

**MITSUBISHI DIGITAL COLOR PRINTER
SPECIFICATION of PrinterDriver
MODEL : CP-M1N-H**

Ref : No. NOKP2009

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**Mitsubishi Electric Corporation
Kyoto Works**

Revision history

Revision Date	Revision Letter	Revisions

<i>Application</i>

This specifications apply for PRINETER DRIVER of CP-M1N-H

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1. Applied model

Model : CP-M1N-H

2. Applied condition

2.1. Windows

Computer	: Use the printer driver in an environment that your operating system works properly.
Operating system	: Microsoft(R)Windows(R) 10 x86 Microsoft(R)Windows(R) 10 x64
Language	: English
Digital Signature	: MITSUBISHI ELECTRIC CORPORATION signature

* Install the printer driver first, and then connect the printer to the PC.

* You can not use different version of the driver at the same time.

When the driver has been already installed, uninstall it and then install this driver.

3. Applied interface

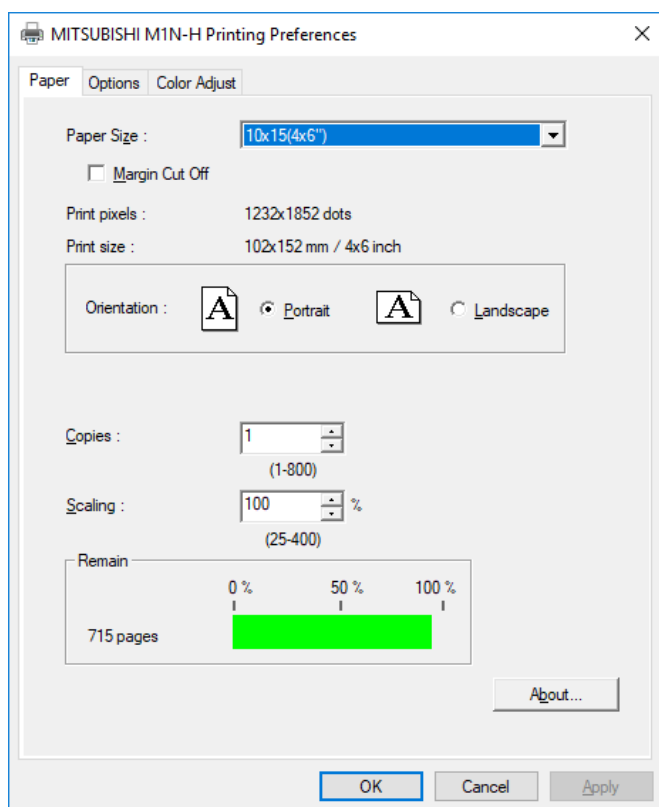
USB Communications :USB 2.0

This printer supports USB 2.0 (Hi-Speed USB) interface.

Connection of USB cable :Be sure to use a cable 2m or shorter.

4.Function explanation

4.1.1. Paper dialog



<Fig. 1>

1) Paper Size

The size of paper is selected.

Paper Size	Print dots
10x15 (4x6'')	1232x1852
9x13 (3.5x5'')	1082x1550
13x18 (5x7'')	1550x2134
15x20 (6x8'')	1852x2434
5x15x2 Type 1 (2x6''x2) *1	1232x1852
5x15x2 Type 2 (2x6''x2) *1	616x1852
5x15 (2x6'') *2	631x1852
15x15 (6x6'')	1833x1852
13x13 (5x5'')	1533x1550
9x13 (3.5x5'') white border *3	934x1382
10x15 (4x6'') white border *3	1084x1684
13x18 (5x7'') white border *3	1382x1986
15x20 (6x8'') white border *3	1684x2286

*1 : Please refer to item 19 on page 17.

*2 : 5x15 (2x6''): This selection allows up to 3 different 2x6 strip in a single ink ribbon patch using media type 15x20 (6x8''). Please note, if only two 2x6 strips is printed, the rest of the ink will be skipped and not usable.

*3 : When any paper size white border is selected, all printed image will have approximately 5 mm white border.

2) Margin Cut Off

Margin cut ON or Off is set.

If the setting is ON, then print without margin cut.

3) Print pixels

The number of pixels to print in each paper size is displayed.

