

Instruction Manual

Direct Dye Sublimation Printer CX-120

Printer Driver



Operating Environment

This software runs on the following systems.

- Microsoft® Windows® 8 32bit/64bit
- Microsoft® Windows® 7 (First Release, Service Pack 1) 32bit/64bit
- Microsoft® Windows Vista™ (Service Pack 1/2) 32bit
- Microsoft® Windows® XP (Service Pack 2/3) 32bit
- Microsoft® Windows® 2000 Professional (Service Pack 4) 32bit

Software License Agreement

Users need to accept the terms and conditions of the software license agreement to use this software. Please read through the “Software License Agreement” at the back of the “Startup Guide” (separate booklet) before using this software.

Apr. 2014, 9th Edition

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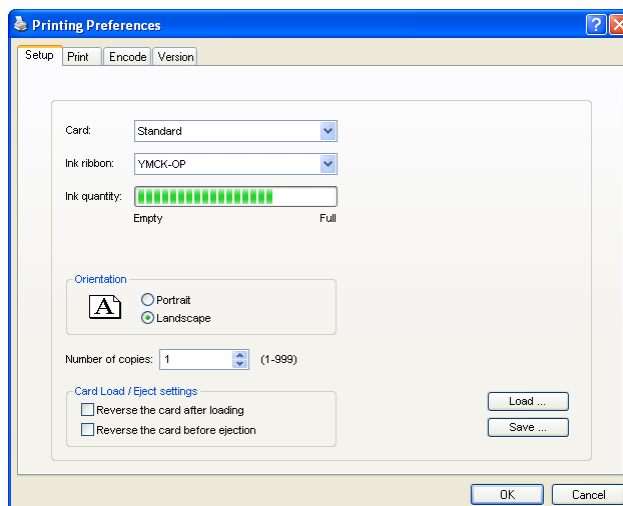
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Notes about this manual

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Printer Driver Settings

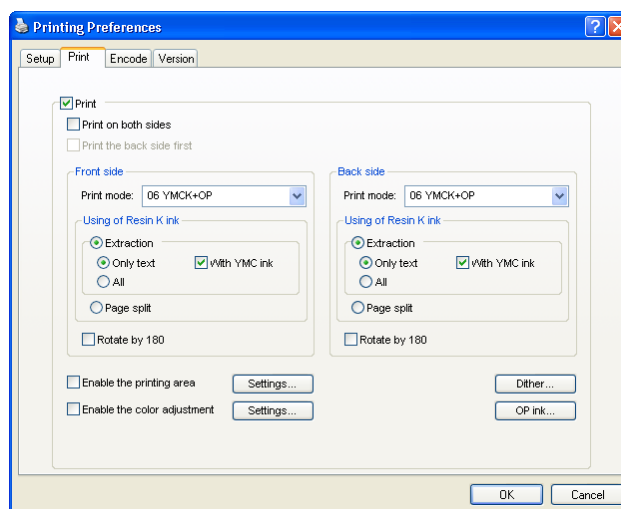
[Setup] Tab Sheet



Item	Description
Card	Choose the card to use.
Ink ribbon	Choose the ink ribbon to use. Note: The ink ribbon set inside the printer will be automatically selected if communication with the printer is possible.
Ink quantity	Indicates the remaining quantity of the ink ribbon. Note: This is not displayed when communication with the printer is not established.
Orientation	Settings for printing orientation.
Portrait	Vertical (Print with the shorter edge of the card on top.)
Landscape	Horizontal (Print with the longer edge of the card on top.)
Number of copies	The number of copies to issue. Enter a number up to 999.
Card Load / Eject Settings	Settings for turns over the card.
Reverse the card after loading	Reverse (turns over) the card after loading.
Reverse the card before ejection	Reverse (turns over) the card before ejection.
Load ...	Loads setting information from a specified file.
Save ...	Saves setting information to a specified file.

Printer Driver Settings (Cont'd)

[Print] Tab Sheet



Item	Description
Print	Executes printing.
Print on both sides	Prints both sides of the card.
Print the back side first	Prints the image on the back side first when printing on both sides of the card. Caution: The checkbox is enabled during double-sided printing.
Front side	Print settings for the front side of the card. (Refer to the next page.)
Back side	Print settings for the back side of the card. (Refer to the next page.)
Enable the printing area	Enable the function of the printing area.
Settings...	Set the "non-printing area" in the specific ink. (Refer to page 6 of this manual)
Enable the color adjustment	Enable the function of the color adjustment.
Settings...	Set the color adjustment. (Refer to page 7 of this manual)
Dither	For specifying settings related to dithering for the Resin K ink. Set a value in the [Dither] dialog. (Refer to page 8 of this manual) Caution: Selecting [2.K], [3.YMCK], [5.K+OP] or [6.YMCK+OP] in [Print mode] enables the [Dither...] button.
OP ink	For specifying settings related to OP ink print data. Set a value in the [UV ink] dialog. (Refer to page 9 of this manual) Caution: Selecting [4.YMC+OP], [5.K+OP] or [6.YMCK+OP] in [Print mode] enables the [OP ink...] button.

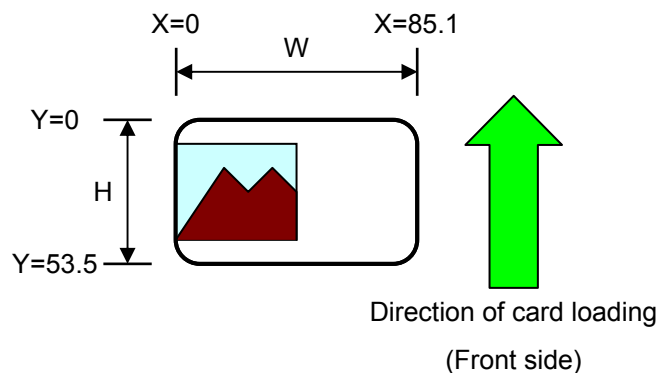
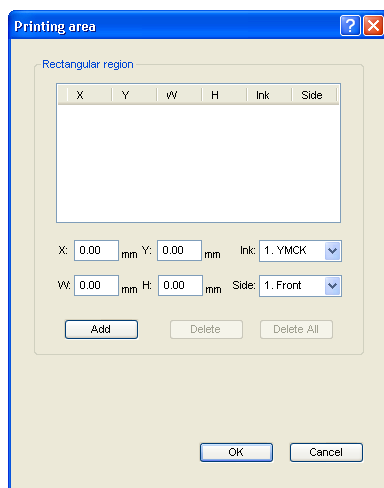
Printer Driver Settings (Cont'd)

The following items are same function between “Front side” and “Back side”.

Item	Description
Print mode	Ink list. Specify the ink to use for printing. Caution: Print error occurs if an ink that is not mounted to the printer is selected.
01 YMC	Prints using the YMC ink.
02 K	Prints using the Resin K ink. Prints the black color by the dither processing of the color image.
03 YMCK	Prints using the YMC ink and Resin K ink.
04 YMC+OP	Prints using the YMC ink. Prints the setting data in the [OP ink] dialog using the OP ink.
05 K+OP	Prints using the Resin K ink. Prints the black color by the dither processing of the color image. Prints the setting data in the [OP ink] dialog using the OP ink.
06 YMCK+OP	Prints using the YMC ink and Resin K ink. Prints the setting data in the [OP ink] dialog using the OP ink.
Using of Resin K ink	For specifying the component to print using the Resin K ink.
Extraction	Prints the black color component on each page using the Resin K ink.
Only text	Prints only the black color text using the Resin K ink.
All	Prints all black color components using the Resin K ink.
With YMC ink	Prints the background of the specified black color component using the YMC ink.
Page split	Prints the first page (odd pages) using the YMC ink. Prints the second page (even pages) using the Resin K ink.
Rotate by 180	Prints the page upside down.

