples**. The printing is divided in a varying number of color chips in which the black is mixed with different percentages of the other dyes. Under every chip is indicated the quantity of the added colors.

A color is normally divided in 256 densities, called levels, (from 0=color absent to 255= maximum saturation). In the field **Number of levels** it is necessary to indicate in how much of these levels starting from the maximum saturation (255), is had to mix the black with the colors of the recipe.

Example: setting Number of levels to 1, only the most saturated black will be mixed with the other colours. The whole rest of the grey scale will be printed-out using onlythe black.

In the fields marked by the name of the color it needs to indicate the quantity of color to add to the black specifying it with values included in a interval from 0 to 255. The recipe can be composed from the number of colors that is desired.

The user can appraise the result of the settings with the command **Print result** that prints-out a test composed by 128 chips of grey scale.

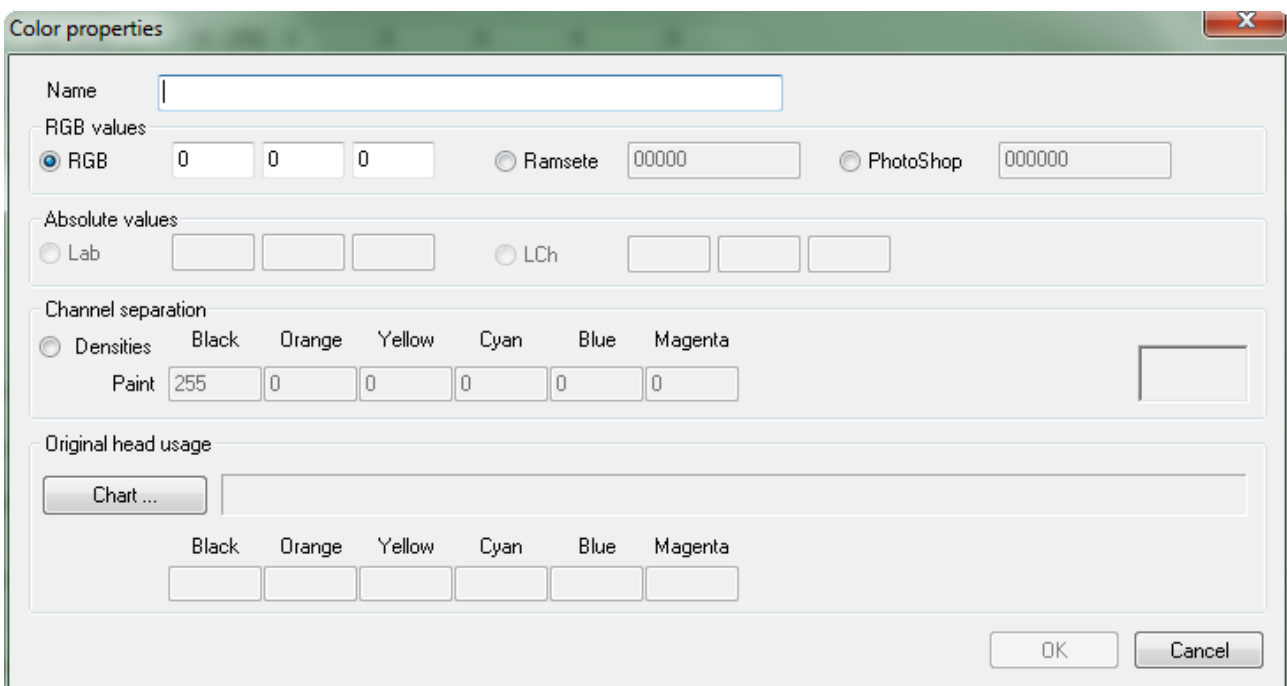
3.3.2 Color correction

Through this function it is possible to make corrections to the color chart manually defining how to print-out the colors whose automatic reproduction doesn't result satisfactory.

Besides it is possible to add some colors whose recipe is integrally defined by the user that is able, in this case, to mix basic dyes that in automatic are never mixed by the software.

The unique code for the recognition of the color to be replaced is the name that in the case of images XPF correspond to the name or code of the color assigned to the single layer during the colorway, while in the case of images PSD correspond to the name of the channel.

The software compares all the names (codes) of the colors belonging to the image with the list present in the management of the color substitution. In case in which there is a correspondence, the color of the image will be replaced with the color present in the list.



With the button **Add color...** or with a double click with the left key of the mouse on the name of the color, it is possible to define or to modify the corrections.

The field **Name** is obligatory and the name must be unique. The following fields allow to choose the mode to effect the correction. It is possible to activate only one of the present options. The values of the disabled options will be automatically updated however in base to the defined settings. Following the possible modes are described.

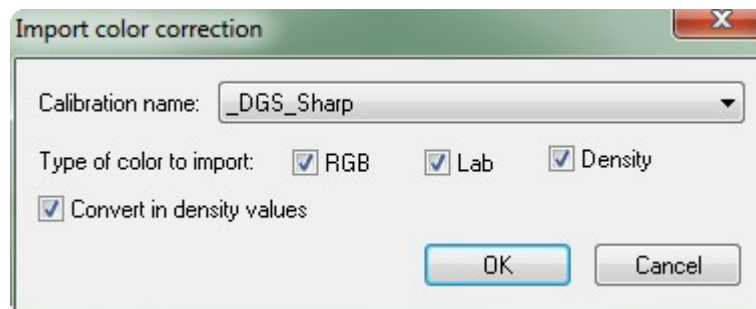
- **RGB** the three associated values correspond to the values R (Red) G (Green) B (Blue), useful to reproduce colors taken by the atlas printed with MatchPrint

directly on the fabric and with the codes RGB visualized. The range of every value varies among 0 and 255;

- **Ramsete** the code is the same used in the software Ramsete to define the colors. As in the preceding case the code can be taken by the color atlas of MatchPrint;
- **Photoshop®**: this is the code used by the software Photoshop® to define the single color;
- **Lab** this code is usually originated from readings by spectrophotometer and correspondent to the description of the space color according to the standard CIE Lab;
- **LCh** it is exactly equivalent to the code Lab, it is a simply representation of the same color space;
- **Densities** with this option it is possible to define an own recipe to reproduce the desired color. The range of every value varies among 0 (absent color) and 255 (color to the maximum allowed density).

The display of the color set is purely representative because it is not applied any video simulation of the printing result.