4) Print size

The print size is displayed.

5) Orientation

The direction of paper is set.

6) Copies

The printer prints the number of printouts which is shown in dialog. (Range: 1 - 800)

* When multiple copies are printed, the print sequence is sorted by pages as listed below.

(example) The print result of 2 copies of 3 pages: 1p 1p 2p 2p 3p 3p

Some application handles multiple copies differently where the sequence is sorted by incremental page number such as 1p 2p 3p 1p 2p 3p.

7) Scaling

Enlargement scale is set. (Range : 25-400%)

8) Remain

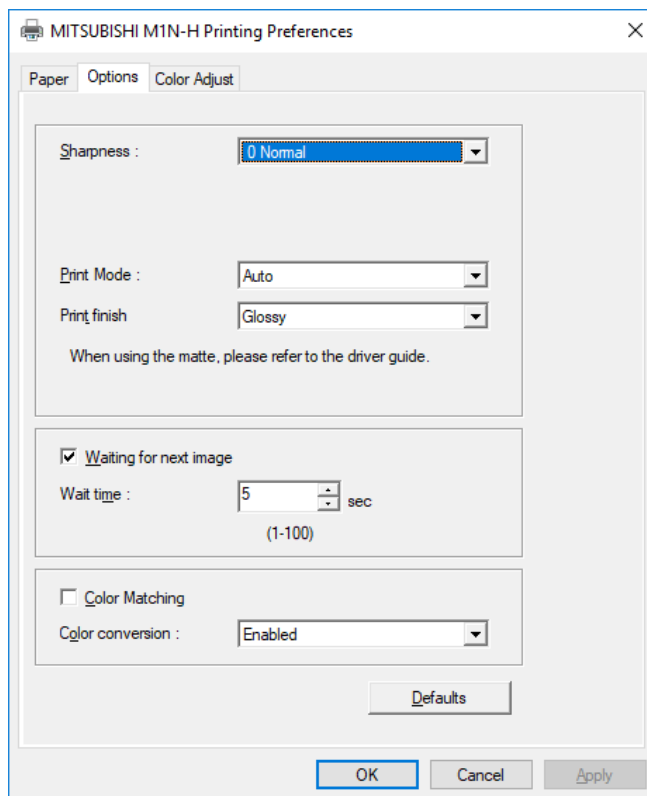
The remaining amount of the ink ribbon in the connected CP-M1N-H printer is displayed in a bar.

When a printer is not connected or information from the printer can not be read, this bar is displayed in gray.

9) About...

Displays the version information of this driver.

4.1.2. Options dialog



<Fig. 2>

1) Sharpness

none / -3 Soft/ -2 / -1 / 0Normal / 1 / 2 / 3Hard

Level of outline correction is changed.

none :Not perform the outline correction.

-3 to 3 :The value is smaller, the outline becomes softer.

The value is larger, the outline becomes sharper.

2) Print Mode

Printing mode is set.

Auto: Prints with appropriate speed depending on the image.

Fast : Prints with high speed.

*Note : The Fast Print Mode is only available on printers with the appropriate firmware.

If the Fast Print Mode is selected on printers with the inapplicable firmware,
the error dialog message No.19 on page 14 will be displayed.

3) Print Finish

Set the print surface finish mode.

Glossy : Gloss finish

Matte : Matte finish

<Note on Matte finish>

Whenever a Matte finish is selected, the ink ribbon will not rewind to maintain ribbon performance and image quality on a 15x20 (6x8") or 13x18 (5x7") media type.

Also the ink ribbon will not rewind after a Matte finish is printed regardless if the next print job is Glossy.

With 15x20 (6x8") or 13x18 (5x7") media and performing Matte finish, it is recommended to create even number of jobs to use the whole ink ribbon patch.

The table below illustrates as examples how the ink ribbon is used with Matte finish based on a combination of paper size and number of 10x15 (4x6") / 9x13 (3.5x5") / 5x15 (2x6") image.