Printer Driver Settings (Cont'd)

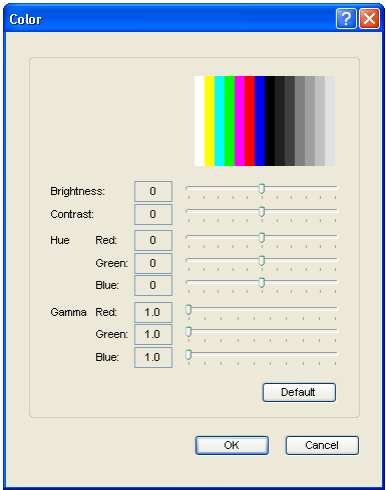
[Printing area] Dialog



Item	Description
Rectangular region	Area not to be printed within a registered rectangular region. This rectangular region is called as “non-printing area”.
	“non-printing area” information.
X	Start X-coordinate of area by millimeter.
Y	Start Y-coordinate of area by millimeter.
W	Width of area by millimeter.
H	Height of area by millimeter.
Ink	Ink valid for the “non-printing area”. 1. YMCK : Area not to be printed using all YMCK inks. 2. OP : Area not to be printed using the OP ink. 3. ALL : Area not to be printed using all YMCKOP inks.
Side	The side of the card for which the printing area is valid. 1. Front : Front side 2. Back : Back side
Add	Registers the input data. You can enter up to 8 input data.
Delete	Deletes the information selected in the list.
Delete All	Deletes all registered information.

Printer Driver Settings (Cont'd)

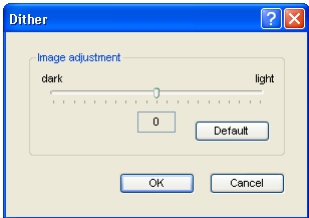
[Color] Dialog



Item	Description
	Settings related to color adjustment. If the following slide bars are moved, the setting will be reflected in the color area of this screen.
Brightness	Brightness level.
Contrast	Contrast level.
Hue	Hue level.
Gamma	Gamma level.
Default	Restores the settings to the default values.

Printer Driver Settings (Cont'd)

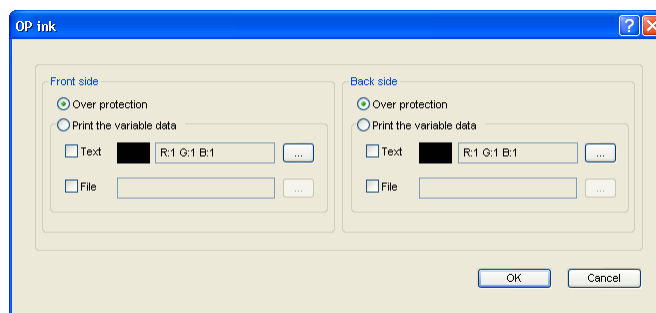
[Dither] Dialog



Item	Description
	Settings related to dithering. Caution: This setting is valid only when the [Print mode] item inside the [Print] tab is specified as <u>02 K</u> or <u>05 K+OP</u> .
Image adjustment	Image adjustment value.
dark	Darkens the printed image after dithering.
(0)	Default value.
light	Brightens the printed image after dithering.
Default	Restores the settings to the default values.

Printer Driver Settings (Cont'd)

[OP ink] Dialog



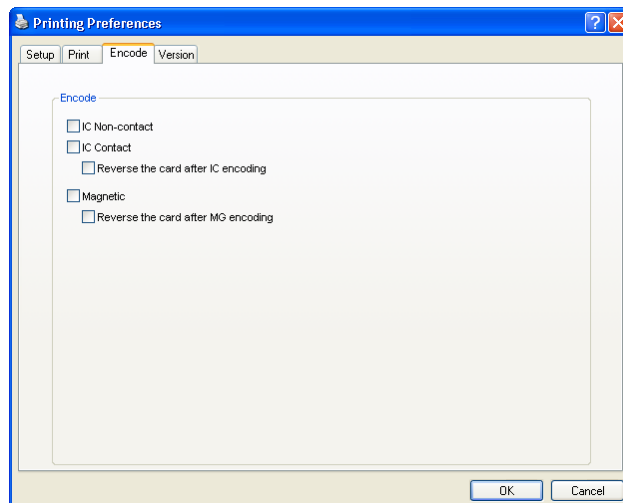
Item	Description
	<p>This function is to protect the whole card and to print image and text with OP ink.</p> <p>Caution: This setting is valid only when the [Print Mode] item inside the [Print] tab is specified as <u>04 YMC+OP</u> , <u>05 K+OP</u> or <u>06 YMCK+OP</u>.</p>
Front side	Settings for the front side of the card.
Over protection	Entire surface of a card is printed using the OP ink, and the printed surface is protected. (Recommendation)
Extraction	Prints a specific color component on each page using the OP ink. (Refer to the Notes .)
Text	<p>Prints the text of a specified color using the OP ink.</p> <p>Caution: White and black colors cannot be selected.</p>
File	<p>Prints a specified file using the OP ink.</p> <p>Caution: This file is 1006x633-pixel 24-bit BMP format.</p>
Back side	Settings for the back side of the card.
	(Refer to settings for the front side.)

Notes

1. When this mode is selected, printing area on the card will not be protected. So please protect printing side on the card by lamination.
2. When OP ink is printed on the edge of the card, adhesive power of lamination film might be little bit weaker. So please check proper and enough adhesive power prior to actual lamination.
3. When it is printed partially with OP ink, OP will be occasionally transferred as a little streak line at the edge of the card.

Printer Driver Settings (Cont'd)

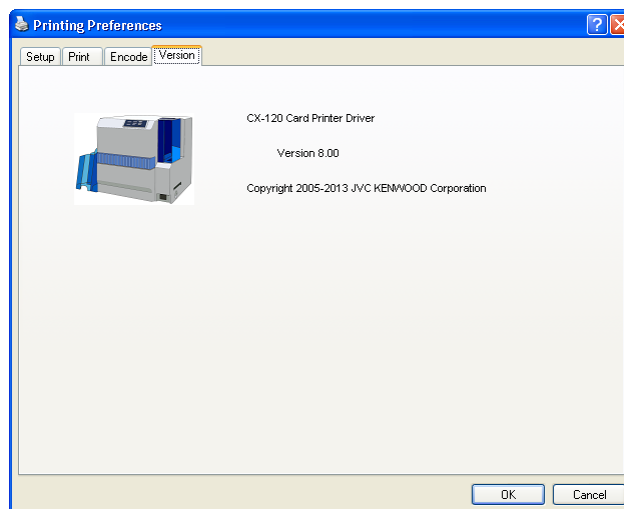
[Encode] Tab Sheet



Item	Description
Encode	Settings for encoding. Note: Only the unit installed within the printer is displayed as enabled when communication with the printer is established.
IC Non-contact	Allows writing of data to the non-contact IC.
IC Contact	Allows writing of data to the contact IC.
Reverse the card After IC encoding	Reverse (turns over) the card after writing data to the non-contact/contact IC.
Magnetic	Allows writing of data to the magnetic stripe.
Reverse the card After MG encoding	Reverse (turns over) the card after writing data to the magnetic stripe.

Printer Driver Settings (Cont'd)

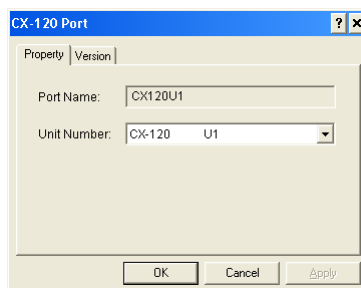
[Version] Tab Sheet



Item	Description
CX-120 Card Printer ...	Version and copyright information.

Port Monitor Settings

[Property] Tab Sheet



Item	Description						
Port Name	Name of the port. You can enter a name of up to 24 characters.						
Unit Number	<p>List of connected printers. The selected printer is used for printing the card.</p> <p>Specify the unit number of the printer in use.</p> <p>Caution: The setting is incorrect if the following message appears.</p> <table border="1"> <thead> <tr> <th>Displayed Message</th><th>Description</th></tr> </thead> <tbody> <tr> <td>No Device</td><td>Printer is not found.</td></tr> <tr> <td>No Selection</td><td>Last used printer is not found. A different printer is currently connected.</td></tr> </tbody> </table>	Displayed Message	Description	No Device	Printer is not found.	No Selection	Last used printer is not found. A different printer is currently connected.
Displayed Message	Description						
No Device	Printer is not found.						
No Selection	Last used printer is not found. A different printer is currently connected.						

