JFX500-2131 Clear Ink Print Guide

This Guide explains how to obtain various kinds of printing effects by using LH-100 / ELH-100 clear ink with the JFX500-2131 printer.
Read this Guide carefully before using the ink.

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Applicable environment

• In the case of LH-100

Printer	JFX500-2131 F.W. Ver. 2.8 or later	
Ink	Color	LH-100 / LUS-150
	Clear	LH-100 clear ink
RIP/ Mimaki Driver	RasterLink6 RasterLink6Plus RasterLink7 RasterLink8	Ver. 5.7 or later / The version compatible with your printer Ver. 1.0 or later / The version compatible with your printer Ver.3.1.0 ~ / Mimaki Driver Ver.5.8.0 ~ Ver.1.0.0 ~ / Mimaki Driver Ver.5.14.0 ~

• In the case of LUS-120

Printer	JFX500-2131 F.W. Ver. 2.8 or later	
Ink	Color	LUS-120
	Clear	LUS-120 clear ink
RIP/ Mimaki Driver	RasterLink6 RasterLink6Plus RasterLink7 RasterLink8	Ver. 5.7 or later / The version compatible with your printer Ver. 1.0 or later / The version compatible with your printer Ver.3.1.0 ~ / Mimaki Driver Ver.5.8.0 ~ Ver.1.0.0 ~ / Mimaki Driver Ver.5.14.0 ~

• In the case of ELH-100

Printer	JFX500-2131 F.W. Ver. 4.00 or later	
Ink	Color	ELH-100
	Clear	ELH-100 clear ink
RIP/ Mimaki Driver	RasterLink6Plus RasterLink7 RasterLink8	Ver. 2.22 or later / The version compatible with your printer Ver.3.3.4 ~ / Mimaki Driver Ver.5.10.0 ~ Ver.1.0.0 ~ / Mimaki Driver Ver.5.14.0 ~

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Setting the printer

Before printing with this Guide, carry out setting of the printer as follows.

1. Turn on the printer's power.

- Wait until <Local> is displayed on the panel.

- If the power is already on, have the panel display <Local>.

2. Select [UV MODE] on the panel, as follows:

(1) With "Local" displayed, press the FUNCTION key.
(2) Use the ▲, ▼ key to select [SETUP], then press the ENTER key.
(3) Use the ▲, ▼ key to select [UV MODE], then press the ENTER key.
(4) Use the ▲, ▼ key to select [HOST].
(5) Display the [UV MODE]. Set "0%" and press the ENTER key
(6) Press the ENTER key.
(7) Return to [SETUP], by pressing the END key just once.

3. Select [MAPS2] on the panel, as follows:

(1) Make sure that [SETUP] is selected.
(2) Use the ▲, ▼ key to select [MAPS], then press the ENTER key.
(3) Use the ▲, ▼ key to select [MAPS2].
(4) Press the END key.

4. Select "AUTO" for [MAPS2], as follows:

```
MAPS2
:AUTO
```

(1) Use the ▲, ▼ key to select "AUTO".
(2) Press the ENTER key.

5. Return to "Local", by pressing the END key several times.

Effects and printing with clear ink

Clear ink's effects

The effects below can be obtained by using clear ink.

Gloss feel effect - "Glossy Print"

Matte feel effect - "Matte Print"

3D feel effect - "Emboss Print"

These effects can be obtained via the "UV MODE" settings in RasterLink.

● Recommended settings for printing a clear ink

In order to obtain a better effect of the clear ink, depending on the image quality and printing speed, please use the settings of the following recommendations for the printing conditions and the concentration of the clear ink.

Important!

- **Clear Ink Density Settings**
  Even when the clear ink density is set to the recommended value, the gloss or matte finish may not be properly reproduced depending on the printed image or media material.
  In such cases, adjust the clear ink density according to the following guidelines.
- **Gloss Clear Ink Printing**
  If the base clear matte density is too low during clear gloss printing, small pinholes may appear on the gloss surface.
  In such cases, increase the base clear matte density for printing.
- **Matte Clear Ink Printing**
  If the clear ink volume is too high, streaking may occur.
  In such cases, reduce the ink volume for printing.

■In the case of LH-100 ink in color ink:

Glossy print

Recommended printing conditions				Clear ink recommended concentration	Base Clear(*) recommended concentration
Resolution	Pass	Print direction	High speed		
600×900 VD	12	Bi	ON	100%	40%

(*) For "base clear", refer to.P. 15 "Setting Glossy Print".

Matte printing, emboss printing

Print mode	Recommended printing conditions				Recommended concentration of clear ink
	Resolution	Pass	Print direction	High speed	
Production	600×900 VD	12	Bi	ON	50%
Standard	600×900 VD	24	Bi	ON	100%
Quality	1200x1200 ND	16	Uni	OFF	50%
High Quality	1200x1200 ND	32	Bi	OFF	100%

■In the case of LUS-150 / LUS-120 / ELH-100 ink in color ink:

Glossy print

Recommended printing conditions				Clear ink recommended concentration	Base Clear(*) recommended concentration
Resolution	Pass	Print direction	High speed		
600×900 VD	12	Bi	ON	100%	40%

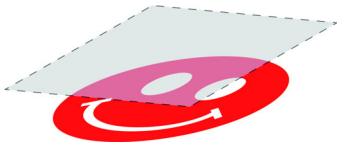
(*) For "base clear", refer to.P. 15 “Setting Glossy Print”.

Matte printing, emboss printing

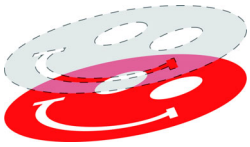
Print mode	Recommended printing conditions				Recommended concentration of clear ink
	Resolution	Pass	Print direction	High speed	
High Speed	600×600 VD	8	Bi	ON	100%
Production	600×900 VD	12	Bi	ON	50%
Standard	600×900 VD	24	Bi	ON	100%
Quality	1200x1200 ND	16	Uni	OFF	50%
High Quality	1200x1200 ND	32	Uni	OFF	100%

Ways clear ink can be printed

Clear ink can be printed in the ways below with RasterLink.