Paper Size	Number of images		Print Finish	Ink ribbon waste number (10x15 (4x6") / 9x13 (3.5x5") conversion)	
				In the case of the image number of jobs that the next job is to use the ink ribbon over the entire surface	In the case of the image number of jobs that the next job is to use half of the ink ribbon
9x13 (3.5x5")	1	In the case of the image number of jobs that use half of the ink ribbon	Matte	1	2
10x15 (4x6")	1			1	2
5x15x2 Type 1 (2x6"x2)	1			1	2
5x15x2 Type 2 (2x6"x2)	1 or 2			1	2
5x15 (2x6")	1			1	2
9x13 (3.5x5") white border	1			1	2
10x15 (4x6") white border	1			1	2
9x13 (3.5x5")	1		Glossy	1	0 *2
10x15 (4x6")	1			1	0 *2
5x15x2 Type 1 (2x6"x2)	1			1	0 *2
5x15x2 Type 2 (2x6"x2)	1 or 2			1	0 *2
5x15 (2x6")	1			1	0 *2
9x13 (3.5x5") white border	1			1	0 *2
10x15 (4x6") white border	1			1	0 *2
9x13 (3.5x5")	2	In the case of the image number of jobs that use the entire surface of the ink ribbon	Glossy /Matte	0	0
10x15 (4x6")	2			0	0
5x15x2 Type 1 (2x6"x2)	2			0	0
5x15x2 Type 2 (2x6"x2)	3 or 4			0	0
5x15 (2x6") *1	2 or 3			0	0
9x13 (3.5x5") white border	2			0	0
10x15 (4x6") white border	2			0	0

*1: 5x15 (2x6") size prints a combination of up to three 5x15 (2x6") strips on a single ink ribbon patch of 15x20 (6x8") media type.

*2: The printer may not perform the rewind function due to image content and unused ink ribbon might be discarded.

Using 15x20 (6x8") or 13x18 (5x7") media for these print sizes, it is recommended to create even number of jobs to use the whole ink ribbon patch, even if the print finish is glossy.

4) Waiting for next image

If the setting is ON, if you print the half size, set the waiting time for printing the next image in the same ink surface.

If the setting is OFF, print without waiting.

* This setting is intended to set the waiting time after the transfer of the last of the image of the print job. Waiting time between images in the print job is fixed (100 seconds).

5) Wait Time

It set wait time. (Range: 1-100 sec)

6) Color matching

Color matching is carried out according to the ICC profile set in the "Color control" tab.

When the ICC profile is not set in the "Color control" tab, set the "Color matching" to OFF because the color matching is not carried out in this case.

For ICC profile, see "9-2. Making the ICC profile" in the "9. Hints for end-user preferred custom settings."

7) Color conversion

Set whether or not to color conversion in printer.

Disabled : Color conversion is not performed.

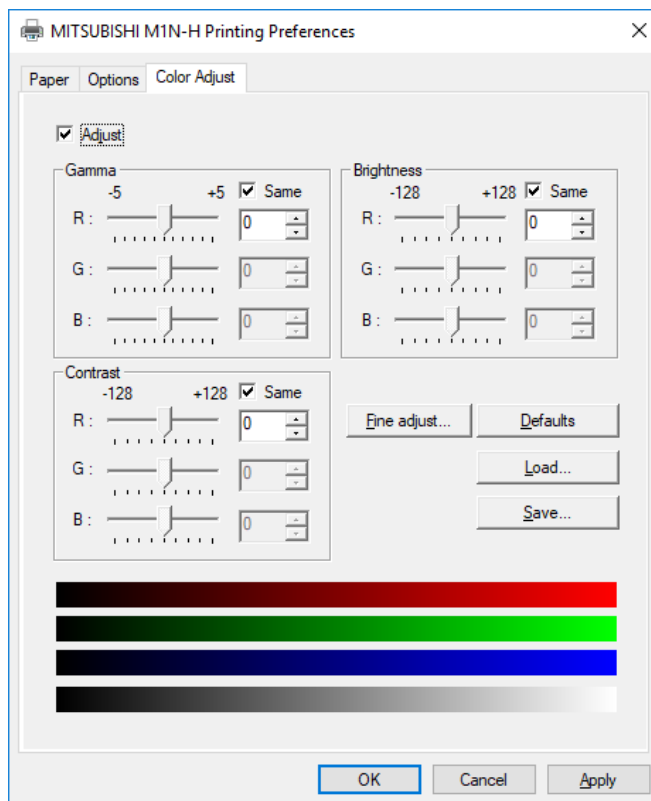
Enabled : Color conversion is performed.

