

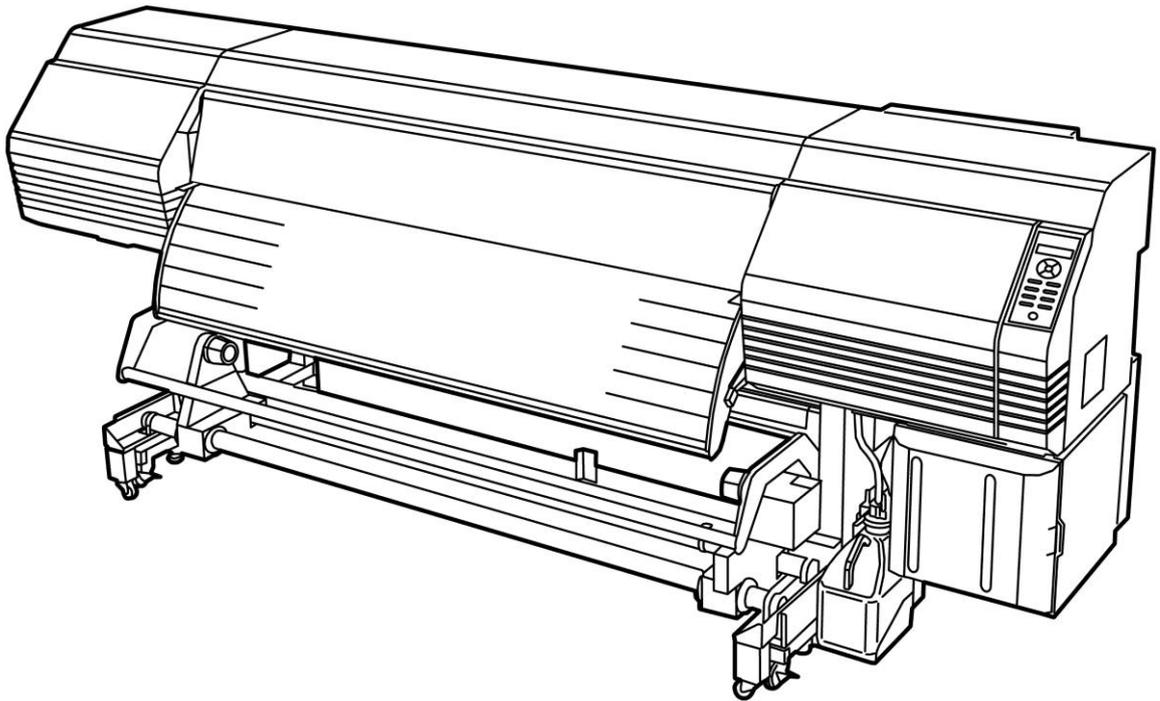
# IP-6620

## Solvent Ink Color Inkjet Printer

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U00130319805

# Maintenance Manual



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# Introduction

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This maintenance manual applies to the following three printer models:

- IP-6620 (64 inches, 6 color specifications) (CIS model)
- IP-6620 (64 inches, 7 color specifications)
- IP-6620 (64 inches, 6 color specifications) (LCIS model)

Depending on the purchasing area, some printers may not be mentioned above. However, unless specified otherwise, the content of this manual covers all printer models.

Also, specific explanation is provided for the maintenance items when they differ depending on models.

## **Caution (make sure to read the following)**

Always disconnect the power cord from the power outlet when opening the controller box or the power supply box, or when performing operation inside these boxes. Operating inside these boxes with the power cord connected may cause electrical shock.

## **Caution**

Pay attention to the following point when using ethanol during the printer maintenance.

- (1) Solid matter will separate if ink is mixed with ethanol. Be careful not to mix ethanol with ink.
- (2) If ethanol needs to be used on parts that enter into contact with the ink, be sure to wait enough for all the ethanol to evaporate after cleaning.

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# Chapter 1 Overview of Maintenance Workflow

This chapter describes the workflow, necessary tools, external views of the printer, and part names for the primary maintenance.

## 1.1 Maintenance Workflow

Maintenance operations for the printer are classified into periodic maintenance and corrective maintenance in accordance with the maintenance agreement.

The workflow for each maintenance type is shown in Figure 1.1.

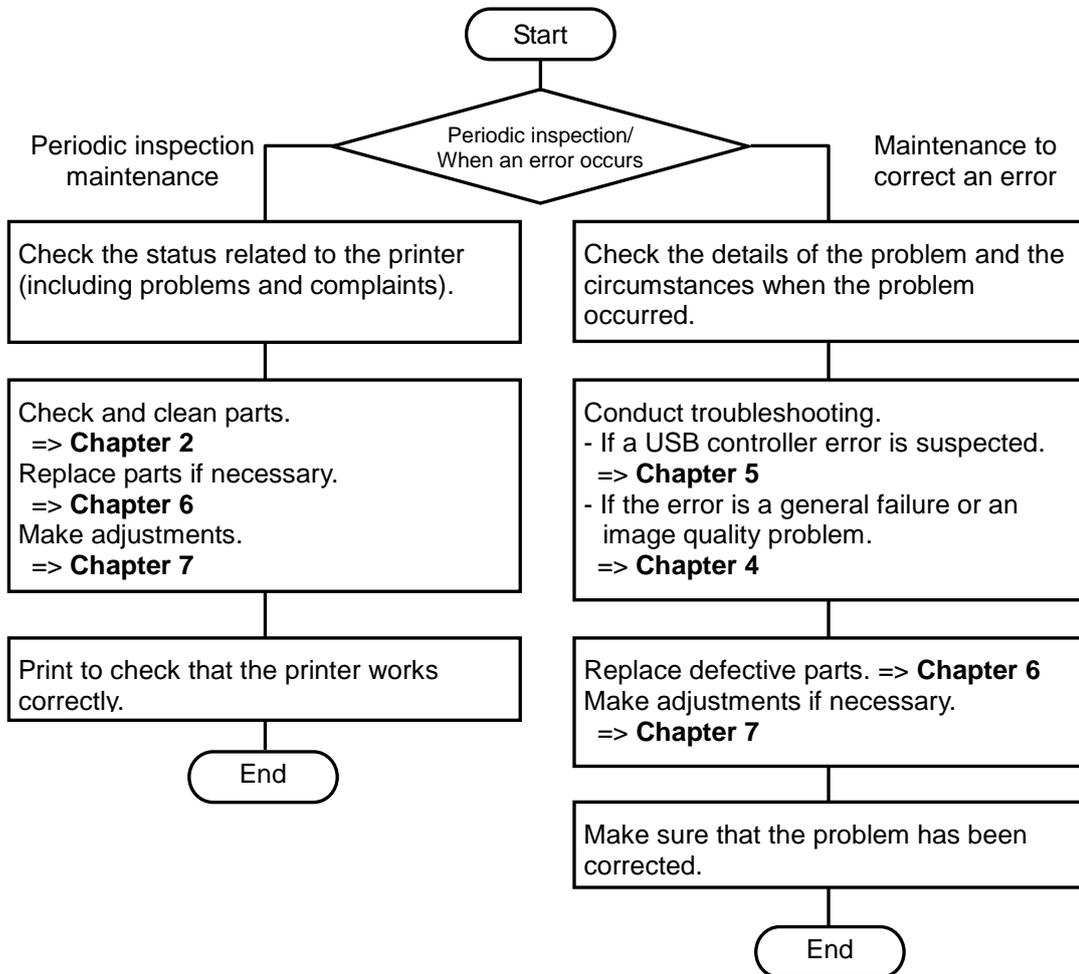


Figure 1.1 Maintenance workflow

## 1.2 Necessary Tools

The tables 1-1 to 1-3 show the tools, measuring instruments, jigs, and consumables necessary for maintenance operations.

**Table 1-1 Tools and measuring instruments**

Name	Quantity	Remarks
Phillips screwdriver (2 bits)	1	Commercially available
Phillips screwdriver (1 bit)	1	For removing the encoder, commercially available
Torque screwdriver (2 bits)	1	For mounting the head unit (15 kgf·cm), commercially available
Phillips screwdriver (long)	1	—
Stubby Phillips screwdriver (2 bits)	1	Commercially available
Flat-head screwdriver	1	For removing E-rings, commercially available
Flat-head screwdriver (short)	1	—
Flat-head precision screwdriver	1	For removing E-rings, commercially available
Hexagon button wrench	1	Size: 5, 6
Wrench	1	Size: 13
Pliers or long-nose pliers	1	For mounting E-rings, commercially available
Nipper	1	Commercially available
Multimeter	1	For measuring voltage, commercially available
Metal rule	1	For adjusting the head unit (300 mm or longer), commercially available
Thickness gauge	1	0.2 to 0.5 mm
Tube cutter	1	Commercially available
Cutter knife	1	Commercially available
Cable tie	1	Commercially available
Microscope with scale (M830-S or equivalent)	1	Peak staff microscope
Thermohygrometer	1	100x, No. 2008-100 (Scale: standard)
USB drive for rewriting engine firmware ROM	1	For checking the printer installation environment, commercially available, compatible USB 2.0

Table 1-2 Jigs

Name	Quantity	Remarks
Fan-shaped tension gauge (0.1 to 20 N) Double-side type (Oba keiki seisakusho)	1	For X motor installation
BeltTension-Jig	1	For adjusting SUS belt tension (push)
Round-type spring tension gauge (50 N)	1	For adjusting Y motor belt tension (pull)
BLOCK-ADJUST-CR	4	- For adjusting the carriage height - For adjusting the carriage parallelism
BAR-ADJUST-CR	1	Head positioning pin
ADJUST HEAD PIN, MW	1	For adjusting the print heads inclination
WIPING HEIGHT TOOL, MW	1	For adjusting the wiping unit height
SINGLE COLOR FILLING TOOL (MV)	1	For supplying or draining one ink color
CAPPING-SEAL-TOOL (HV)	1	For checking leak tightness of the capping unit