Note: in this window it is possible to verify how the software will reproduce the required color. In the image can be seen that the value RGB 240, 0, 233 has been introduced for the color 1234. In the disabled fields related to the voice "Densities" it is possible to see that MatchPrint will generate the color with the recipe 15 of black, 10 of orange and 255 of magenta. To modify the recipe is enough to enable the voice "Densities" and to introduce the desired values.



The button **Import correction...** allows to import the corrections effected for another calibration adapting them, if necessary, to the current one. In the window above it is possible to select the calibration from which to take the information of correction, the type of colors to be import and to choose whether to adapt the corrections for the current calibration (**Convert in density value**).

The button **Delete color** allows to delete from the list the selected correction.

The button **Print...** prints all the list of corrections.

The box **search code** allows to seek a color inside the list indicating the complete name of it or only a part.

3.3.3 ICC profiles

This feature is available only with calibrations from version 5.50.

To activate the ICC support for a calibration it is necessary to generate a small file with the **Export measures...** button and send it to MS PRINTING SOLUTIONS (by email). We will send back the ICC file to import in the calibration with the **Import ICC profile...** button. After that the item *Rendering intent* will be activated: this is necessary to select the ICC rendering to use for the printing with the ICC profile.

The calibration ICC support is indicate also in the status bar (paragraph 1.1).

3.3.4 Rendering mode

The **Default rendering mode** item indicates the default value of the *Rendering label* in the object parameters window (paragraph 1.3), loading a new image in the layout. This feature refers to all the RGB images (no layer with colorways or PSD multichannel images).

3.3.5 Overlay mode

The **Default overlay mode** item indicates the default value of the *Overlay* label in the object parameters window (paragraph 1.3), loading a new image in the layout. This feature refers to all the layer with colorways or PSD multichannel images (no RGB images).

3.3.6 Simulation curve

The **Default simulation curve** item indicates the default value of the *Curves* label in the object parameters window (paragraph 1.3).

3.3.7 RGB ink limit

This feature permit to reduce the total amount of the ink that the software use to print.

When a color is composed of 100% of black ink and other inks, the software will decrease the quantity of the colors (no effect on the black quantity). In this way the total coverage will not go over the specified limit.

The option permits to avoid the bleeding effect that some inks have on some kind of fabrics.

3.3.8 Saturation compression

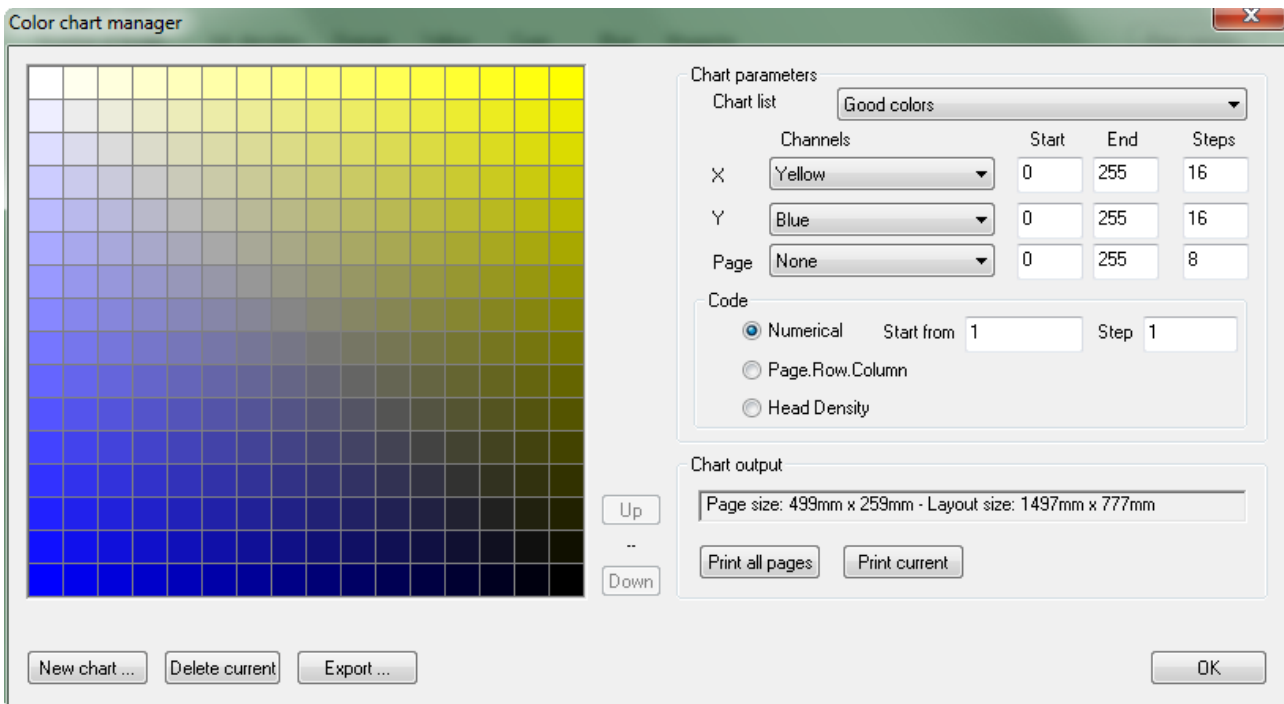
This option allows to reduce per cent the quantity of color used to print maintaining unchanged the tones, changing only the saturation and print coverage.

3.3.9 Under color removing

This feature permits to take off the colour inks from the colour recipe while printing very dark tones. In this way it is possible to avoid "tone jump" that happens in some cases printing dark shading.

There are five available options that apply different colours removal. The option that remove the greater amount is “20-Gamma 2+35”.

3.3.10 **SPOT colour chart management**



With this feature it is possible to create and manage a particular chart where the colours are manually defined as a mix of two or three base colours. The visual result totally depends by the calibration.

With the **New chart...** button it is possible to create a new chart.

The **Delete current** button allows to eliminate the colour chart currently selected in the field *Chart list*.

With the **Export...** button it is possible to export the information in a .XCD file compatible with Ramsete software, This is powerful to make the colorways.