When the color matching is set to ON, color conversion is not available.

8) Defaults

All the settings in Option dialog are reset to the defaults.

4.1.3. Color Adjust dialog



<Fig. 3>

1) Adjust

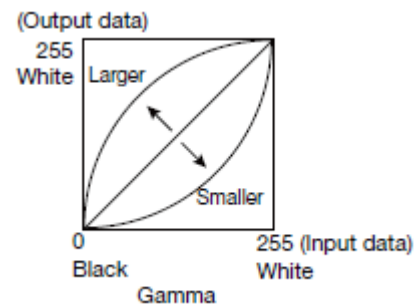
Tick the box for the color adjustment.

2) Gamma

Adjusted value (-5 - +5)

When you want to increase the density of the middle tones, decrease the value of "Gamma" of the color adjustment dialog.

Same check box ON: R, G and B are same value,
OFF: R, G and B are individually adjusted.

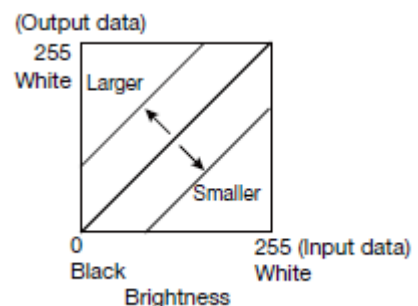


3) Brightness

Adjusted value (-128 +128)

When you want the brightness of the print picture to be dark, the value of "Brightness" of the color adjustment dialog must be decreased.

Same check box ON: R, G and B are same value,
OFF: R, G and B are individually adjusted.

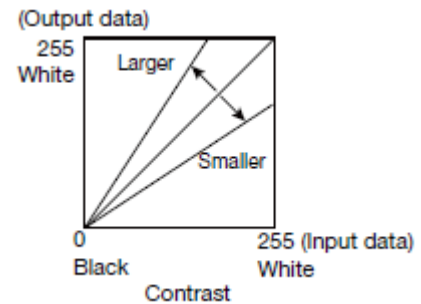


4) Contrast

Adjusted value (-128~+128)

When you want the contrast of the print picture to be strong, the value of “Contrast” of the color adjustment dialog must be increased.

Same check box ON:R,G and B are same value,
OFF:R,G and B are individually adjusted.



5) Fine adjust

The more minute color adjustments are carried out by the Gamma adjustment tone curve.

6) Defaults

All adjustable values in Color Adjust dialog become 0.

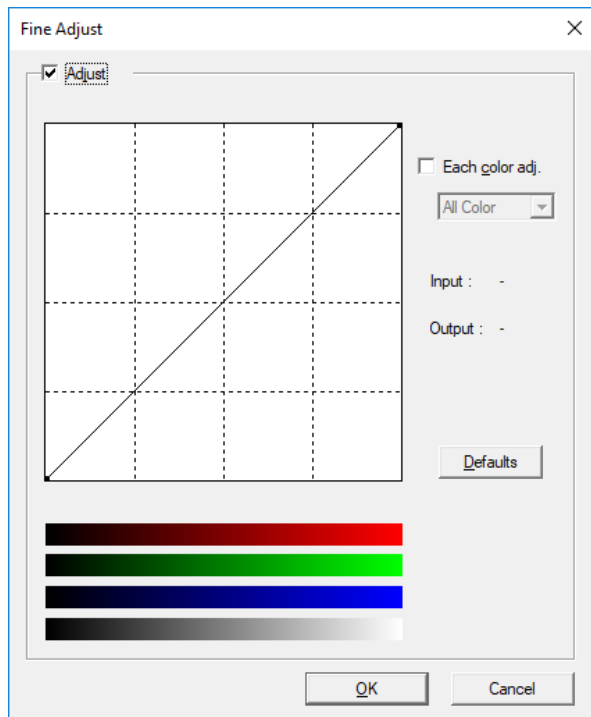
7) Load...

The color adjustment setting file is loaded.

8) Save...

The color adjustment setting is saved.

4.1.3.1. Fine Adjust dialog



<Fig. 4>

1) Adjust

Tick the box for the color adjustment.

2) Each color adjustment

ON: Each RGB color is individually adjusted.