Printed over the whole of a color image



Printed onto valid pixels of a color image

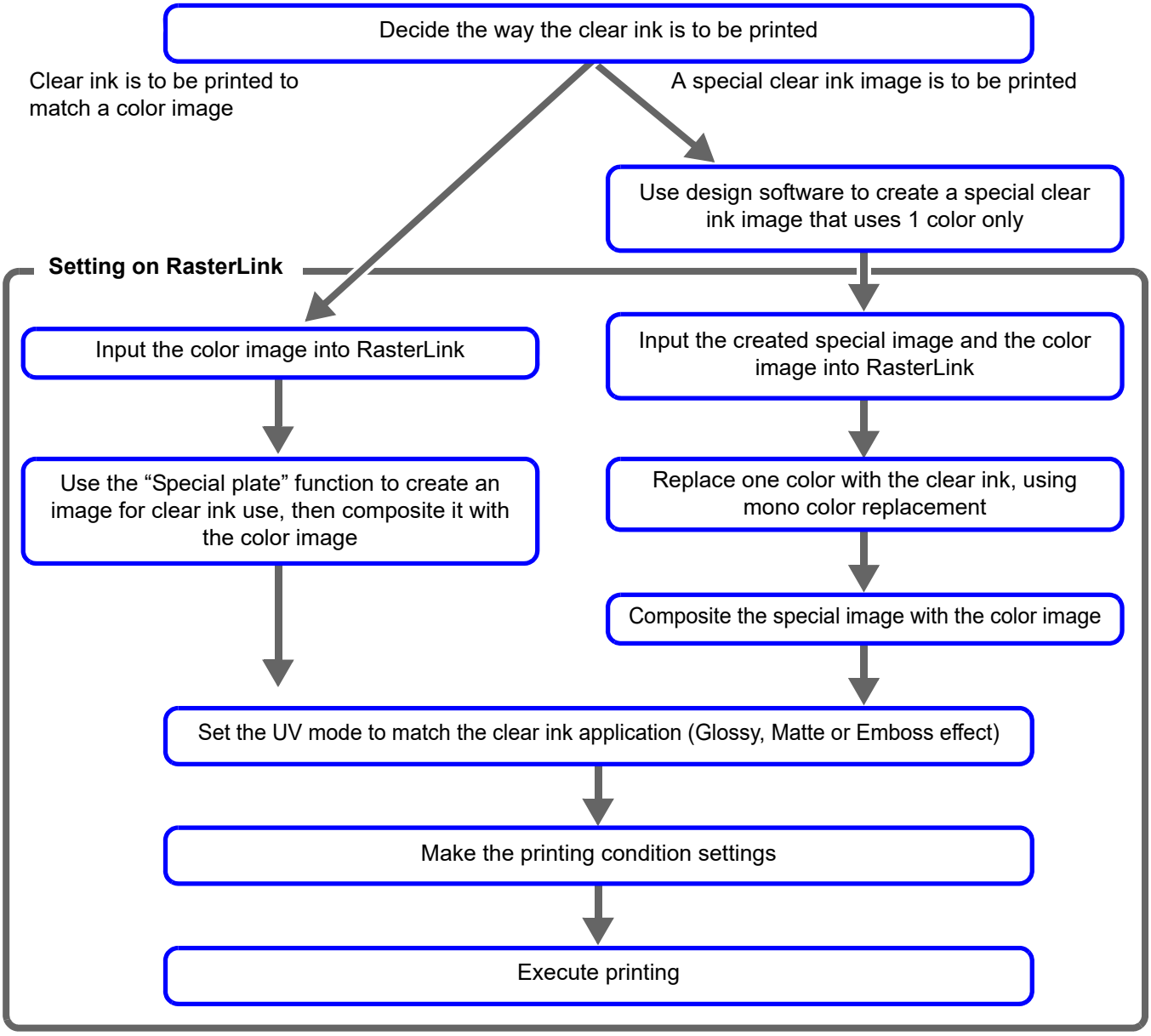
Printed as a special image for clear ink use

For printing the clear ink over the whole of a color image, and for printing it onto valid pixels of a color image, create a clear ink job using the “Special plate” function of RasterLink.
For printing the clear ink as a special clear ink image, you must create the special clear ink image by means of design software such as Illustrator.

Printing methods

Data creation and printing procedures

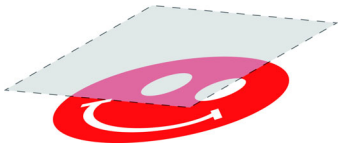
In order to print, you must first create clear ink data and make the settings for it on RasterLink, using the procedure below.



1. Decide the way the clear ink is to be printed

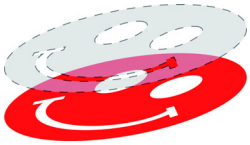
Suppose you have the following color image. You can print the clear ink in any of the three ways shown below.

Print it over the whole of the color image



→ Go to A.Printing the clear ink over the whole of the color image

Print it onto the valid pixels of the color image



→ Go to B.Printing the clear ink onto the valid pixels of the color image

Print a special image for clear ink use

→ Go to C.Printing a special clear ink image

- Here, describes the procedure to create a clear version. of setting the concentration of clear ink to 100%.
  Refer to the table in P.5 「Recommended settings for printing a clear ink」, please create a clear version with appropriate concentration of clear ink, which matches to the desired UV mode and printing conditions.

A. Printing the clear ink over the whole of the color image

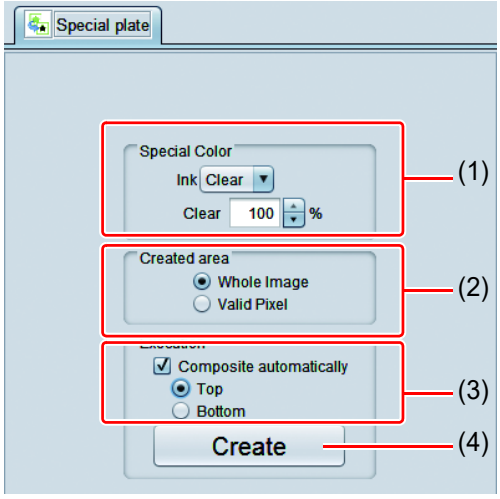
To print the clear ink over the whole of the color image, create a Special plate on the basis of the image.

1. In the job list, select the job that will be the basis for the plate.

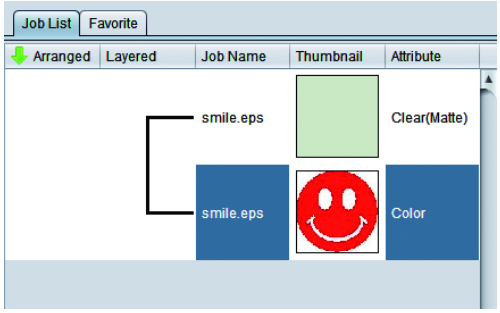
- Click the [Special plate] icon.