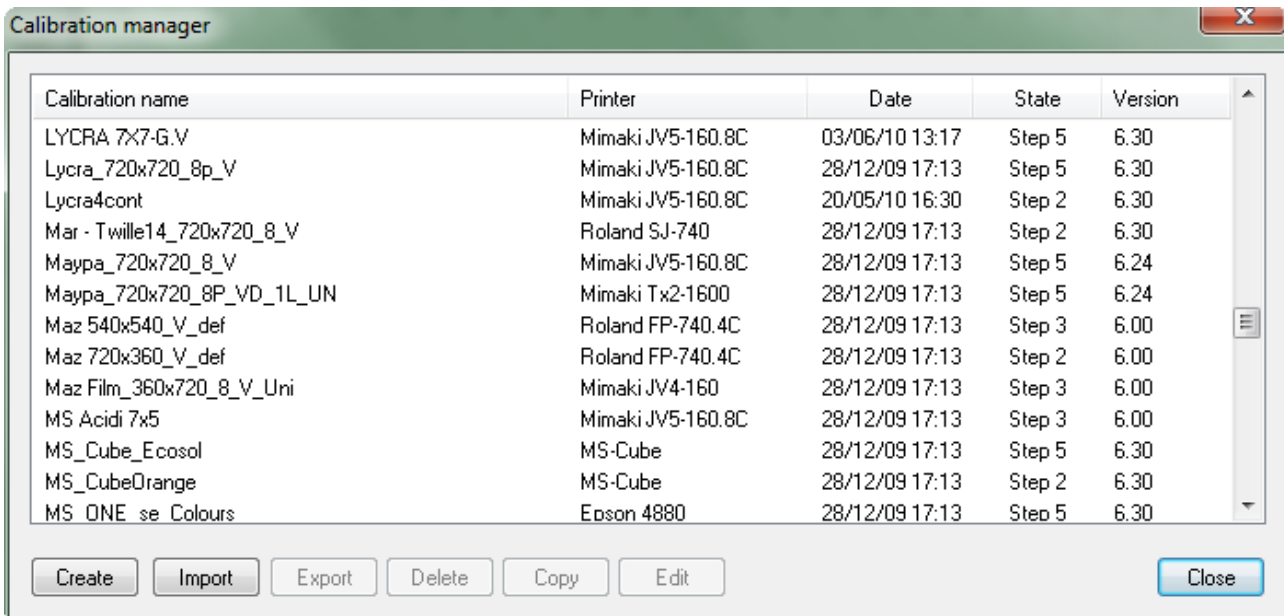
In the **Chart parameters** section are available the parameters to adjust the chart:

- *Chart list* shows the list of the chart present in the calibration;
- *Channels* identifies the color associated respectively to the X axis, Y axis and the pages of chart;
- *Start* indicates the starting density of the color associated respectively to the X axis, Y axis and the pages of the chart (values from 0 to 255),
- *End* indica la densità di arrivo del colore associato rispettivamente all'asse X, all'asse Y e alle pagine della cartella (valori da 0 a 255),
- *Step* indica il salto di incremento delle densità.

Nella sezione **Chart output** vengono visualizzate le dimensioni della pagina e dell'intero layout. Inoltre è possibile stampare la sola pagina corrente (**Print current**) o la cartella colori completa (**Print all pages**).

3.4 Calibration management

Selecting “Calibration/Calibration manager” the following window will be visualized



Calibration name	Printer	Date	State	Version
LYCRA 7x7-G.V	Mimaki JV5-160.8C	03/06/10 13:17	Step 5	6.30
Lycra_720x720_8p_V	Mimaki JV5-160.8C	28/12/09 17:13	Step 5	6.30
Lycra4cont	Mimaki JV5-160.8C	20/05/10 16:30	Step 2	6.30
Mar - Twille14_720x720_8_V	Roland SJ-740	28/12/09 17:13	Step 2	6.30
Maypa_720x720_8_V	Mimaki JV5-160.8C	28/12/09 17:13	Step 5	6.24
Maypa_720x720_8P_VD_1L_UN	Mimaki Tx2-1600	28/12/09 17:13	Step 5	6.24
Maz 540x540_V_def	Roland FP-740.4C	28/12/09 17:13	Step 3	6.00
Maz 720x360_V_def	Roland FP-740.4C	28/12/09 17:13	Step 2	6.00
Maz Film_360x720_8_V_Uni	Mimaki JV4-160	28/12/09 17:13	Step 3	6.00
MS Acidi 7x5	Mimaki JV5-160.8C	28/12/09 17:13	Step 3	6.00
MS_Cube_Ecosol	MS-Cube	28/12/09 17:13	Step 5	6.30
MS_CubeOrange	MS-Cube	28/12/09 17:13	Step 2	6.30
MS ONE se Colours	Epson 4880	28/12/09 17:13	Step 5	6.30

It represents the list of all the calibrations available in the system and it is possible to make some operation on each calibration: rename (with a slow double click on the original name), delete and copy with the buttons on bottom of the windows.

Moreover it is possible to export a calibration: the software will create a compressed file containing all the information. This feature is interesting to move a calibration from a PC to another or to make the backup of the calibrations.

With the “Import” button it is possible to import a calibration previously exported.

The file extension of the exported calibration is “.cbs”.

The calibration where the “State” label is less than 4 are uncompleted. This means that the calibration does not support the colour matching.

3.5 Backup

The calibration is the most important part of the user data. It permits to reproduce, always in the same way, the design on the calibrated media. Also if you change the computer or upgrade the MatchPrint software: all the new version support the old calibration preserving the colour result. So, it is very important to make a backup of all the calibration you are using on another support (e.g. CD, DVD, external disk...)

4 Diagnostics

From this menu it is possible to make some diagnostic on the plotter. Every item could be enable or disable depending by the selected printer.

The **Print head order test** command is active for the plotters those permit to print a pattern to determine the order how the inks have been loaded in the heads. This order is the same that you must enter in the colour list while creating a new calibration.

The **Print heads test draw** command, prints a pattern to control the working of all the nozzle of the head.

The **Heads cleaning** command, starts immediately the head cleaning procedure.

The **Linear test pattern** command is active only when a calibration is selected and it prints a test that represent the shading result apply by the software.

5 Supported printers

MatchPrint II has a modular structure that gives the possibility to manage different kind of printers. For each model has been created a dedicated driver interface to set the particular printer parameters.