OFF: The same adjustment of each RGB color carries out.

3) Selecting the color to be adjusted

When adjusting color individually, select the color to be adjusted.

4) I/O value display

The input (gradation value before adjustment) and output (gradation value after adjustment) of the adjustment point are displayed.

5) Defaults

All the tone curves become a linear straight line of the range (0, 0) - (255, 255).

5. Installation

5.1. Windows 10

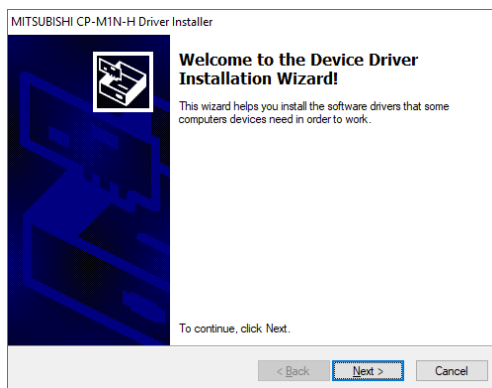
5.1.1. Installing the driver

* Install the printer driver for Windows 10 before you connect the printer to your PC.

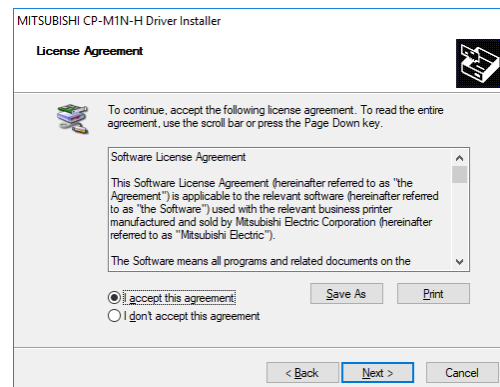
- 1) Start Windows® 10 operating system.
- 2) Logon as an Administrator or Administrator group members.
- 3) Start the installer (Install_Drv.exe) by “Run as administrator”.
- 4) Install according to the instructions in the wizard.

Click “Next” button on “Welcome to the Device Driver Installation Wizard!”. (Fig. 5)

5) Accept the License Agreement and select “I accept this agreement” and click “Next” button on “License Agreement”. (Fig. 6)



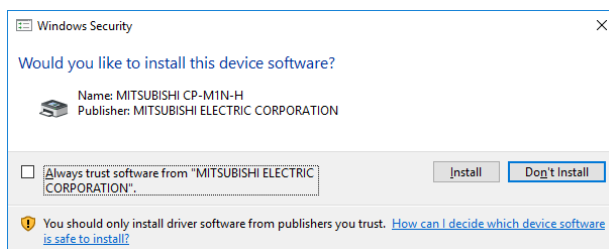
<Fig. 5>



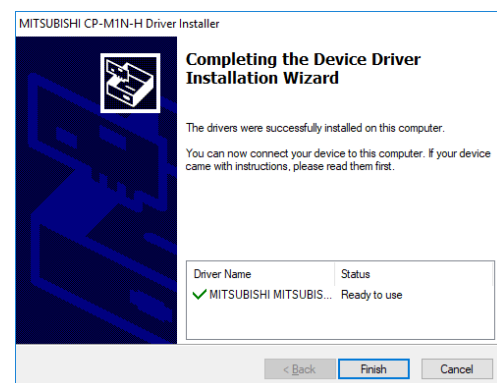
<Fig. 6>

6) Click “Install” button on “Windows Security”. (Fig. 7)

7) Window of (Fig. 8) appears on success in installation.



<Fig. 7>



<Fig. 8>

5.1.2. Installing the USB port

- 1) Now, power on the printer and connect it to your PC with USB cable.
- 2) The driver software will be automatically installed.
- 3) Icon of “MITSUBISHI M1N-H” will be added to the “Printers” in the “Devices and Printers”.
- 4) Restart your PC.

6. Uninstallation

Operate the following procedures to uninstall the printer driver.

When uninstalling the printer driver, confirm that the printer driver is not used from the application or the print job does not remain in the spooler.

When you use the printer, confirm that the printer is not set as default printer.

When you uninstall and then reinstall the printer driver, restart your PC after the reinstallation is completed.

