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EXCEED YOUR VISION

Printing with WH/MS, Matching Specific Colors

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Introduction

When using White ink (hereafter WH) or Metallic Silver ink (hereafter MS) for RIP printing, some additional work, apart from that needed to print with only other color inks, is needed. This manual explains the procedures and workflow for WH/MS printing. In addition, it also presents the method for matching specific colors, such as corporate colors or spot colors (PANTONE or DIC Color). See the *Manual for RIP Printing* (PDF), which also has the basic information on RIP printing.

What to Prepare

Software RIP (hereafter RIP)
Use a RIP that supports WH/MS. Check the web site of the manufacturer regarding the information on supported RIP.

Epson Control Dashboard (Dashboard)
Use the latest version of Dashboard. (Update as soon as possible if you are notified of new information.)

Use when importing setting information for the printer or RIP, or download an EMX file for printing with WH/MS. For more information, see the *Manual for RIP Printing* (PDF).

Print data (PDF)

> ❗ *Important:*
>
> *When printing with WH/MS, it is necessary to do the following process with image processing software before reading the data to be printed with the RIP.*
>
> *For example, when printing with WH, the RIP does not automatically process WH as the print area by just putting all the print objects on a specified layer named "White" for WH in the print data.*

❏ **Specify the areas printed in WH/MS as spot colors.**

This section explains examples when printing with WH. The white (RGB = all 255 or CMYK is all 0%) in the print data is processed by the RIP as an area in which ink does not need to be applied, the same as when printing with other color inks only. Because of this, the RIP cannot automatically process the parts that look white on screen = WH in print areas even when using a printer that supports WH.

We recommend first splitting the areas to be printed using color ink and the areas to be printed using WH/MS into layers.

❏ **Specify the order in which inks are layered (print order). (Adobe Illustrator only)**

We recommend splitting the layers for color ink and for WH/MS so you can more easily specify the order in which inks are layered during printing.

Details about processing procedures

Introduction

Image processing software
Use this for processing data to print. In this manual, we explain the procedures for Adobe Illustrator and Adobe Photoshop. In either case, we recommend version CS1 or later.

Introduction

Workflow

Follow the steps below to perform printing work.

For the first time only, see "1. Prepare Printing" in the *Manual for RIP Printing* (PDF).

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1. Perform Change Color Mode on the printer.

Proceed to step 2 if you have installed the ink cartridge to be used for printing.

If you have not installed it, be sure to perform **Change Color Mode**. See the *User's Guide* (PDF) for more information.

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2. Load media in the printer and select the media setting number.

Load the media correctly and select the media setting number which has been registered to the printer.

See the *User's Guide* (PDF) for more information about loading media and selecting media setting number.

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3. Check the data to be printed, and process it for WH/MS printing.

Open the print data in the image processing software. Make such settings as how to layer the ink and the specified spot colors for the areas to print with WH/MS.

Proceed to step 4 if you are using a RIP that can print unprocessed data the same as processed data by using the print settings.

U "Processing Print Data" on page 7

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4. Read the print data to the RIP, and then print it. (The procedure varies depending on the RIP that is used.)

Open the print data in the RIP and select the print mode according to the colors of ink being used and make the print settings.

We recommend that you always check the data in a preview before you start printing.

U "Print Settings in the RIP" on page 15

Processing Print Data

In this section we present the procedure to process the print data, including the parts that are printed with WH/MS, using Adobe image processing software. Use Adobe Illustrator (hereafter Illustrator) to process vector data, in which the object and text are the main thing, as in diagram A. Use Adobe Photoshop (hereafter Photoshop) to process raster data, in which photos and graphics are the main thing, as in diagram B. See the following for the processing procedure.

U "Illustrator Settings" on page 7

U "Photoshop Settings" on page 10

Diagram A   **Diagram B**
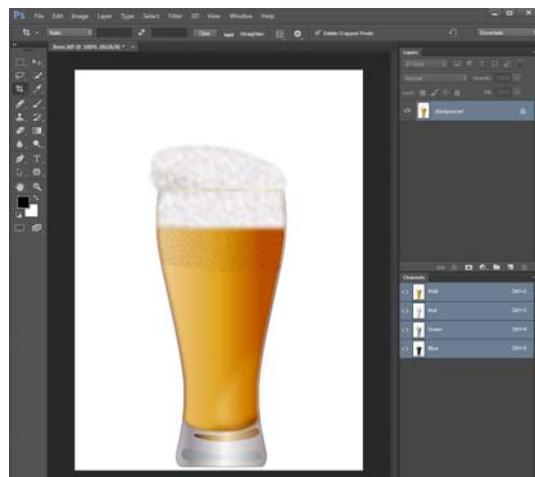
> *Note:*
>
> ❏ *When the print data includes no parts that are printed with WH/MS, write the data with the image processing software before processing.*
>
> ❏ *With ONYX RIP and Caldera RIP, you can easily do the print settings for WH/MS while checking the data when it is printed, without processing the data. See the following for details.*
> *ONYX RIP U "Settings in ONYX RIP" on page 15*
> *Caldera RIP U "Settings in Caldera RIP" on page 29*

Illustrator Settings

This section uses an example of data that includes WH to explain the data processing procedure of Adobe Illustrator CC(2015) in Windows 7.

1   Start Illustrator and open the print data.

Processing Print Data

2 Click **Window** - **Swatches**, and then click ▣ (New Swatch).
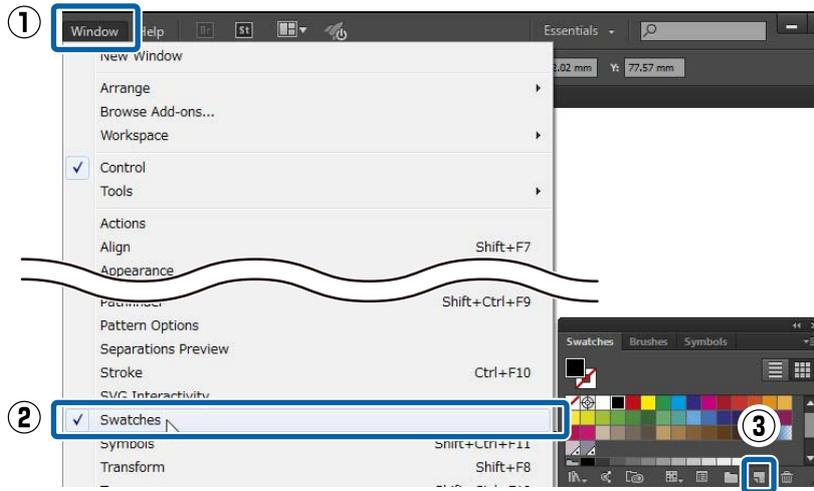
3 Refer to the following table and specify the color to be used for areas printed with WH, and then click **OK**.

(1)	**Swatch Name**	Input the name of the spot color in single-byte characters. We recommend using names that allow you to identify the color of the ink, such as "White" for printing with WH and "Metallic" for printing with MS.
		Use the names that are assigned here when making print settings in the RIP. Keep a record of the names, so you do not mistake the upper and lower cases.
(2)	**Color Type**	Select **Spot Color**.
(3)	**Color Mode**	Select **CMYK** and specify the color to print. We recommend specifying a bright color that is not used in the image for checking because it is difficult to identify the background color if you use white (all CMYK at 0%). (In the example diagram, the color is set as a very light ash gray.)
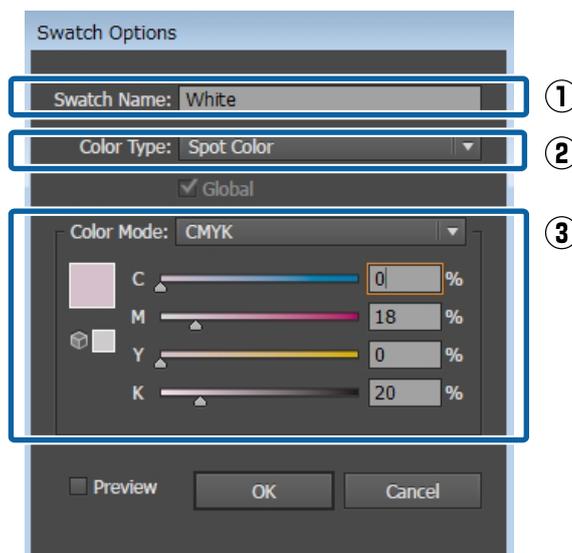
In the following, the parts of the image that are specified with the color from the swatch are printed in WH.

Processing Print Data

4 Select the objects to print with WH, and specify the spot color you saved to the swatch in step 3 to color them.
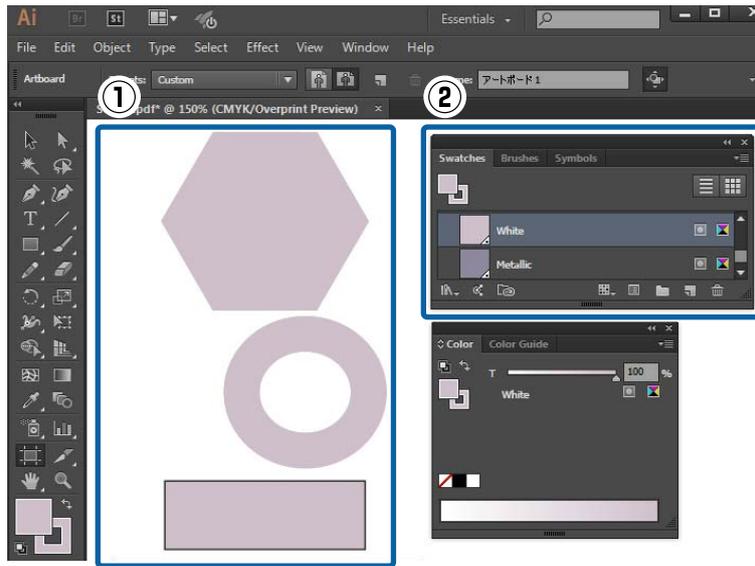
5 Click **Window** - **Layer**, and then specify the order of the layers of ink (print order).

When all of the objects are on the same layer, the lower objects are printed first.

When you divide the layers on which there are objects printed in WH, the lower layer are printed first.

When WH is printed first	When WH is printed later (such as for inverted printing)
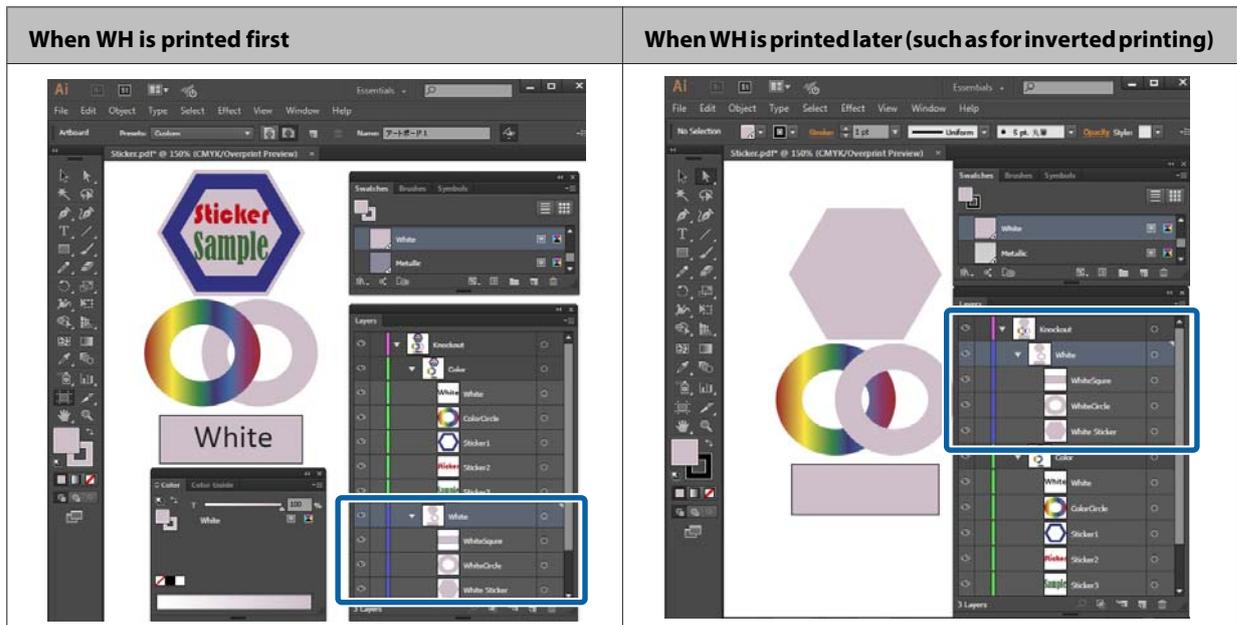
> *Note:*
> *Depending on the RIP you are using, the print order set in the RIP may have priority over the print order that is decided here. See the manual supplied with the RIP for more details.*

6 Click **Window** - **Attributes**, and then make the settings according to the print results of the parts where objects overlap.

Refer to the following table and make the settings while the object that will be on top when they overlap is selected.

Processing Print Data

When checked	When not checked
The shapes of the objects are printed as they appear using colors or WH according to the order of layers. (Overprint is enabled.)	When they overlap, the parts on the lower layer are not printed. (Overprint is disabled.)
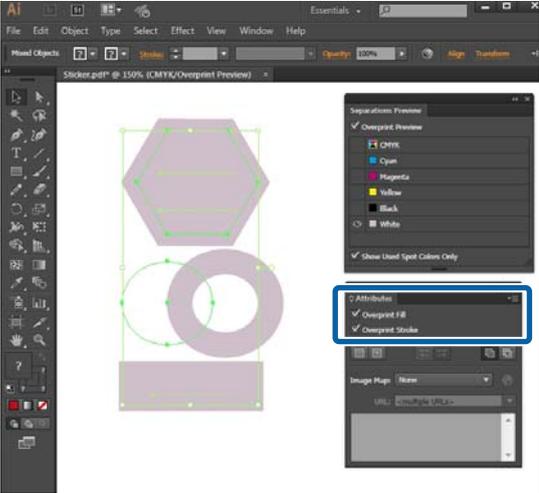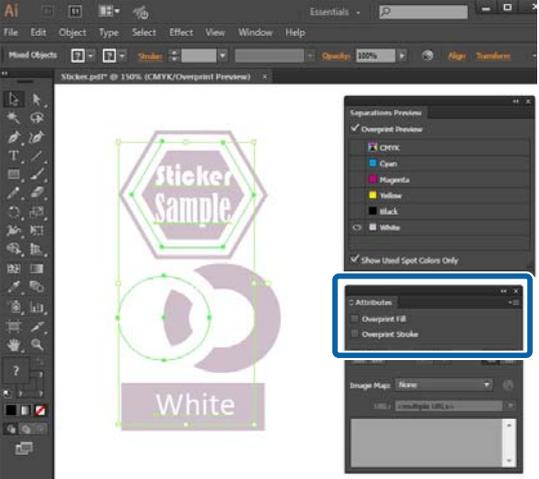
Note:

❏ *The diagrams in the table are when **Overprint Preview** is selected in **Separations Preview**, and the CMYK plates are not displayed, so it is easy to understand the results of printing with WH.*
*Separations Preview is displayed by clicking **Separations Preview** in the **Window**.*

❏ *With Overprint, you can get the same effect as with **Transparency**. (To overprint, select **Multiply**. And, to not overprint, select **Normal**.) For more information, see the online help for Illustrator.*

7 When you have set all the objects the same way, save the data in PDF format.

In **Compatibility**, we recommend **Acrobat 4 (PDF 1.3)** or **Acrobat 5 (PDF 1.4)**.

Photoshop Settings

This section uses an example of data that includes WH to explain the data processing procedure of Adobe Photoshop CC(2015) in Windows 7.

1 Start Photoshop and open the print data.

2 Click **Window** - **Layer**.

3 Right click on a layer that includes parts that are printed in WH, and then click **Duplicate Layer**.

The image is copied and there are now two image layers.

4 On the **Layer**, select the original image layer, and then delete the part that is printed in WH.

There are two ways to select only the part that is printed in WH. For more information, see the online help for Photoshop.

Processing Print Data

❏ Use the ✎ (Quick Selection tool) or ✺ (Magic Wand tool) for selecting things.