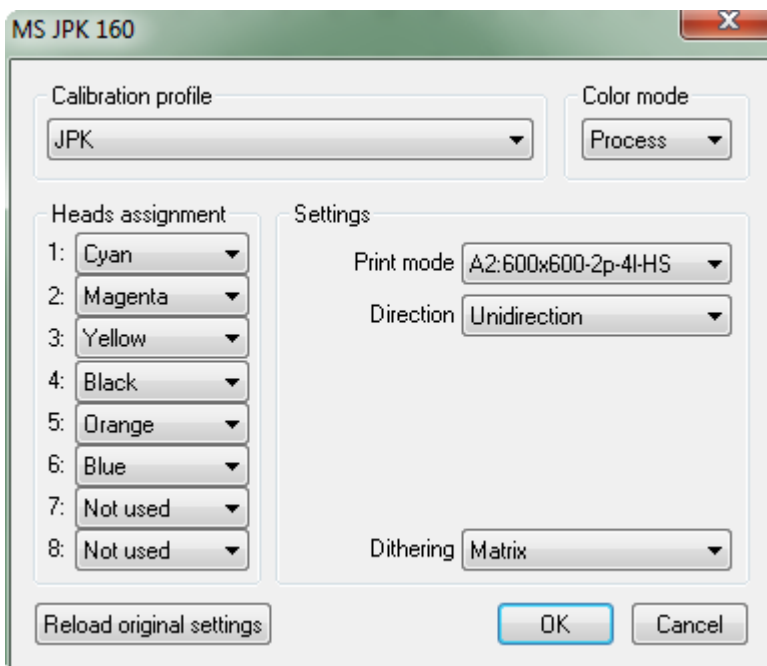
All of the driver windows have a common part, always equal, where specify the calibration name (*Calibration profile* label) and the printing mode (colour *mode* label) that could be *Process* (automatic calculation of colours), *Spot* (usable with multichannel images).

The number of labels for the colours list selection is variable (*Heads assignment label*) according to the printer number of heads. The colour selection has been clarified in the paragraph 3.1.

All the printing parameters (*Settings label*) could be different between every printer models.

In succession will be explained the meaning of the parameters for every printer.

5.1 MS JPK, MS JP6



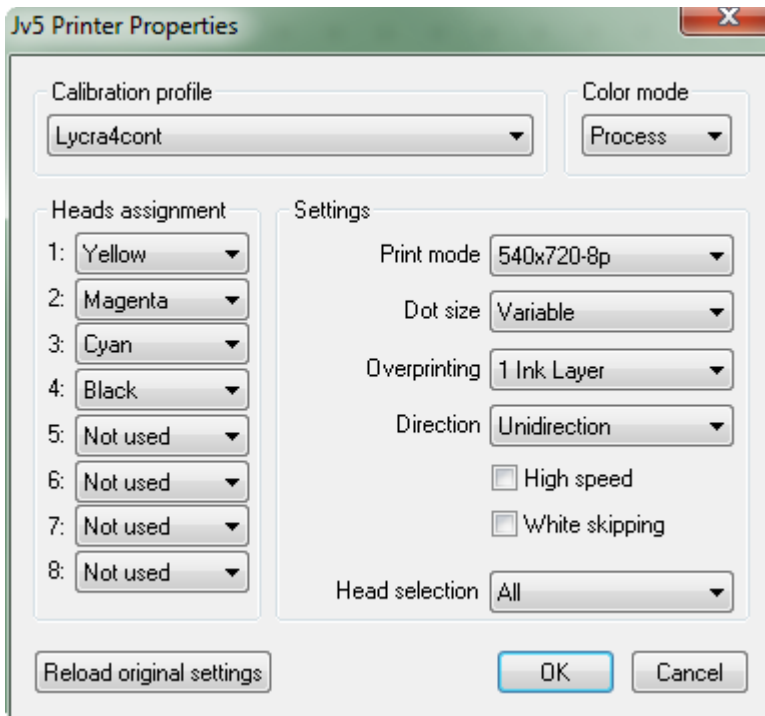
Printers with high performance, it is possible to select many different “Printing mode” (from A to H) in increasing order of coverage; the printer direction, which consider in addition to Unidirection and Bidirection, the SmartBidi option for C and D mode.

The “Dithering” parameter; it allows to define the type of calculation to use to effect the distribution of the points during printing.

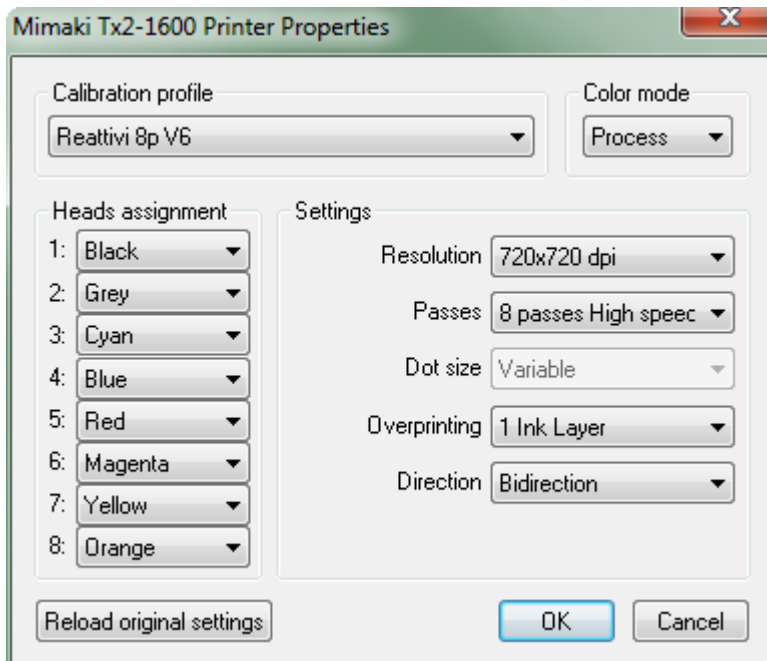
These printers support up to 8 different colors.

“Reloaded original settings” allows to restore the print parameters with which the calibration has been made.