2. Make the settings as follows.

(1) [Special Color]: Select “Clear”
Clear= Select “100%”.
(2) [Created area]: Select “Whole image”.
(3) [Execution] : “Composite automatically:
Check the box, and select “Top”.
(4) Click the [Create] button.



3. The clear ink job will be created, in a composited state.



B. Printing the clear ink onto the valid pixels of the color image

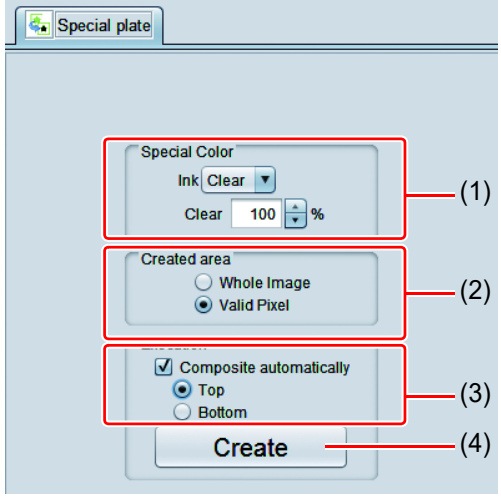
To print the clear ink onto the valid pixels of the color image, create a Special plate on the basis of the image.

1. In the Job List, select the job that will be the basis for the plate.

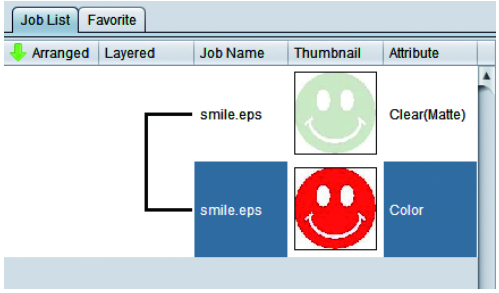
- Click the “Special plate” function icon.

2. Make the settings as follows.

(1) [Special Color]: Select “Clear”
Clear= Select “100%”.
(2) [Created area]: Select “Valid Pixel”.
(3) [Execution] : “Composite automatically: ON”
Check the box, and select “Top”.
(4) Click the [Create] button.



3. The clear ink job will be created, in a composited state.



C. Printing a special clear ink image

To print an image designed for clear ink, create a special image, separate from the color image, and carry out mono color replacement with RasterLink. After that, composite the clear ink image with the color image.

Creating the clear ink image

1. Using design software such as Illustrator or Photoshop, create a clear ink image with the following conditions:

- Color Mode: CMYK
  Colors used: One color only - cyan or magenta or yellow or black. Set 100% density for the color. For the other colors, set 0%.
  In this procedure, black 100% is used as an example.

Make the clear ink image's size match the color image's.

You can do this by creating a non-fill/non-line path around the periphery of both images, as shown on the right.

You are recommended to save the color image and clear ink image separately from each other after you have done the layout for them with the design software.

2. Save the created image as an EPS or TIFF image.

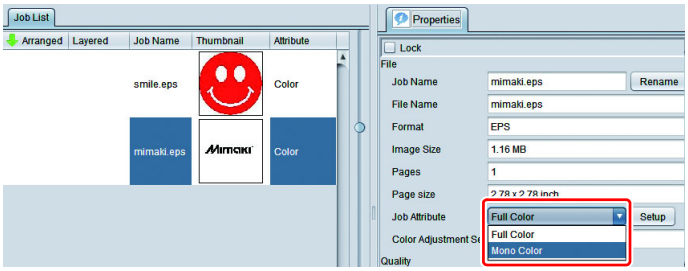
3. Import the image saved in step 2 into RasterLink.

Setting mono color replacement

1. **In the job list, select the clear ink job.**

- Click the “Properties” icon.

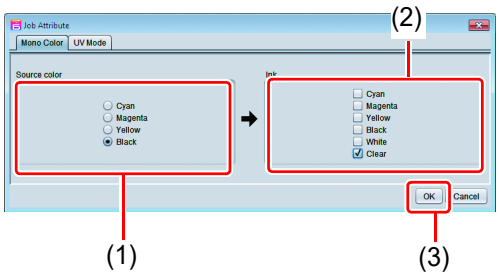
2. **Select “Mono color” in the [Job Attribute] dropdown list.**



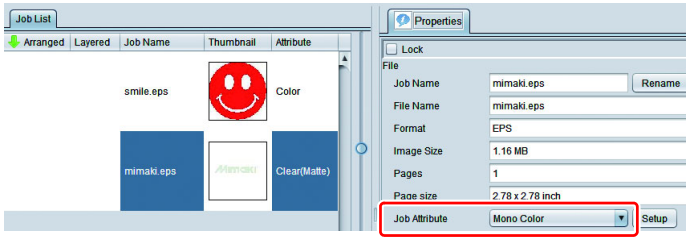
3. **Select the [Mono color] tab.**

- Make the settings as follows.

  (1) [Source color]: “Black”
  (2) [Ink]: “Clear”
  (3) Click the [OK] button.



4. **The job’s attribute is now “Mono color”. In the job list, the job will have a gray thumbnail color and “Clear(Matte)” will be displayed in its “Attribute” field.**



Compositing the clear ink image with the color job

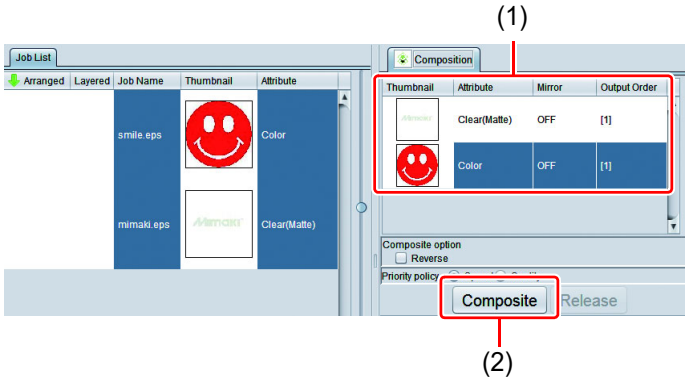
1. In the job list, select the color job and the clear ink job.

- Click the “Composition” icon.