❏ After using the **Select** tool to select an area that includes WH, use **Select** - **Color Range** to specify the color for WH.
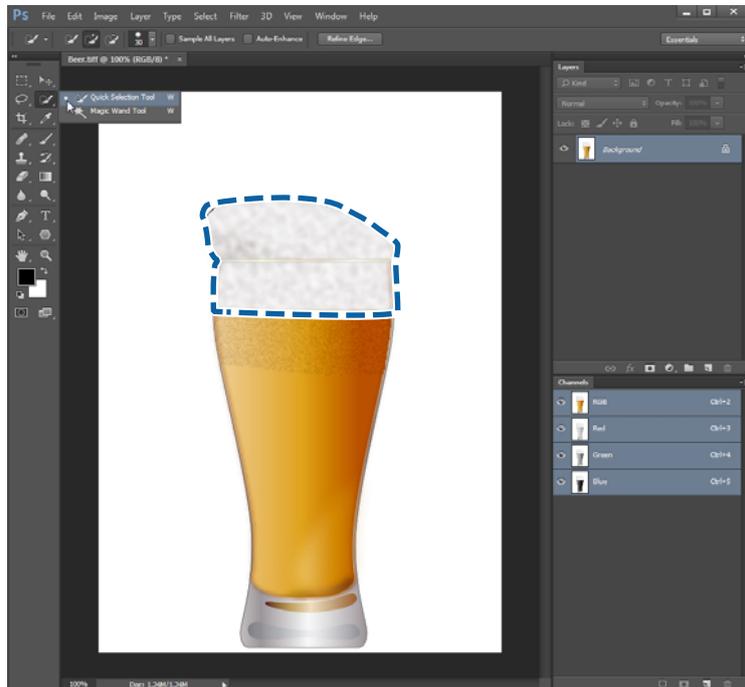
5 On the **Layer**, select the copied layer and click **Select** - **Inverse**, and then delete all the parts except those printed in WH.

The parts that are not printed in WH disappear so that parts where there is nothing are selected.
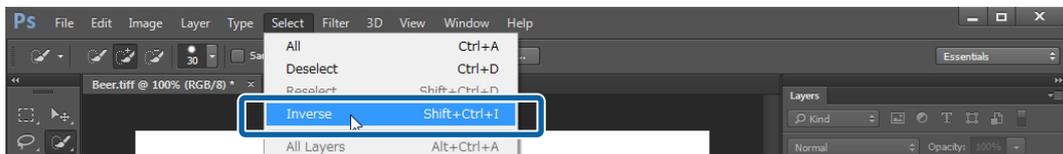
6 Click **Window** - **Channel**.

Processing Print Data

| 7 | Click ⊙ (Save selection as channel). |
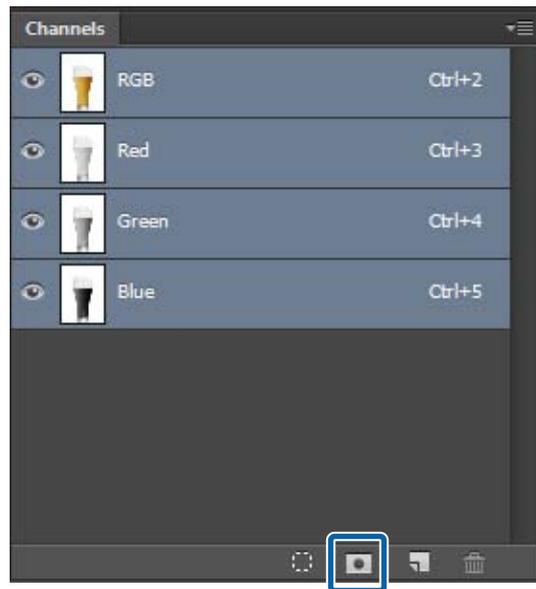
The parts that are printed in WH are masked. (The red colored parts are the masked areas.)
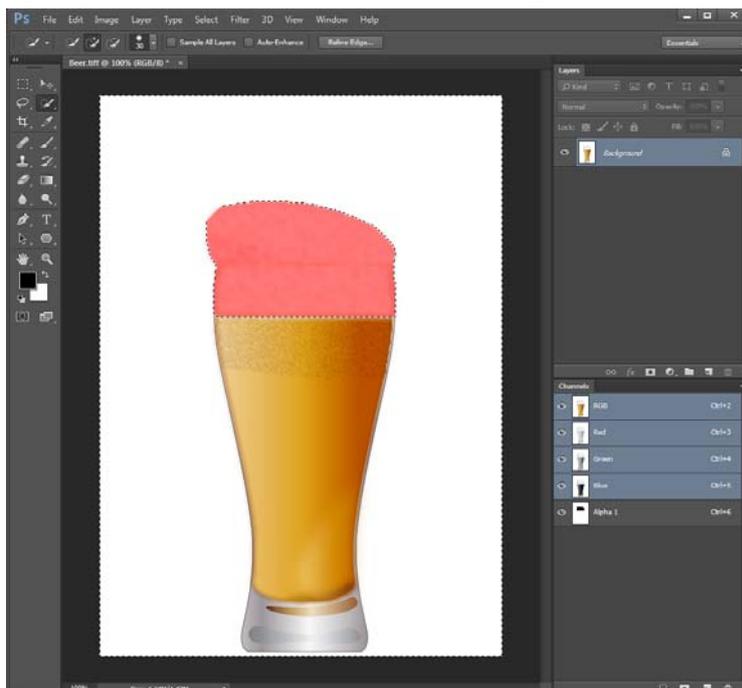
Processing Print Data

8 While **Alpha channel** is selected click the menu and then click **Channel Options**.
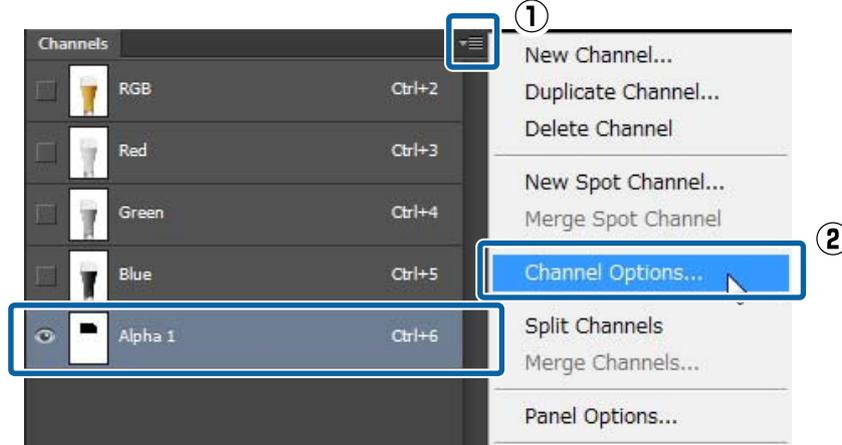
9 Refer to the following table and set (1) to (3), and then click **OK**.

(1)	**Name**	Input the name of the channel in single-byte characters. We recommend using names that allow you to identify the color of the ink, such as "White" for printing with WH and "Metallic" for printing with MS.
		Use the names that are assigned here when making print settings. Keep a record of the names, so you do not mistake the upper and lower cases.
(2)	**Color Indicates**	Select **Spot Color**.
(3)	**Color**	Specify the color in which to display parts that are printed in WH. (In the example diagram, the red colored parts are printed in WH.)
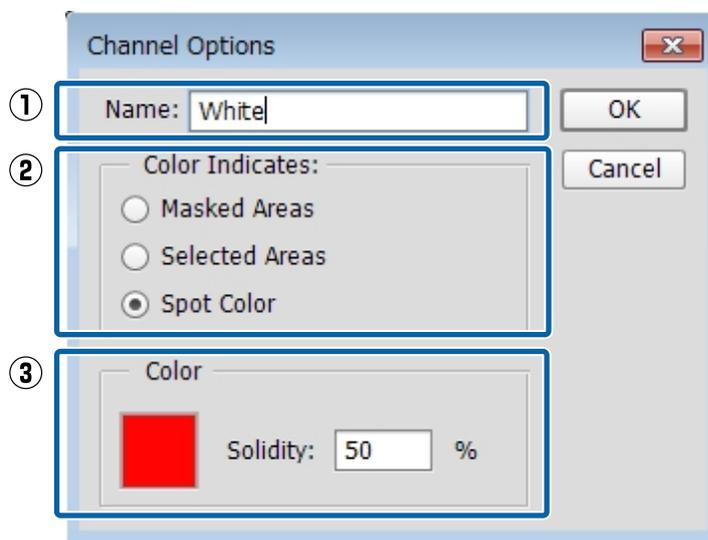
When printing the image on this layer using only WH/MS:
Hide the copied layer so you do not use color ink unnecessarily when printing. (Make the setting while the copied layer is selected using **Window** - **Layer**.) Only the alpha channel remains and printing can be done using only WH/MS.

When color ink overlaps with WH/MS:
Proceed to step 10.

Processing Print Data

10 Save the data in PDF format.

In **Compatibility**, we recommend **Acrobat 4 (PDF 1.3)** or **Acrobat 5 (PDF 1.4)**.

Print Settings in the RIP

When printing with WH/MS, it is necessary to check the print data in the RIP as you make the settings. We do not recommend printing without checking the print data as in hot folder printing. The printing method varies depending on the RIP that is used.

See the following for details.

Settings in ONYX RIP

> ❗ *Important:*
>
> *See the Manual for RIP Printing (PDF) before you start the following tasks and import "Install and Connect" and "Importing Print Information".*

With ONYX RIP, use the quick set (often used print settings are saved as a preset), and then print while checking the image in Job Editor.

How to Create Quick Sets

This section explains how to make the settings for RIP Queue (Ver. 12).

1 Right click the RIP Queue icon and select **Run as administrator**.

Always start the software in administrator mode when you update or create new quick sets.
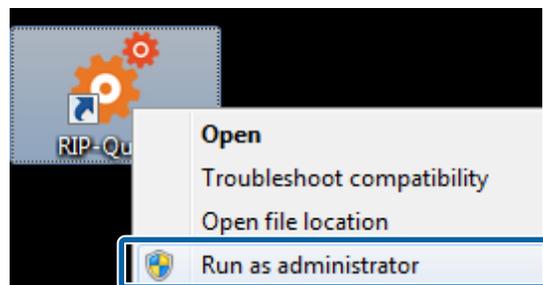
2 Click **Configure Printer** in the toolbar.

Print Settings in the RIP

3 In the **Quick Sets** tab, click **New**.
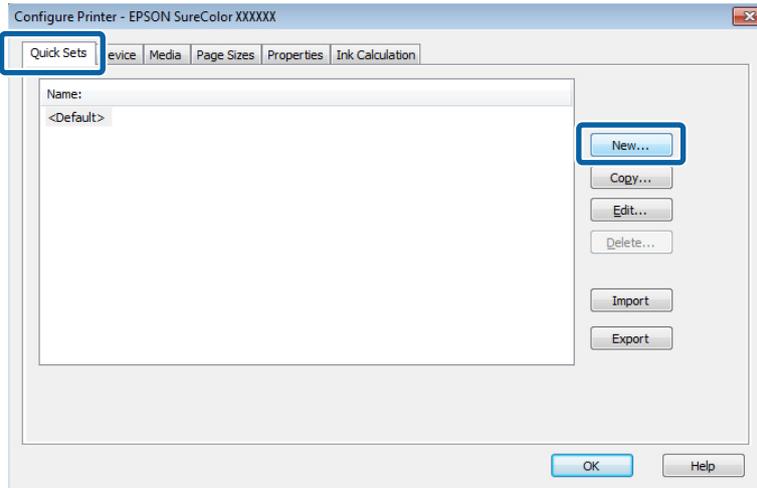
4 Input the **Quick Set Name**.

We recommend using a name that is easy to understand for the other person that is printing something.
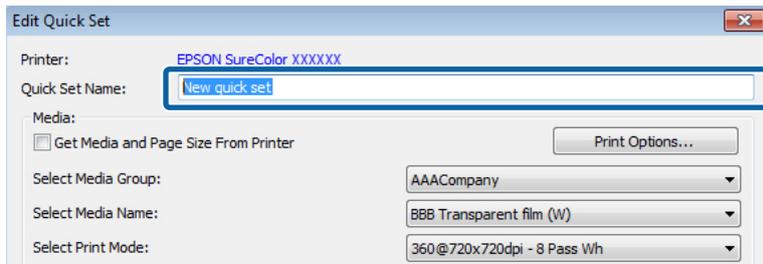
5 Click **Change Profiles** in **Color Management**.
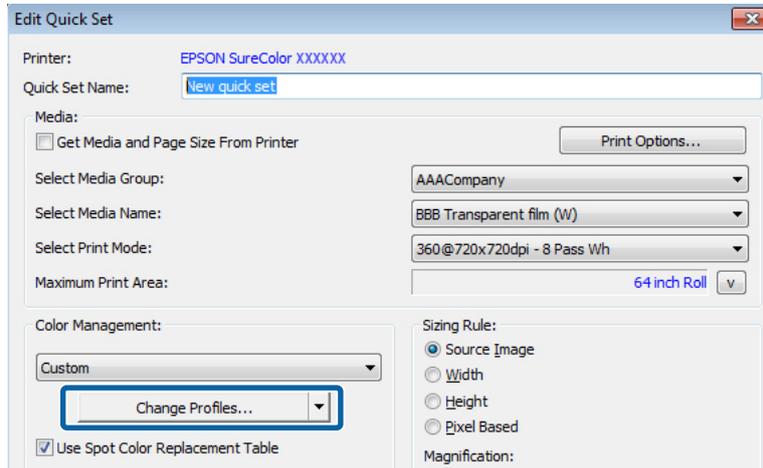
6 Refer to the following table and set (1) to (3) in the **Profiles** tab.

	For printing with a wide color gamut	For general printing
(1)	EpsonWideCMYK Ver2.icc	Select general profile for printing.
(2)	AdobeRGB1998.icc	sRGB.icc, etc.
(3)	Not checked	Checked
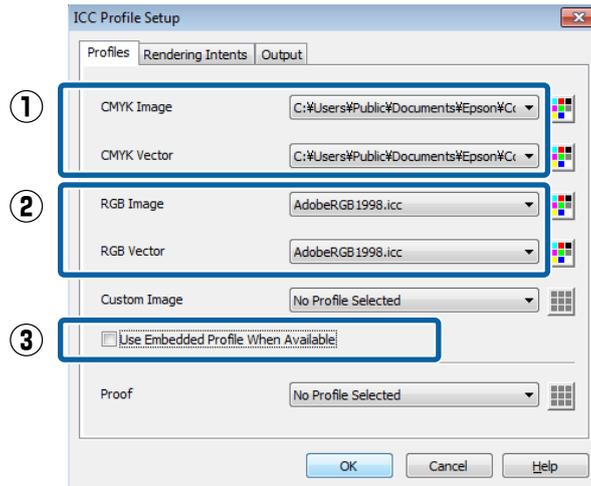
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Print Settings in the RIP

Refer to the following also when matching spot colors.