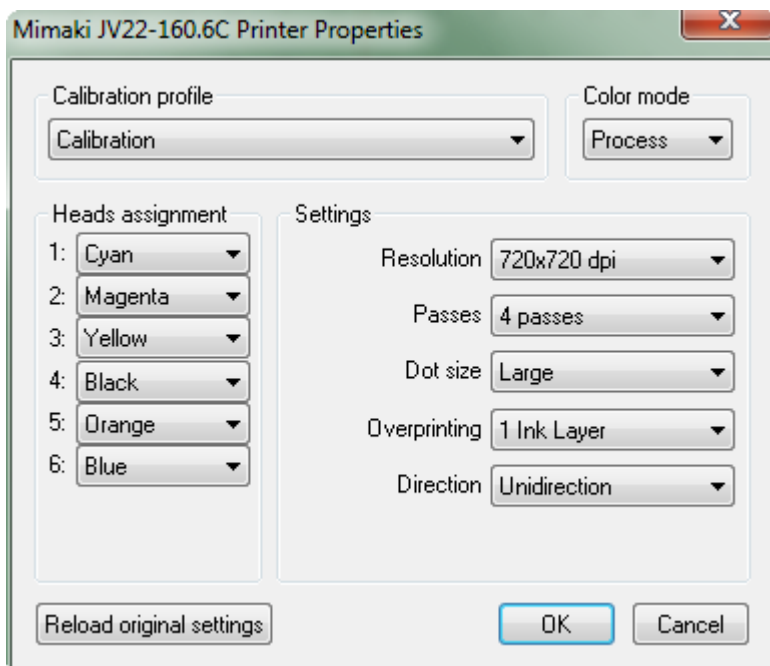
5.2 Mimaki-JV5, MS JP5



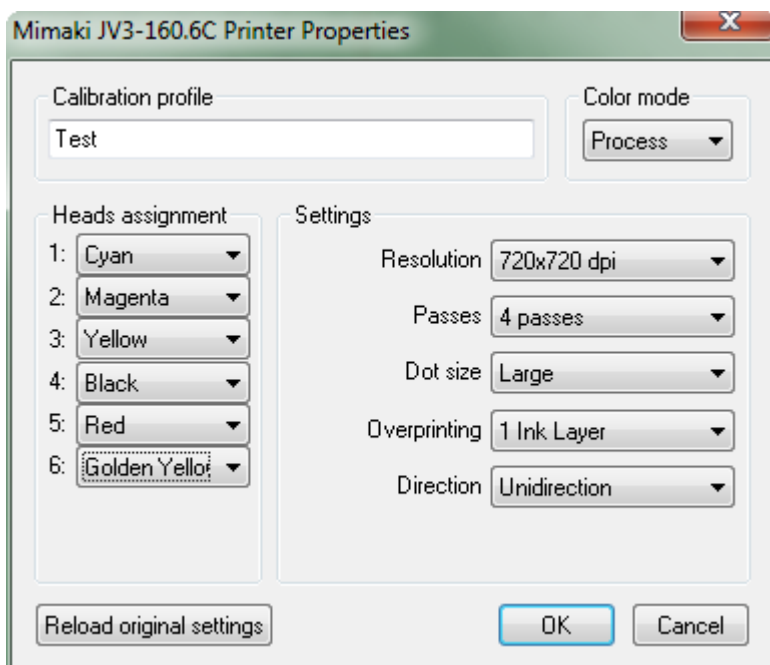
5.3 Mimaki-Tx2, Mimaki-Tx3, MS JP4



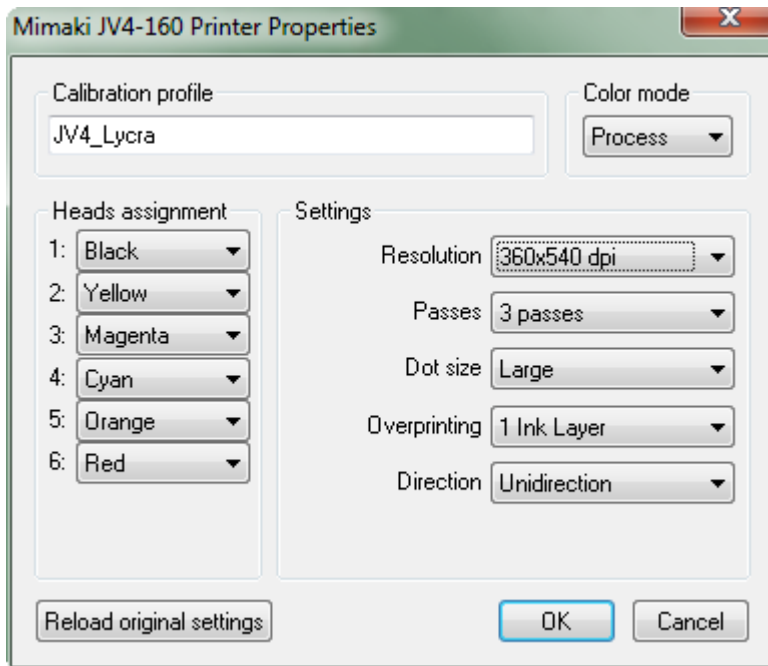
5.4 Mimaki-JV22



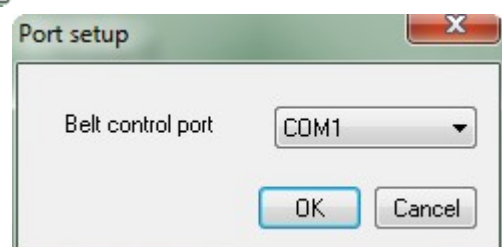
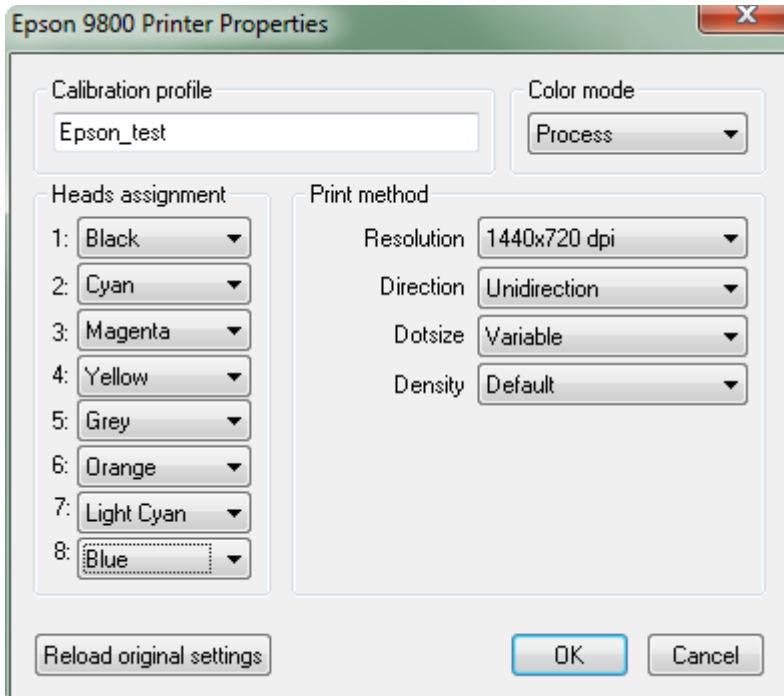
5.5 Mimaki-JV3