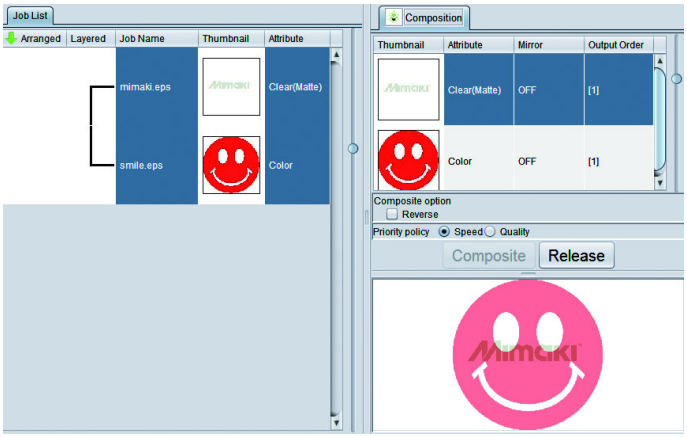
2. Carry out the following check.

(1) Is the clear ink job above the color job in the job list.
- If it is not, use drag and drop to change the positions around.

(2) After the above check, click the [Composite] button.



3. The images will be composited.



- Printing will be carried out in either of the following ways, depending on the [Priority Policy] setting on the ［Composition］screen.

  “Speed”: The color image and clear ink image are printed simultaneously using special color overprinting.
  In this case, the UV mode set for the color image is ignored and the conditions set for the clear ink image are used.

  “Quality”: The color image is printed first and the clear ink image is printed after.
  In this case, the UV modes set respectively for the color image and clear ink image are applied respectively to each image.
- In the case of glossy print, please refer toP. 14 “2.Select the clear ink’s effect: set the UV mode”.

2. Select the clear ink's effect: set the UV mode

The clear ink's effect is determined by the [UV mode setting] in RasterLink.

Gloss feel effect - "Glossy Print"

→ Go to a.Setting Glossy Print

Matte feel effect - "Matte Print"

→ Go to b.Setting Matte Print

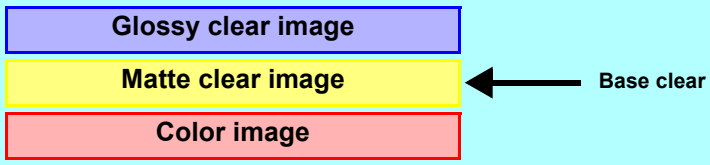
3D feel effect - as "Emboss Print"

→ Go to c.Setting Emboss Print

a. Setting Glossy Print

Important!

- When using glossy tones with clear ink for the color ink LUS-150/ LUS-120, you need to print a matte clear image (clear ink density: 40%) on the color image and print glossy clear image on it.



∗ Here, referred the matte clear image to be printed on top of the color image as "base clear".
∗ If a base clear, is not printed on top of the color image, clear image of glossy does not finish in glossy.

Create a job of clear ink

Create a clear job for glossy and clear job for base clear.

Each job I will be created at the following concentrations.

Job	Concentration of clear ink
Clear job for glossy	100%
Clear job for the base clear	40%

In the case of [A.Printing the clear ink over the whole of the color image][B.Printing the clear ink onto the valid pixels of the color image]:

1. In the job list, select the job that will be the basis for the plate.

- Click the [Special plate] icon.

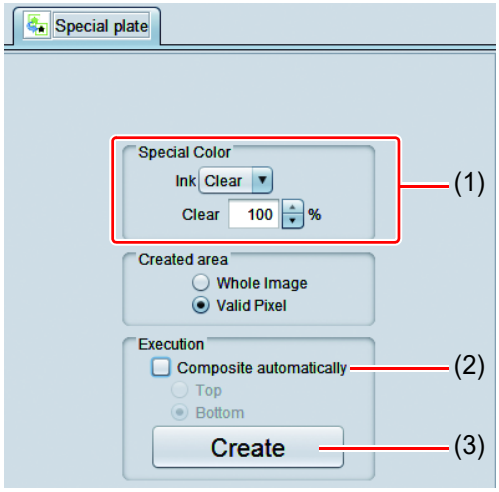
2. Make the settings as follows.

(1) [Special Color]：Ink = Clear
Clear= Select “100%”.

(2) Set “Composite automatically: OFF”.

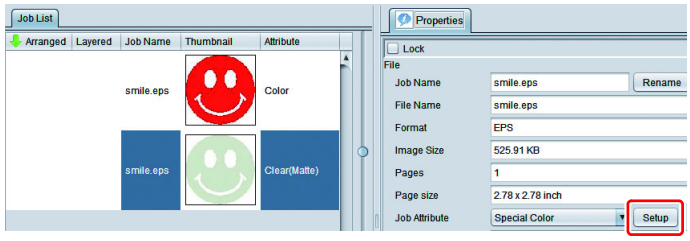
- Because a version can not be created from the composite job, you will not be able to create multiple job of clear ink.

(3) Click the [Create] button.



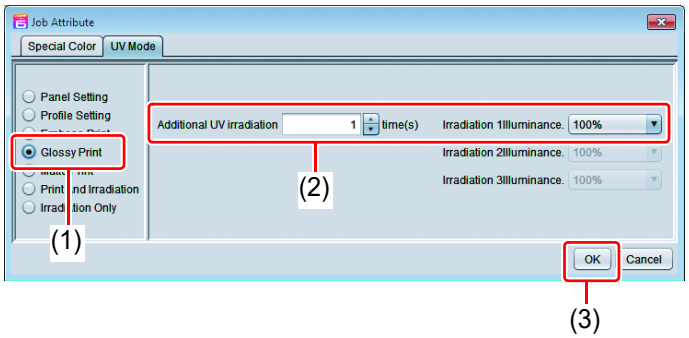
3. Select the job created in step 2 from the job list.

- Click the “Properties” icon.
- Click the [Setup] button in the [Job Attribute] field.

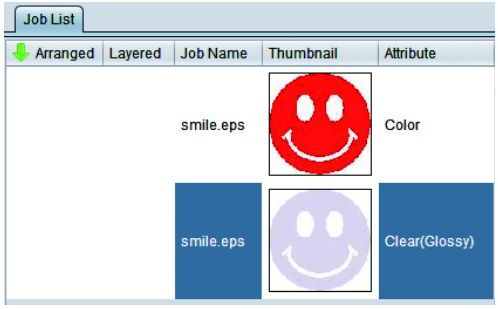


4. Select the [UV Mode] tab.

- Make the settings as follows.
  - **(1)** Select “Glossy Print” in the mode list on the left side.
  - **(2)** Additional UV irradiation: 1 time Irradiation 1Illuminance: 100%
  - **(3)** Click the [OK] button.