7 In the **Output** tab, click **Spot Channel Replacement**.

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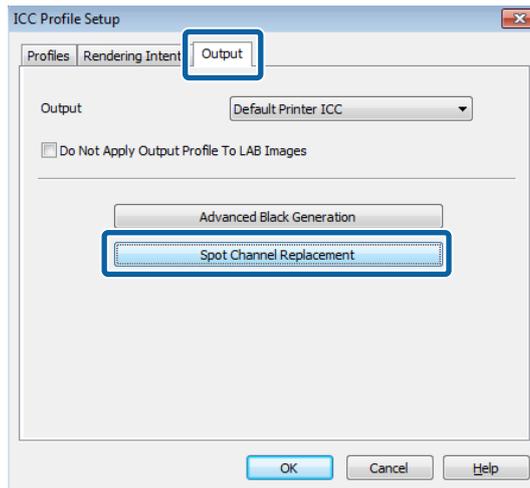
Print Settings in the RIP

8 Input the spot color name for WH/MS in the **Document Spot Color Name**, and then click **OK**.

Click the left side of **Spot 1** to input. Input the correct name (White or Metallic etc.) saved for the spot color swatch (Illustrator) or spot color channel (Photoshop). Be careful that you do not mistake the upper and lower cases or misspell the name.
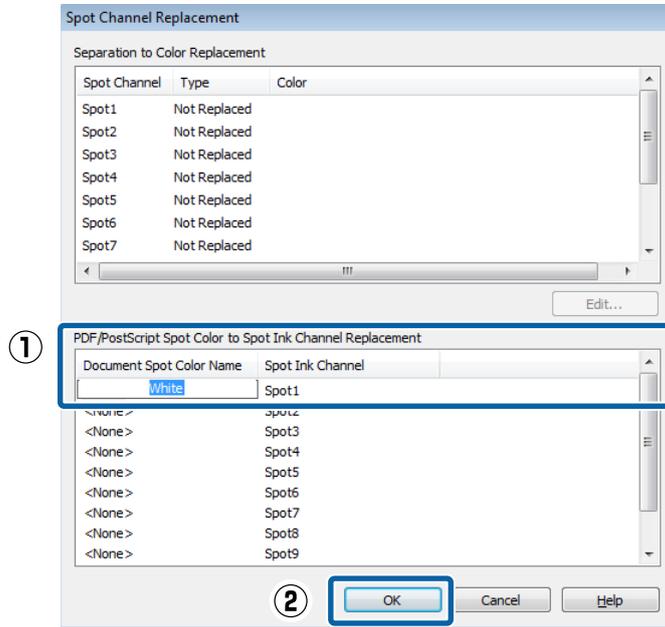
9 Return to the **Edit Quick Set** screen, and clear the **Get Media and Page Size From Printer** check box.

10 Refer to the following table and make the settings to match the media setting that has been selected on the printer's control panel.

| Select Media Group	Select the name of a media company.*
Select Media Name	Select from the following according to the combination of ink and media you are using. ❏ When printing with only color ink: media name only ❏ When printing MS: something that has an (Ms) after the media name ❏ When printing WH: something that has a (W) after the media name
Select Print Mode	Select a print mode (resolution and number of passes). See the supplementary table about how to read Print mode.

* If you cannot find the name of the company for the media you are using, search for the EMX files provided by Epson. If no EMX files have been provided, select a media that has similar characteristics.

Print Settings in the RIP
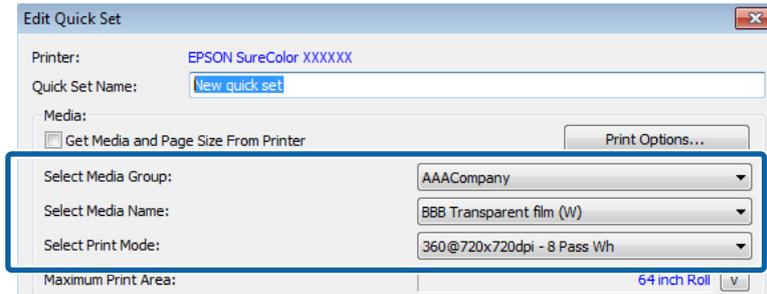
How to Read Print Mode

The following settings output the print data (input resolution of 360 dpi) to 720 x 1440 dpi and then print 32 passes in WH and color. Descriptions of the settings from ❶ to ❺ are shown in the following table.

❶	Indicates the input resolution. You can select either 360 or 720 dpi.
❷	Indicates the output resolution of the RIP. The higher the number the better the print quality, but the printing speed decreases.
❸	Indicates the print passes (how many times printing is split for one interval). The higher the number the better the print quality, but the printing speed decreases. Depending on the media you are using, the term High Quality may appear following the name of the media. This setting helps prevent the occurrence of tint unevenness and banding from the setting of the same number of passes, but it reduces the print speed.
❹	Indicates the spot color that is used. (Wh or Ms)
	When printing with only color ink, select a mode that does not have ❹ or ❺.
❺	Indicates number of print layers. When printing with WH/MS and color ink at the same time, that do not overlap, select a mode that does not have ❺. When printing with WH/MS and color ink that do overlap, select 2L or 3L*. (3L can be selected only when printing with WH.) When you select 3L, you also need to select how the print results appear.
	❏ Printouts that appear correct from just either the front or back side:_1Way
	❏ Printouts that appear correct from both sides:_2Way

* Depending on your country or region, you may not be able to select 3L. For more details, contact your dealer or Epson Support.

11 Click **Print Options**.

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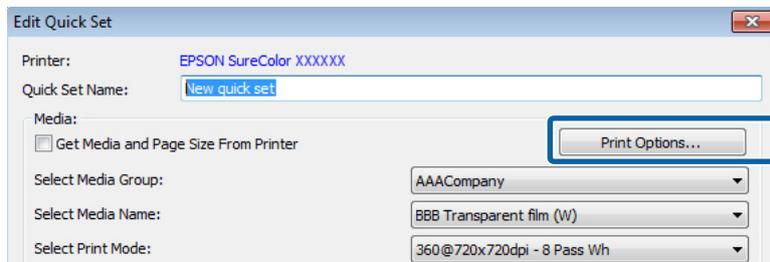
Print Settings in the RIP

12 If necessary, set (1) to (4) and then click **OK**.
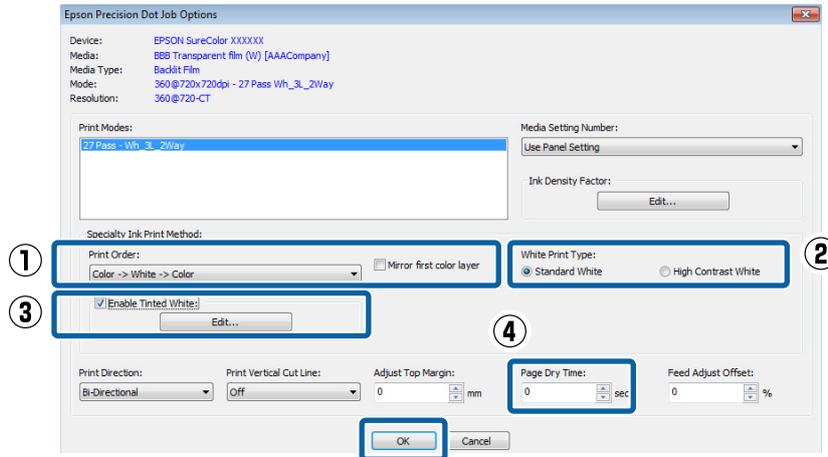
(1) Print Order

Set the order in which colors and WH/MS are printed. The settings that can be used vary depending on the print mode that is selected. If you select a setting value that cannot be used, the RIP changes the print mode automatically.

When printing 1 layer or 2 layers (2L)

Spot->Color(Underprint)	Prints WH/MS under the colors.
Color->Spot(Overprint)	Prints WH/MS over the colors.*
Color and Spot	Prints both WH/MS and colors at the same time.* Use this only when you want to print very fast.

* When you want to read the character correctly when looking at the printout from the back side, invert the image.

When printing 3 layers (3L) (only when printing WH)

Color->White->Color	Colors are printed two times with WH in between. Select **Mirror first color layer** when you want to be able to correctly read the text from either the front or back sides.
White->White->Color	Prints two coats of WH under the colors.
Color->White->White	Prints two coats of WH over the colors.*

* When you want to read the character correctly when looking at the printout from the back side, invert the image.

(2) White Print Type (when printing inWH only)

Select one of the following according to the conditions of the part you are printing in WH.

❏ **Standard White**: normally select this one.

❏ **High Contrast White**: when the data includes parts that are printed all over (solid printing) in WH.

(3) Enable Tinted White (only when printing 2 layers (2L))

Select this when you do not want to print with WH ink only, but when you want to mix it with other colors (LC/LM/Y/LK) to adjust the colors, and then click **Edit**. Adjust the colors in the following screen.
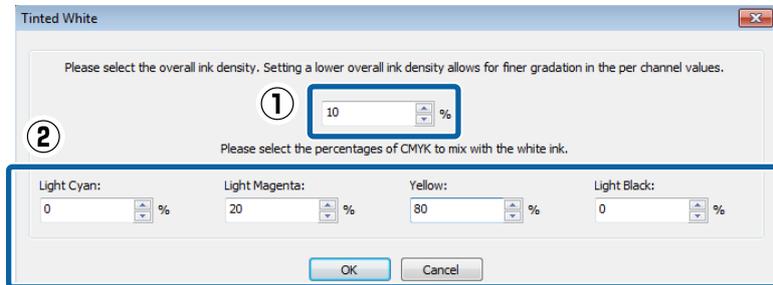
(1) Set the mixing color ink ratio to WH 100%.

(2) Set the ratios for each color so that the total value for all the colors is 100%, and then click **OK**.

(4) Page Dry Time

Set the drying time in which additional drying is done by the drying fan and heater after a job has finished printing.

Note:

❏ *When printing in layers of color inks and WH/MS, if the printed surface is rolled up before it has sufficiently dried, the printed surfaces may stick together. The appropriate drying times vary depending on the media you are using. However, we recommend setting a little longer time than when printing with color ink only.*

❏ *Set the **Drying Time Per Pass** on the control panel menu of the printer for banner print jobs (length rolled before additional drying after a print job). See the User's Guide (PDF) for more information.*

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13 Return to the **Edit Quick Set** screen, and then click **OK**.

Use Job Editor, for the following, to check the print data as you print. The procedure varies depending on whether or not the data is processed.

When the print data has already been processed:

When the print data is not processed:

Printing Processed Data

Refer to the previous sections and create a quick set in advance.

1 Double click the RIP Queue icon.

Print Settings in the RIP

2 Click **Open** in the toolbar.

3 Select the print data and the quick set, select **Open in Job Editor**, and then click **Open**. Select a quick set that has been made for printing with WH/MS.
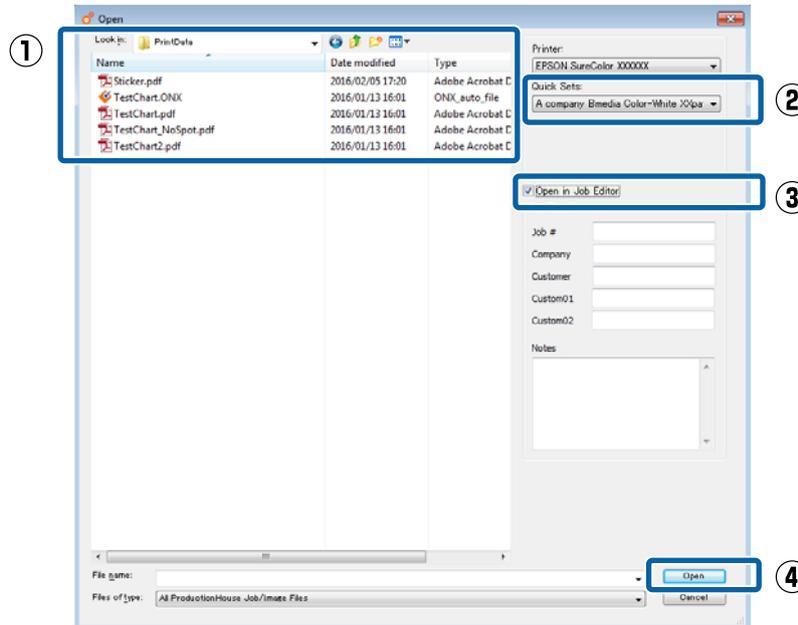
Job Editor starts automatically.

Print Settings in the RIP

4 Click the **Printer and Media** tab, and then check the print data.

The WH/WH print areas that were specified in the image processing software appear with their colors. (The RIP automatically applies the colors to check the display.) If the print data has no problem, click **Apply**.
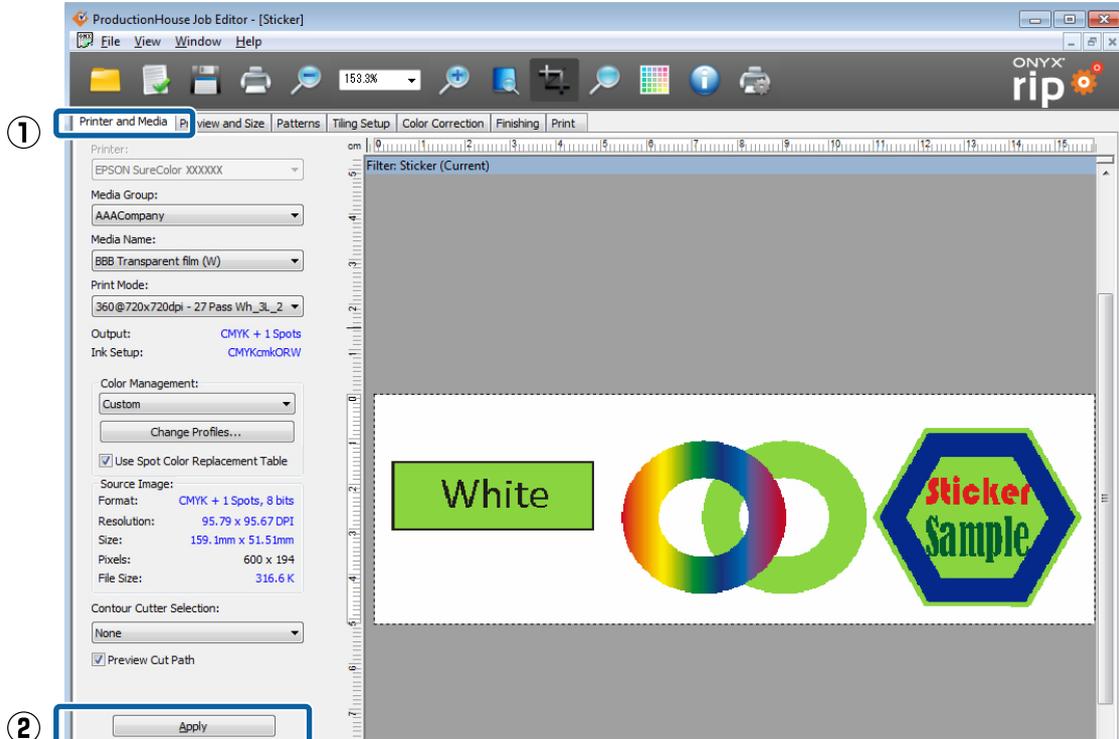
5 Click the printer icon.

Print Settings in the RIP

6   Click **Print Now** on the right side of the RIP Queue screen.
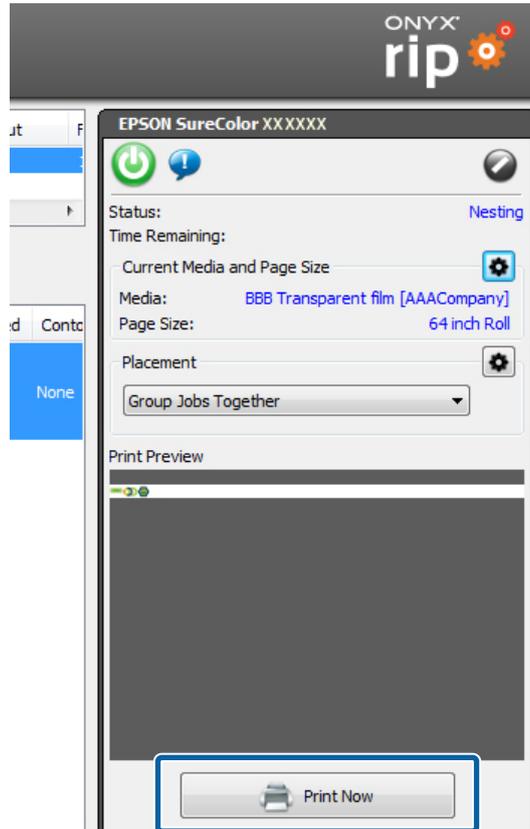
Printing Unprocessed Data

In this section we explain the procedure for printing by assigning the WH/MS print area to parts of the images and objects. Refer to the previous sections and create a quick set in advance.