[Version] Tab Sheet



Item	Description
CX-120 Card Printer ...	Version and copyright information.

Port Monitor Settings (Cont'd)

Error Code List

Below is a list of error codes for the printer unit. For details, refer to the printer unit's instruction manual.

No.	Error Code	Description
1	0x01020401	Printer is initialization in progress.
2	0x01020480	Printer door is open.
3	0x01020481	Cleaning unit is not mounted.
4	0x01023A00	No card in the cassette.
5	0x0102****	Printer is not ready.
6	0x01030C00 0x01031100	Writing of magnetic encoding data failed.
7	0x01033600	Ink ribbon is not mounted or cannot be recognized.
8	0x01033B81	Card jam occurred during card feed.
9	0x01033B**	Card jam occurred during card feed or card transfer.
10	0x0103****	Media error is detected.
11	0x01043681	Ink ribbon is not mounted or faulty.
12	0x0104****	Hardware error is detected.
13	0x01052080	IC encoder is not installed.
14	0x01052081	Magnetic encoder is not installed.
15	0x01052401	Invalid selection of an ink ribbon.
16	0x01052680	Invalid magnetic encoding data.
17	0x0105**** 0x010B****	Command error is detected.
18	0x01420081	Remaining ink ribbon level is 0.
19	0x01420082	Remaining laminating film level is 0.

Port Monitor Settings (Cont'd)

Below is a list of error codes related to the printer driver.

No.	Error Code	Description
1	0x02*****	Printer is not found.
2	0x09*****	Command error is detected.
3	0x10000103	Writing of magnetic encoding data failed.
4	0x10000201	Contact IC encoding program is not found.
5	0x10000202	Unable to establish communication with contact IC encoder.
6	0x10000203	Writing of contact IC encoding data failed.
7	0x10000301	Non-contact IC encoding program is not found.
8	0x10000302	Unable to establish communication with non-contact IC encoder.
9	0x10000303	Writing of non-contact IC encoding data failed.
10	0x10001001	Ink ribbon cannot be recognized.
11	0x10001002	Invalid selection of an ink ribbon.
12	0x10001003	IC encoder is not installed.
13	0x10001004	Magnetic encoder is not installed.
14	0x10002000	Printer is not found.
15	0x1000200*	Printer is not ready.

In-Line Encoding

In-Line Encoding Format

In-line encoding is possible when all the settings in the [Encode] tab are enabled.

Encoding data can be sent to the card printer through the printer driver using the special character strings (prefixes) described below. This function is called as “in-line encoding”.

Adding a prefix (tilde (~), ?, or numeric characters) at the beginning of a text string enables the string to be recognized as encoding data. Character strings including prefixes are not printed on the card when they are recognized as encoding data.

No.	Prefix character string	Text string following prefix [*1]	Usable character code table [*2]	Max. string length [*3]
1	~?0	String denotes JIS2 magnetic encoding data. [*4]	7 units code	69
2	~?1	String denotes ISO track 1 magnetic encoding data.	6 units code	76
3	~?2	String denotes ISO track 2 magnetic encoding data.	4 units code	37
4	~?3	String denotes ISO track 3 magnetic encoding data.	4 units code	104
5	~?4	Reserved.		
6	~?5	Reserved.		

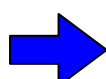
Remarks

- [*1] Make sure that the string is not broken and uses the same font.
- [*2] Encoding cannot be performed correctly if characters that are not consistent with the usable code table are used.
- [*3] The maximum string length is the number of characters including control codes and excluding prefixes.
- [*4] Half-width katakana characters can be used. For a list of usable characters, refer to the Katakana Character Code List.
- [**] Character strings that are processed as graphics, such as screen captures, may not be recognized as encoding data. Processing of character strings is dependent on the application software.
- [***] Enter the in-line encoding character string at the first screen of each card to be printed.

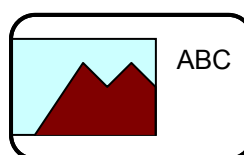
Example

Textbox character strings of application software

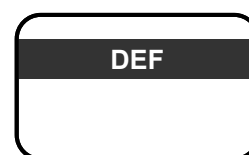
ABC
~?1DEF



Character string to be printed on card



Encoding data to be sent to ISO track 1



In-Line Encoding (Cont'd)

Character Code Table

Below is the list of usable ASCII codes. Configure the character string to encode using the usable half-size characters for each of the level codes.

ASCII character code table

					b7	0	0	0	0	1	1	1	1					
					b6	0	0	1	1	0	0	1	1					
					b5	0	1	0	1	0	1	0	1					
					b4	b3	b2	b1		0	1	2	3	4	5	6	7	
0	0	0	0	0									0	@	P	.	p	
0	0	0	1	1									!	1	A	Q	a	q
0	0	1	0	2									"	2	B	R	b	r
0	0	1	1	3									#	3	C	S	c	s
0	1	0	0	4									\$	4	D	T	d	t
0	1	0	1	5									%	5	E	U	e	u
0	1	1	0	6									&	6	F	V	f	v
0	1	1	1	7									'	7	G	W	g	w
1	0	0	0	8									(	8	H	X	h	x
1	0	0	1	9									)	9	I	Y	i	y
1	0	1	0	A	LF								*	:	J	Z	j	z
1	0	1	1	B									+	;	K	[	k	{
1	1	0	0	C									,	<	L	\	l	|
1	1	0	1	D									-	=	M	]	m	}
1	1	1	0	E									.	>	N	^	n	~
1	1	1	1	F									/	?	O	_	o	DEL

The range of 4 units code.

The range of 6 units code.

The range of 7 units code for a text string.

Tilde character (Hex-decimal: 7E)

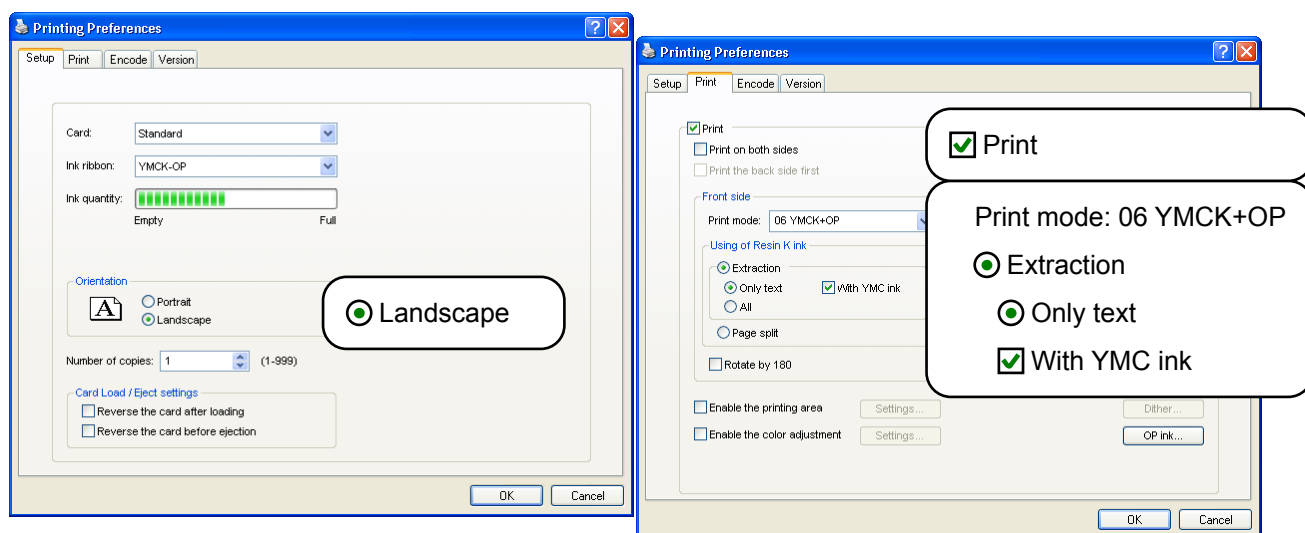
The start sentinel and end sentinel listed below cannot be used in the encoding data.