6.1.Windows 10

* When uninstalling the driver, make sure to connect the printer to the USB port on the PC that is used for the installation.

1) Display “desktop” and press Windows “START” Key and click “Windows System”.

Then select “Control Panel” and select “Devices and Printers”.

“Devices and Printers” is displayed.

2) Right-click the printer icon to be removed and select “Remove device”.

3) Click “Yes” button in the “Remove Device” confirmation dialog.

4) While selecting any of the icon under “Printers” category in the “Devices and Printers” window, select “Print server properties” at the top of the window.

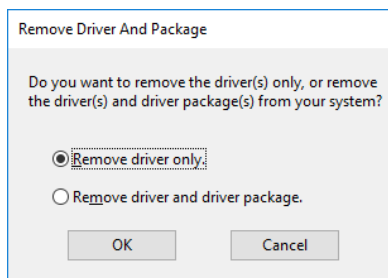
5) Open “Drivers” tab of “Print Server Properties” and click “Change Driver Settings” button.

* Depending on the version of the operating system, this window may not be displayed.

6) The similar window that doesn’t have “Change Driver Settings” button at the bottom left is displayed.

Select the printer driver to be removed and click “Remove” button.

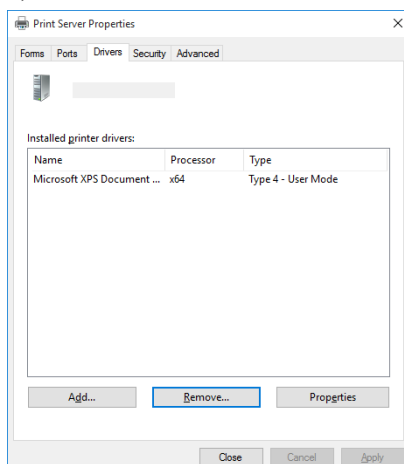
7) Select “Remove driver only.” in “Remove Driver And Package” dialog and click “OK” button. (Fig. 9)
[Important] Don’t select “Remove driver and driver package”.



<Fig. 9>

8) Click “Yes” button in “Print Server Properties” confirmation dialog.

9) Confirm that the driver has been removed in “Print Server Properties”. (Fig. 10)

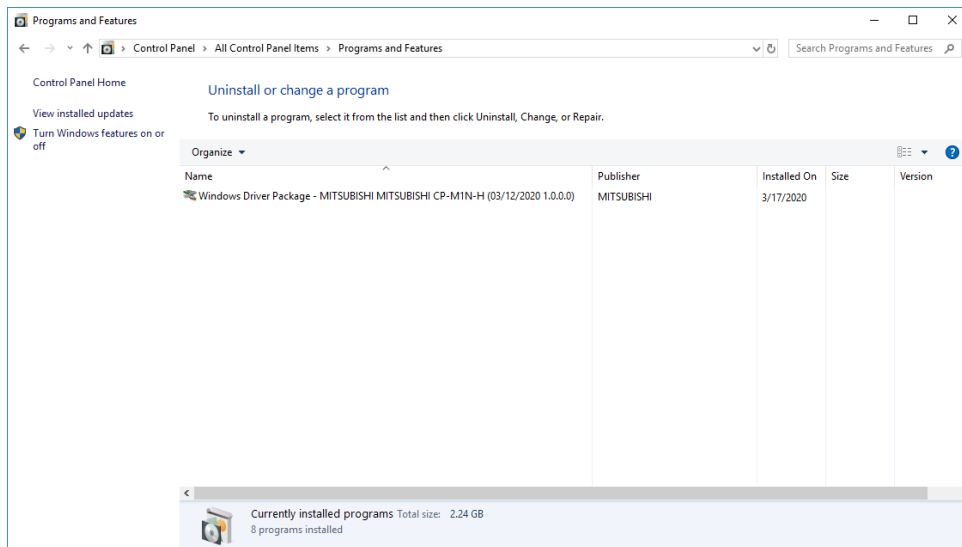


<Fig. 10>

10) Select “Programs and Features” on the “Control Panel”.

11) Select “Windows Driver Package –MITSUBISHI MITSUBISHI CP-M1N-H” and click “Uninstall/Change” with right-click. (Fig. 11)

Confirm that the driver package has been removed in “Programs and Features”.