1   Double click the RIP Queue icon.

2   Click **Open** in the toolbar.
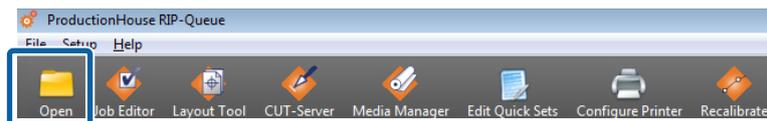
Print Settings in the RIP

3   Select the print data and the quick set, select **Open in Job Editor**, and then click **Open**. Select a quick set that has been made for printing with WH/MS.
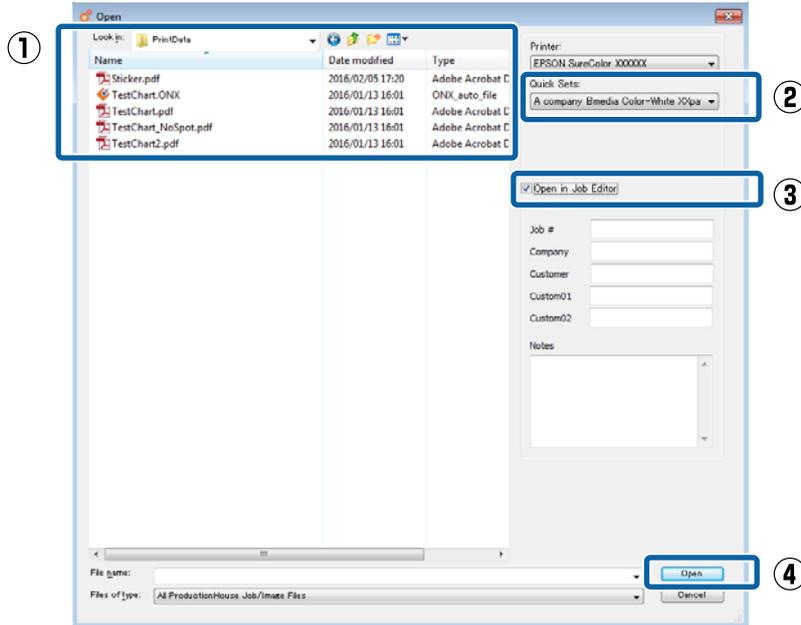

Job Editor starts automatically.

4   Click **Spot Layer Tool** from **Tools** in the **Color Correction** tab.
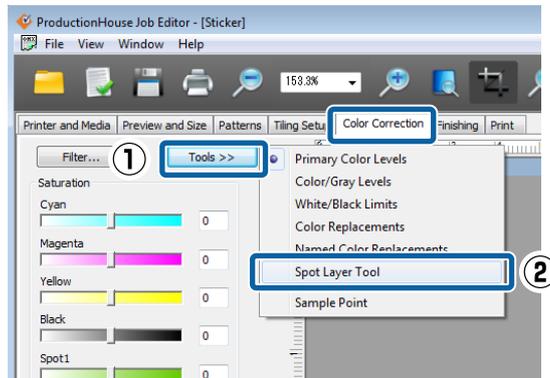
5   Select **Enable Spot Layer Generation**.

Print Settings in the RIP

6 Select the print area for WH/MS.
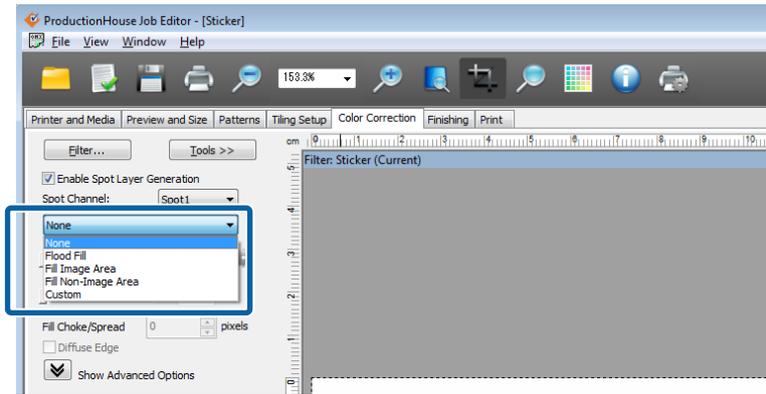
According to the selected information, print area for WH/MS will be colored for display checking in the preview screen.

Flood Fill: Prints the entire area of the print data with WH/MS.
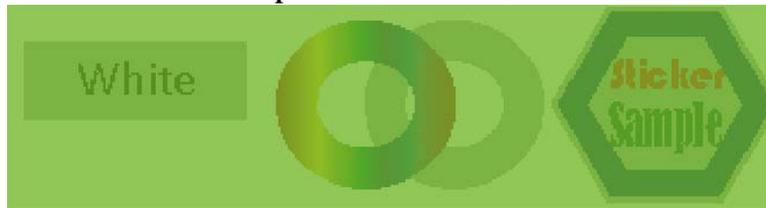
Fill Image Area: Prints WH/MS in the areas that include images or objects.

Fill Non- Image Area: Prints WH/MS in the areas with no images or objects.

Print Settings in the RIP

7   Set (1) and (2) as necessary.
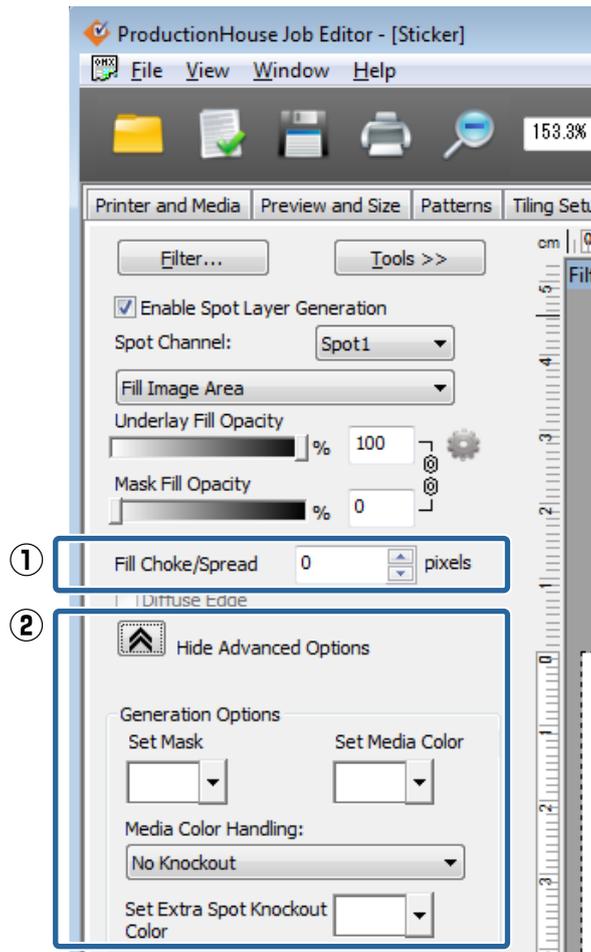
(1) Fill Choke/Spread (when Fill Image Area or Fill Non-Image Area is selected)
You can set how far the ink extends outside the images and objects in the WH/MS print area.

By selecting a negative value, you can keep the ink inside the edges of the images and objects.

(2) Knockout settings (when Flood fill is selected)
You can make knockout settings (not print when the WH/MS and color inks overlap on printed parts) under **Media Color Handling** by clicking **Show Advanced Options**. See the following table for details.

| No Knockout	Prints WH/MS even in parts that overlap with color inks.
Spot Knockout	Does not print WH/MS only in parts with specified colors. Be sure to specify a color in **Set Extra Spot Knockout Color**.
Full Knockout	Does not print WH/MS in parts that overlap with color inks.

8   Click **Apply** in the **Printer and Media** tab.
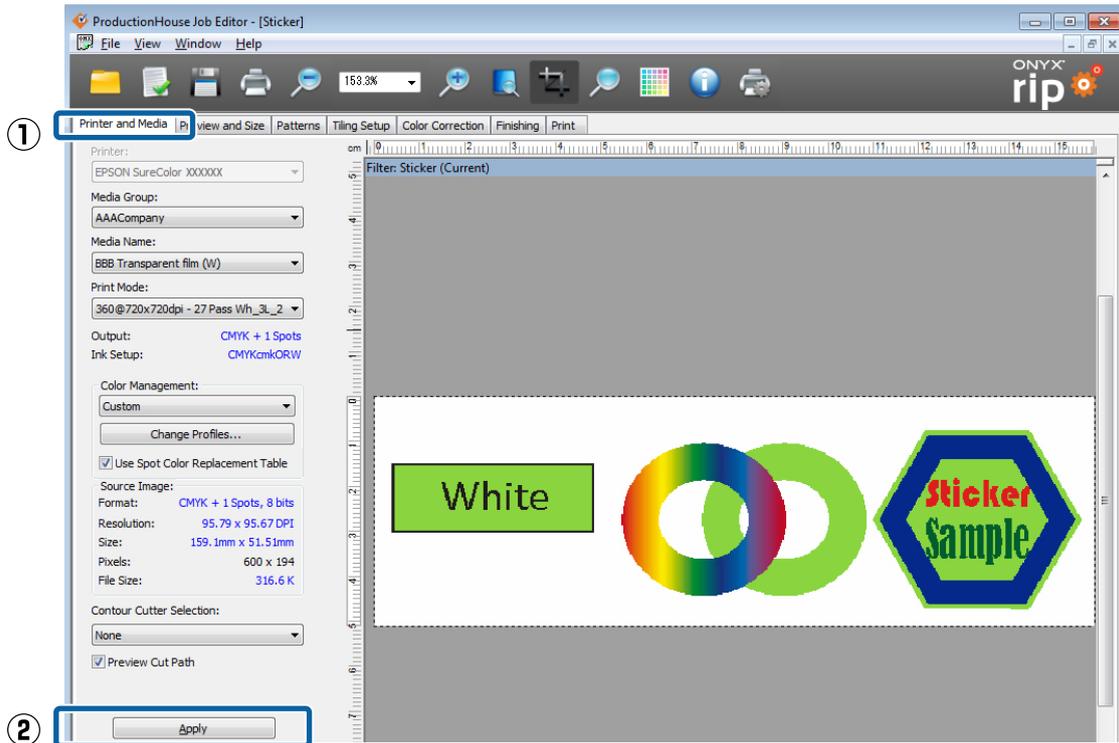
9   Click the printer icon.

Print Settings in the RIP

| 10 | Click **Print Now** on the right side of the screen. |
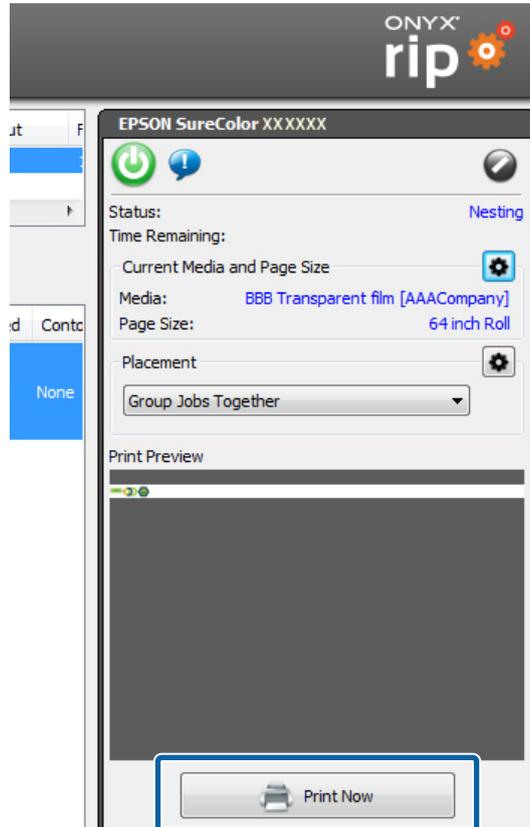
Settings in Caldera RIP

> ⚠️ **Important:**
>
> *See the Manual for RIP Printing (PDF) before you start the following tasks, from "Install and Connect" to "Create Configuration (Print Settings)".*

This section explains the procedure for printing in Caldera RIP (Ver. 10.2) on a Mac OS X.

| 1 | Start Caldera RIP. |

Print Settings in the RIP

2 In the **Main** tab, click **Fileman**.
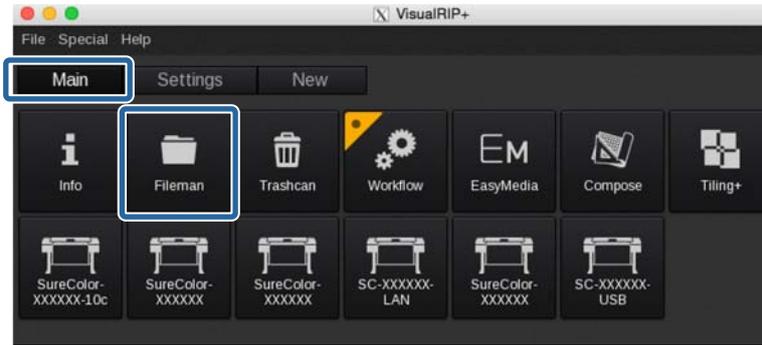
3 Select a file to print, and then select **Open**.
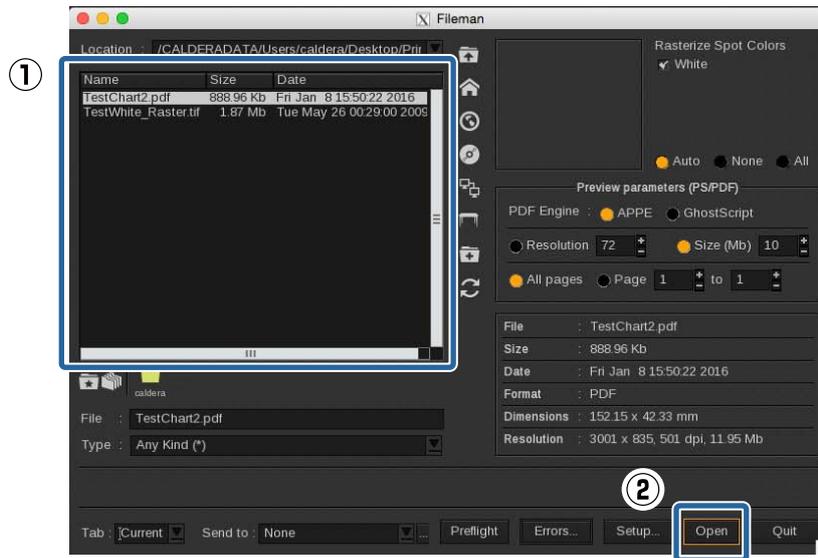
4 Drag and drop an image from **Default** to the preview area in the printer dialog box.

Print Settings in the RIP

5 Click ⊙ (**Colors**) in the printer dialog box.
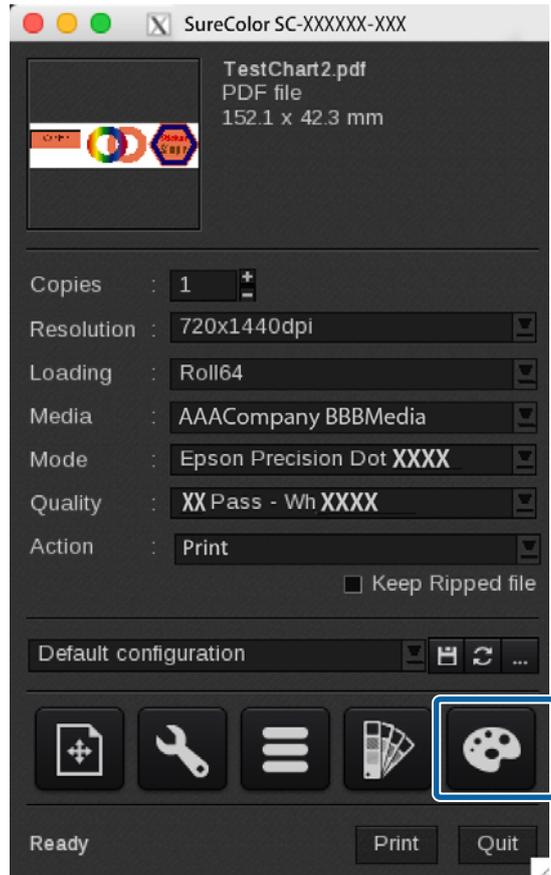
6 Refer to the following table and set (1) to (3) in the **Color Management** tab, and then click **Close**.

	For printing with a wide color gamut	**For general printing**
(1)	Not checked	Checked
(2)	AdobeRGB1998.icc	sRGB.icc, etc.
(3)	EpsonWideCMYK Ver2.icc	Select general profile for printing.