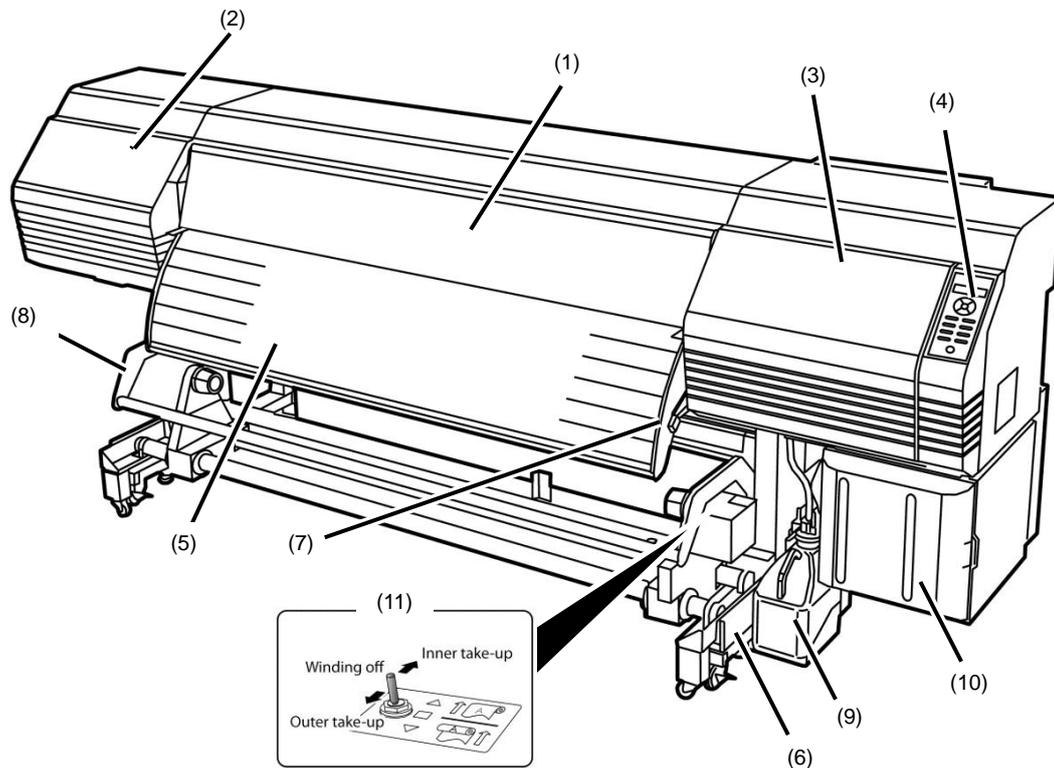
Table 1-3 Consumables

Name	Quantity	Remarks
Grease for synchro belt and decelerating belt	1	Grease EM-60L (Dow Corning Toray Co.,Ltd.) or an equivalent grease (silicon grease can be used)
Glove or fingerstall	1 pair	For protection from ink blot, commercially available
Cleaning paper	As required	For wiping ink blot, Kimwipes or equivalent
Ethanol	As required	For cleaning contacts, etc.
Cap cleaning liquid	1 set	Daily maintenance kit
Wiper cleaning liquid	1 set	Daily maintenance kit
Cleaning swab	1 set	Daily maintenance kit
Dropper	1 set	Daily maintenance kit
Cleaning liquid cartridge	6 or 7	The number of necessary cartridges depends on the number of ink colors
Storage liquid cartridge	6 or 7	The number of necessary cartridges depends on the number of ink colors

### 1.3 External Views and Part Names (CIS model)

Figures 1.2 and 1.3 show the external view of the printer and the part names.

#### 1.3.1 Front view

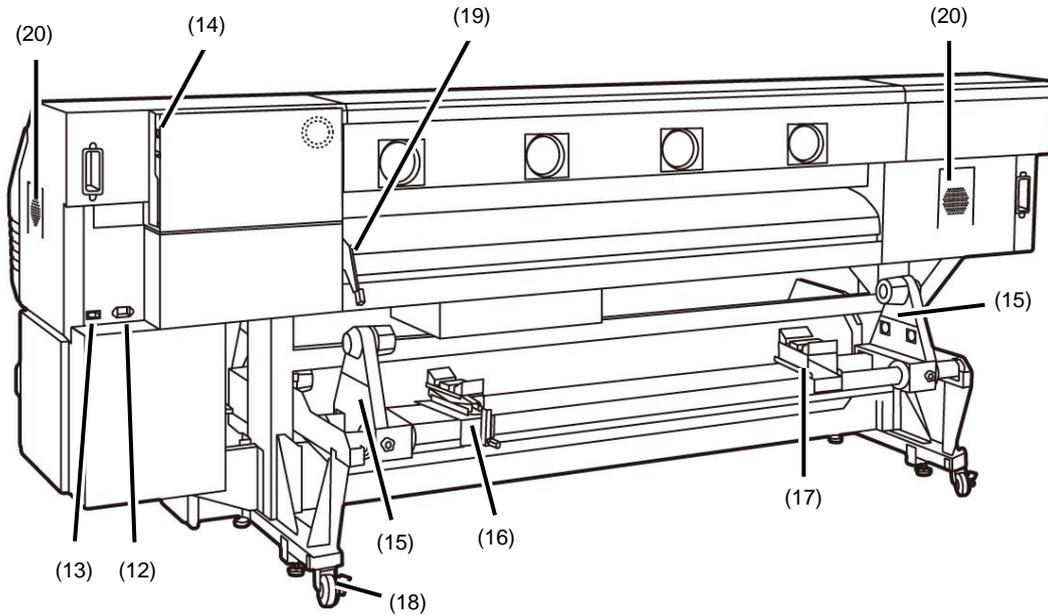


- (1) Front cover
- (2) Maintenance cover
- (3) Capping cover
- (4) Operation panel
- (5) Output paper guide
- (6) Take-up reel unit
- (7) Pressure roller lever
- (8) Guide bar
- (9) Waste ink bottle
- (10) Ink box
- (11) Take-up direction switch

Moves together with the pressure roller lever at the printer rear side.

**Figure 1.2 External view and part names (front)**

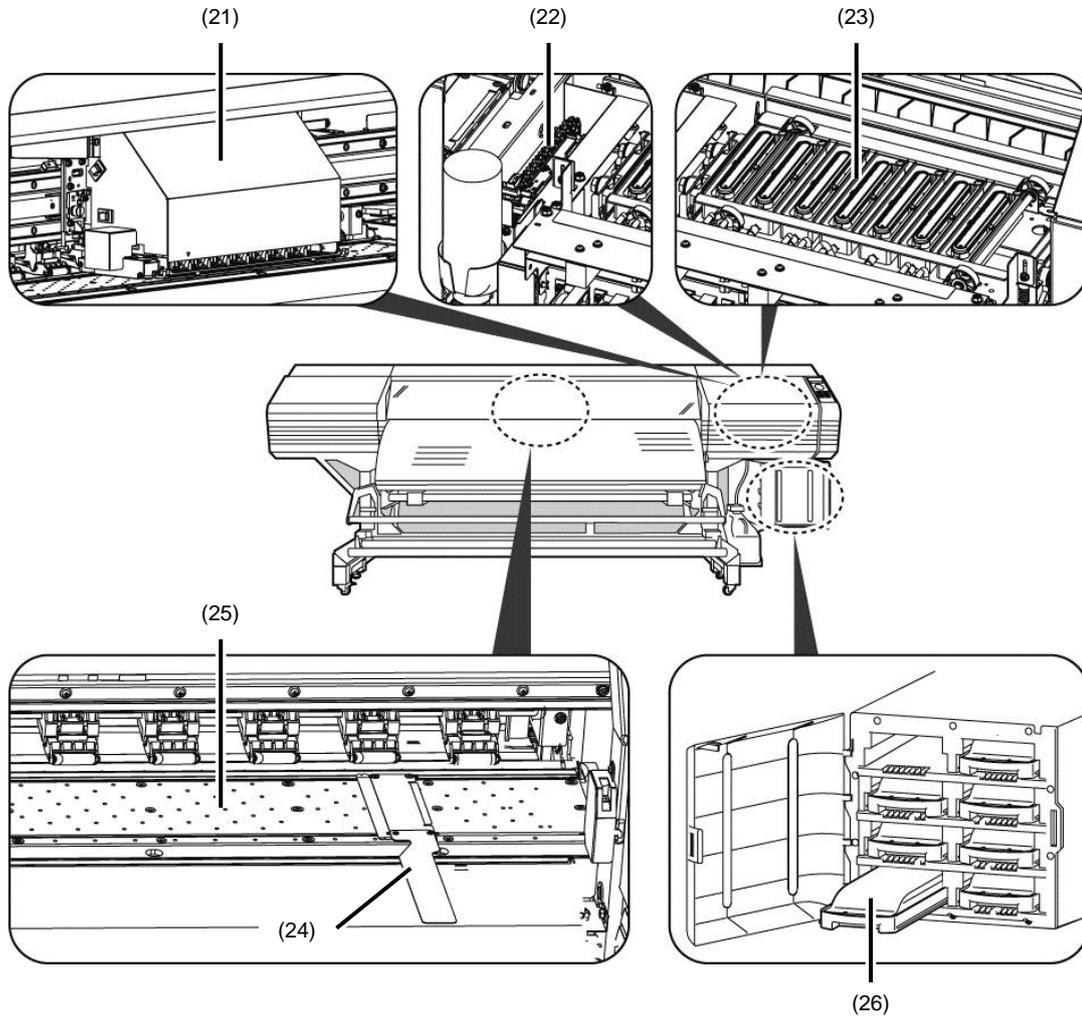
### 1.3.2 Rear view



- (12) Power inlet
- (13) Printer power switch
- (14) USB connector
- (15) Media holder
- (16) Media jack
- (17) Media support
- (18) Caster
- (19) Pressure roller lever                      Moves together with the pressure roller lever at the printer front side.
- (20) Installation locations for  
exhaust attachment (option)