<Fig. 11>

12) Disconnect the USB cable from your PC.

13) Restart your PC.

8. Error indication

No.	Error dialog message	Button	Operation
1	Printer is not connected.	OK	Click OK button. After connecting the printer (Turn on the printer or Connect the USB cable), printing starts automatically.
2	Data Transmission Error.	OK	When clicking OK button, the dialog disappears and the print job is deleted. After turning the power off and turning it back on, start printing process again.
3	The printer does not respond. Turn the printer Off and then On again, and try again.		
4	Something is wrong with the printer.(xxxx) Turn the printer Off and then On again, and try again.	Cancel	When the error is resolved, the dialog disappears and printing starts automatically. When Cancel button is clicked, printing is canceled. All the jobs in the printer are cancelled and printing is cancelled. * Numeric characters are indicated in (xxxx).
5	Paper size of printer driver and Ink Ribbon type do not match.		
6	Ink Ribbon Empty(xxxx)		
7	Ink Ribbon End(xxxx)		
8	Ink Ribbon Error(xxxx) Check Ink Ribbon.		
9	Ink Ribbon Error(xxxx) Check Ink Ribbon and set Paper again.		
10	It is not equipped with the Paper Strip Bin (xxxx)		
11	Paper Empty(xxxx)		
12	Printing unit is opened.(xxxx)		
13	Paper End(xxxx)		
14	Paper JAM(xxxx) Check Ink Ribbon and set Paper again.		
15	Mechanical Error(xxxx) Check Ink Ribbon and set Paper again.		
16	Mechanical Error(xxxx) Turn the printer Off and then On again, and try again.		
17	Electrical Error(xxxx) Turn the printer Off and then On again, and try again.		
18	Printer driver settings is incorrect.		
19	Transfer image size is out of range.		

* When no error message is displayed on the monitor and printing is not carried out, check the indicators on the front of the printer.

*When an error occurs in the printer, printing starts automatically by resolving the error.

For the details of the indicators on the printer, see the operation manual of CP-M1N-H printer.

The error may not be displayed in the case of system configurations other than that shown below.

Interface	Operating system	Setting
USB	Windows 10	Set “Enable bidirectional support” for printer properties.

* The print job is not deleted if the printer is not turned on or the USB cable is not connected.

By turning on the printer or connecting the USB cable, the data will be transferred again.

8. Note

1) Secure of Hard disk for spool file

Secure the capacity of Hard disk for spool file enough for the printer operation and the number of printing sheets.

The printing cannot be correctly carried out when the capacity is running short.

The drive for spool file is the same drive as the drive of Windows system usually.

2) Operation of the printer

Refer to the operation manual of the printer.

Do not turn off the power switch during data transfer or print.

If you turn off the power switch, restarting of a computer may be needed.

(When deletion of a printing data cannot be performed, restarting of a computer is required.)

3) Applicability of color adjustment

The color adjustment is applied to the entire printing range including the background.

4) About "Print directly to the printer"

With some applications, if "Print directly to the printer" is selected, objects may not be printed correctly.

In that case, select "Spool print documents ..." by the "Advanced" page of printer property sheet.

5) About connection of a computer and a printer

Do not disconnect the interface cable during data transfer.

If the interface cable is disconnected, wait 1 minute or more after disconnecting the cable to connect it again. If the cable is connected without leaving an enough interval, the printer driver may not work correctly.

6) System requirements for USB interface

Use a personal computer with Windows 10 pre-installed, and make sure that its USB operation is guaranteed by the manufacturer.

CP-M1N-H printer supports USB 2.0 (Hi-Speed USB) interface.

7) Connection of USB cable

When you take out and insert a USB cable after installation of a printer driver, wait 10 seconds or more after extracting a cable.

If the cable is reinserted without leaving an interval, the printer may not operate normally.

8) Print job

Do not delete the print job in the spooler during data transfer. When deleting it, do not start printing until the printer becomes to the initial status.

9) Number of prints

With some applications, the number of prints set by the printer driver does not work. Set the number of prints from the print dialog box of the application.

10) Remaining

Remaining on the Paper tab shows the remaining of the ink ribbon by a bar, by reading information from the printer when the Paper tab is displayed. The correct information may not be acquired during printing.