Print Settings in the RIP
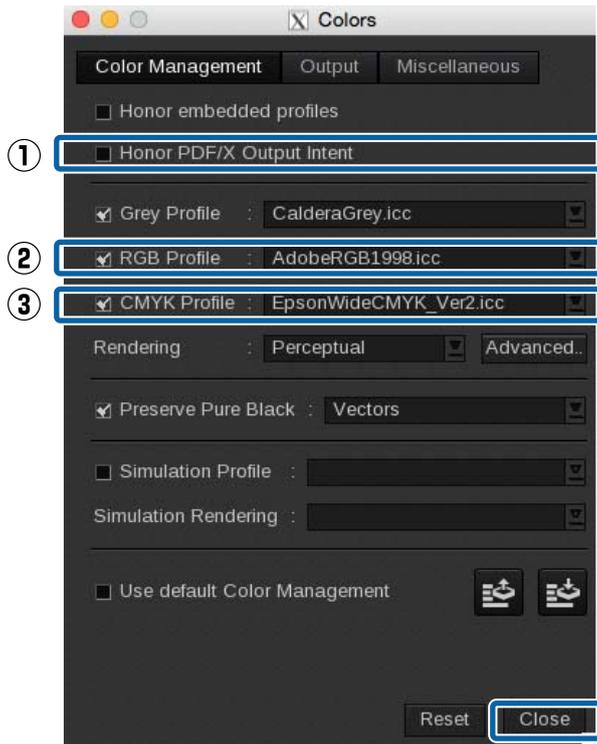
Note:
If you cannot find Epson Wide CMYK_Ver2.icc in (3), click **More** in the lowest level and select the **Files** tab in the **Profile Browser** screen.
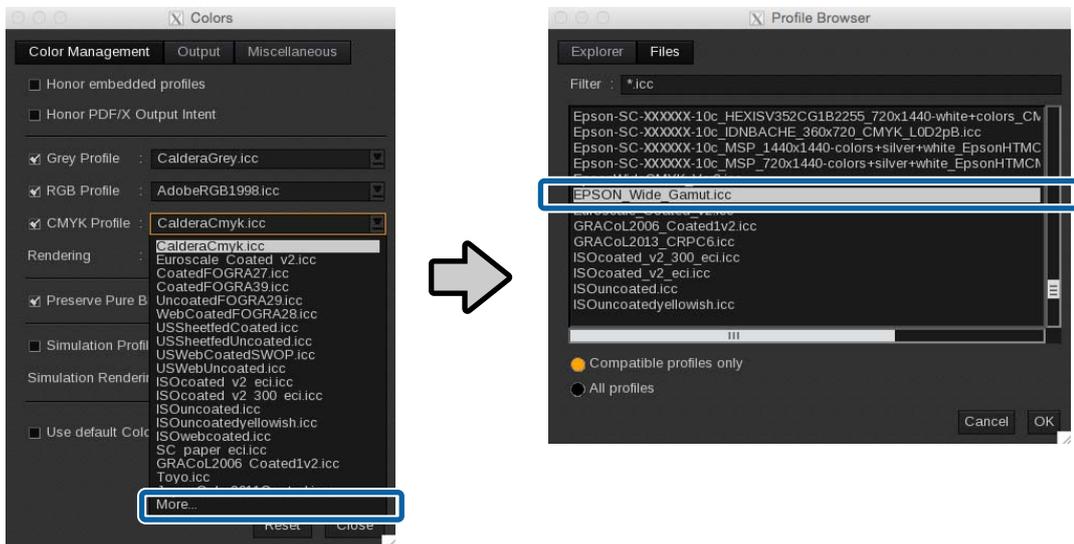
Refer to the following also when matching spot colors.

Print Settings in the RIP

7 Do the print settings in the printer dialog box.

The white text settings are the recommended settings. Print quality cannot be guaranteed for settings other than the white text.
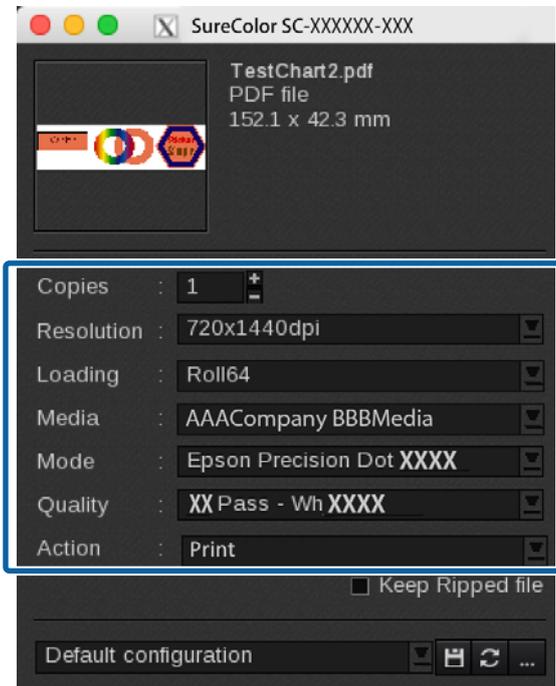
See the following table for a summary of the setting items. (See the manual supplied with the RIP for more details.)

Copies	Specify the number of copies.
Resolution	Specify the print resolution for the image.
Loading	Select the width of the media that has been loaded in the printer.
Media	Select the type of the media that has been loaded in the printer.
Mode	If you are using print information that is imported from an EMX file, select a setting that includes Epson Precision Dot CMYK in its name.
Quality	Select this according to the number of print passes and layers. The recommended settings for each print pass are indicated by an "*" (asterisk). See the supplementary table for details.
Action	Normally, select **Print**. Printing starts automatically when the settings are complete.

How to Read Quality
The following settings are for 32 passes bidirectional printing of WH and color. Descriptions of the settings from ❶ to ❹ are shown in the following table.

❶	Indicates print passes (how many times printing is split for one interval). The higher the number the better the print quality, but the printing speed decreases. Depending on the media you are using, the term High Quality may appear following the name of the media. This setting helps prevent the occurrence of uneven density and banding from the setting of the same number of passes, but it reduces the print speed.

Print Settings in the RIP

❷	Indicates spot colors used for printing. Select from those below.
	❏ When printing with WH and color ink that overlap:Wh
	❏ When printing with WH and color ink at the same time, that do not overlap:(Wh)
	❏ When printing with MS (either overlapping or not):Ms
	❏ When printing with only color ink and a low number of print passes: mode that does not have ❷ or ❸.
	❏ When printing with only color ink and a high number of print passes: mode that has (Wh) in ❷ that does not have ❸.
❸	Indicates number of print layers. When printing with WH/MS and color ink at the same time, that do not overlap, select a mode that does not have ❸. When printing with WH/MS and color ink that do overlap, select 2L or 3L*. (3L can be selected only when printing with WH.) When you select 3L, you also need to select how the print results appear.
	❏ Printouts that appear correct from just either the front or back side:1 Way
	❏ Printouts that appear correct from both sides:2 Way
❹	Indicates the method in which printing is done. The printhead prints while moving both left and right; or the printhead prints while moving in only one direction. You can select one of the following.
	❏ Bid: The print head prints while moving both left and right, so printing can be done quickly.
	❏ Unid: Printing is done only in one direction. The print quality increases, but the printing speed decreases.

* Depending on your country or region, you may not be able to select 3L. For more details, contact your dealer or Epson
   Support.

8 Click 🔳 (**Page Setup**).
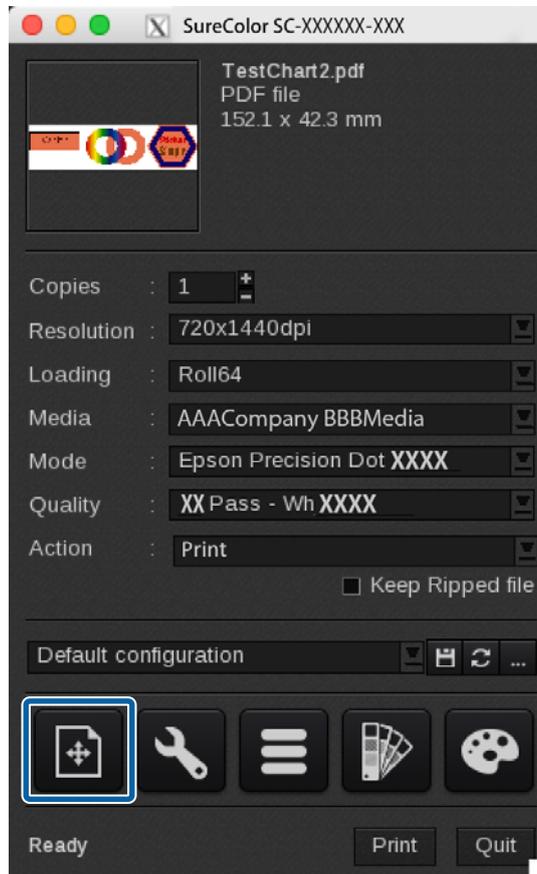
Print Settings in the RIP

9   Select the **White** or **Metallic** tab and select **Enable Separation**.

> **Note:**
> *Printing may not be done correctly if **Enable Separation** is selected in both the **White** and **Metallic** tabs. Clear the selections in tabs for colors of ink that are not being used for printing.*

10 If necessary for the print data, set (1) and then click **Close**.
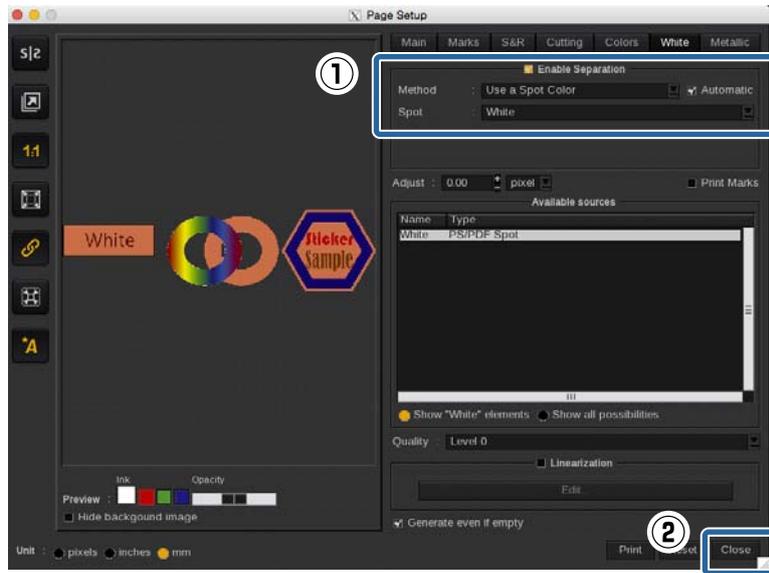
Processed print data

Method	Select **Use a Spot Color**.
	Select **Automatic** to automatically set **Spot**.
Spot	Select a name (White or Metallic) that is saved in a spot color swatch (Illustrator) or spot color channel (Photoshop).

Unprocessed print data (when you want to specify WH/MS print areas in the RIP settings)

Method	Select **Generate from CMYK data**.
Computation	Select one of the following as the part you want to print with WH/MS.
	❑ Parts that have images and objects:**Generate where there is some ink**
	❑ Parts that do not have images and objects:**Generate where there is no ink**
Density	Set the ink density for WH/MS.

Unprocessed print data (when WH/MS is printed all over)

Method	Select **Fill page coverage**.
Density	Set the ink density for WH/MS.

Print Settings in the RIP

> *Note:*
> *When printing something other than PDF format data in the channel for printing WH/MS, select **Use Extra Channel** for **Method** and then select the ink color for **Channel**. See the manual supplied with the RIP for more details.*

11 Click (Advanced settings).
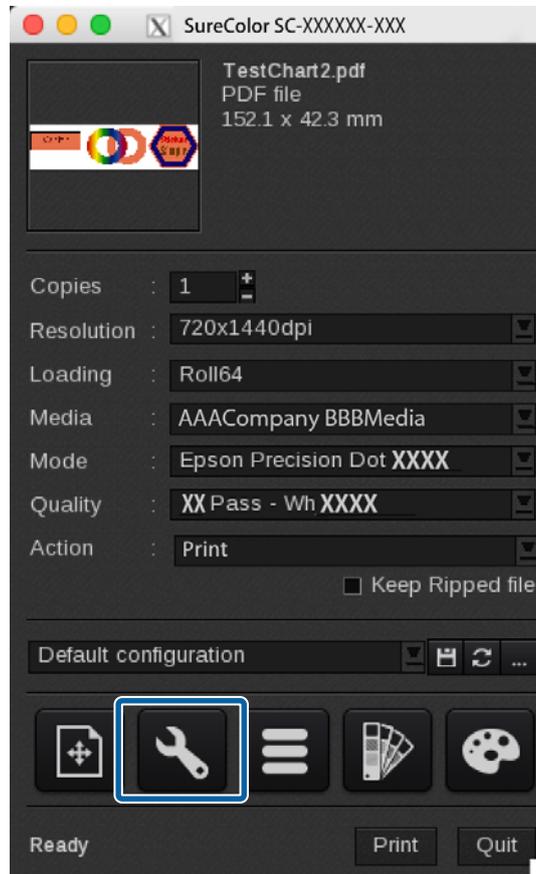
Print Settings in the RIP

12 Check that the following item is not selected in the Printer tab.

Select this only when the print data has parts that are printed all over (solid printing) with WH.
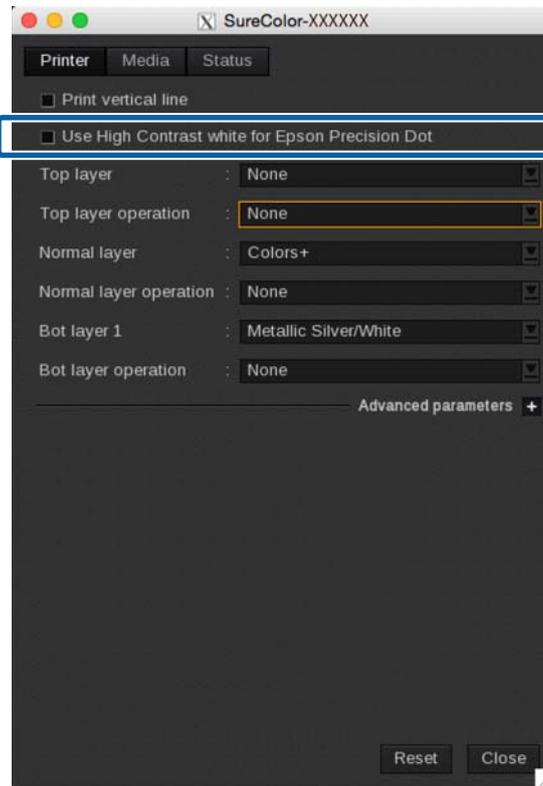
13 Set the print order and ink colors used for each layer.

The settings vary depending on the number of print layers. See the following for details.
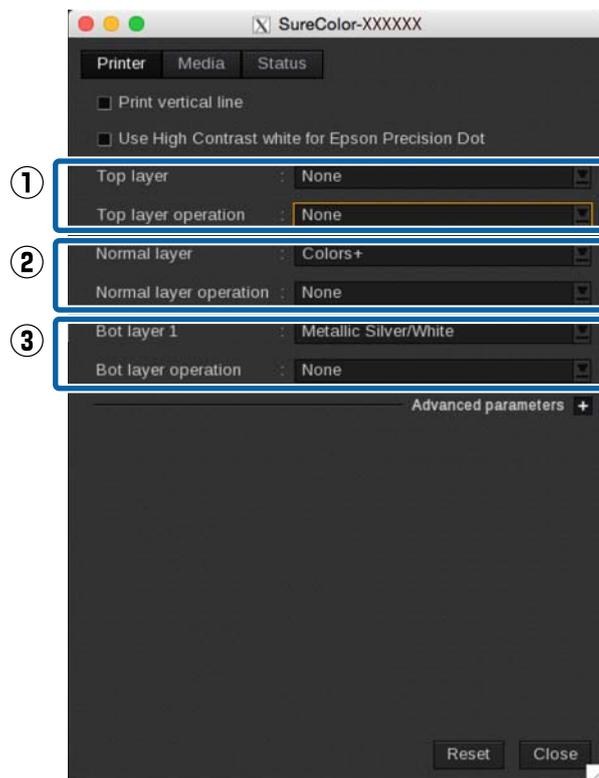
Print Settings in the RIP

When printing only in color ink or when printing colors and WH/MS without overlapping
Select **None** for everything in (1) and (3). Set (2) according to the following table.