5. Job list of attribute becomes a "Clear (Glossy)".



6. Choose again the job selected in step 1.

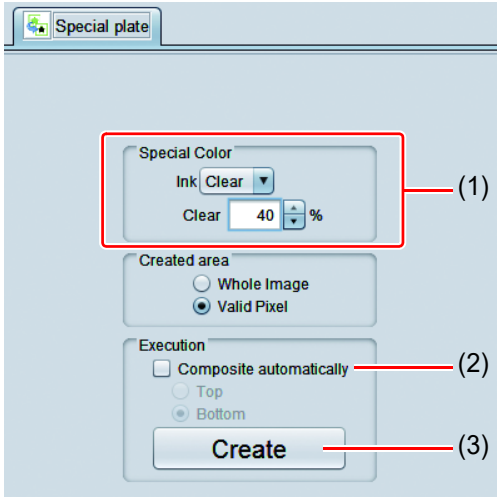
- Click the [Special plate] icon.

7. Make the settings as follows.

(1) [Special Color]：Ink = Clear
Clear= Select “40%”.

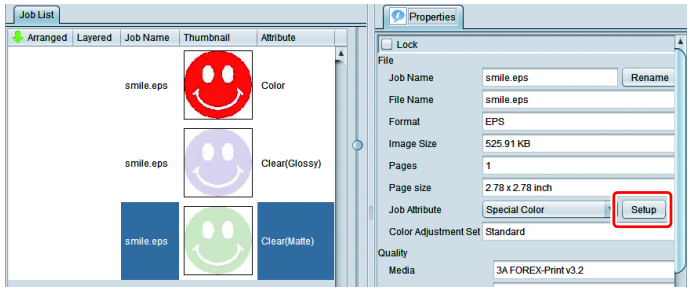
- Concentration of clear ink of base clear is 40%.

(2) Set [Composite automatically]: OFF.
(3) Click the [Create] button.



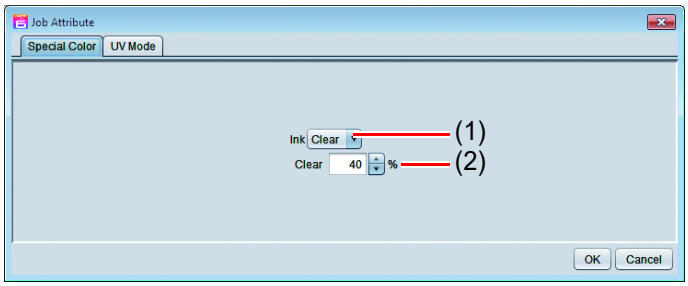
8. Select the job created in step 7 from the job list.

- Click the “Properties” icon.
- Click the [Setup] button in the [Job Attribute] field.



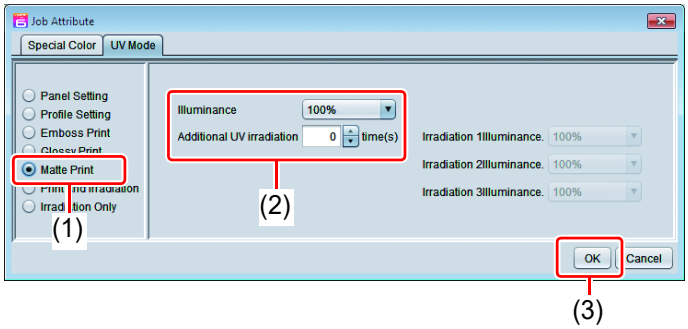
9. Select the [Special Color] tab.

- Make the settings as follows.
  (1) [Ink]: “Clear”
  (2) [Clear] : “40%”



10. Select the [UV Mode] tab.

- Make the settings as follows.
  (1) Select “Matte Print” in the mode list on the left side.
  (2) Illuminance: 100%
  Additional UV irradiation: 0 time
  (3) Click the [OK] button.

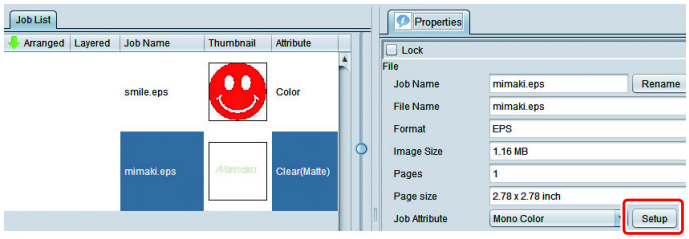


In the case of [C.Printing a special clear ink image]:

1. Refer P. 11~12 "C.Printing a special clear ink image", keep up the setting of mono color replacement.

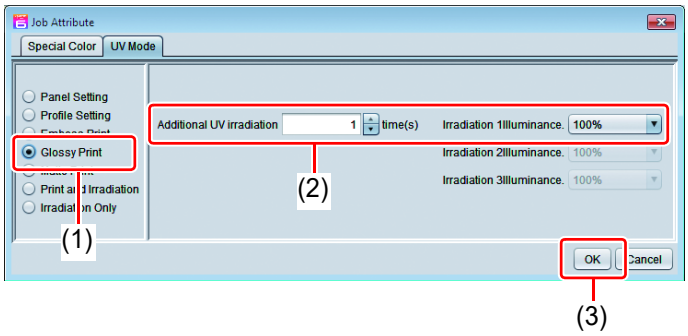
2. Choose the job of clear ink from the job list.

- Click the "Properties" icon.
- Click the [Setup] button in the [Job Attribute] field.

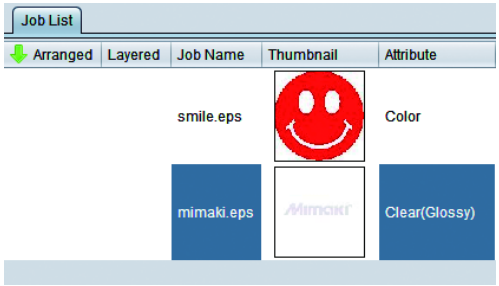


3. Select the [UV Mode] tab.

- Make the settings as follows.
  - **(1)** Select "Glossy Print" in the mode list on the left side.
  - **(2)** Additional UV irradiation: 1 time Irradiation 1Illuminance.: 100%
  - **(3)** Click the [OK] button.