**Figure 1.3 External view and part names (rear)**

### 1.3.3 Inner parts view

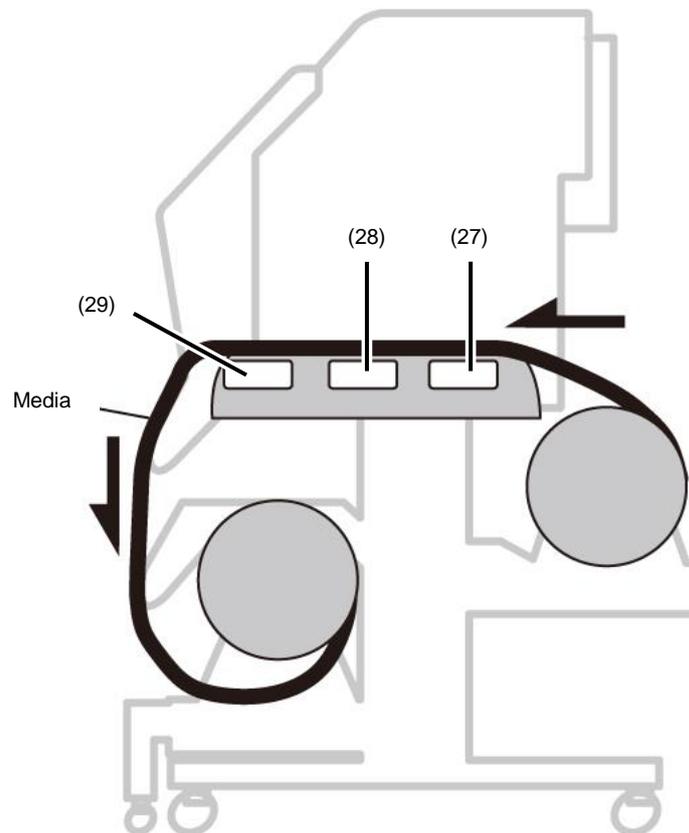


- (21) Carriage
- (22) Wiping unit
- (23) Capping unit
- (24) Media edge guards
- (25) Platen
- (26) Ink tray

Figure 1.4 External view and part names (printer interior)

### 1.3.4 Printer heater section

The printer is equipped with three heaters to fix ink on the print media and stabilize the print quality.



- (27) Preheater
- (28) Printhead
- (29) Afterheater

\* These three heaters are controlled individually.

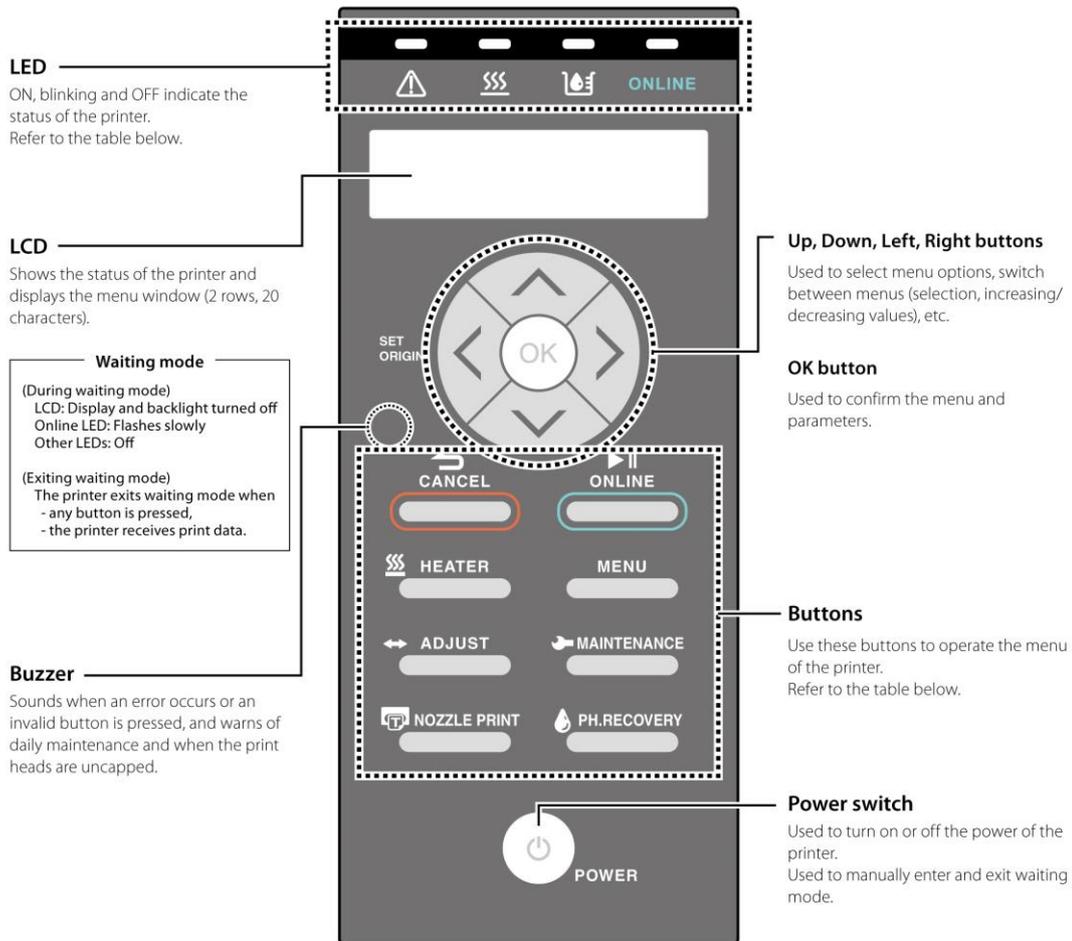
**Figure 1.5 Heater names and locations (sectional view)**

**Note**

Be careful about the hot surfaces of the heaters.

### 1.3.5 Operation panel

The buttons, LEDs and LCD are placed on the operation panel of the printer as shown below. The buzzer is used to notify the operator when an error occurs or an invalid button is pressed. The printer enters waiting mode if it is not used for a given length of time.



LED		Buttons	
	Indicates whether an error has occurred. ON: An error has occurred. Blink: Warning state. OFF: Normal (no error)		Cancels entered parameters or returns back to the upper menu.
<b>Error LED (Orange)</b>			Switches between online and offline states, and puts the printer in pause or resumes printing.
	Indicates the status of the media heater. - ON: The set temperature has been reached - Blink: Currently heating - OFF: Media heater is off		Enters heater control menu.
<b>Media heater LED (Green)</b>			Used to display information about the printer and change printer settings.
	Indicates whether ink is remaining. ON: Ink for all colors is present. Blink: Ink near-end (The level of any color is low.) OFF: No ink.		Used to enter the adjustment menu.
<b>Ink LED (Green)</b>			Used to enter the maintenance menu.
	Indicates the online, offline, data reception, and pause status. - ON: Online - Blink (slowly): In pause - Blink (fast): Data reception - OFF: Offline		Used to perform a nozzle print.
<b>ONLINE LED (Green)</b>			Used to enter the cleaning menu.

Figure 1.6 Operation panel

## 1.3.6 Options

### - Exhaust attachment (option)

A unit used to install the exhaust air duct to the printer.

### - 2 inch flange (option)

A flange used to install media rolls with 2-inch cores.

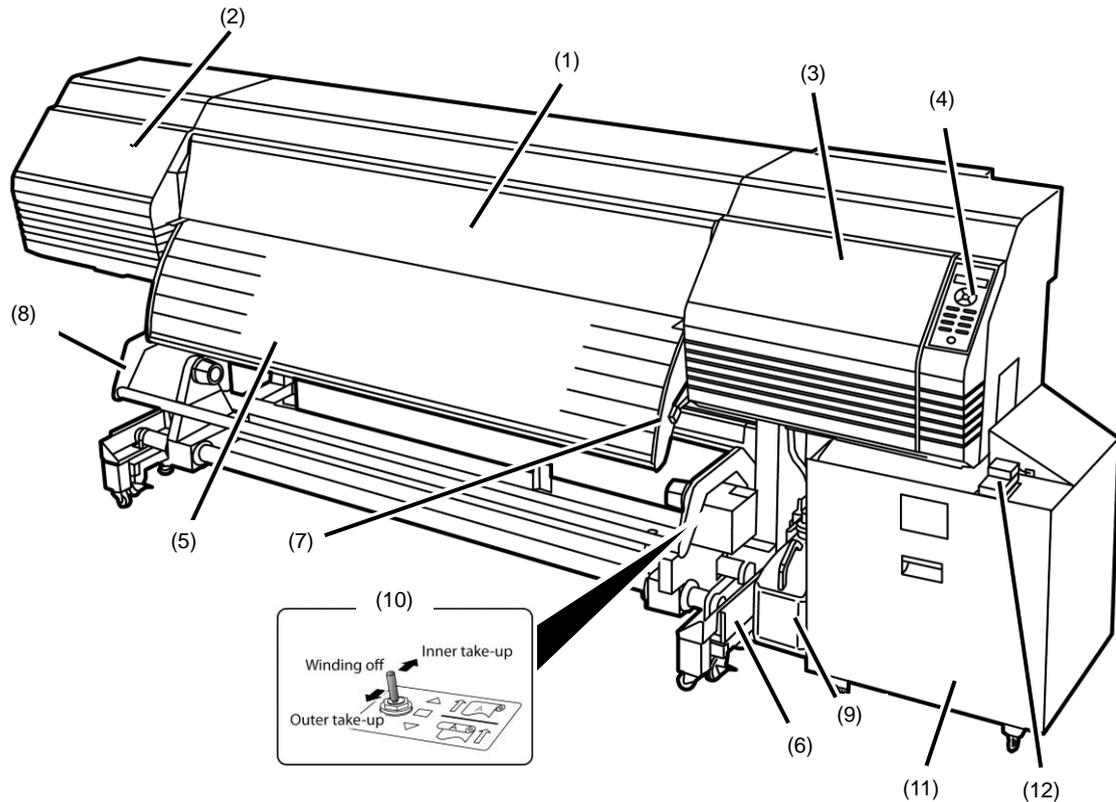
### - Cutter unit (option)

A unit used to cut the printed media manually.

## 1.4 External Views and Part Names (LCIS model)

Figures 1.7 and 1.8 show the external view of the printer and the part names.