(2)	Normal layer	Colors+
	Normal layer operations	The setting is different from where to see the print results.
		❏ Front:**None**
		❏ Back: **Mirrored** (when printing inverted)/**None** (when printing normally)

When 2L is selected
The settings vary depending on the print order of WH/MS and color ink.

❏**When printing WH/MS on top (when the print results can be seen from the back side)**
   Set (1) and (2) according to the following table. Select **None** for everything in (3).

(1)	Top layer	Metallic Silver/White
	Top layer operations	None
(2)	Normal layer	Colors+
	Normal layer operations	Mirrored (when printing inverted)/**None** (when printing normally)

❏**When printing WH/MS on bottom (when the print results can be seen from the front side)**
   Select **None** for everything in (1). Set (1) and (2) according to the following table.

(2)	Normal layer	Colors+
	Normal layer operations	None
(3)	Bot layer	Metallic Silver/White
	Bot layer operations	None

When 3L is selected
The settings vary depending on the print order of WH and color ink.

❏**When printing color ink two times with WH in between (when the print results can be seen from both sides)**

(1)	Top layer	Colors
	Top layer operations	None
(2)	Normal layer	Metallic Silver/White
	Normal layer operations	None
(3)	Bot layer	Colors
	Bot layer operations	Mirrored

Print Settings in the RIP

❏ **When printing WH two times overlapping on color ink (when the print results can be seen from the back side)**

(1)	**Top layer**	**Metallic Silver/White**
	Top layer operations	**None**
(2)	**Normal layer**	**Metallic Silver/White**
	Normal layer operations	**None**
(3)	**Bot layer**	**Colors**
	Bot layer operations	**Mirrored** (when printing inverted)/**None** (when printing normally)

❏ **When printing WH two times overlapping under color ink (when the print results can be seen from the front side)**

(1)	**Top layer**	**Colors**
	Top layer operations	**None**
(2)	**Normal layer**	**Metallic Silver/White**
	Normal layer operations	**None**
(3)	**Bot layer**	**Metallic Silver/White**
	Bot layer operations	**None**

Print Settings in the RIP

14 In the **Media** tab, set **Drying time (in seconds)** and click **Close**.

Set the drying time in which additional drying is done by the drying fan and heater after a job has finished printing.

Note:

❏ *When printing in layers of color inks and WH/MS, if the printed surface is rolled up before it has sufficiently dried, the printed surfaces may stick together. The appropriate drying times vary depending on the media you are using. However, we recommend setting a little longer time than when printing with color ink only.*

❏ *Set the **Drying Time Per Pass** on the control panel menu of the printer for banner print jobs (length rolled before additional drying after a print job). See the User's Guide (PDF) for more information.*

Print Settings in the RIP

15   When all the settings are complete, click **Print** in the printer dialog box.

Printing starts automatically.
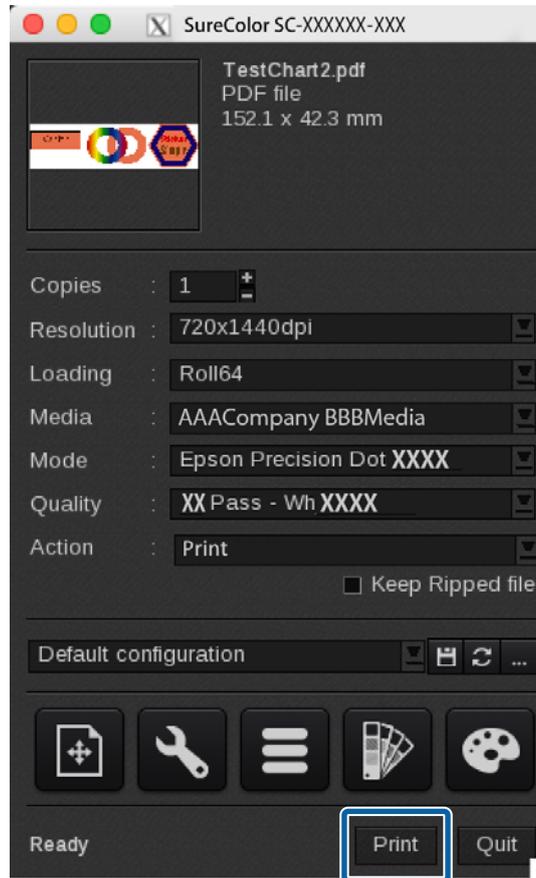
Print Settings in the RIP

Note:
Click 💾 *to save the setting. Then you can print by recalling the settings next time.*

We recommend using a name for the settings that is easy to understand for other people that are printing something.
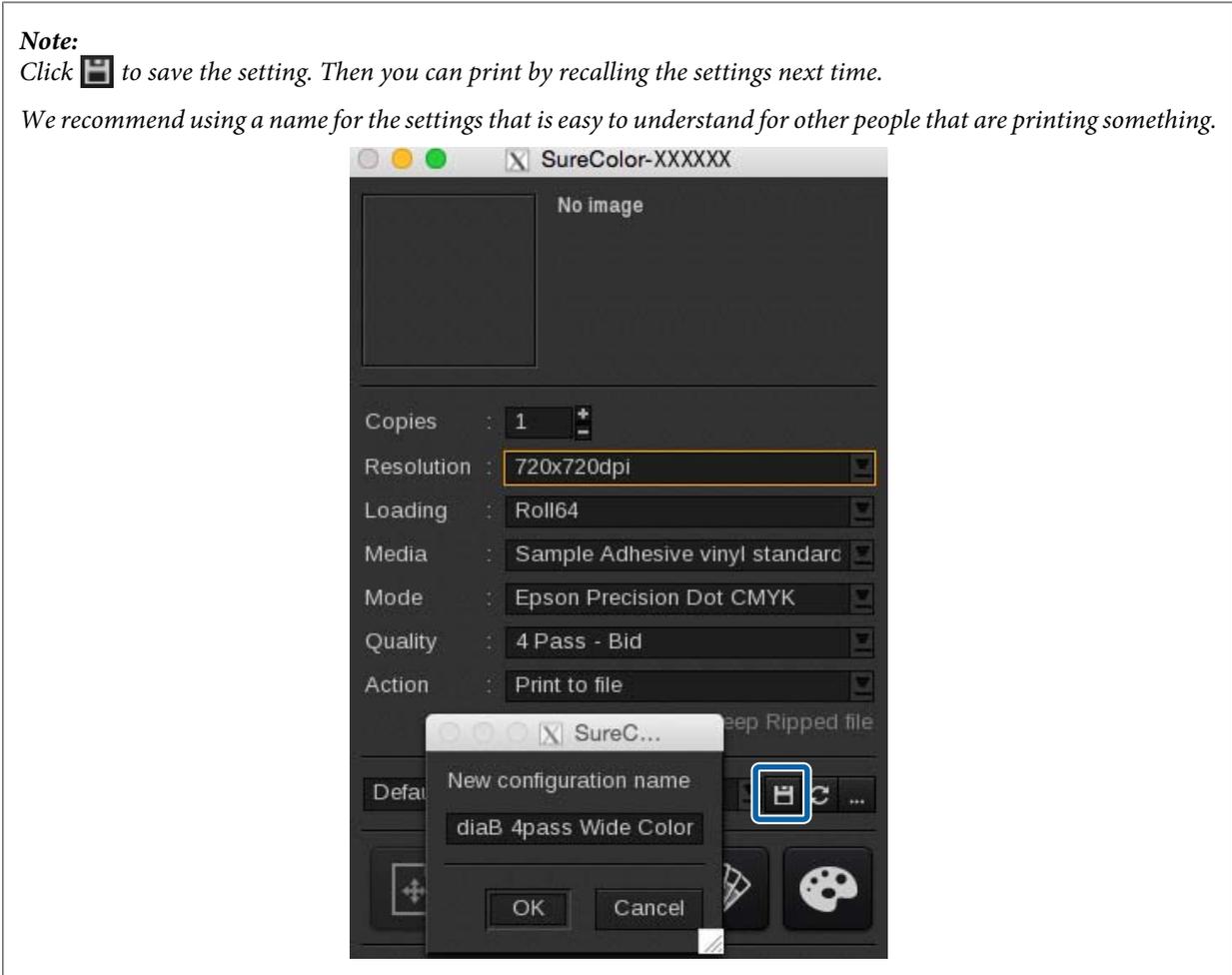
Settings in DINAX Mirage

> ❗**Important:**
>
> *See the Manual for RIP Printing (PDF) before you start the following tasks and import "Install and Connect" and "Importing Print Information".*

This section explains the procedure for printing in DINAX Mirage (Ver. 3.50) on Windows.

1 Start Mirage Print.

Print Settings in the RIP

2 Select **Settings** in **File**.
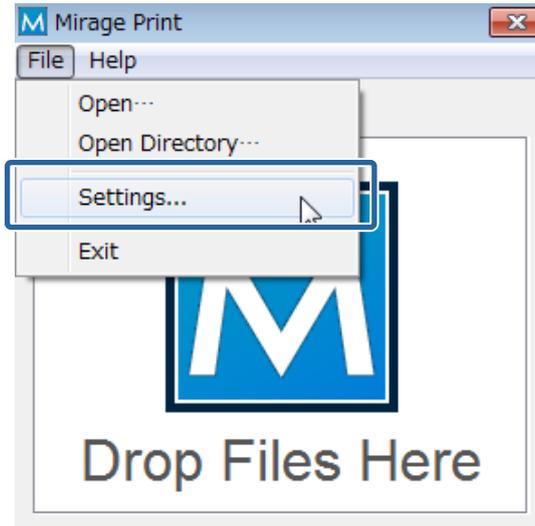
3 Refer to the following table and set (1) to (3) in the **Color Settings** tab.

|	For printing with a wide color gamut	For general printing
(1)	AdobeRGB1998.icc	sRGB.icc, etc.
(2)	EpsonWideCMYK Ver2.icc	Select general profile for printing.
(3)	Assign default profiles	Leaves as is
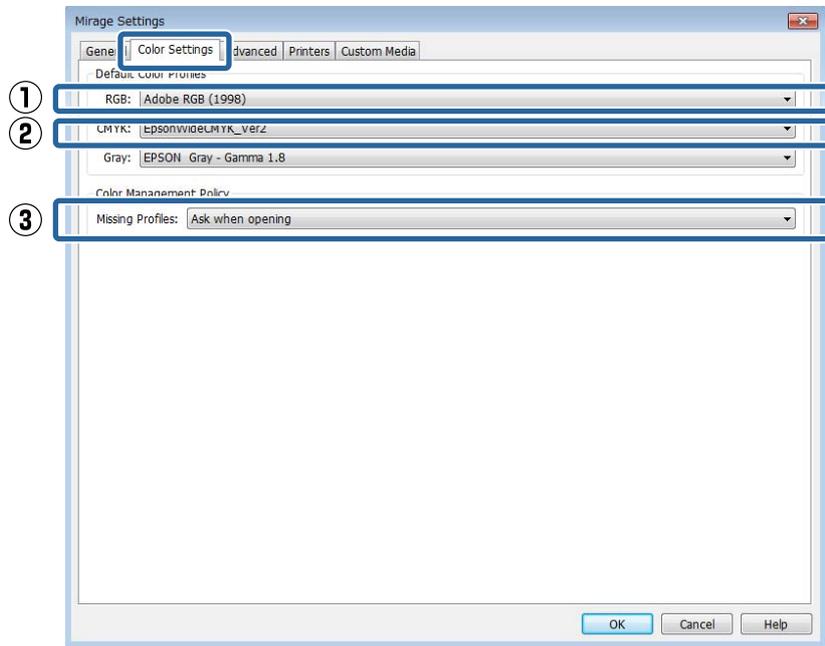
Print Settings in the RIP

> *Note:*
> *If your print data falls into one of the categories below, we recommend selecting* **Ask when opening** *in (3). When you open the data, the following screen is displayed and you can check and change the settings.*
>
> ❏ *No profile is embedded*
> ❏ *Uncertain whether a profile is embedded*
>
> **Documents Without Color Profile**
>
> The following documents are not color managed:
>
> **What would you like to do?**
> ○ Do not open
> ○ Leave as is
> ○ Assign default profile(s)
> ● Assign profile(s):
>
> RGB: Adobe RGB (1998)
> CMYK: EpsonWideCMYK_Ver2
> Gray: EPSON Gray - Gamma 1.8
>
> You can assign color profiles now, or later in the print dialog. Until a profile is assigned, the documents can be printed only in Profile Creation mode, and will be hidden in other print modes.
>
> OK   Cancel

4 Drag and drop the print data to **Mirage Print**.
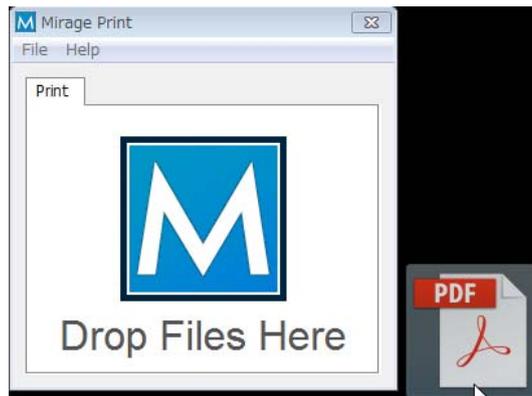
5 Select the name of the media loaded in the printer in **on**, and the print mode in **with**.
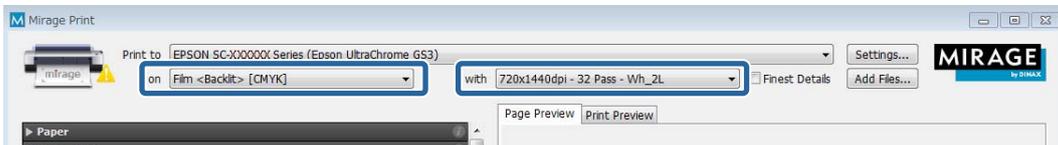
How to Read Print Mode
In the following setting example, the print data is output at 720 x 1440 dpi and then print 32 passes in WH and color. Descriptions of the settings from ❶ to ❹ are shown in the following table.

720x1440dpi - 32 Pass - Wh - 2L - Reverse
       ❶   ❷   ❸   ❹
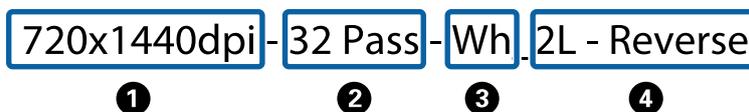
❶	Indicates the output resolution of the RIP. The higher the number the better the print quality, but the printing speed decreases.

Print Settings in the RIP

| ❷	Indicates the print passes (how many times printing is split for one interval). The higher the number the better the print quality, but the printing speed decreases. Depending on the media you are using, the term High Quality may appear following the name of the media. This setting helps prevent the occurrence of uneven density and banding from the setting of the same number of passes, but it reduces the print speed.
❸	Indicates spot colors are used. (Wh or Ms) When printing with only color ink, select a mode that does not have ❸ or ❹.
❹	Indicates number of layers and print order. ❏ When printing WH/MS without overlapping with color ink (when printing WH/MS and color ink at the same time): mode that does not have ❹ ❏ When printing WH two times overlapping: mode that has 3L_1Way* ❏ When printing WH/MS on colors: mode that has "-Reverse" at the end

* Depending on your country or region, you may not be able to select 3L. For more details, contact your dealer or Epson Support.