4. Job list of attribute becomes a "Clear (Glossy)".



5. Choose the job of clear ink from the job list.

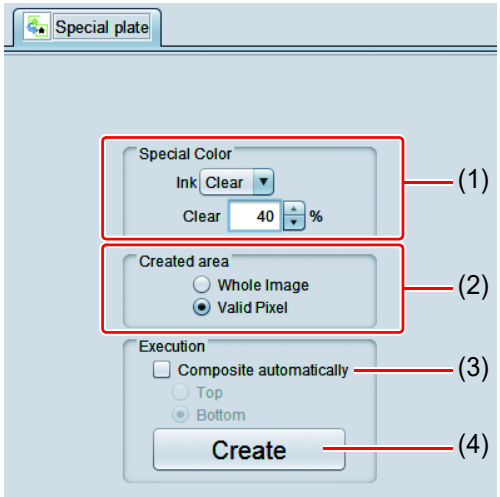
- Click the [Special plate] icon.

6. Make the settings as follows.

(1) [Special Color]：Ink = Clear
Clear= Select "40%".

> - Concentration of clear ink of base clear is 40%.

(2) [Created area]: Select "Valid Pixel".
(3) Set [Composite automatically]: OFF.
(4) Click the [Create] button.



Composite

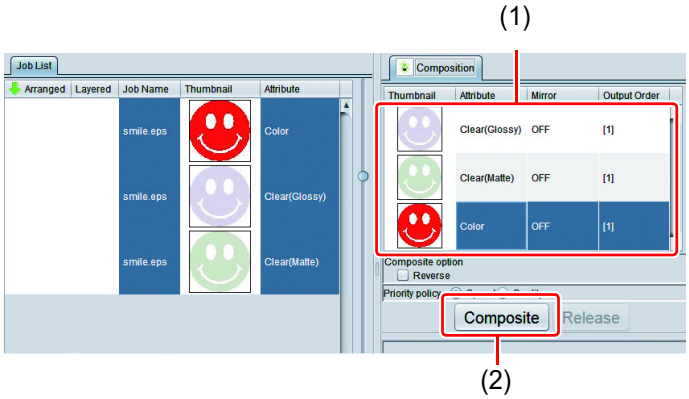
1. Choose one job of color and two jobs of clear ink from the job list.

- Click the “Composition” icon.

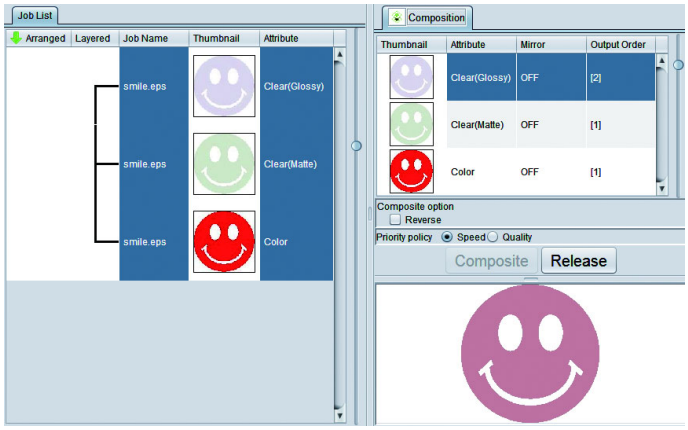
2. Carry out the following check.

(1) From the top order of the list Clear(Glossy) -> Clear(Matte) ->Color
Check the order
- If the order is not as above, please replace the composition List by Drag & Drop.

(2) After the above check, click the [Composite] button.



3. The images will be composited.



- In glossy print, depending on the type of color ink using, print the clear image as follows.

Color ink	Synthesis conditions of synthetic screen	
	Speed priority(*)	**Quality priority(**)**
LH-100(***) / ELH-100	Print at the same time in the order of color image -> clear image.	After printing the color image, print the clear image.
LUS-150 / LUS-120	After printing at the same time in the order of color image -> bottom clear, print the clear image.	After printing a color image, print the bottom clear, and finally print the clear image.

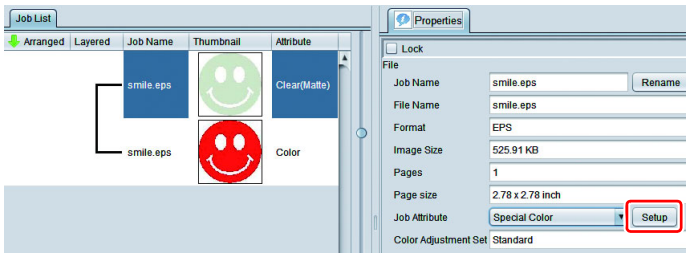
(*) If the speed priority, setting of the UV mode set to the color image is ignored, and print setting of the UV mode set clear image.
(**) Each color image and clear image will be printed as of setting of UV mode set for each.
(***)When color ink is LH-100 / ELH-100 and the base clear is printed, print in the same way as for LUS-150 / LUS-120.

b.Setting Matte Print

- MAPS Settings for Matte Printing
  When printing with matte clear ink, if specific banding or patterns appear, lower the smoothing level before printing.

1. In the job list, select the clear ink job.

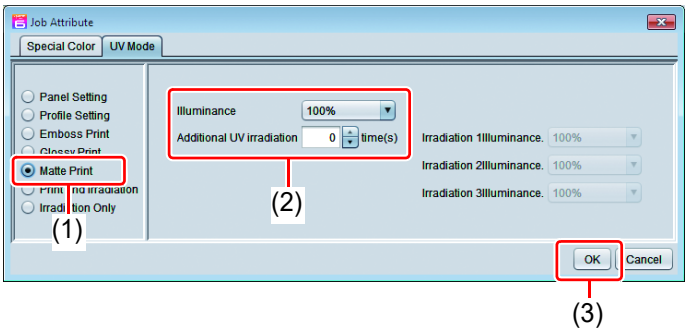
- Click the “Properties” icon.
- Click the [Setup] button in the [Job attribute] field.



2. Select the [UV Mode] tab.

- Make the settings as follows.