### 1.4.1 Front view

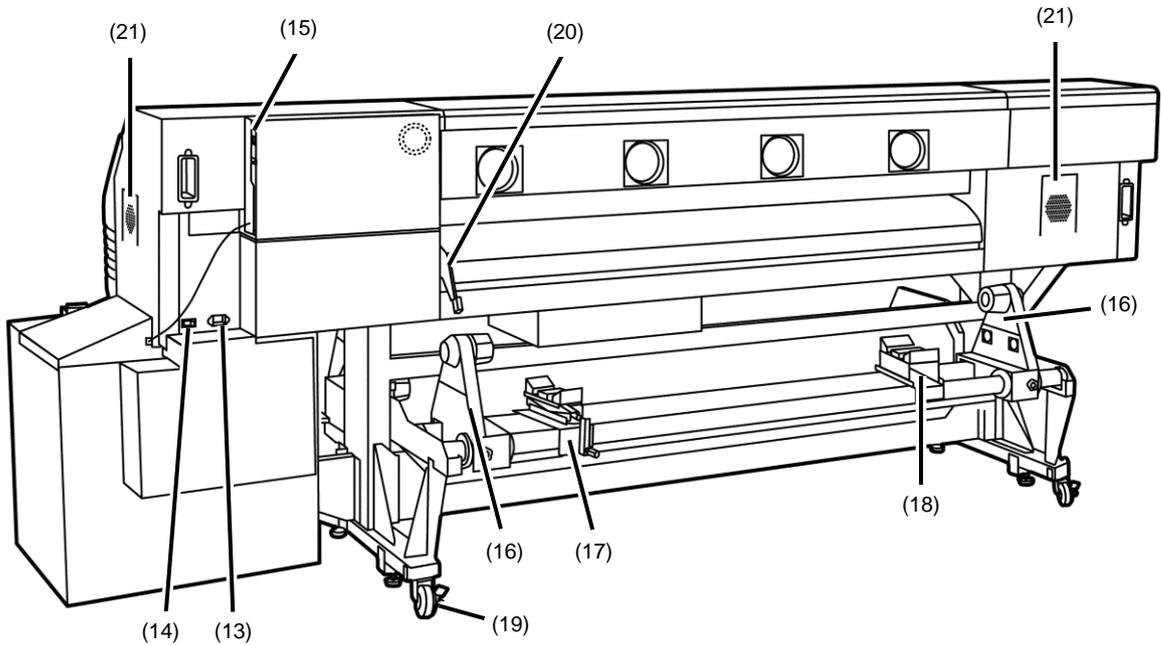


- (1) Front cover
- (2) Maintenance cover
- (3) Capping cover
- (4) Operation panel
- (5) Output paper guide
- (6) Take-up reel unit
- (7) Pressure roller lever
- (8) Guide bar
- (9) Waste ink bottle
- (10) Take-up direction switch
- (11) LCIS unit
- (12) Chip reader

Moves together with the pressure roller lever at the printer rear side.

**Figure 1.7 External view and part names (front)**

### 1.4.2 Rear view

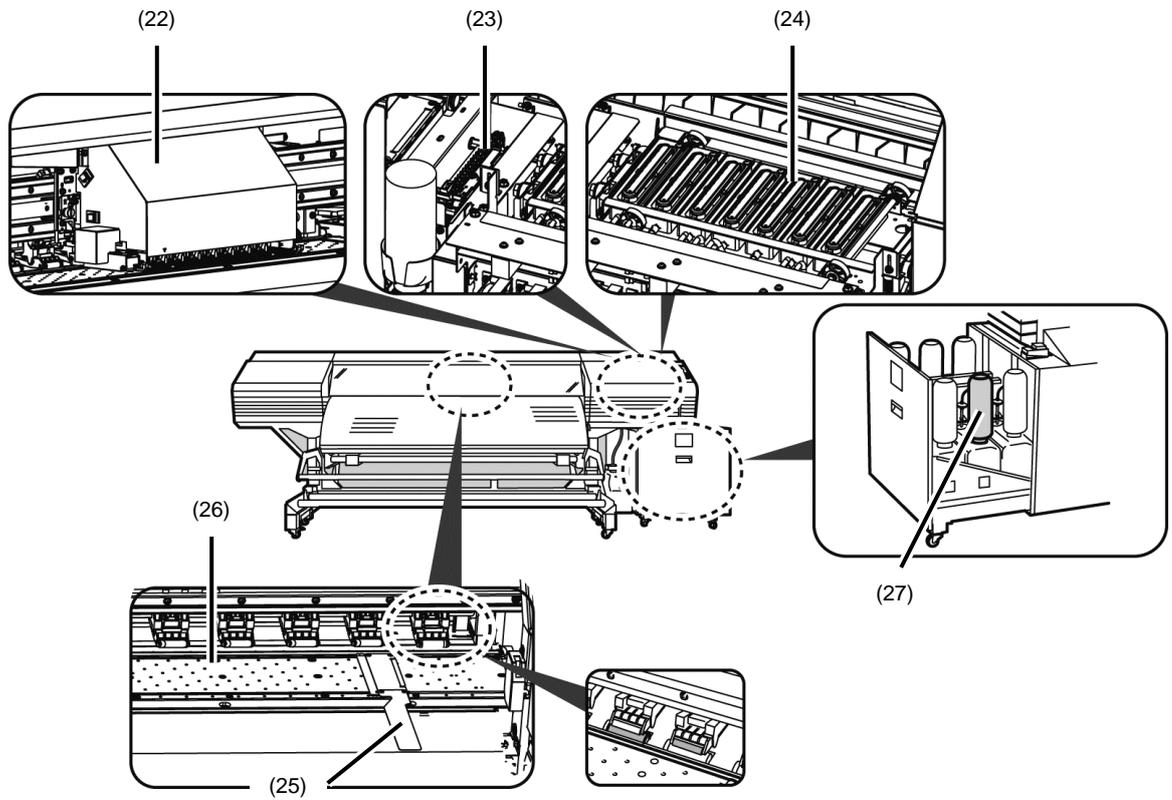


- (13) Power inlet
- (14) Printer power switch
- (15) USB connector
- (16) Media holder
- (17) Media jack
- (18) Media support
- (19) Caster
- (20) Pressure roller lever
- (21) Installation locations for exhaust attachment (option)

Moves together with the pressure roller lever at the printer front side.

**Figure 1.8 External view and part names (rear)**

### 1.4.3 Inner parts view

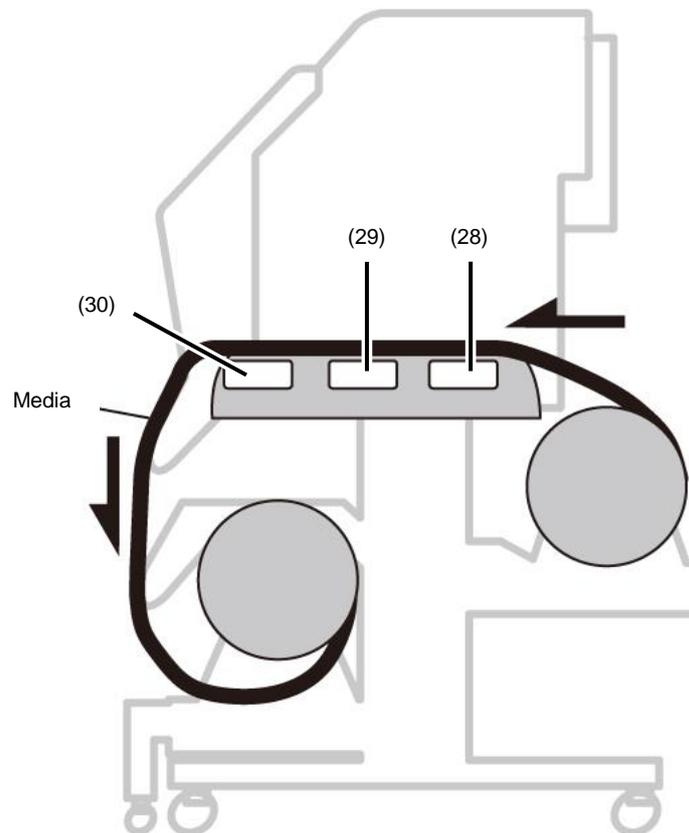


- (22) Carriage
- (23) Wiping unit
- (24) Capping unit
- (25) Media edge guards
- (26) Platen
- (27) Ink bottle

Figure 1.9 External view and part names (printer interior)

#### 1.4.4 Printer heater section

The printer is equipped with three heaters to fix ink on the print media and stabilize the print quality.



- (28) Preheater
- (29) Printhead
- (30) Afterheater

\* These three heaters are controlled individually.

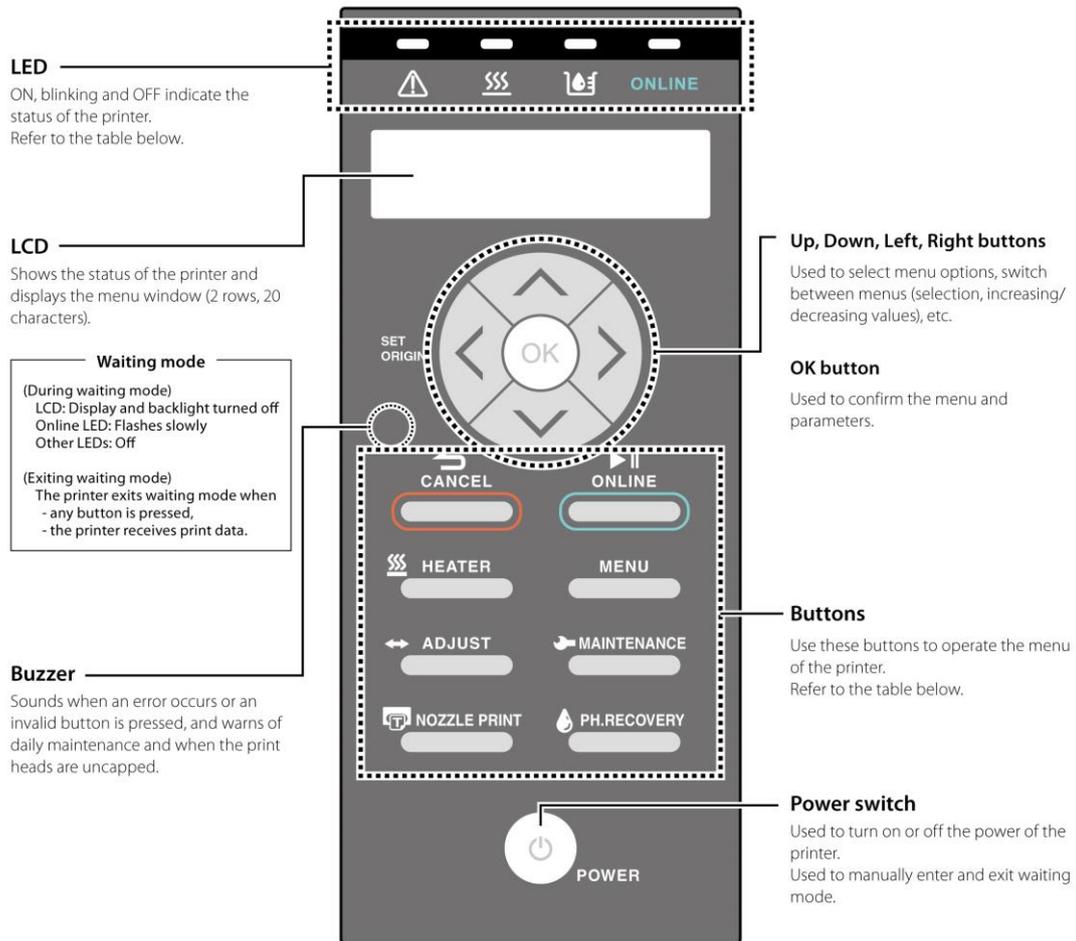
**Figure 1.10 Heater names and locations (sectional view)**

**Note**

Be careful about the hot surfaces of the heaters.