6 Set (1) and (2) according to the print mode you selected in step 5.
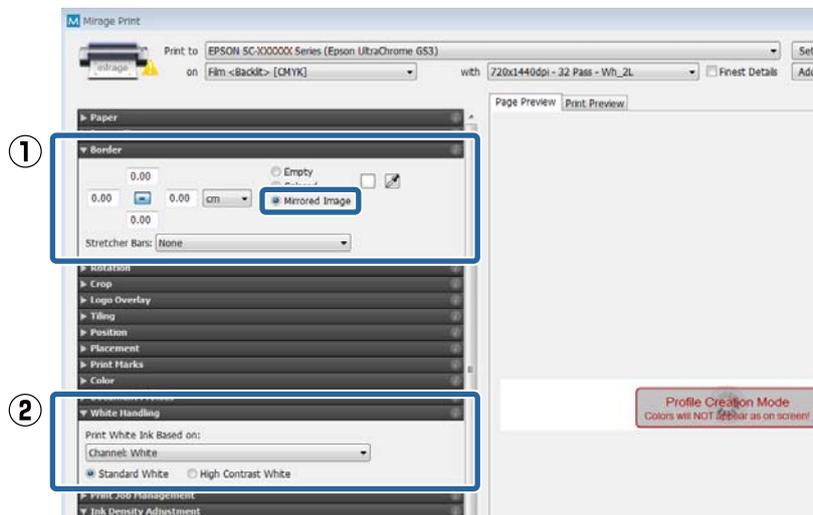
(1) Border (only when you have selected a mode that has "-Reverse" in ❹)
When you want to be able to read printed characters correctly when looking at the printout from the back side, select **Mirrored Image**.

(2) White Handling (only when printing WH)
Select **Print White Ink Based on** according to the print data.

❏   Data processed in Illustrator: **Channel: White**

❏   Data processed in Photoshop: **Use Alpha for White**

❏   When not printing WH: **No White**

If you select anything other than **No White** for **Print White Ink Based on**, then also select the following.

❏   **Standard White**: Normally select this one.

❏   **High Contrast White**: When the data includes parts that are printed all over (solid printing) with WH.

7 Click **Print** in the bottom right of the screen to start printing.

Matching Specific Colors

When matching specific colors, such as spot colors or corporate colors, determine the optimum value by comparing the target to the printed color sample (Color Books) created with a RIP. The target differs according to the color being matched.

Spot color*	Commercially available color books, such as PANTONE and DIC
Other than spot colors	Actual printed materials and sample goods

* Indicates named colors specified in the swatch library of the image processing software.

See the following for how to make the settings for each RIP.

ONYX RIP

Caldera RIP

> *Note:*
> *There is no specific color matching function in DINAX Mirage.*

## Settings in ONYX RIP

1 Open the print data using Job Editor.

2 Select **Tools** from the **Color Correction** tab and click 🔧.

Select the following according to the color being matched.

| Spot color	**Named Color Replacements**
Other than spot colors	**Color Replacements**
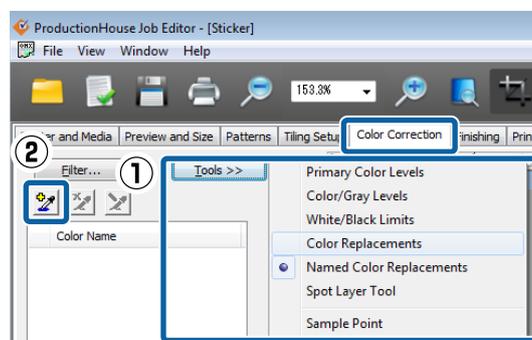
Matching Specific Colors

**3** Select the target color according to the matching color.

Spot color
Select the spot color name for matching colors in **Color To Replace**. If the data contains multiple spot colors, select the correct replacement colors.
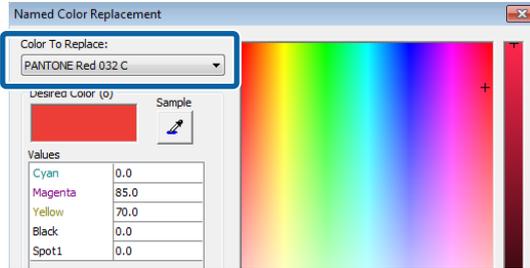
Other than spot colors
Click ✎ in **Current Color**, then click the matching color on the preview screen.
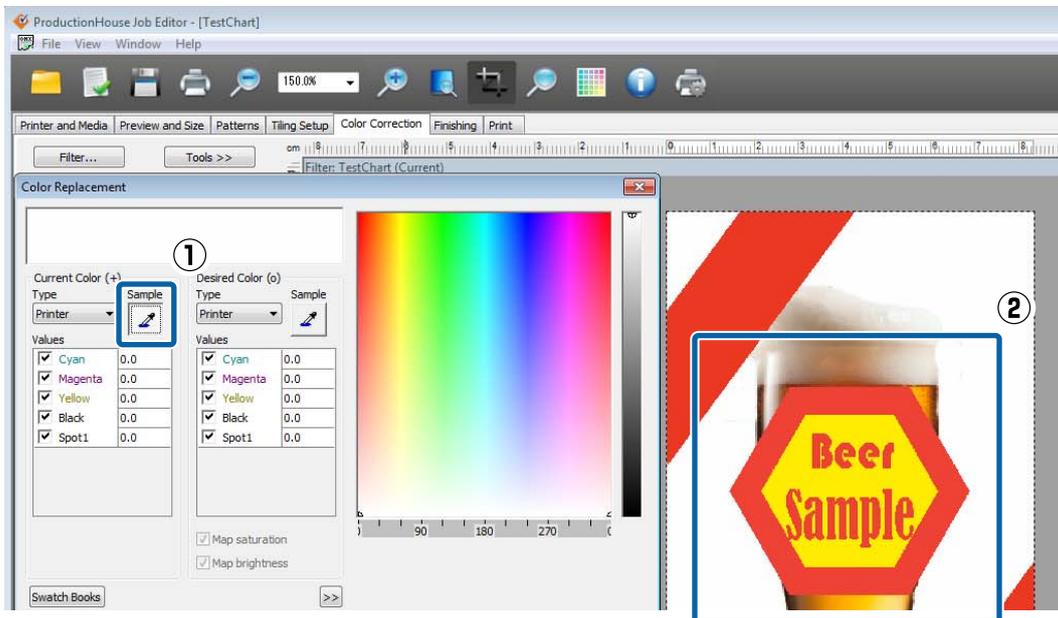

4 Click **Swatch Books**.
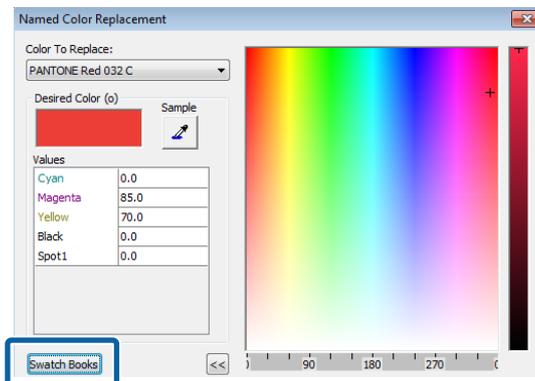
5 Make the settings for the color patches and click **Print**.

See the following table for a summary of the settings. (See the manual supplied with the RIP for more details about the items.)

Matching Specific Colors

| (1)	Select the number of components to set in (3). (Example: Selecting **3-Dimensional** will allow you to set three components.)
(2)	Set the number of pages to print and the number of each vertical and horizontal print patch.
(3)	Normally, use this while **Auto Patches** is selected.
	Select the components to change for each **Horizontal**, **Vertical**, and **Page**, then set the ranges from the drop-down menu on the right side.
	The brightness can be changed in **Lightness**, vividness (saturation) can be changed in **Chroma** and the tone can be changed in **Hue**.
(4)	Set the height and width of the patch. We recommend over 20 mm.
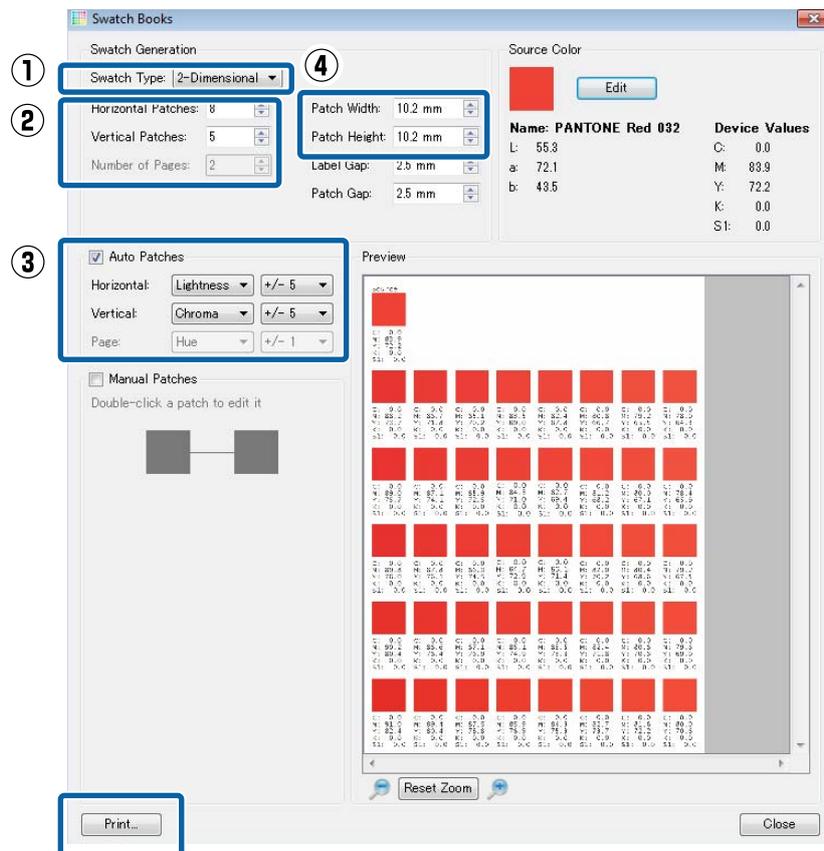
6 Compare the target (color books, samples) with the printed color patches and search for the patch with the closest color.

If you cannot find a suitable color, return to step 5, increase the number of patches and change the range, then recreate and print the color patches. Repeat steps 5 and 6 until you find a suitable color.

Matching Specific Colors

7 Enter the CMYK value of the color found in step 6 into the **Values** for the **Desired Color**.
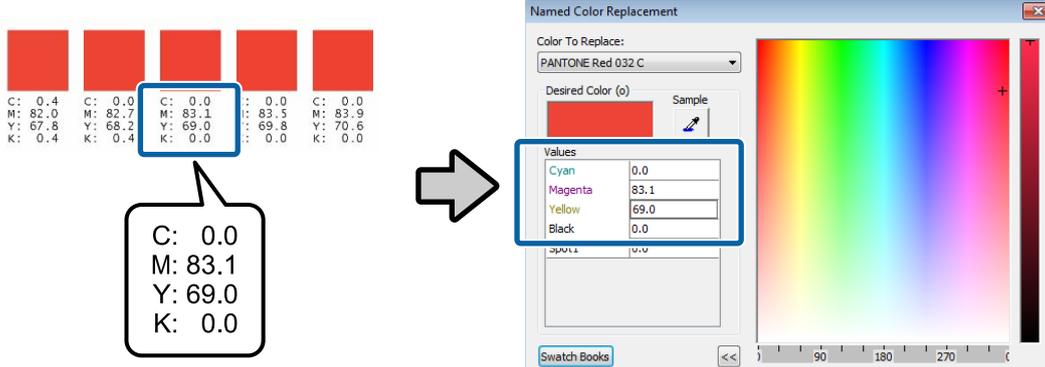
> **⚠ Important:**
>
> *When color matching, all of the colors that are the same as the specified color in the print data will be replaced. Make sure to check on the preview screen for the Job Editor whether unintended parts have also been replaced.*

8 Print the actual data and check the color matching results.

If you would like a more precise match, start again from step one and find another similar color.

Settings in Caldera RIP

1 Click ![icon](Spot Colors) in the printer dialog box.
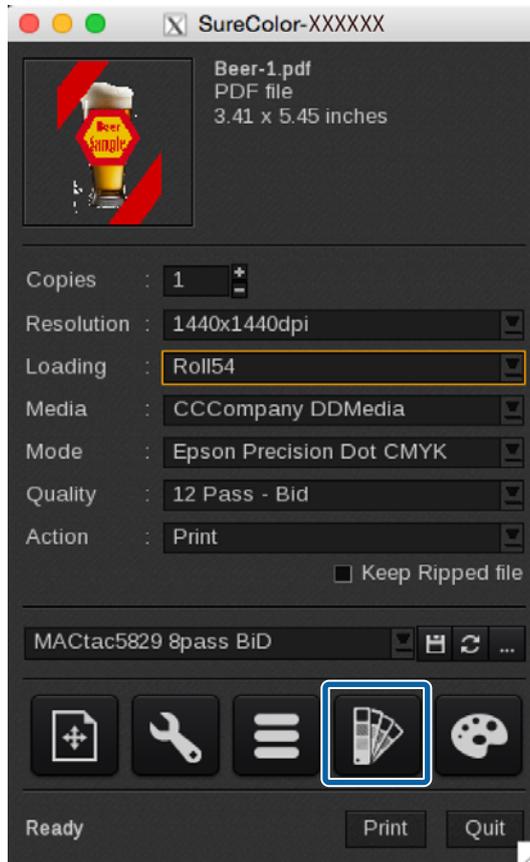
2 Select **Enable Spot Colors processing**, and then specify the area to match colors in **Range**.

❏ **Vectors**: Only areas that include vector data, such as objects or text

❏ **Images**: Only areas of raster data, such as photos

❏ **Both**: Both **Vectors** and **Images**
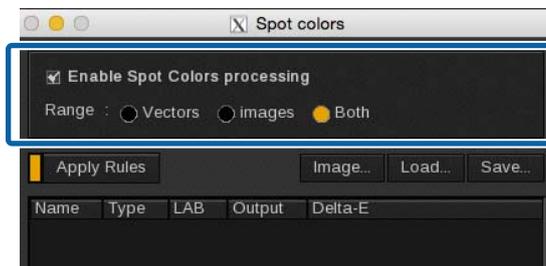
Matching Specific Colors

3 Select and register the target color according to the matching color.

Spot color
Select a name for the spot color. If the data contains multiple spot colors, select the correct colors for matching colors.
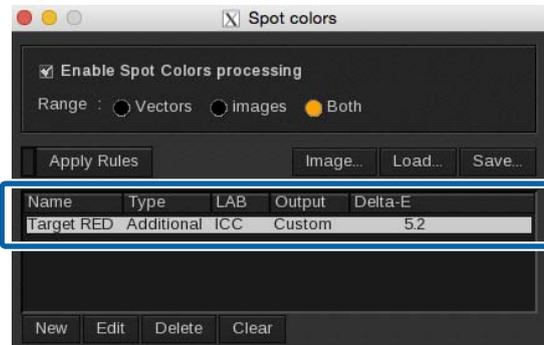
Other than spot colors
Use the following procedure to register colors for matching colors as new spot colors.

(1) Click **New**.

(2) Click (**Pick**) in **New Spot Color**.

(3) Click ![] in Preview, then select the color for the matching color.