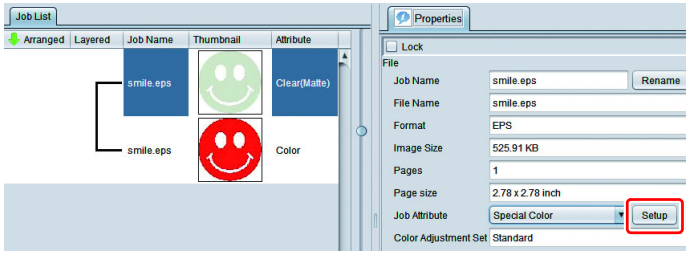
(1) Select “Matte Print” in the mode list on the left side.
(2) Set “100%” for [Illuminance]. Set “0 time” for [Additional UV irradiation]
(3) Click the [OK] button.



c. Setting Emboss Print

1. In the job list, select the clear ink job.

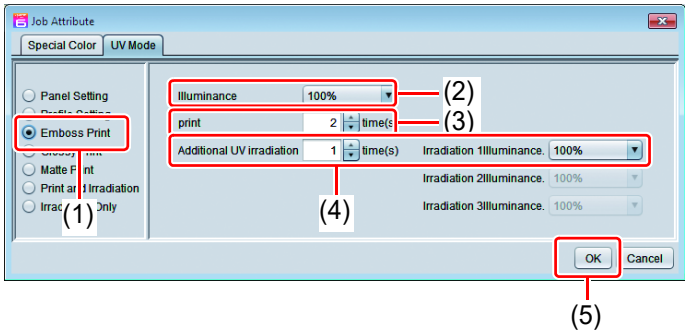
- Click the “Properties” icon.
- Click the [Setup] button in the [Job Attribute] field.



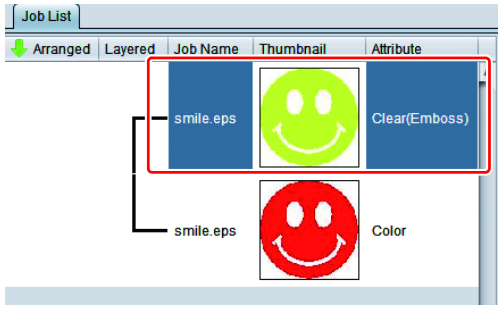
2. Select the [UV Mode] tab.

- Make the settings as follows.

(1) Select “Emboss Print” in the mode list on the left side.
(2) [Illuminance]: Set “100%”.
(3) [Number of printings]: Set this according to the thickness of the embossing. (See “Hint!” below for rough calculation of the number of printings for the thickness).
(4) Additional UV irradiation: 1 time
Irradiation 1Illuminance.: 100%
(5) Click the [OK] button.



3. Color of the thumbnail in the job list to be yellow, Attribute column is to be “Clear(Emboss)”.



- After you have set Emboss Print, the clear ink job will be printed the specified number of times after the color job is printed, regardless of the [Priority policy] settings on the [Composition] screen.
- If increase the head gap, missing nozzle by mist is likely to occur. Recommend the head gap to be 1.5 ~ 2.0mm, embossing number of times up to 20 times.
- The table below gives rough correspondences between the thickness of the embossing and the number of additional times (after the first printing) that the clear ink is printed over the color image.
  These values are for when 600x900 dpi output resolution is set.

Specified number of times	Embossing thickness [mm]	Specified number of times	Embossing thickness [mm]
2	0.06	10	0.17
4	0.08	15	0.24
6	0.11	20	0.31
8	0.14		

- When you specify Emboss Print, make sure that there is ample head clearance.
- If you set just Emboss Print, the finish will be matte. See P. 24 for the settings to make in order to obtain a glossy print result.

3. Set the recommended values for the printing conditions

To obtain better effects from the clear ink, use the settings below that are appropriate for the image quality and output speed that you want.

In the case of LH-100 / ELH-100 ink in color ink:

Glossy print

Resolution	Pass	Print direction	High speed
600×900 VD	12	Bi	ON

Matte printing, emboss printing

Print mode	Resolution	Pass	Print direction	High speed
Production	600×900 VD	12	Bi	ON
Standard	600×900 VD	24	Bi	ON
Quality	1200x1200 ND	16	Uni	OFF
High Quality	1200x1200 ND	32	Bi	OFF

In the case of LUS-150 / LUS-120 ink in color ink:

Glossy print

Resolution	Pass	Print direction	High speed
600×900 VD	12	Bi	ON

Matte printing, emboss printing

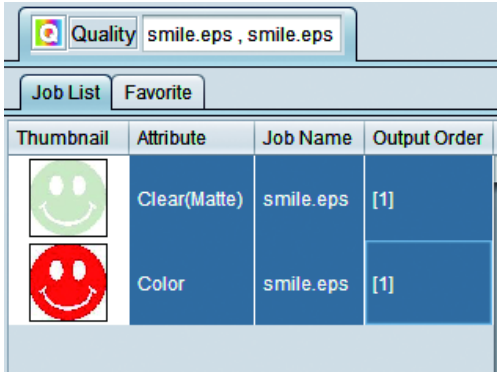
Print mode	Resolution	Pass	Print direction	High speed
High Speed	600×600 VD	8	Bi	ON
Production	600×900 VD	12	Bi	ON
Standard	600×900 VD	24	Bi	ON
Quality	1200x1200 ND	16	Uni	OFF
High Quality	1200x1200 ND	32	Bi	OFF

1. In the job list, select the applicable job.

- Click the “Quality” icon.

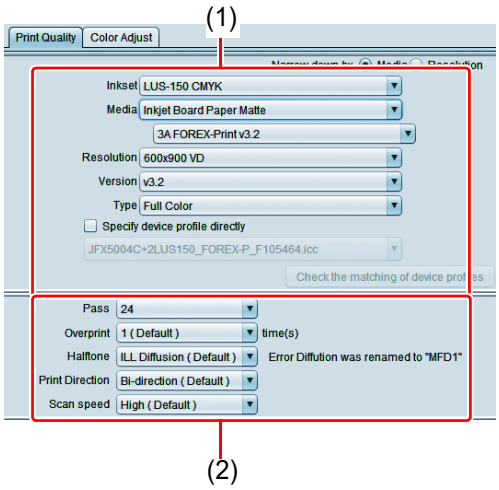
2. Select both the color job and the clear ink job that are displayed in the job list.

- You can select multiple items by holding down the CTRL key while clicking on them.
- By selecting both jobs, you can set the same conditions for both of them.



3. **In the profile field (1), select a profile that matches the media to be printed on.**

4. **Refer to the table P.21 to set the output setting field (2)**



4. Execute printing

1. **In the job list, select the applicable job.**

- Click the “Execution” Icon.

2. **Select “RIP and print”.**

- Click the [Start] button.