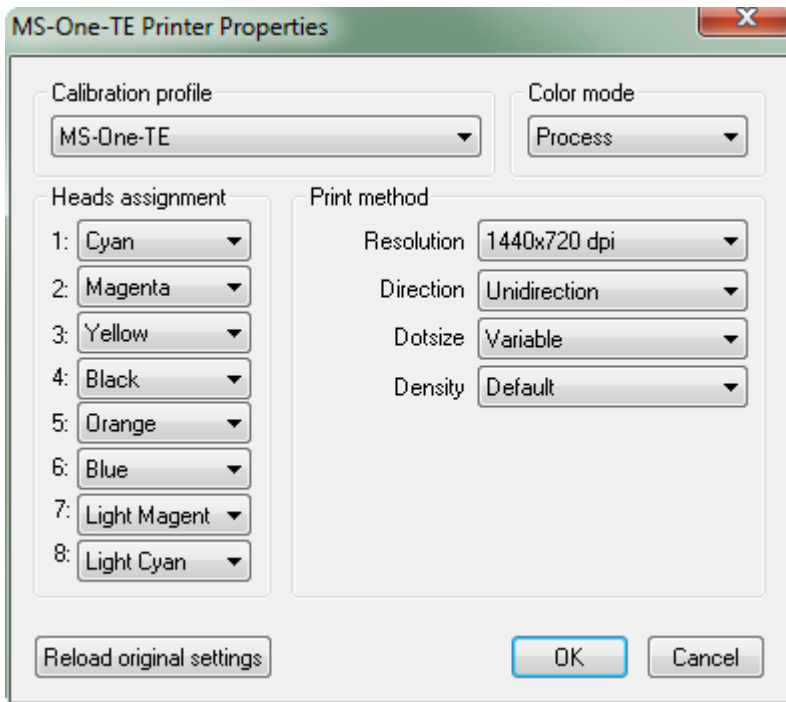
5.6 Mimaki-JV4



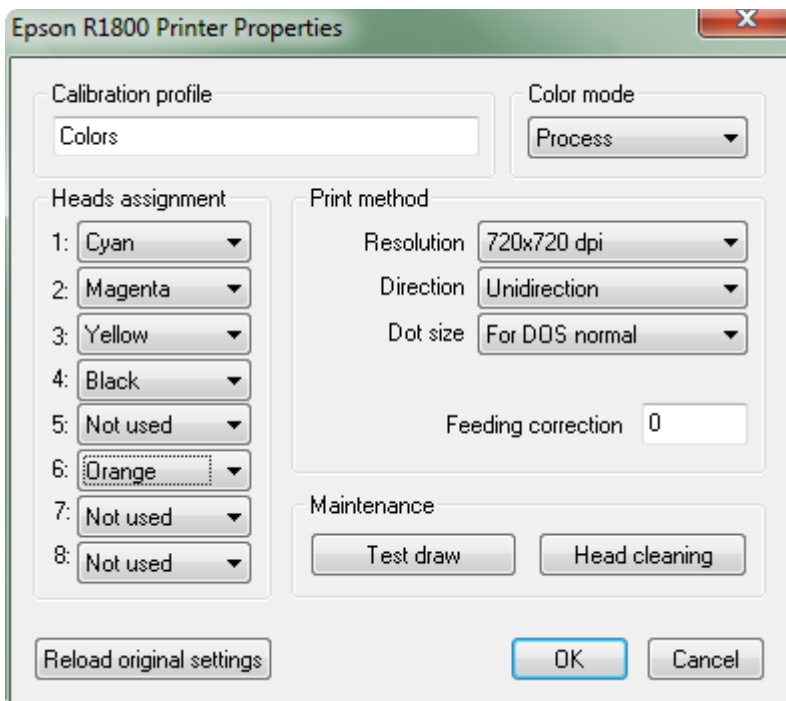
5.7 Epson 9800, Epson 9880, MS-Two, MS-Two-SE



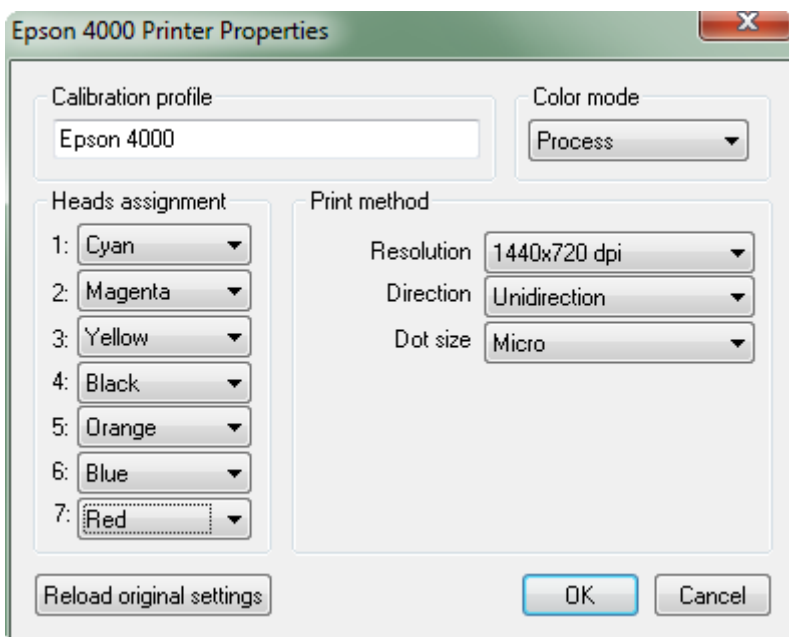
5.8 Epson 4800, Epson 4880, MS-One-SE, MS-One-TE