11) Connection with more than one printer

When multiple CP-M1N-H printer are connected to one personal computer, the "Add New Hardware Wizard" will be displayed and installation of the printer drivers will be carried out repeatedly for each connected printers. The same number of printer drivers as that of connected printers are installed.

12) Errors during printing

When an error occurs during printing, it may not be displayed on the monitor. To resume printing, check the indicator on the front of the printer and take the countermeasure. For the indication by the indicator of the printer and the countermeasures, see the operation manual of the printer.

13) Setting of the color matching

Even if the color matching is set to ON by the printer driver, color matching may not be available with some applications.

With some applications, color matching is effective even if it is set to OFF.

14) When you print and "Parameter's value is invalid." is displayed, perform the following operations.

- a) Select "Device Manager" from "Hardware" tab of "System Properties."
- b) Select "Scan for hardware changes."

15) Install the printer driver first, and then connect the printer to the personal computer.

16) When the printer is in standby status, the printer driver may not be installed correctly. Install the printer driver while the printer is activated.

17) You can set the number of printouts from 1 to 800 in the Paper dialog, however, the maximum number of printouts per one paper roll varies depending on the paper size.

18) Uninstallation and reinstallation of the printer driver

Confirm that the printer is not set as default printer and then uninstall the printer driver.

When you uninstall and then reinstall the printer driver, restart the computer after the reinstallation is completed.

19) When the 5x15x2 (2x6"x2) (Type 1 or Type 2) is selected for the paper size

The paper cut position may shift depending on the printer.

9. Hints for end-user preferred custom settings

9-1. When you want to adjust the color of the print image.

(Note that the effects are invalid on the display even if you make following setting.)

- 1) When you want the density of entire print picture to be thick (dark), decrease the value of "Brightness" of the color adjustment dialog.
- 2) When the print picture is out of focus (the contrast is weak), increase the value of "Contrast" of the color adjustment dialog.

The contrast becomes stronger.

3) When you want to change the color of printout.

Change the value of "Brightness" of the color adjustment dialog.

Increase Red : Increase the "R" value of the color adjustment dialog.

Increase Green : Increase the "G" value of the color adjustment dialog.

Increase Blue : Increase the "B" value of the color adjustment dialog.

4) When you want to adjust Gamma of the printout.

By moving the graph of the Fine Adjust dialog with a mouse, the density of the entire image can be adjusted to the arbitrary Gamma curve.

The density becomes high (dark) when you decrease the output value compared with the input value.

The density becomes low (bright) when you increase the output value compared with the input value.

9-2. Making the ICC profile

Refer to the following when you make a suitable ICC profile for the system to be used and apply it to the printer driver.

1) Set the printer driver as follows when you print the basic color chart for making ICC profile using the printer.

Delete the ICC profile set on the “Color control” tab of the printer property.

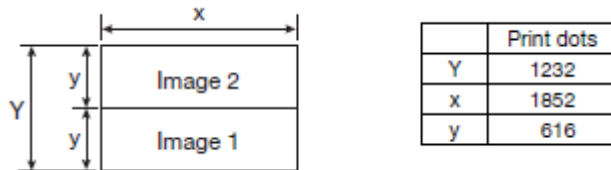
Set the “Color matching” on the option tab of the printer driver to OFF.

Set the “Color conversion” on the option tab of the printer driver to “Disabled”.

2) Add the new ICC profile using the “Color control” tab of the printer property.

9-3. When “5x15x2 Type 1” is selected in “Paper size”

Lay out the image 1 and image 2 as following and print them.



9-4. When “5x15x2 Type 2” is selected in “Paper size”

When multiple images are selected in “Windows Photo Viewer”, etc., the images are printed in 5x15 (2x6”) size.

When the number of pages or copies is odd, the last print of 5x15 (2x6”) size paper is output as a blank page. Depending on the application software, a blank page may be set every other page.

10. Prohibition matter

We prohibit Reverse Engineering, decompiling or reverse assembling of this driver software.

11. Exemption from responsibility

Occasionally, this software does not operate normally depending on operating environment.

Moreover, Mitsubishi Electric Co. will not assume any responsibility for damage (including, but not limited to, lost profit or damage caused from special circumstances etc.) occurring during the use of this driver.