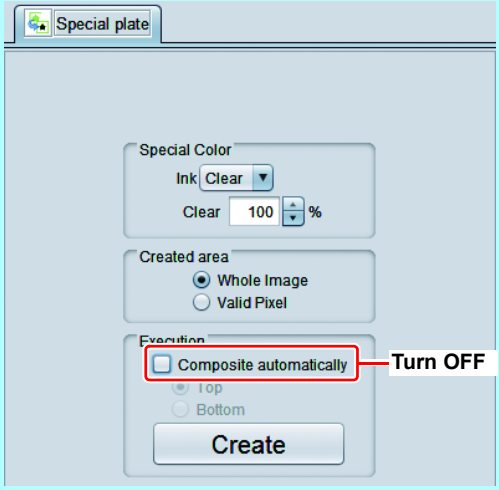
Setting glossy finish for Emboss Print

If you set just Emboss Print, the finish will be matte. To obtain a glossy finish, you must reate a Glossy clear ink job, separate from the Emboss Print clear ink job.

1. Referring to P. 8~ "Decide the way the clear ink is to be printed", create 1 color job and 2 clear ink jobs.

Important!

- In the case of [Printing the clear ink over the whole of the color image][B.Printing the clear ink onto the valid pixels of the color image]:
  Turn off "Composite automatically" in Special plate printing before creating the clear ink job.
  Otherwise it will not be possible to create multiple clear ink jobs, since a special plate cannot be made from a composited job.
  Carry out the above procedure 2 times to create the 2 clear ink jobs.



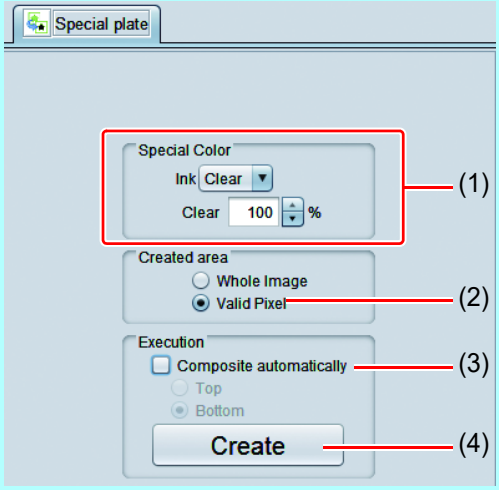
- In the case of [Printing a special clear ink image]:
  Carry out the "Setting mono color replacement" procedure, then carry out the following procedure to duplicate the job.

  1. Select the clear ink job.

  2. Click the "Duplicate" icon.

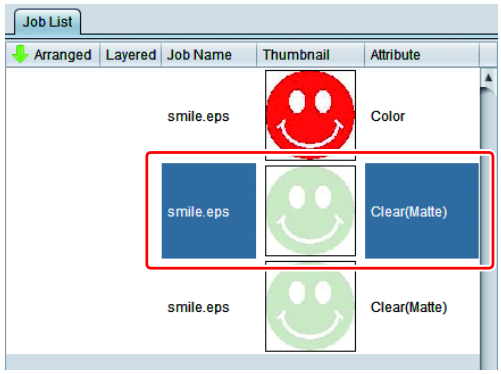
  3. Make the settings as follows.

  (1) [Special color]：Ink = Clear
  Clear = Select "100%".
  (2) [Created area]: Select "Valid Pixel".
  (3) [Composite automatically]: OFF
  (4) Click the [Create] button.



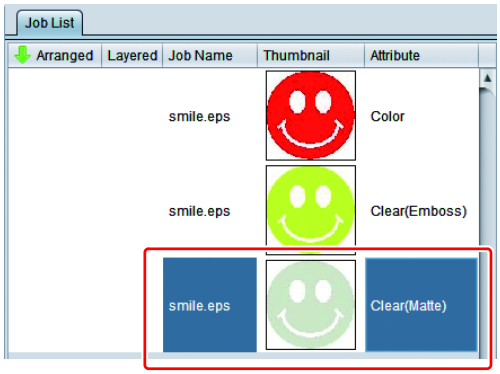
2. Choose the job of emboss printing from the job list.

- Refer to [c.Setting Emboss Print] and set the thick print.



3. Select the job of glossy printing (the concentration of clear ink 100%) from the job list.

- Refer to [Setting Glossy Print] and set the glossy print.



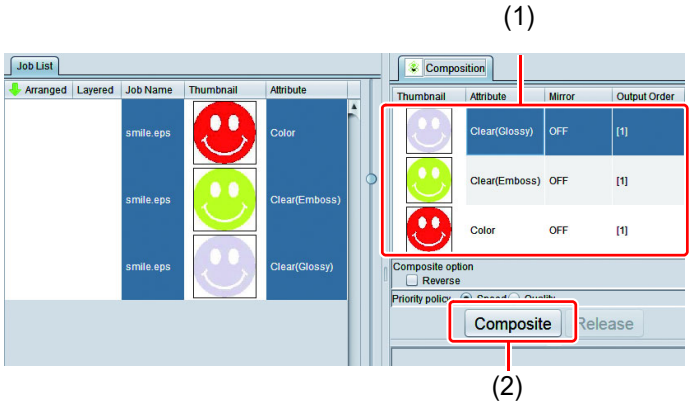
4. Choose one job of color and two jobs of clear ink from the job list.

- Press [Composite] from function icon.

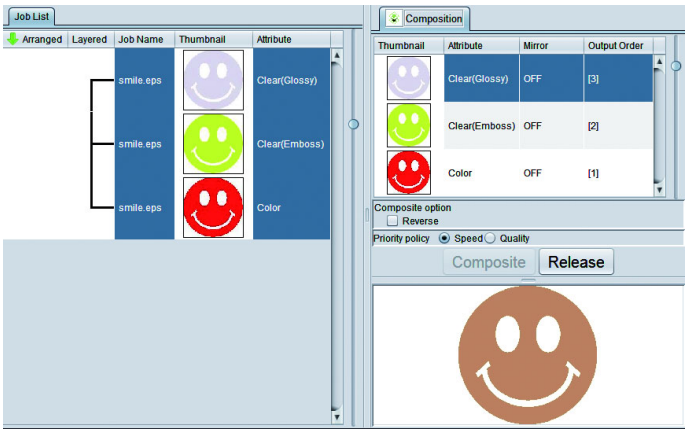
5. Check the following.

(1) From the top order of the list Clear(Glossy) -> Clear(Emboss) ->Color Check the order
- If the order is not as above, please replace the composition List by Drag & Drop.

(2) After the above check, click the [Composite] button.



6. The images will be composited.



7. Execute printing.

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