### 1.4.5 Operation panel

The buttons, LEDs and LCD are placed on the operation panel of the printer as shown below. The buzzer is used to notify the operator when an error occurs or an invalid button is pressed. The printer enters waiting mode if it is not used for a given length of time.



LED		Buttons	
	Indicates whether an error has occurred. ON: An error has occurred. Blink: Warning state. OFF: Normal (no error)		Cancels entered parameters or returns back to the upper menu.
<b>Error LED (Orange)</b>			Switches between online and offline states, and puts the printer in pause or resumes printing.
	Indicates the status of the media heater. - ON: The set temperature has been reached - Blink: Currently heating - OFF: Media heater is off		Enters heater control menu.
<b>Media heater LED (Green)</b>			Used to display information about the printer and change printer settings.
	Indicates whether ink is remaining. ON: Ink for all colors is present. Blink: Ink near-end (The level of any color is low.) OFF: No ink.		Used to enter the adjustment menu.
<b>Ink LED (Green)</b>			Used to enter the maintenance menu.
	Indicates the online, offline, data reception, and pause status. - ON: Online - Blink (slowly): In pause - Blink (fast): Data reception - OFF: Offline		Used to perform a nozzle print.
<b>ONLINE LED (Green)</b>			Used to enter the cleaning menu.

Figure 1.11 Operation panel

## 1.4.6 Options

### - Exhaust attachment (option)

A unit used to install the exhaust air duct to the printer.

### - 2 inch flange (option)

A flange used to install media rolls with 2-inch cores.

### - Cutter unit (option)

A unit used to cut the printed media manually.

## 1.5 Maintenance Space

Figure 1.12 shows space required for the printer maintenance.

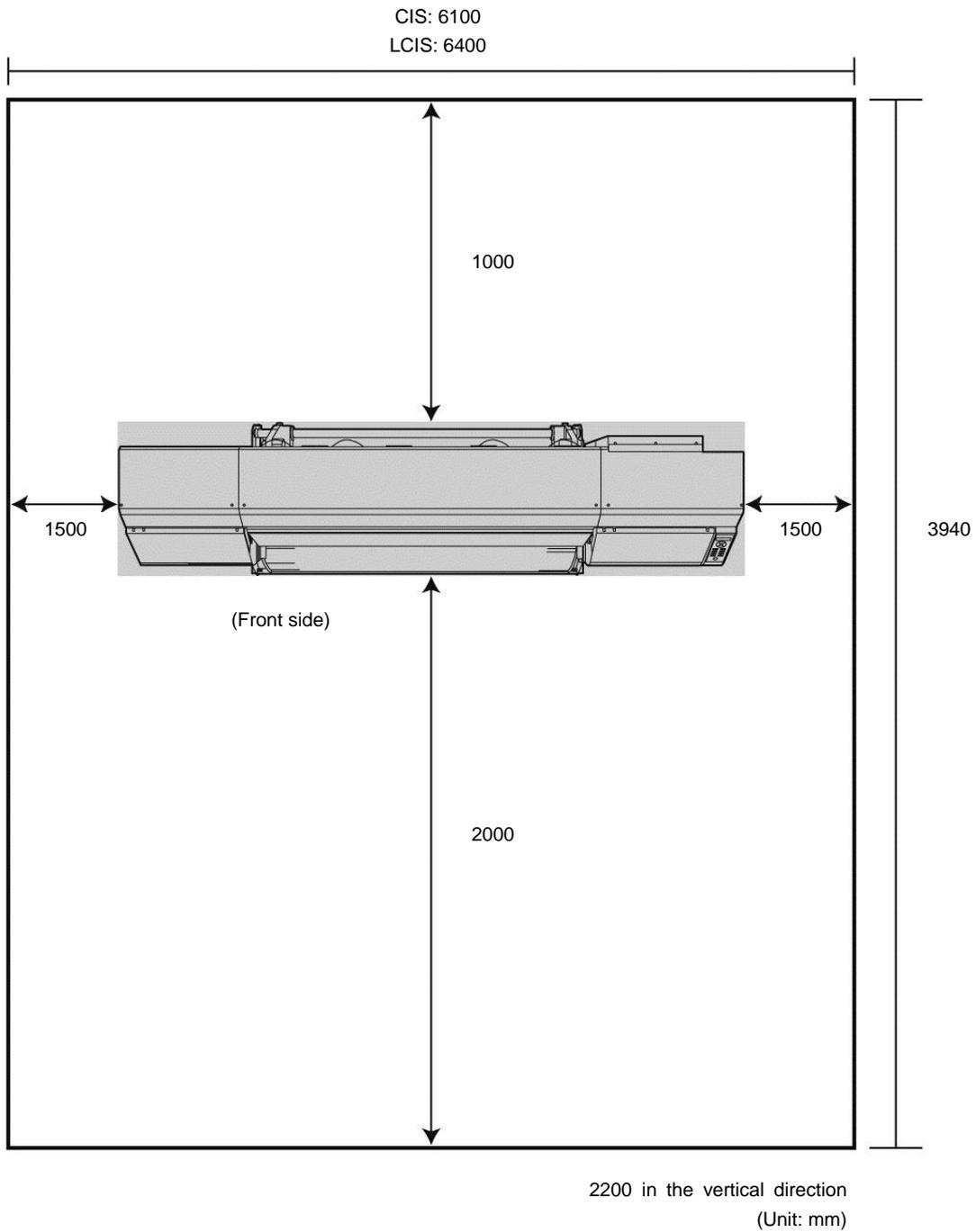


Figure 1.12 Maintenance space

## Chapter 2 Inspection and Maintenance

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This chapter describes periodic inspection and periodic maintenance operations.

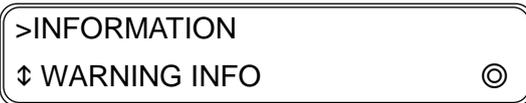
### 2.1 Periodic Inspection and Maintenance Guideline

The printer requires periodic inspection and maintenance. Confirming the maintenance execution rate and perform the operations listed below. If the execution rate is low, advise the user to perform the maintenance operations.

#### 2.1.1 How to check the daily maintenance execution rate

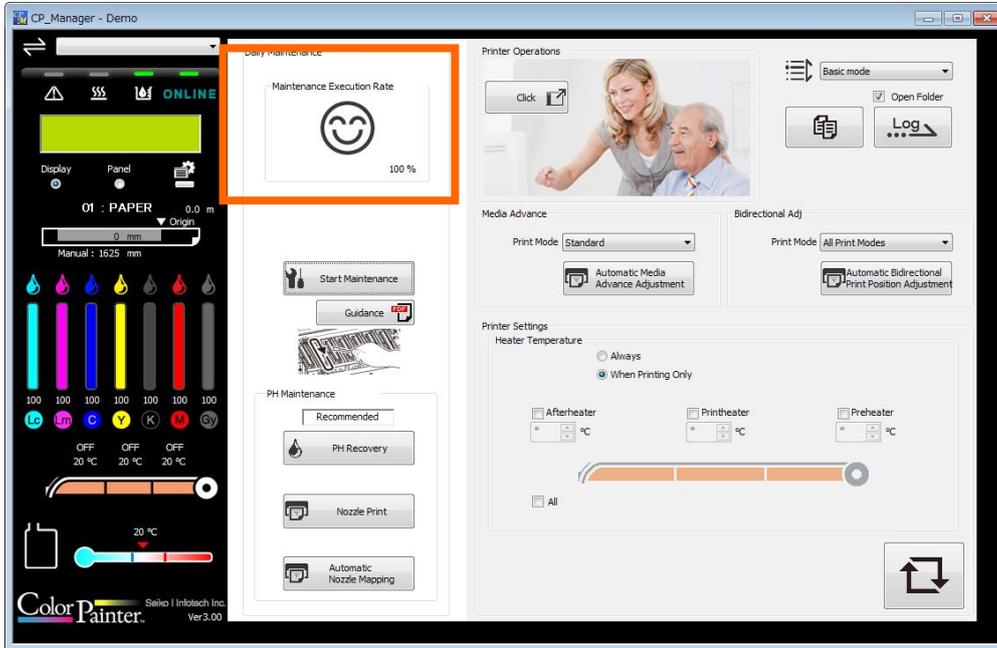
Daily maintenance execution rate can be checked on the printer operation panel and CP\_Manager.