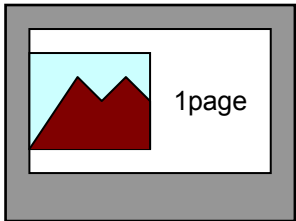
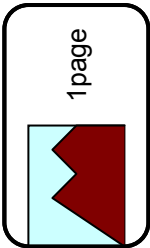
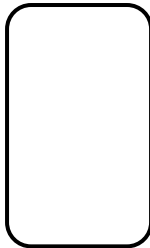
	Start sentinel (Hexadecimal value)	End sentinel (Hexadecimal value)
4 units code	; (3B)	? (3F)
6 units code	% (25)	? (3F)
7 units code	DEL (7F)	DEL (7F)

Setting Examples

Examples of Printing

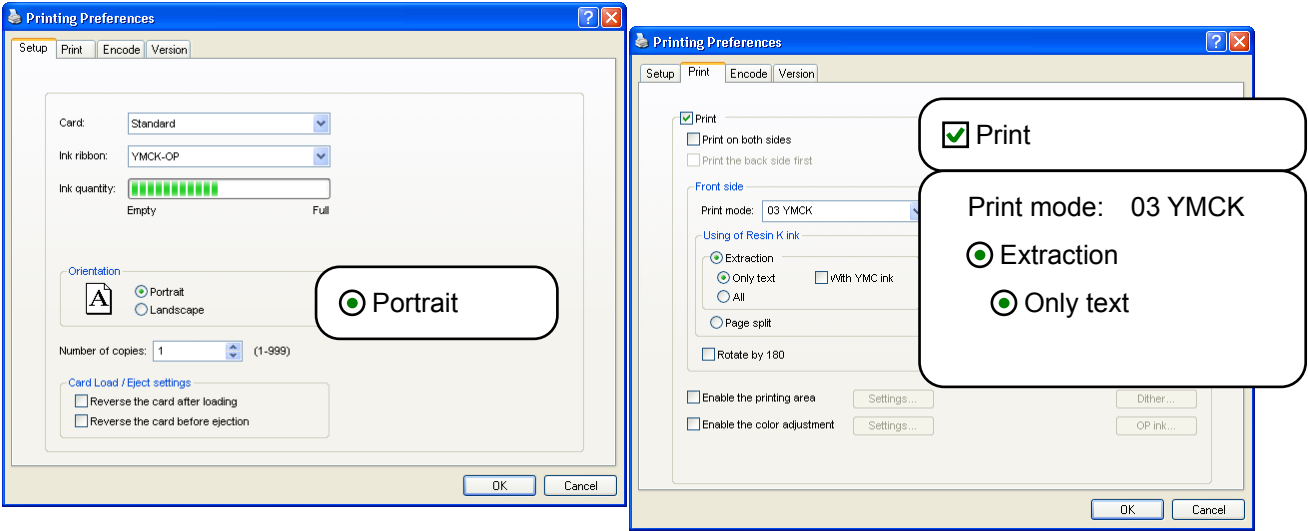
Printing on Single Side (Landscape)

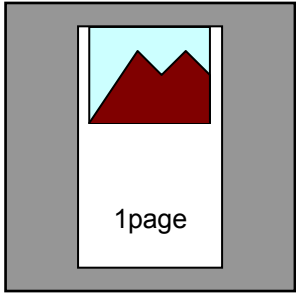
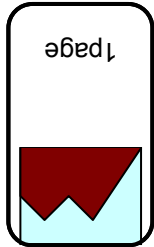
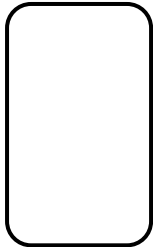


Application software		Printer		
		<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> <p>Ejection</p>  <p>Front side</p> </div> <div style="text-align: center;"> <p>Printing</p> </div> <div style="text-align: center;"> <p>Loading</p>  <p>Front side</p> </div> </div>		
Graphics	Color	Graphics	YMC ink	Protective layer (OP) is printed.
Text	Black	Text	YMC ink + Resin K ink	

Setting Examples (Cont'd)

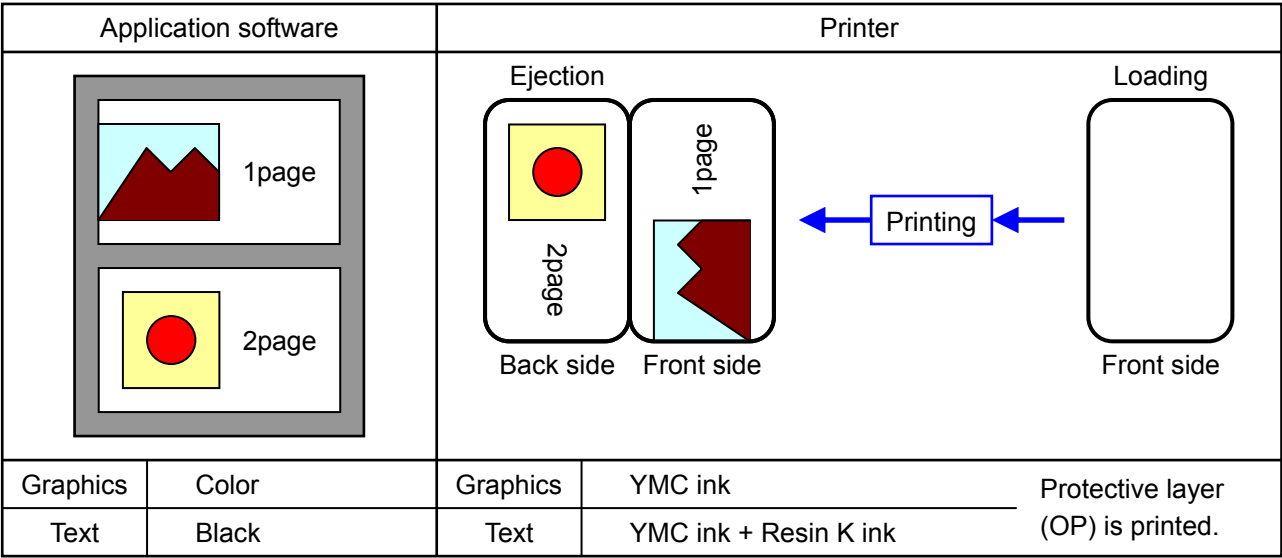
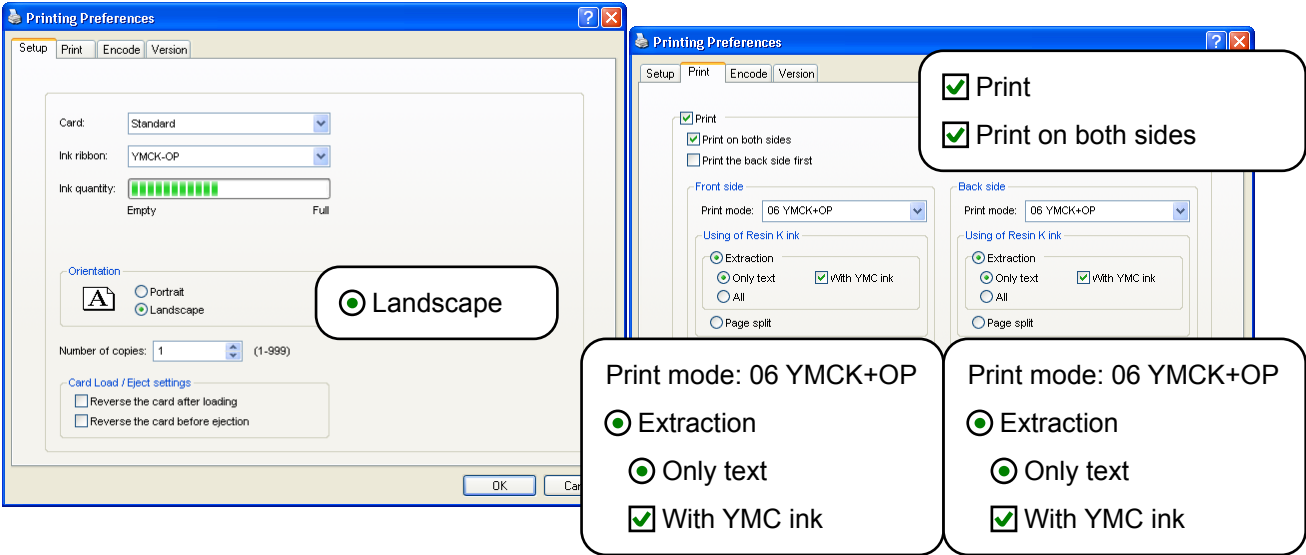
Printing on Single Side (Portrait)