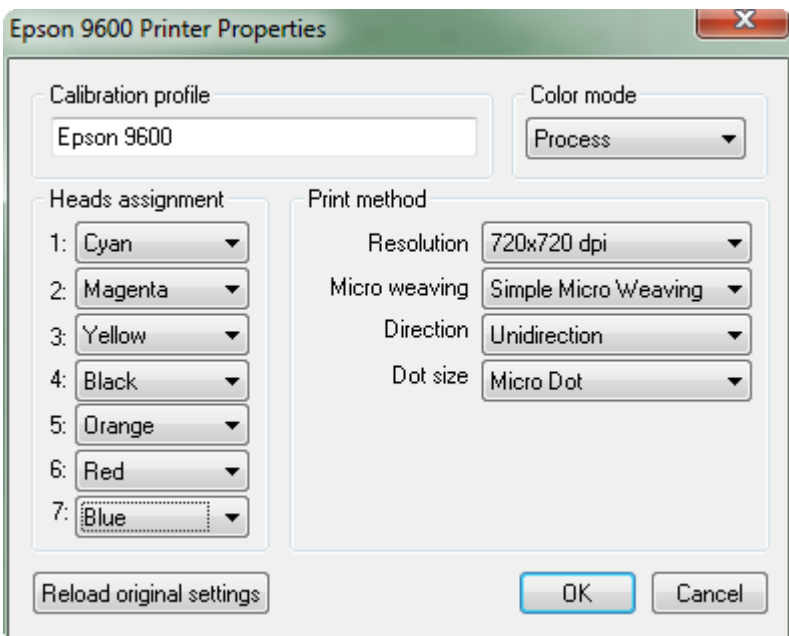
5.9 Epson R1800, Epson R1900, MS-Zero, MS-Cube



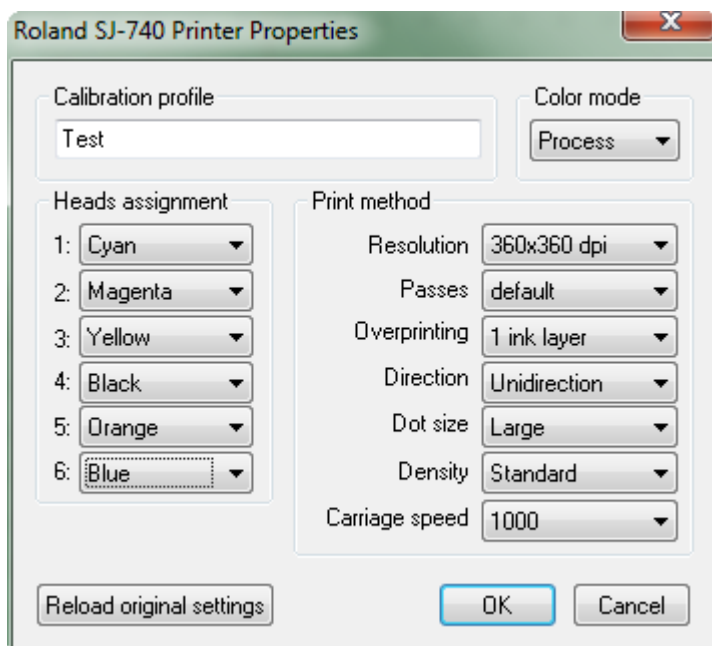
5.10 Epson 4000, MS-One



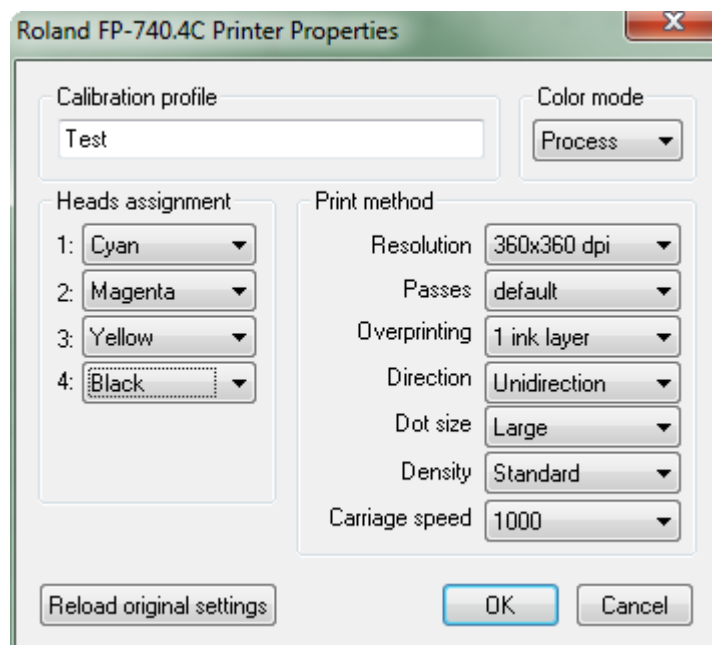
5.11 Epson 9600



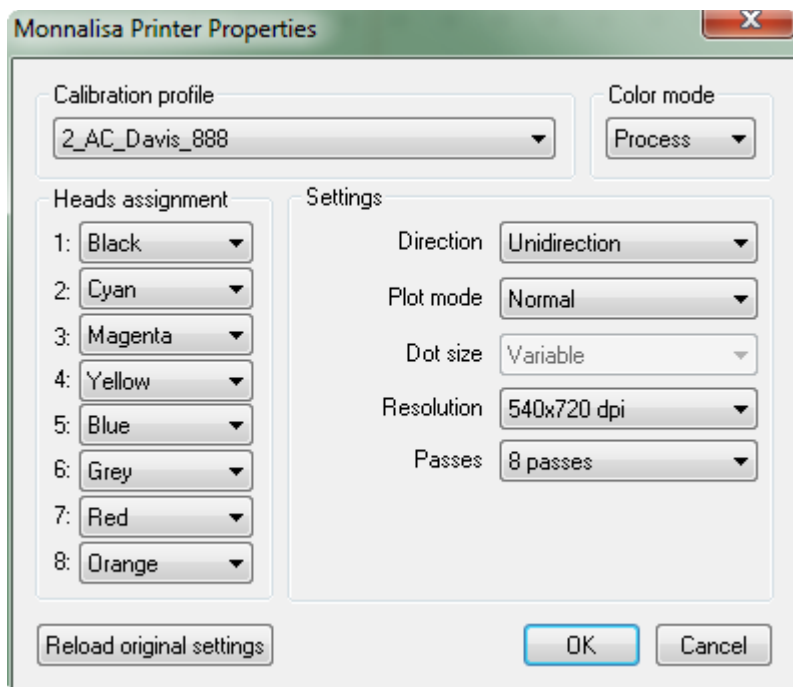
5.12 Roland SJ-540, Roland SJ-740, Roland SJ-745, Roland FJ-540