##### <Procedure to check the daily maintenance execution rate on the operation panel>

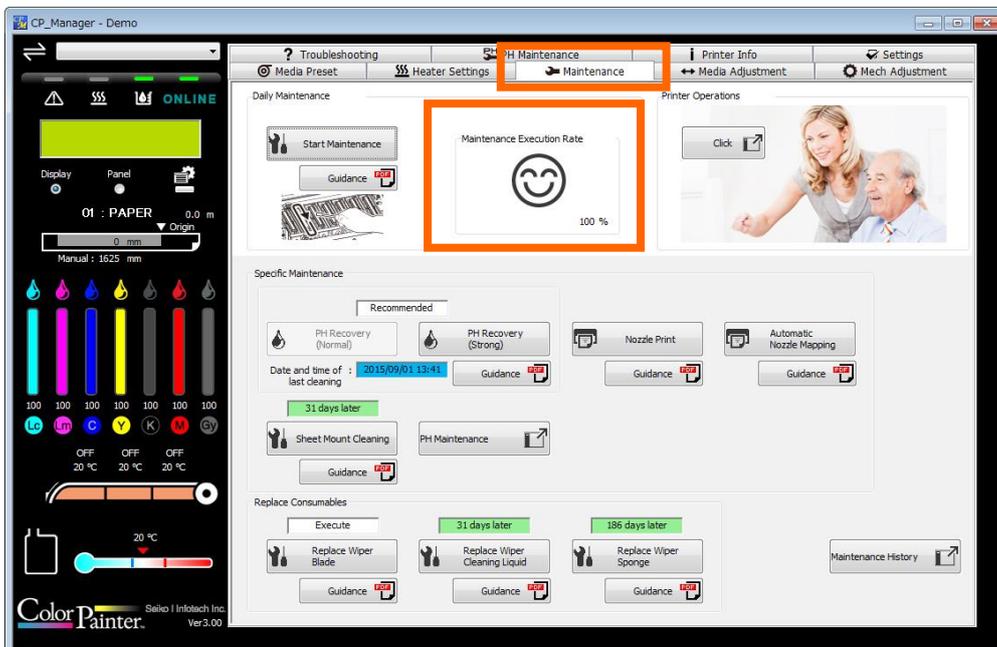
- 1 Confirm that the printer is not currently printing and press the **MENU** button.
- 2  Press the **OK** button.  
 MENU  
 ↓ INFORMATION
- 3  Press the **Down** button.  
 >INFORMATION  
 ↓ WARNING INFO
- 4  Press the **OK** button.  
 >INFORMATION  
 ↓ MAINTENANCE INFO
- 5  Press the **OK** button.  
 >>MAINTENANCE INFO  
 ↓ MAINT EXECUT RATE
- 6  The maintenance execution rate is displayed.  
 >>>MAINT EXECUT RATE  
 ↓ XXX%

<Procedure to check the daily maintenance execution rate on CP\_Manager>

- In Basic mode



- In Advanced mode  
Select the **Maintenance** tab.



## 2.1.2 Regular inspection and maintenance operations

The inspection and maintenance operations are as follows. Refer to the *User's Guide* for more information.

- Daily maintenance
  - Media installation
  - Start maintenance (capping unit cleaning and normal cleaning)
  - Waste ink bottle check and replacement
  - Wiper cleaning liquid check and supply
  - Wiper blade cleanliness check and replacement
- Maintenance when a message is displayed
  - Waste ink bottle replacement
  - Wiper cleaning liquid supply
  - Wiper blade replacement
  - Wiper sponge replacement
  - Sheet mount cleaning
- Maintenance when the printer is dirty
  - Printer cleaning  
(Edge guard cleaning, head guard cleaning, platen cleaning, paper guide cleaning, pressure roller cleaning and front cover cleaning)

## 2.2 Maintenance when the Printer is Turned Off for more than One Month

See 5.5.24 System Error 2010: Long-term Storage Error.

## 2.3 Replacement of Parts

Refer to the *User's Guide* to replace the following parts.

- Wiper blades (rubber and sponge)
- Wiper sponge
- Wiper cleaning liquid

## 2.4 Cleaning

If the printer exterior is dirty, clean it with a soft cloth moistened with water or a solution neutral detergent diluted in water.

### Notes

- Always turn the printer off before cleaning.
- Never use volatile solvents such as thinner and benzene, as they may degrade the printer surfaces or cause the painting to peel off.

## 2.5 Cleaning of the Front Cover and Media Feed and Output Parts

Remove the dust and the paper particles with a vacuum cleaner. If these parts are very dirty, wipe them with a soft cloth moistened with water or a water-diluted neutral detergent. Only the metal parts without paint can be cleaned with a soft cloth moistened with cleaning liquid.



### Notes

- Always turn the printer off before cleaning.
- Do not blow out paper particles. If paper particles or dust get inside the printer, it may cause a malfunction or affect the print quality.

## 2.6 Platen Cleaning

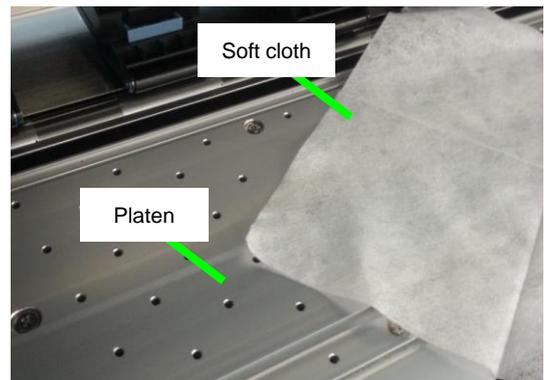
Use the following procedure to clean the platen if

- vinyl chloride adhesive gets on the platen; or
- ink drops on the platen.

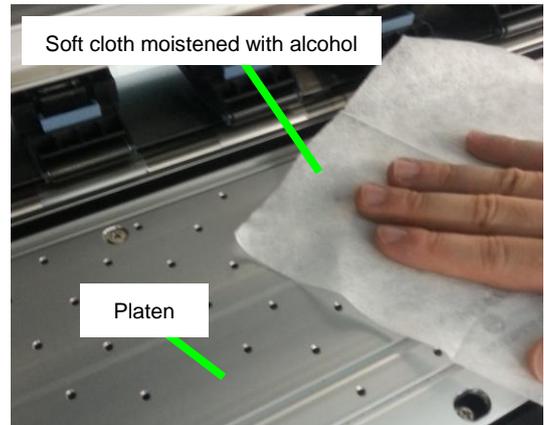
(The procedure to clean ink stains is explained below.)

1. Open the front cover and put a soft cloth onto ink stains on the platen to soak them up.

Be careful not to spread the ink on the platen.

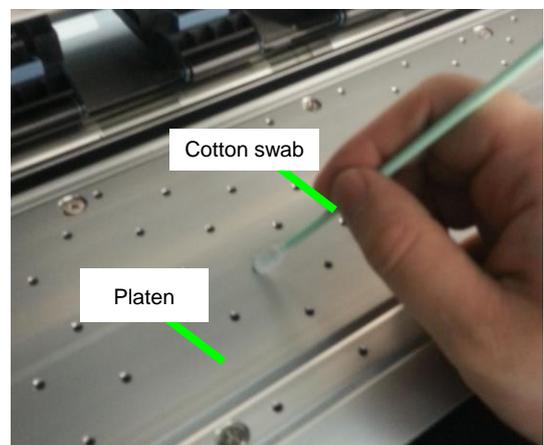


2. Wipe off the ink marks on the platen with a soft cloth moistened with alcohol.



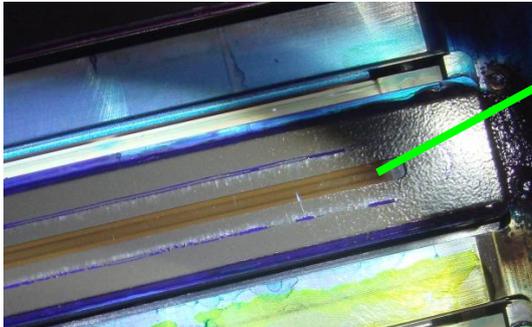
3. If ink enters vacuum holes on the platen, clean the holes with a commercially available cotton swab, and then wipe clean with a cotton swab moistened with alcohol.

\* Use a cotton swab of 3 mm in diameter.



## 2.7 Print Head Cleaning

Clean the print heads when their surfaces are dirty, as shown in the picture below.



Clean the print heads when the three conditions below are met.

- After cleaning, random print defects appear on the nozzle print pattern;
- The user has not performed daily maintenance or sheet mount cleaning; and
- Event after cleaning, the ink has dried and forms continuous lines following the contours of the cap.

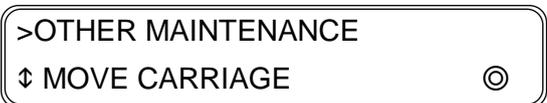
1. Press the **MAINTENANCE** button.



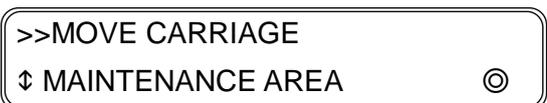
2. Select **OTHER MAINTENANCE** with the **Down** button, and the press the **OK** button.



3. Select **MOVE CARRIAGE** with the **Down** button, and the press the **OK** button.



4. Select **MAINTENANCE AREA** with the **Down** button, and the press the **OK** button.



5. Press the **OK** button.

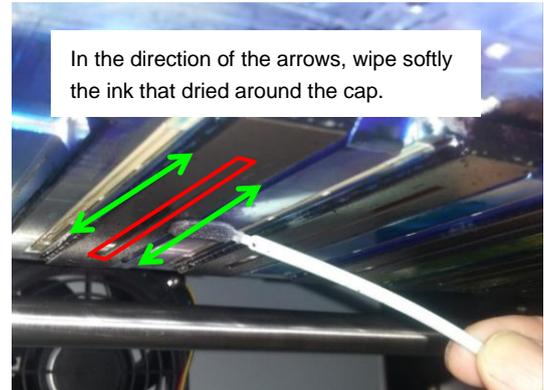


6. After the carriage has stopped moving, open the COVER(CENTER)-F and COVER(L)ASSY-MW in that order.

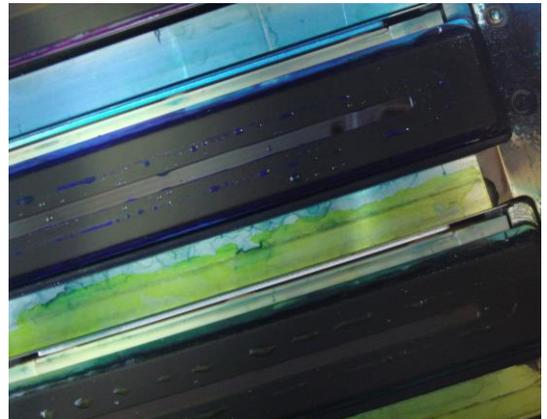
7. Moisten a cleaning swab with wiper cleaning liquid, and with it wipe softly the parts covered with ink.