Application software		Printer		
				
Graphics	Color	Graphics	YMC ink	No Protective layer (OP).
Text	Black	Text	Resin K ink	

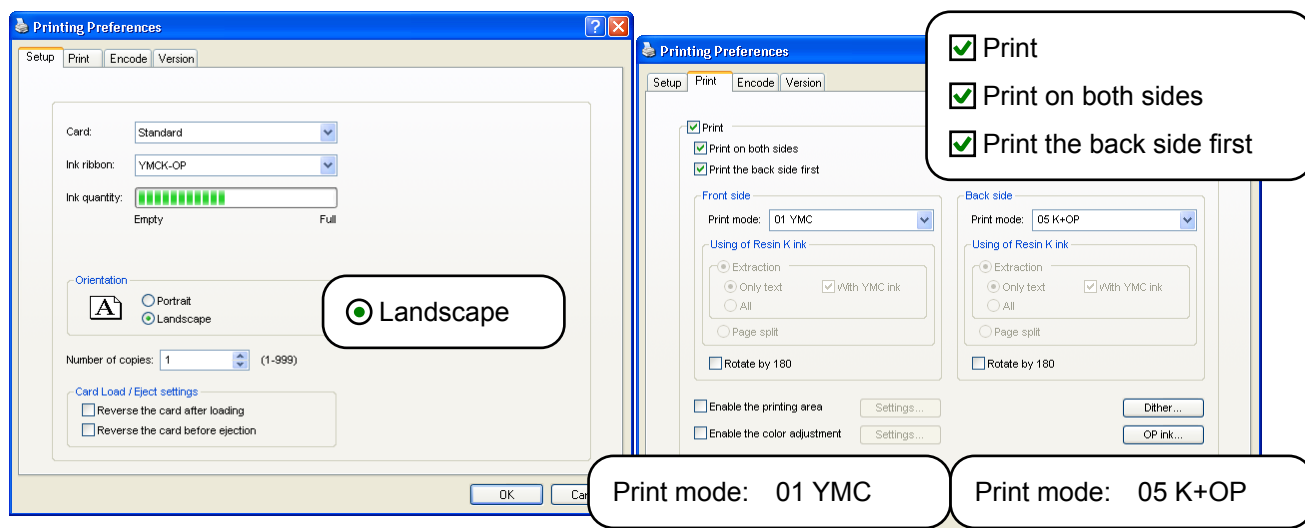
Setting Examples (Cont'd)

Printing on Both Sides (Standard)



Setting Examples (Cont'd)

Printing on Both Sides (for Laminator)



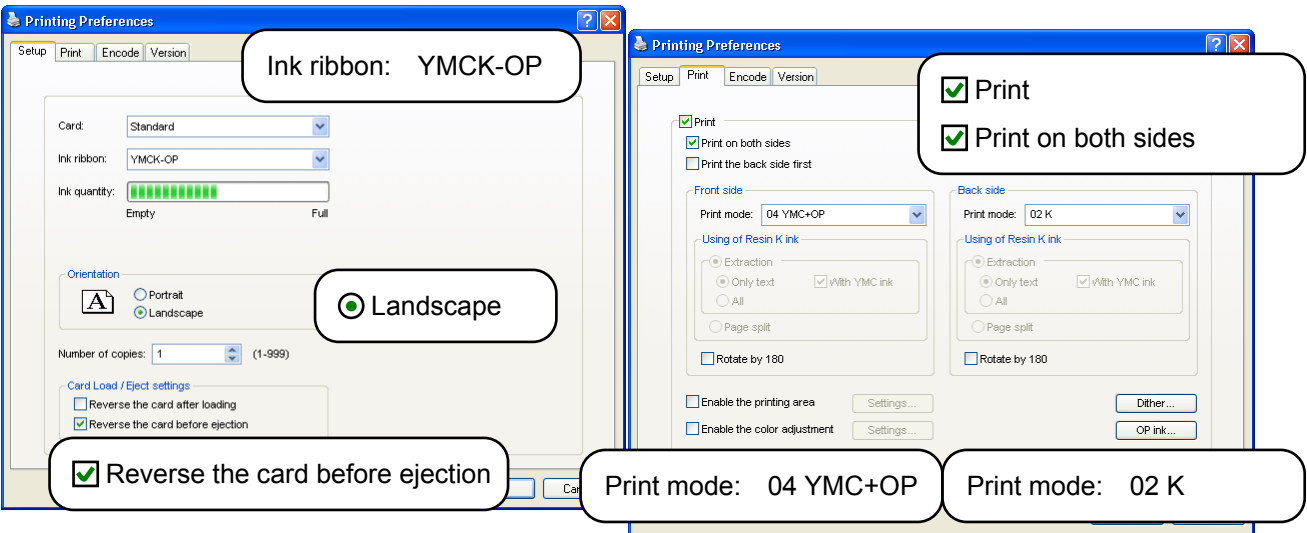
Application software			Printer			
1st Page	Graphics	Color	Front side	Graphics	YMC ink	No Protective layer (OP).
	Text	Color		Text	YMC ink	
2nd Page	Graphics	Black	Back side	Graphics	Resin K ink	Protective layer (OP) is printed.
	Text	Black		Text	Resin K ink	

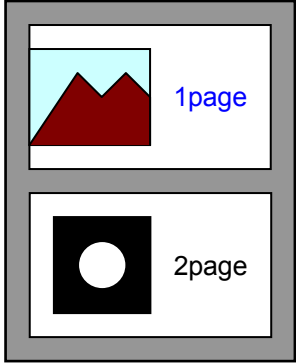
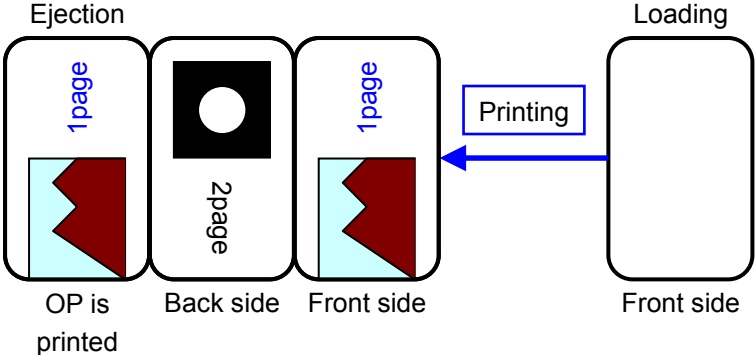
When page 2 and subsequent pages are colored, dithering is performed and printing is executed using the Resin K ink.

Setting Examples (Cont'd)

Printing on Both Sides (Special Mode)

This special mode may be economical for the ink. This function is supported by printer driver of version 3 (or later).