(4) Click (**OK**) in **New Spot Color**.
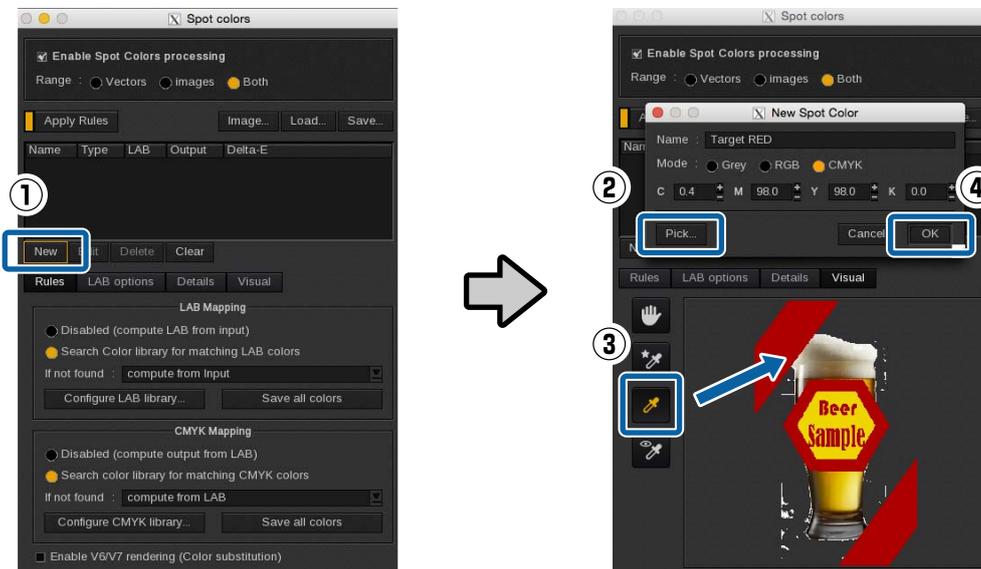
Matching Specific Colors

4 Click **Color books**.
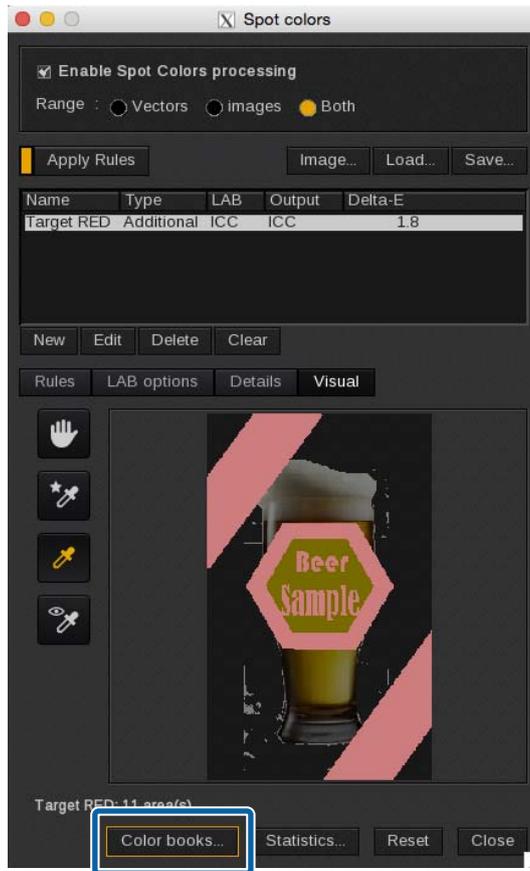
5 Click the **Colors** tab, and then use the following procedure to set the color swatch book data.

(1) Select **Targeted color book**.

(2) Select from **Device** (input CMYK color) or **LCH** (Lightness, Chroma, and Hue) for the elements in which to change values. (The following explanation uses an example of when **Device** is selected.)

(3) Refer to the following table to set the various items. See the manual supplied with the RIP for more details.

|	
Range	Set the percentage (positive or negative) to change the value.
Samples per direction	Set the number of patches to create per line.
Combinations	Select the combinations of colors to change. When you select **Custom** and click **…**, you can select detailed combinations.
Ink Mixing	Select the number of colors for which to change values.

Matching Specific Colors
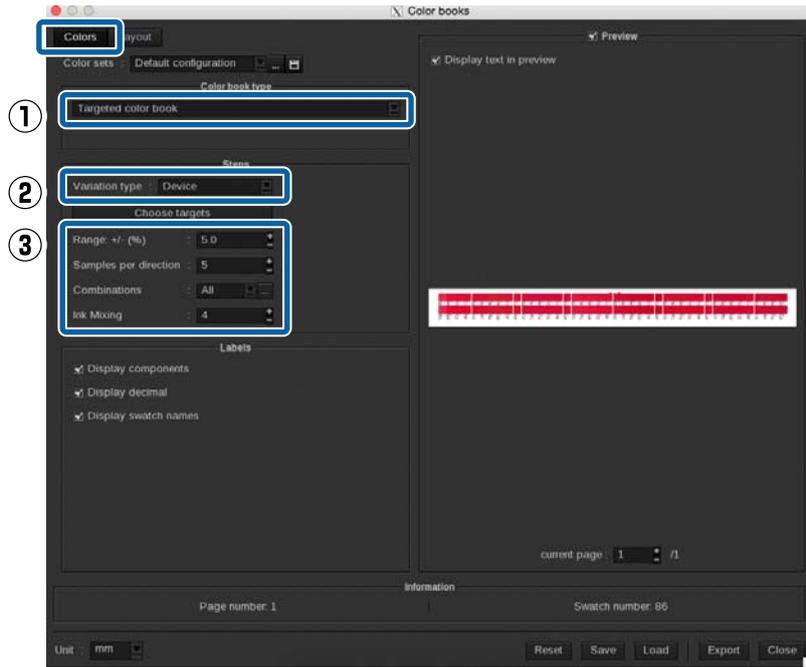
6 Refer to the following table to set the print settings for the patches in the **Layout** tab.

See the manual supplied with the RIP for more details.

(1)	You can print the name of the color book, comments and other information in the header. Select **Repeat header on each page** to print the header on each page.
(2)	❑ **Format**: Select the width of the roll paper on which to print the color patches. ❑ **Width**: Specify the print width per one line of color patches. ❑ **M. Left** - **M. Bottom**: Set the top, bottom, left, and right margins.
(3)	❑ **Width**/**Height**: Set the height and width of the patch. We recommend over 20 mm. ❑ **Hspace**/**Vspace**: Specify the vertical and horizontal margins between the patches. ❑ **Mode**: Normally automatically set to 1 line. Select **Center** to print the patches in the center of the media. Select **Make packs** to block the patches for each element that has a changed value when printing them.

Matching Specific Colors
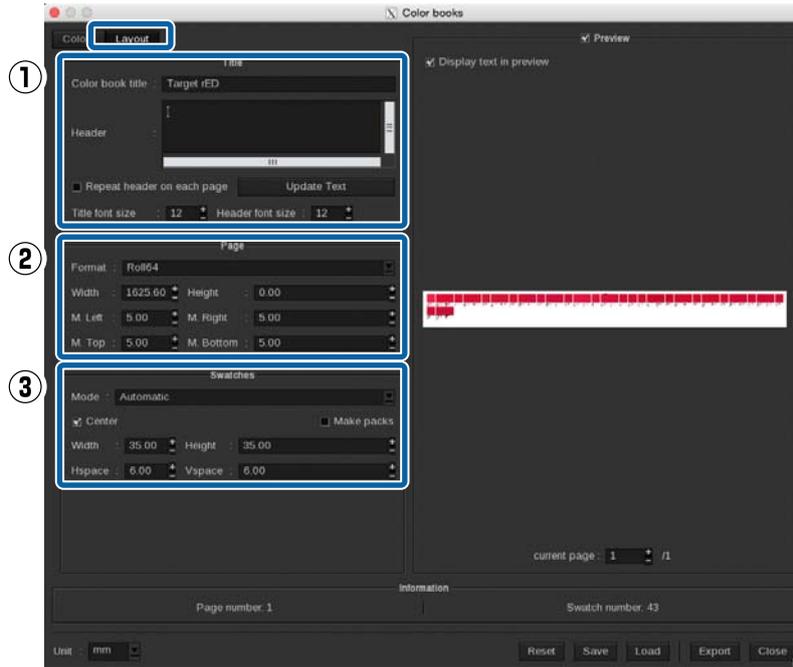
7 Click **Export** and then select **PDF** in **Output** and then click **OK**.
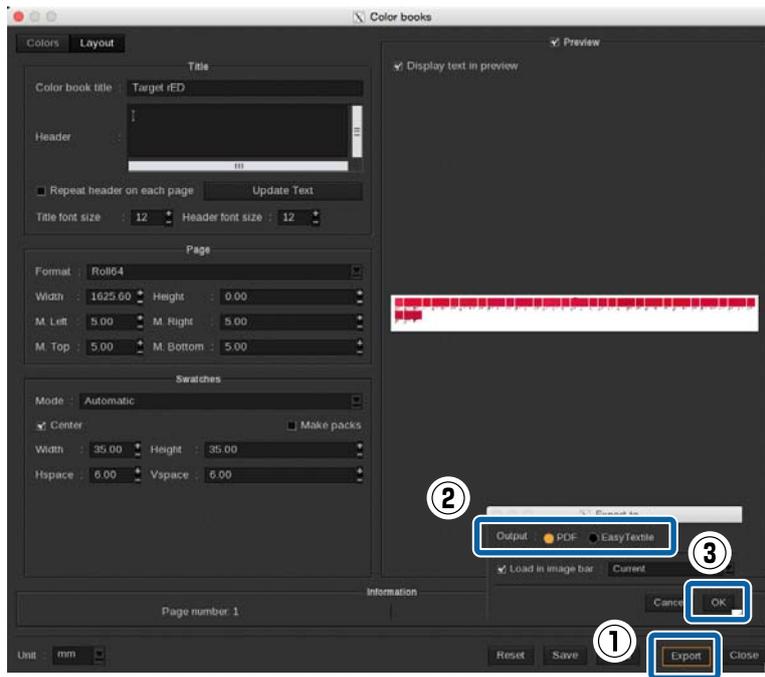
Matching Specific Colors

|8| Click **Print** in the printer dialog box.
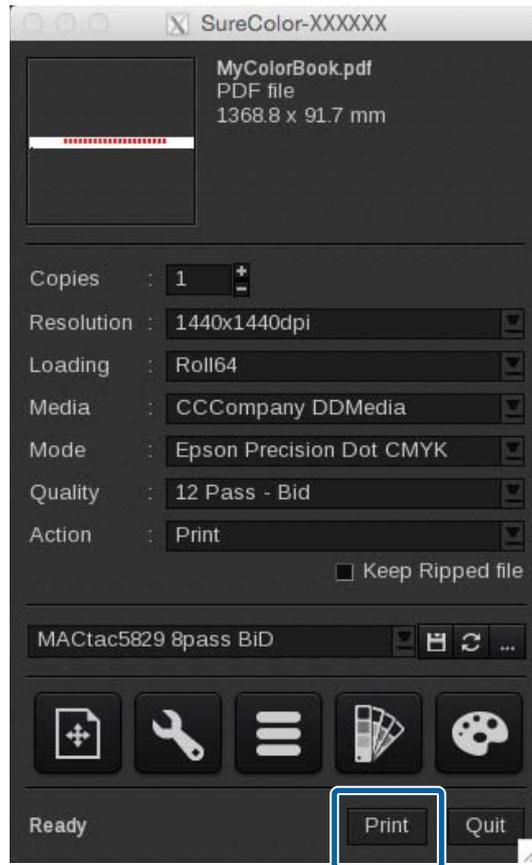
|9| Compare the target (color books, samples) with the printed color patches and search for the patch with the closest color.

If you cannot find a suitable color, return to step 4, change the range and number of patches, and recreate and print the color patches. Repeat steps 4 to 8 until you find a suitable color.

|10| In the **Details** tab of Spot Colors for the original print data, input the CMYK values (detailed values on the bottom row) that you found in step 9, and then click **Close**.
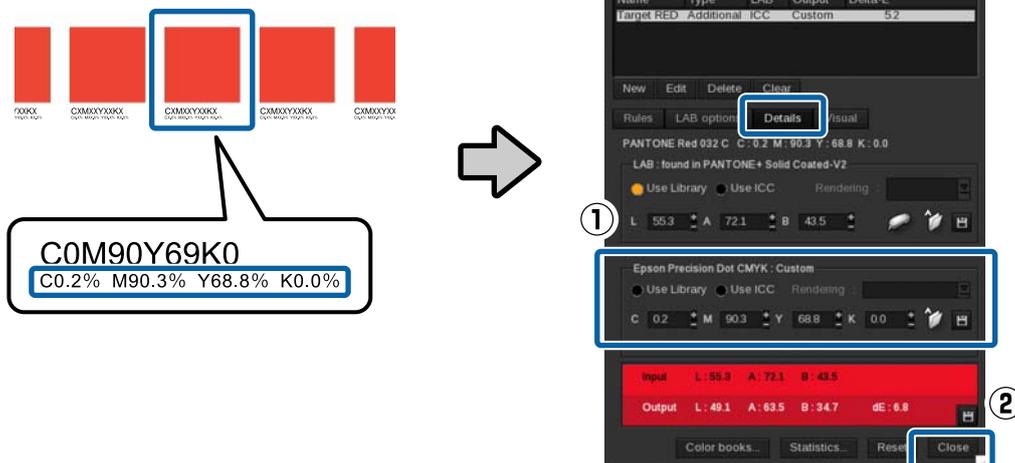
Matching Specific Colors

> ⚠ *Important:*
>
> *When color matching, all of the colors that are the same as the specified color in the print data will be replaced. Be sure to check on the preview screen that unintended parts have not also been replaced.*

11 Print the actual data and check the color matching results.

If you would like a more precise match, start again from step one and find another similar color.

Troubleshooting

WH/MS does not Print

Check the following.

Was the print data processed beforehand?
When printing with WH/MS, processing is necessary before reading the print data with the RIP. And, be sure to make the print settings for unprocessed data when printing the data, without processing.

Steps for data processing ∠⟳ "Processing Print Data" on page 7

Print Settings in ONYX RIP ∠⟳ "Printing Unprocessed Data" on page 24

Print Settings in Caldera RIP ∠⟳ "Settings in Caldera RIP" on page 29

Is your RIP setting for WH/MS printing?
The ink is not correctly assigned if the input name in the RIP is not the same as the spot color layer name or channel name, such as White and Metallic, that was given in the image processing software. Make sure there are no misspellings or errors with the case. Also, make sure to select a print mode for WH/MS.

ONYX RIP ∠⟳ "How to Create Quick Sets" on page 15

Caldera RIP ∠⟳ "Settings in Caldera RIP" on page 29

Is your printer's color mode correct?
The printer's color mode does not switch just by replacing the ink cartridge. Be sure to perform **Change Color Mode** on the menu of the control panel.

Setting procedure ∠⟳ *User's Guide* (PDF)

Color and WH/MS Overlapping Parts Do Not Print Correctly

The items to check vary depending on whether or not the print data is processed.

Processed Data
Check the following points.

❑ **Is the order of the overlapping layers correct?**

   Open the print data in Illustrator or Photoshop and check the order of the layers.

❑ **Are the settings for overprint (Attributes/Transparency) correct? (Illustrator only)**

Open the print data in Illustrator and check whether the settings have been done to either print or not print the parts on the lower layer when objects overlap.

Also, depending on the RIP used, if the setting for overprint is selected in **Attributes**, printing may not be done correctly. Clear everything in **Attributes** and select **Multiply** in **Transparency** for the **Blending Mode**.
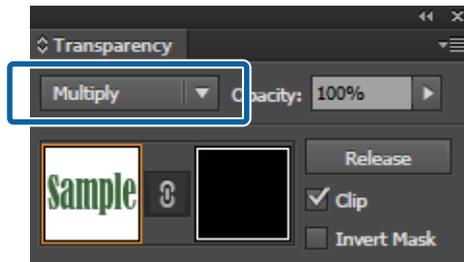
❑ **Are the print settings for the RIP correct?**

Depending on the RIP used, you can set to overprint (knockout) or reshuffle the print order of the layers in the print settings of the RIP. Check whether there is a problem with the print settings of the RIP.

Steps for data processing ☞ "Processing Print Data" on page 7

Print settings for ONYX RIP ☞ "Printing Processed Data" on page 21

Print settings for Caldera RIP ☞ "Settings in Caldera RIP" on page 29

Print settings for DINAX Mirage ☞ "Settings in DINAX Mirage" on page 42

Unprocessed Data
Check the following points in the print settings of the RIP.

❑ Are the selected print order, number of layers for the print mode, and way to see the print results appropriate?

❑ Is the print order of the layers correct?

❑ Are the settings for overprint (knockout) correct?

Print settings for ONYX RIP ☞ "Printing Unprocessed Data" on page 24

Print settings for Caldera RIP ☞ "Settings in Caldera RIP" on page 29

Print settings for DINAX Mirage ☞ "Settings in DINAX Mirage" on page 42

Gradation Skipping Occurs When Printing at High Densities

Check the following.

Troubleshooting

Are you using an EMX file that suits the media you are using?
You cannot achieve optimal print results if you do not us an EMX file that suits the media you are using. The mode for high-density printing is in the EMX file for Back Lite Film. Select the mode for high-density printing in the RIP settings.

When using media for which Epson does not provide an EMX file, edit the media settings based on the EMX file for media with similar characteristics.

Is the density of ink (Ink Density) set over 100%?
You can print with concentrated colors by setting the ink density to over 100% in the RIP. However, gradation skipping and unevenness in color may occur. Also, if you raise the density too high, the ink will take a long time to dry.

When setting the ink density over 100%, lower the setting value.