**Note**

Never touch the part shown in the red frame in the picture to the right (the part with the glossy surface).  
If the surface is damaged, it may cause print defects.



8. When the ink has dissolved and is not forming continuous lines as shown in the picture, the cleaning is finished.



9. Close the COVER(L)ASSY-MW and COVER(CENTER)-F in that order.
10. The carriage returns to the home position.
11. Execute a normal cleaning.

## 2.8 Changing the Printer Specifications from 6 Colors to 7 Colors (CIS)

The printer's ink color quantity can be changed from 6 to 7 during the period below:

- the first year of use after the installation; and
- accumulated print length is 10 km or less.

Change the color specifications following the procedure below.

1. Replace the PUMP-F-ASSY(MW) for the seventh color (Gy) with a new one (see **6.10.4** for the procedure).
2. Replace the CAP-ASSY(MW) for the seventh color (Gy) with a new one (see **6.10.5** for the procedure).
3. Replace the SUPPLYPUMP-UNIT(MW) for the seventh color (Gy) with a new one (see **6.12.5** for the procedure).
4. Change the number of ink colors to seven colors (see **3.4.1.2 (10)** for the procedure).
5. Prime the ink system with Gy ink (see **3.4.3.1 (4)** for the procedure).

## 2.9 Parts Requiring Periodic Replacement

Parts requiring periodic replacement are those that wear with the printer's normal operation. As preventive maintenance, we recommend their regular replacement.

**Table 2-1 Parts that require periodic replacement**

	Part name	Part code	Timing of replacement warnings *2		Remark
			Total print length 0 to 50 km	Total print length 51 to 100 km	
1	PUMP-TUBE-ASSY (supply pump tube)	U00130797000	160h warning is displayed 180h error	Same as on the left	Replace when the warning is displayed.
2	CAP, MW	U00131094001	3 years	Same as on the left	Can be replaced only when malfunctioning *1
3	MOTOR(CAP)-UD	U00112511200	2 years	Same as on the left	Can be replaced only when malfunctioning *1
4	PUMP F ASSY, MW	U00130624700	180h	Same as on the left	Can be replaced only when malfunctioning *1
5	Y-DRIVE- MOTOR-ASSY	U00130619200	17 km	Same as on the left	Can be replaced only when malfunctioning *1
6	DRIVING PULLEY UNIT, MW	U00130614600	3 years	Same as on the left	Can be replaced only when malfunctioning *1
7	SUPPLY PUMP, MW, LCIS, Lc-Y (supply pump assy)	U00132600300	160h warning is displayed 180h error	Same as on the left	Replace when the warning is displayed. (LCIS model)
8	SUPPLY PUMP, MW, LCIS, Lm-K (supply pump assy)	U00132601400	160h warning is displayed 180h error	Same as on the left	Replace when the warning is displayed. (LCIS model)
9	SUPPLY PUMP, MW, LCIS, C-M (supply pump assy)	U00132602500	160h warning is displayed 180h error	Same as on the left	Replace when the warning is displayed. (LCIS model)
10	Other parts		Depends on the printer conditions	Same as on the left	Can be replaced only when malfunctioning *1

\*1 Not covered by the guarantee

\*2 Covered by the guarantee if malfunctioning before the warning

# Chapter 3 Maintenance Mode Functions and Operations

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## 3.1 Introduction

Functions available on the printer operation panel are classified as follows.

- User mode: Functions used by standard users
- Maintenance mode: Functions used for initial adjustments at the factory and field maintenance

This chapter describes only operations in the maintenance mode used for initial adjustments and field maintenance.

For operations in the user mode for standard users, refer to the *User's Guide*.

## 3.2 Maintenance Mode Operations

### 3.2.1 On the operation panel

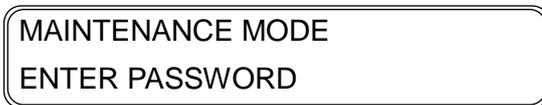
(1) **Enter the maintenance mode**

With the printer in the offline state in the user mode, press the following button sequence to display the password entry screen.

**CANCEL → Right → CANCEL → CANCEL**

(When the last **CANCEL** button is pressed, the buzzer indicating an invalid key sounds.

However, the password entry screen is displayed.)



(2) **Enter the password**

The password depends on the operation mode as follows.

Operation mode	Password
Maintenance mode	Press the following button sequence. <b>MENU → Up → Down → Right</b>

**In maintenance mode, operators have access to the necessary menus for on-site maintenance such as nozzle check, sensor monitoring, and print head information.**

The following screen is displayed after the password has been entered correctly.

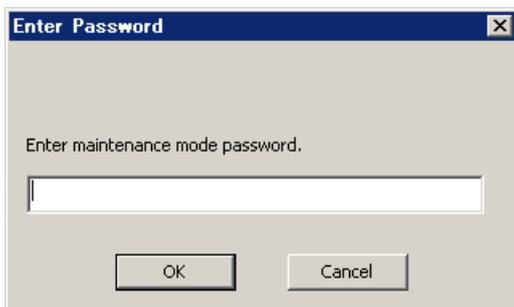
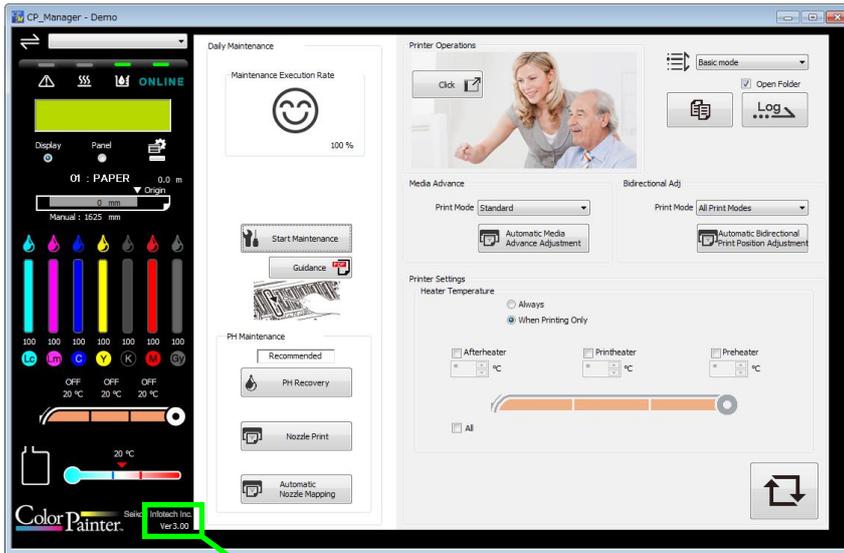


### 3.2.2 On CP\_Manager

(1) Enter the maintenance mode

Click on **Ver X.XX** on the bottom left corner of the CP\_Manager screen while holding the **Ctrl** key to display the password entry screen. Then enter the password.

(You can perform this operation with **Display** or **Panel** radio button selected, in the both Basic and Advanced modes.)



Operator	Password
Maintenance operator (primary)	CSCCSUDR (All characters should be capitalized.)

## 3.3 Basic Menu Operations

The structure of each menu is shown below.

### 3.3.1 Menu tree

The menu tree of maintenance mode contains various maintenance items in addition to the user menu tree (top menus have also been added).

The menu items structure is shown in the tables below with the differences between the maintenance mode and user mode clearly indicated.

\* **Items highlighted in yellow** are displayed and operated only in the maintenance mode.

\* **Items highlighted in cyan** can only be displayed and operated from the operation panel, not from CP\_Manager.

Panel button	Description
<b>MENU</b> button	Used to display various information items and the system settings. The displayed menu items differ on printing and in the other states.
<b>ADJUST</b> button	Used to display the adjustment items, such as bidirectional adjustment, advance adjustment, and mechanical adjustment.
<b>MAINTENANCE</b> button	Used to display the maintenance items, such as start maintenance and cap maintenance.
<b>NOZZLEPRINT</b> button	<ul style="list-style-type: none"> <li>- Used to perform nozzle print (before system firmware ver. 3.00).</li> <li>- Used to perform automatic nozzle map. This function can be executed without any menu selection (system firmware ver. 3.00 and later).</li> </ul>
<b>PH.RECOVERY</b> button	Used to perform normal or strong cleaning.

### 3.3.1.1 MENU button

Used to display various information items and the system settings.

The displayed menu items differ on printing and in the other states.

<When printing>

Warning information	
	Warning 1
	Warning 2 (when the printer emits a warning)
	Warning 3 (when the printer emits a warning)
	Warning 4 (when the printer emits a warning)
	(Followed by other warnings if any)
Ink information	
	Number of bottles that can be supplied (LCIS model only)
	Remaining ink
	Lc
	Lm
	C
	Y
	K
	M
	Gy (7-color CIS model only)
	Ink manufacturing date (CIS model only)
	Lc
	(some menus are omitted below)
	Amount of ink that can be used (LCIS model only)
	Ink waste percent
Current print job	
	Progress
	Required time
	Productivity
Remaining media	
Print length	
Total print length	

<When not printing>

Information	
	Warning information
	Ink information
	Number of bottles that can be supplied (LCIS model only)
	Remaining ink
	Lc
	Lm
	C
	Y
	K
	M
	Gy (7-color CIS model only)
	Ink manufacturing date (CIS model only)
	Lc
	(some menus are omitted below)
	Ink waste percent
	Total used ink
	Lc
	(some menus are omitted below)
	Remaining media
	Print length
	Total print length
	Maintenance information
	Maintenance execution rate
	XXX%
	Cleaning date & time
	Most recent
	Second
	Third
	Fourth
	Fifth
	Printer ink system
	Version information
	Boot
	FW
	IPB
	ACT
	HCB
	BTC
	ATG
	RSM
	PTG
	ABC
	USB information
	Address
	Speed