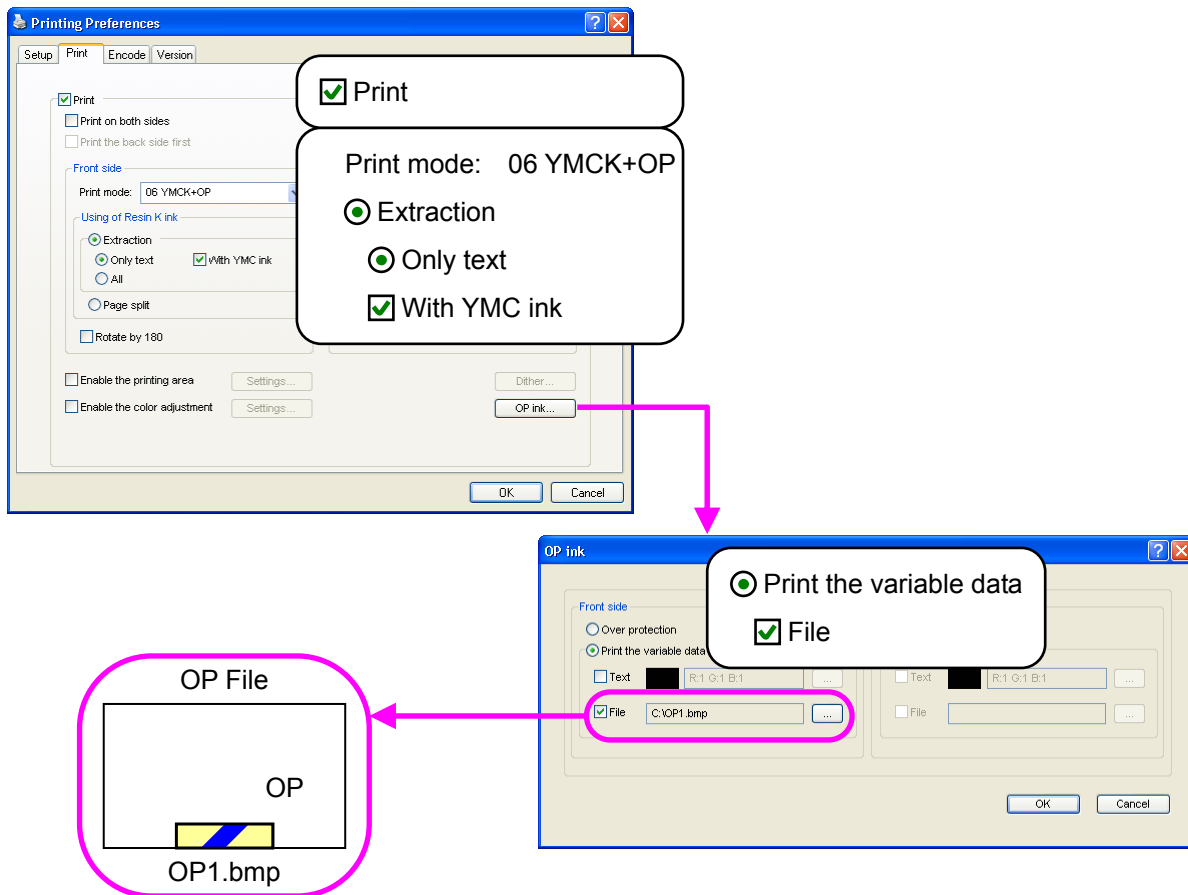


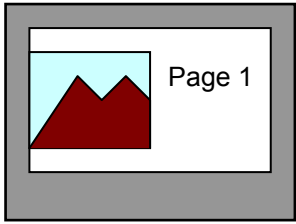
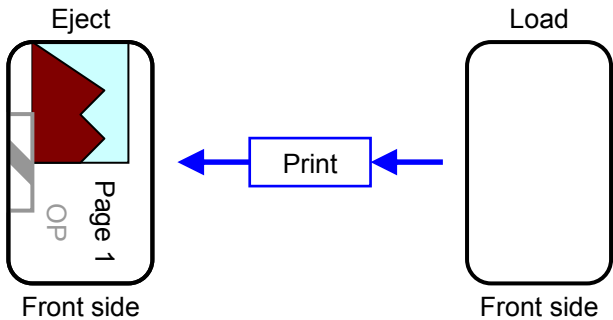
Application software			Printer			
						
1st Page	Graphics	Color	Front side	Graphics	YMC ink	Protective layer (OP) is printed.
	Text	Color		Text	YMC ink	
2nd Page	Graphics	Black	Back side	Graphics	Resin K ink	No Protective layer (OP).
	Text	Black		Text	Resin K ink	

When page 2 and subsequent pages are colored, dithering is performed and printing is executed using the Resin K ink.

Setting Examples (Cont'd)

Printing on Single Sides (OP ink Graphics)

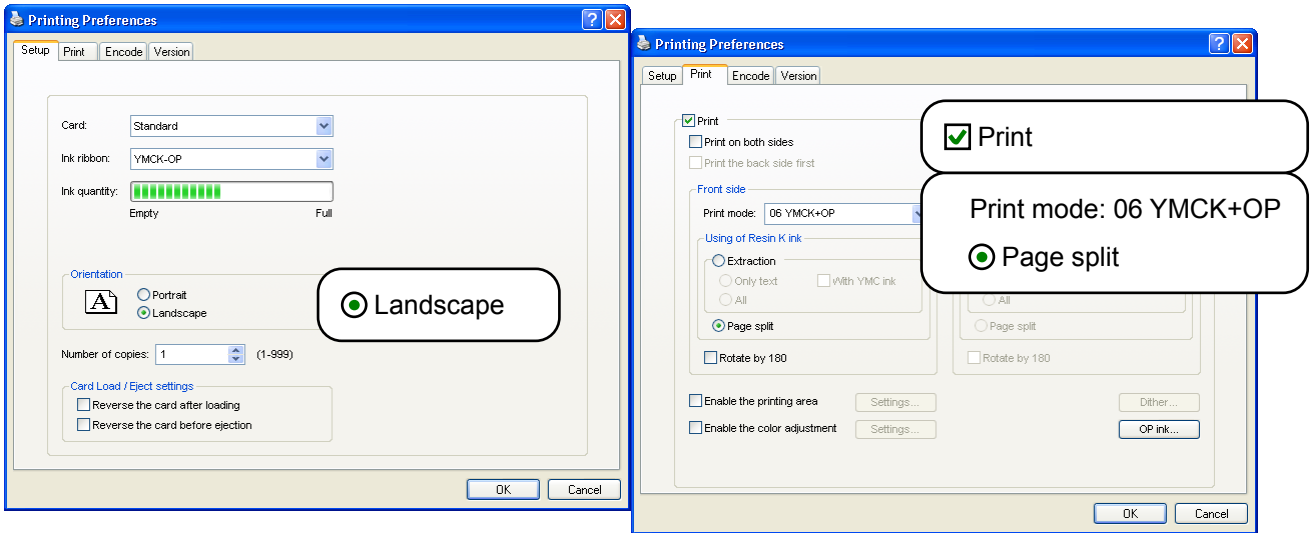


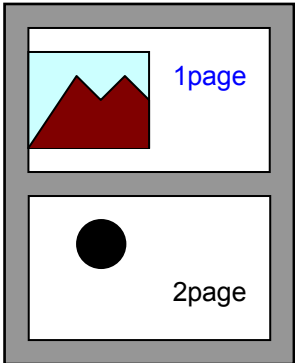
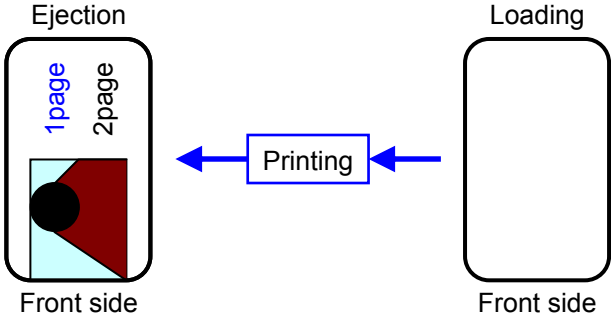
Application software		Printer	
			
Graphics	Colored	Graphics	YMC ink
Text	Black color	Text	YMC ink + Resin K ink
		OP1.bmp	OP ink

The OP file is converted into 2 gradation and printing is executed using the OP ink.