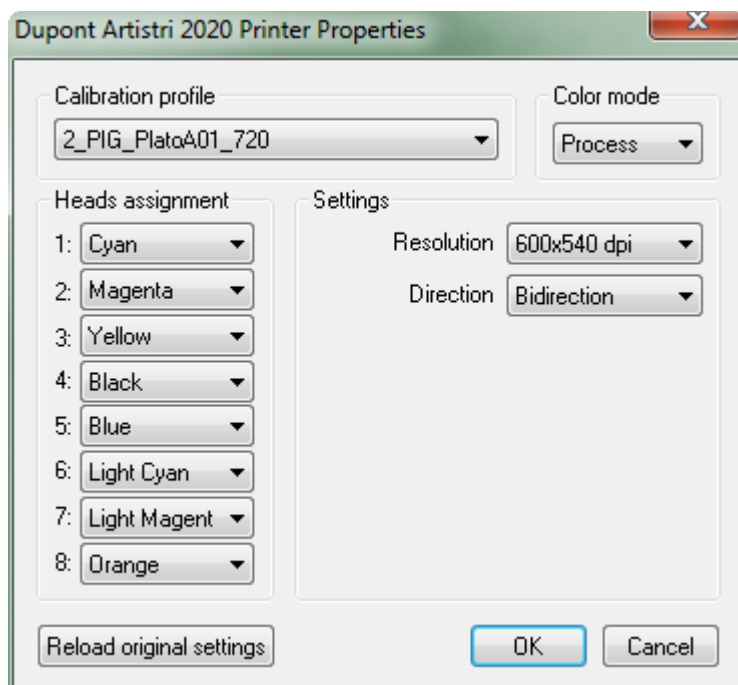
5.13 Roland FP-740



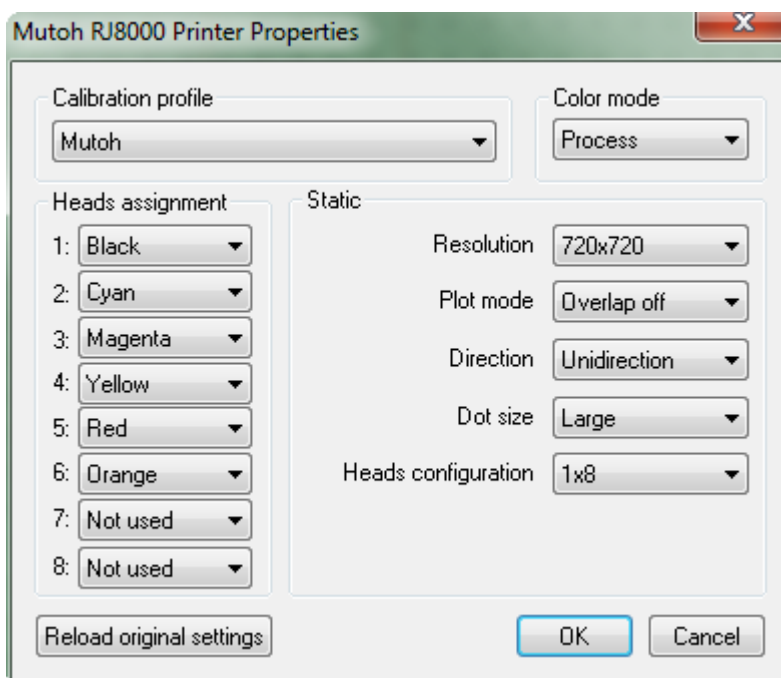
5.14 Robustelli Monna Lisa



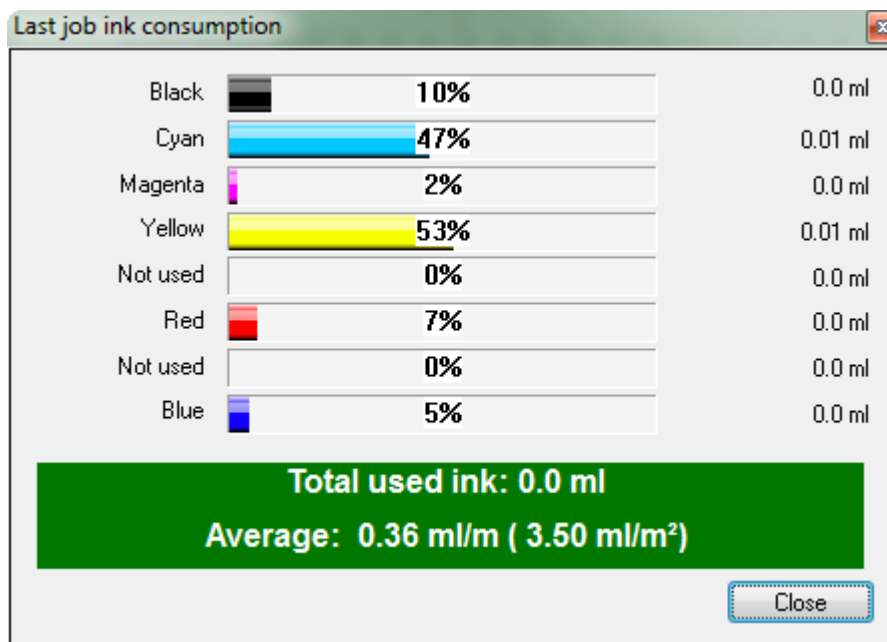
5.15 Dupont Artisti 2020



5.16 Mutoh RJ8000



6 Ink consumption



It is possible to verify the ink consumption in real time (CTRL + I). It is indicated for basic color in milliliters and as a percentage of the total.

In the "Job list" (paragraph 2,10) it is possible to see the ink consumption of a specific job.

7 Keyboard shortcuts

- F3: Color Atlas
- F5: Color search
- F6: Calibration Manager
- F7: Objects auto positioning
- F8: Shows the whole layout
- F9: Zoom out
- F10: Zoom in
- Key 'L': Reloads the last layout printed (from the JobList)
- Key 'R': Clears the layout
- Key 'F' selecting an object: Opens Windows file explorer where the file image is located.
- Key INS selecting an object: Duplicates image positioning the next colorways
- Key CANC selecting an object: Removes the object from the layout
- Key '.': Selects the next object
- Selecting the layout, type the number of meters (e.g. 25) followed by the "ENTER" key to place the layout to the position desired.
- CTRL + I : Ink consumption