Setting Examples (Cont'd)

Page Split

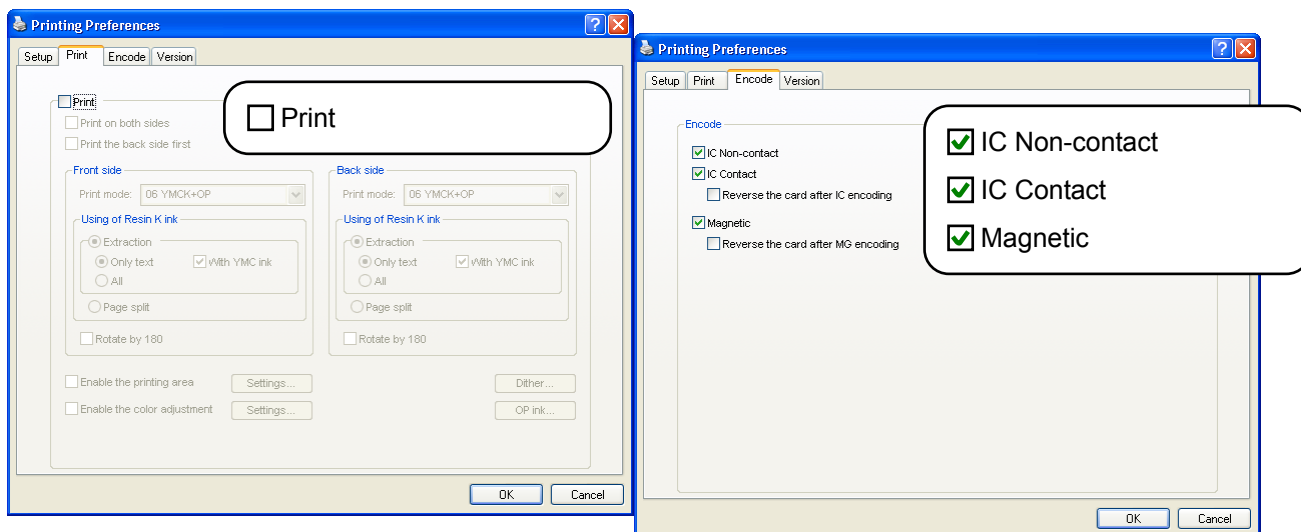


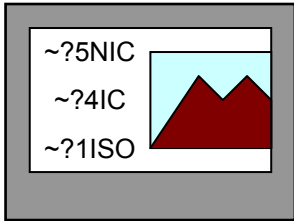
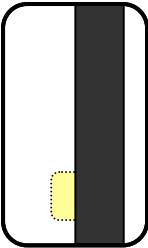
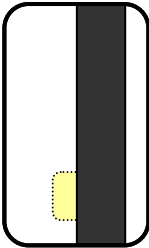
Application software			Printer			
						
1st Page	Graphics	Color	Graphics	YMC ink + Resin K ink	Protective layer (OP) is printed.	
	Text	Color	Text	YMC ink + Resin K ink		
2nd Page	Graphics	Black				
	Text	Black				

Setting Examples (Cont'd)

Examples of Encoding

Encoding without Printing



Application software		Printer		
		<div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"> <p>Ejection</p>  <p>Front side</p> </div> <div style="text-align: center;"> <p>Non-contact IC encoding</p> <p>Contact IC encoding</p> <p>Magnetic Encoding</p> </div> <div style="text-align: center;"> <p>Loading</p>  <p>Front side</p> </div> </div>		
Graphics	Color	Graphics	Nothing	No Protective layer (OP).
Text	Black	Text	Nothing	
Inline Encoding		Non-contact-type IC encoding data		NIC
		Contact-type IC encoding data		IC
		"ISO track 1" magnetic encoding data		ISO

Setting Examples (Cont'd)

Encoding with Printing

Printing Preferences

☒ **Print**

Print mode: 06 YMCK+OP

☒ **Extraction**

☒ Only text

☒ With YMC ink

☒ Enable the printing area

Printing area

Rectangular region

X	Y	W	H	Ink	Side
6.00	15.00	18.00	17.00	3	1

X: 6 mm Y: 15 mm Ink: 3. ALL

W: 18 mm H: 17 mm Side: 1. Front

Add Delete Delete All

OK Cancel

Printing Preferences

Encode

☒ IC Non-contact

☒ IC Contact

☐ Reverse the card after IC encoding

☒ Magnetic

☒ Reverse the card after MG encoding

☒ IC Non-contact

☒ IC Contact

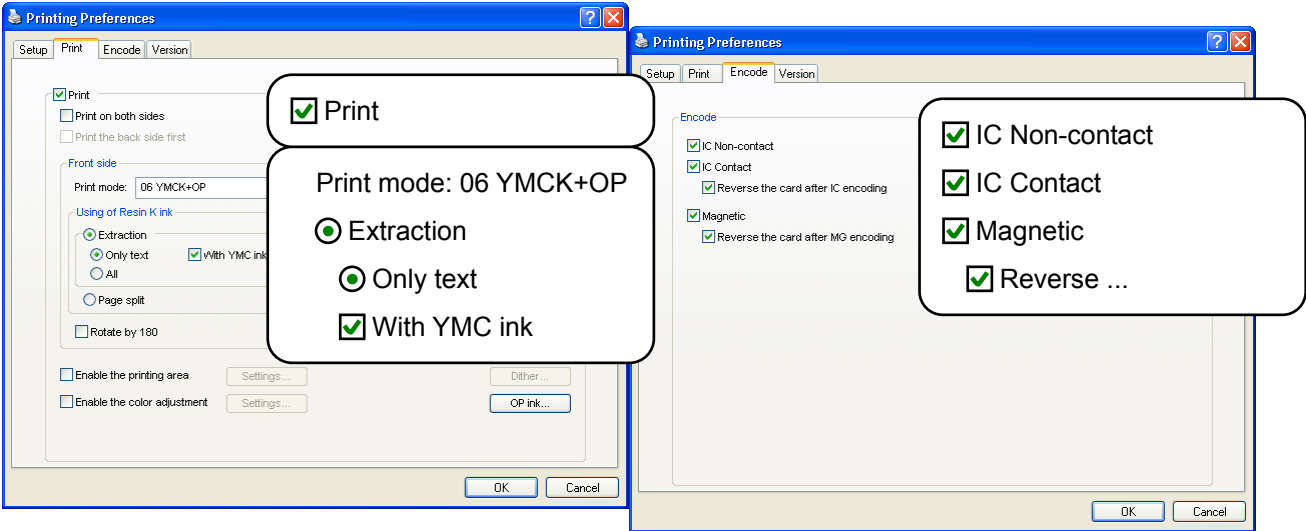
☒ Magnetic

☒ Reverse ...

Application software		Printer		
		Ejection Front side	Non-contact IC encoding Contact IC encoding Magnetic Encoding Reverse the card Printing	Loading Back side
Graphics	Color	Graphics	YMC ink	Protective layer (OP) is printed.
Text	Black	Text	YMC ink + Resin K ink	
Inline Encoding		Non-contact-type IC encoding data		NIC
		Contact-type IC encoding data		IC
		"ISO track 1" magnetic encoding data		ISO

Setting Examples (Cont'd)

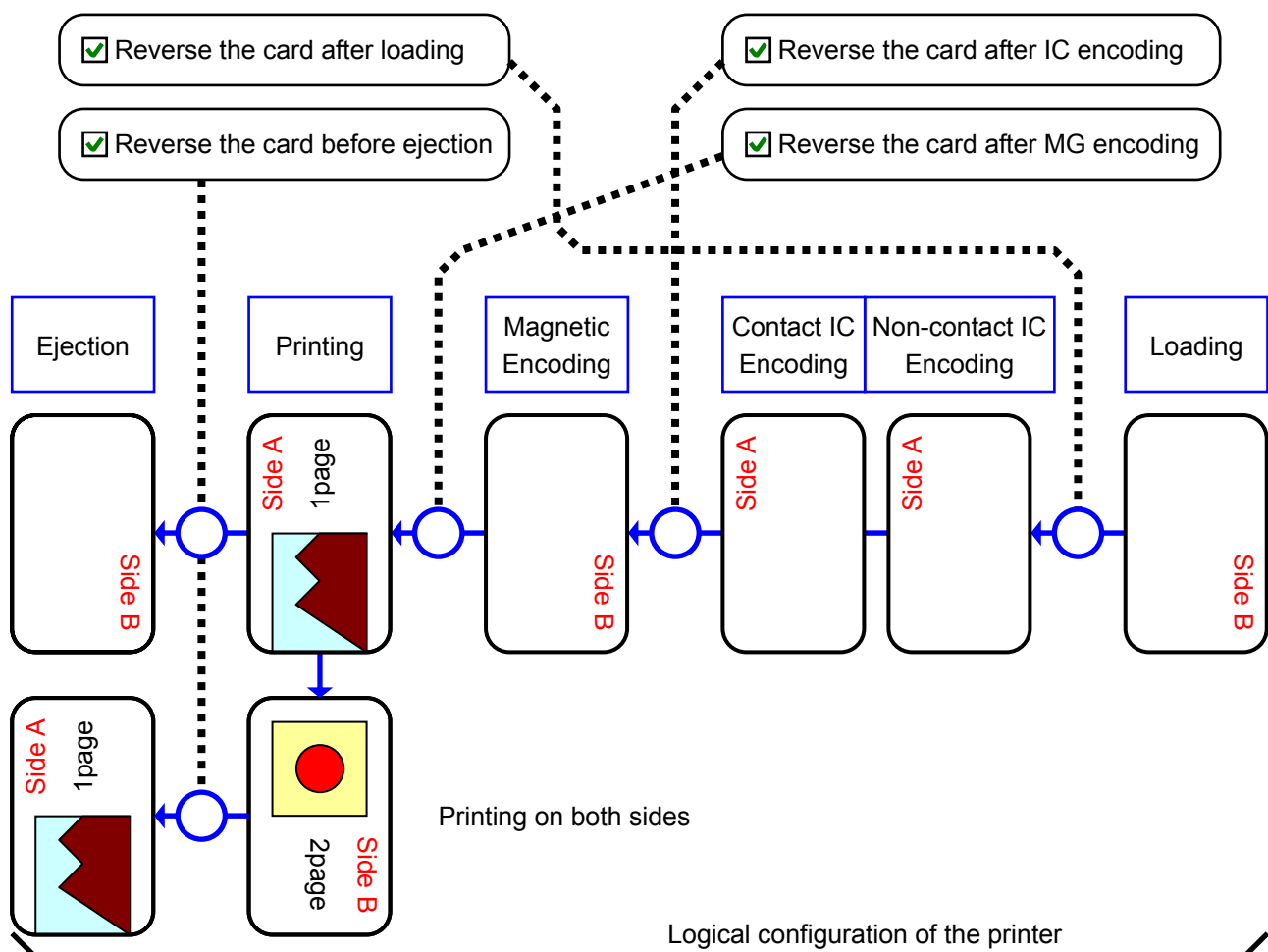
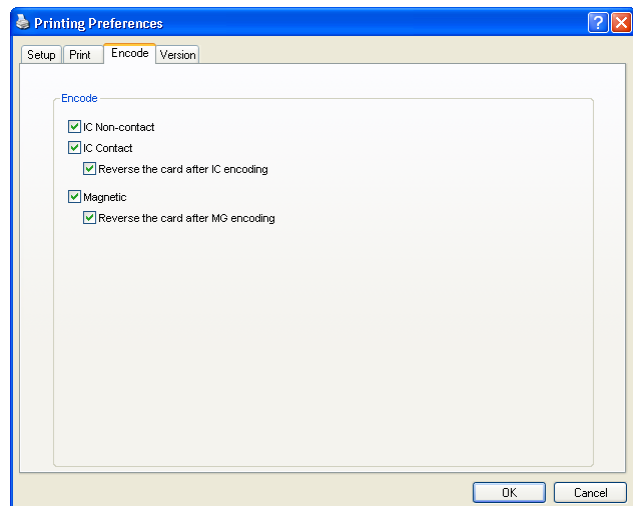
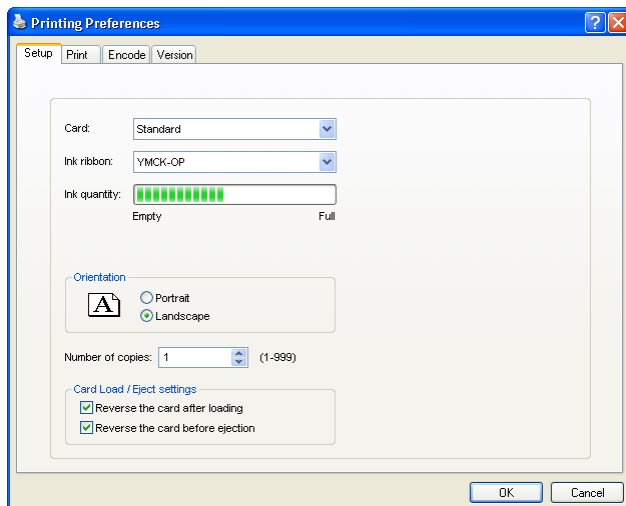
Encoding with Printing (JIS magnetic stripe card)



Application software		Printer		
			<div>Non-contact IC encoding</div> <div>Contact IC encoding</div> <div>Magnetic Encoding</div> <div>Reverse the card</div> <div>Printing</div>	<div>Loading</div> <div>Back side</div>
Graphics	Color	Graphics	YMC ink	Protective layer (OP) is printed.
Text	Black	Text	YMC ink + Resin K ink	
Inline Encoding		Non-contact-type IC encoding data		NIC
		Contact-type IC encoding data		IC
		"JIS type 2" magnetic encoding data		JIS

Setting Examples (Cont'd)

Diagram of Reversing Card



FAQ (Frequently Asked Questions)

Q Ink ribbon settings are automatically restored to their default settings upon changing.

A Ink ribbon set inside the printer is automatically selected.

[Important] When the printer is connected locally, there is no need to perform ink ribbon setting.

Q Remaining ink ribbon level is not displayed.

A The printer may not be properly connected. Check the connection and power supply of the printer.

[Note] When the printer is connected to the shared network, information on remaining ink ribbon level cannot be acquired from a client PC.

Q The card is discharged without being printed.

A The [Print] check box of the [Print] tab is not ticked. Tick the [Print] check box. (Refer to page 4 of this manual.)

Q How can I print black color using the Resin K ink ?

A Choose the [Mode] item of [Printing] tab except "01 YMC" and "04 YMC+OP". (Refer to Page 5 of this manual)

Q How can I perform magnetic/IC encoding ?

A Exclusive applications are required for methods other than in-line encoding. Please consult our authorized dealers for details.

Q How can I print using the OP ink on partial areas instead of the entire surface of a card ?

A Set the area for which OP ink is not to be printed in the [Printing area] dialog. (Refer to page 6 of this manual.)

Q How can I print OP graphics using the OP ink ?

A Set the OP function using the [OP ink] dialog. (Refer to 9 or 23 pages of this manual)

Q Values for firmware, Config and Table versions are displayed as '0'.

A The printer may not be properly connected. Check the connection and power supply of the printer.

[Note] When the printer is connected to the shared network, version information cannot be acquired from a client PC.

Q I cannot print a card using a network-shared printer which connected via USB.

A When the access authority of the computer is not proper, the printer may be unable to print, even if installation of the printer driver is completed by the shared network. Please make the access authority properly according to the instructions of the network administrator.

Direct Dye Sublimation Printer CX-120 Printer Driver Instruction Manual