	Print head information	
	Print head color	
		Manufacturing date
		Serial number
		Voltage rank A
		Voltage rank B
		Installed on:
		Printed dots
		Number of jams
		Color history
		Print head type
	Check sensors	
	Printer sensors	
		Edge
		Home position
		Cap position
		Wiper position
		Supply side media
		Output side media
		Roll end
		Lever
		Front cover (R)
		Front cover (L)
		Waste ink bottle
		Auto adjust R
		Auto adjust G
		Auto adjust B
		Ionizer (+)
		Ionizer (-)
	Ink system sensors	
		Ink box cover
		Reservoir drawer (LCIS model only)
		Ink supply pump 1
		Ink supply pump 2
		Ink supply pump 3
		Ink supply pump 4
		Ink supply pump 5
		Ink supply pump 6
		Ink supply pump 7
		Ink tray 1
		Ink tray 2
		Ink tray 3
		Ink tray 4
		Ink tray 5
		Ink tray 6
		Ink tray 7
		Subtank full 1

			Subtank full 2
			Subtank full 3
			Subtank full 4
			Subtank full 5
			Subtank full 6
			Subtank full 7
			Subtank end 1
			Subtank end 2
			Subtank end 3
			Subtank end 4
			Subtank end 5
			Subtank end 6
			Subtank end 7
			Remaining ink 1 (LCIS model only)
			Remaining ink 2 (LCIS model only)
			Remaining ink 3 (LCIS model only)
			Remaining ink 4 (LCIS model only)
			Remaining ink 5 (LCIS model only)
			Remaining ink 6 (LCIS model only)
			TUR sensors
			TUR drawer R
			TUR drawer L
			Slack upper limit
			Slack lower limit
			Function switch 1
			Function switch 2
			Thermistors
			Ambient temperature
			Preheater
			Printheater
			Afterheater
			Print head 1
			Print head 2
			Print head 3
			Print head 4
			Print head 5
			Print head 6
			Print head 7
			Print head IC 1A
			Print head IC 1B
			Print head IC 2A
			Print head IC 2B
			Print head IC 3A
			Print head IC 3B
			Print head IC 4A
			Print head IC 4B
			Print head IC 5A

			Print head IC 5B
			Print head IC 6A
			Print head IC 6B
			Print head IC 7A
			Print head IC 7B
Ink amount extension (LCIS model only)			
	Available ink amount (LCIS model only)		
	Read extension chip (LCIS model only)		
	Check chip data (LCIS model only)		
Change preset			
Edit media presets			
	Select preset number		
	Edit preset name		
	Media advance priority		
	Media advance adjustment value		
	Bidirectional adjustment value 1		
		Lc_L	
		Lc_R	
		Lm_L	
		Lm_R	
		C_L	
		C_R	
		Y_L	
		Y_R	
		K_L	
		K_R	
		M_L	
		M_R	
		Gy_L (with 7-color printers only)	
		Gy_R (with 7-color printers only)	
	Bidirectional adjustment value 2		
		Lc_L	
		Lc_R	
		(some menus are omitted below)	
	Bidirectional adjustment value 3		
		Lc_L	
		Lc_R	
		(some menus are omitted below)	
	Bidirectional adjustment value 4		
		Lc_L	
		Lc_R	
		(some menus are omitted below)	
	Heater priority		
	Afterheater temperature		
	Printheater temperature		
	Preheater temperature		
	Delete preset		

	Copy media preset
	Miscellaneous settings
	Remaining media
	Ionizer
	TUR mode
	Edge guards
	Skew check
	Color stripe
	Suction fan power
	Media advance mode
	Media back mode
	Auto PH cleaning
	Print head rest interval
	Print head rest time
	Carriage speed
	Detect media width (system firmware ver. 3.00 and later only)
	Detect media (system firmware ver. 3.00 and later only)
	Remaining media monitoring (system firmware ver. 3.00 and later only)
	Set remaining media
	Print remaining media (system firmware ver. 3.00 and later only)
	Unwind media
	Setting
	System
	Subscription code
	Language
	Date format
	Time zone
	Length unit
	Temperature unit
	Warning sound
	PH uncapped
	TUR open/timeout
	Ink errors
	Part replacement warning
	Detect media width (before system firmware ver. 3.00 only)
	Detect media (before system firmware ver. 3.00 only)
	Jam detection sensitivity
	Nozzle sweeping
	Set all settings to default
	Date setting
	Time setting
	Serial number
	Initialize EEPROM
	Save default settings
	Load default settings
	Save printer settings
	Load printer settings

		Number of colors (CIS model only)
		Ink system status
		Media heater settings
		Print end heating
		Standby time
		Standby temperature
		Actuators
		Heaters
		Media heaters
		Print head heaters
		Fans
		Rear fans
		Carriage fans
		Exhaust fan
		Suction fan 1
		Suction fan 2
		Suction fan 3
		Suction fan 4
		Motors
		Pump/Wipe motor
		Cap motor
		TUR unit motor
		Ink supply motor 1
		Ink supply motor 2
		Ink supply motor 3
		Ink supply motor 4
		Ink supply motor 5
		Ink supply motor 6
		Ink supply motor 7
		Solenoids
		Air release solenoid 1
		Air release solenoid 2
		Air release solenoid 3
		TUR electromagnetic clutch
		LEDS
		LED for red
		LED for green
		LED for blue
		Ionizers
		Printer power

### 3.3.1.2 ADJUST button

Used to display the adjustment items, such as bidirectional adjustment, advance adjustment, and mechanical adjustment.

Media advance adjustment	
Media advance automatic	
	Draft (LCIS model only)
	Fast production
	Production
	Standard
	Quality
	High quality
	Max quality
Media advance manual	
Draft (LCIS model only)	
	1 pattern
	3 patterns
	Feed media
	Back feed media
Fast production	
	1 pattern
	3 patterns
	Feed media
	Back feed media
Production	
	1 pattern
	3 patterns
	Feed media
	Back feed media
Standard	
	1 pattern
	3 patterns
	Feed media
	Back feed media
Quality	
	1 pattern
	3 patterns
	Feed media
	Back feed media
High quality	
	1 pattern
	3 patterns
	Feed media
	Back feed media
Max quality	

			1 pattern
			3 patterns
			Feed media
			Back feed media
			Media advance adjustment value
Bidirectional position adjustment			
			Bidirectional adjustment automatic
			1: DRA,FAST PR,PRO (CIS), 1: FAST PRO, PRO (LCIS)
			2: STD & QUALITY
			3: HIGH QUALITY
			4: MAX QUALITY
			Bidirectional adjustment manual
			1: DRA,FAST PR,PRO (CIS), 1: FAST PRO, PRO (LCIS)
			Print pattern
			Feed media
			Back feed media
			Bidirectional adjustment value Lc_L
			Bidirectional adjustment value Lc_R
			Bidirectional adjustment value Lm_L
			Bidirectional adjustment value Lm_R
			Bidirectional adjustment value C_L
			Bidirectional adjustment value C_R
			Bidirectional adjustment value Y_L
			Bidirectional adjustment value Y_R
			Bidirectional adjustment value K_L
			Bidirectional adjustment value K_R
			Bidirectional adjustment value M_L
			Bidirectional adjustment value M_R
			Bidirectional adjustment value Gy_L (with 7-color printers only)
			Bidirectional adjustment value Gy_R (with 7-color printers only)
			2: STD & QUALITY
			(some menus are omitted below)
			3: HIGH QUALITY
			(some menus are omitted below)
			4: MAX QUALITY
			(some menus are omitted below)
			Print check pattern
			All print modes
			Print pattern
			Feed media
			Back feed media
			1: DRA,FAST PR,PRO (CIS), 1: FAST PRO, PRO (LCIS)
			(some menus are omitted below)
			2: STD & QUALITY
			(some menus are omitted below)
			3: HIGH QUALITY
			(some menus are omitted below)

		4: MAX QUALITY
		(some menus are omitted below)
Nozzle mapping configuration (system firmware ver. 3.00 and later)		
Smart nozzle mapping (before system firmware ver. 3.00)		
	Enter Lc	
		#01
		#02
		#03
		#04
		#05
		#06
		#07
		#08
		#09
		#10
	Enter Lm	
		#01
		#02
		(some menus are omitted below)
	(some menus are omitted below)	
Mechanical adjustment		
	Print head position adjustment	
		Print pattern
		Feed media
		Back feed media
	Enter print head adjustment value	
		Lc
		Lm
		C
		Y
		M
		Gy (with 7-color printers only)
	Enter right and left adjustment value	
		Lc
		Lm
		(some menus are omitted below)
	Nozzle position adjustment	
		Print pattern
		Feed media
		Back feed media
		Enter Lc
		Enter Lm
		(some menus are omitted below)
	Print head slant check	
		Print pattern
		Feed media
		Back feed media

	Adjustment check
	Print pattern
	Feed media
	Back feed media
	Edge sensor adjustment
	Print pattern
	Feed media
	Back feed media
	Edge sensor adjustment value
	Cap position adjustment value
	Wiping position adjustment value
	Remaining ink sensor adjustment (LCIS model only)
	Print head voltage offset
	Offset value Lc_L
	Offset value Lc_R
	Offset value Lm_L
	Offset value Lm_R
	Offset value C_L
	Offset value C_R
	Offset value Y_L
	Offset value Y_R
	Offset value K_L
	Offset value K_R
	Offset value M_L
	Offset value M_R
	Offset value Gy_L (with 7-color printers only)
	Offset value Gy_R (with 7-color printers only)

### 3.3.1.3 MAINTENANCE button

Used to display the maintenance items, such as start maintenance and cap maintenance.

Start maintenance	
Wiper maintenance	
	Replace blade
	Replace liquid
	Replace sponge
Print head maintenance	
	Sheet mount cleaning
	Clean for storage
	Clean print heads and ink system
	Prime ink system
	Drain ink (LCIS model only)
	Fill cap with ink
	Adjust print head height
	Set print head for check
	Nozzle check
	Replace print head
	Print head check pattern
	Prime one ink color
	Prime one print head
	Drain one ink color
	Prime filters (LCIS model only)
Other maintenance	
	Open cap
	Close cap
	Tightly close cap
	Move carriage
	Replace cap
Export data to USB	
Counters	
	Enter value
	Print length
	Total ink used
	Y motor
	Y motor pulley
	Cap motor
	Cap
	Suction pump cycles
	Ink pump cycles
	Reset counters
	Print length
	Total ink used
	Y motor

	Y motor pulley
	Cap motor
	Cap
	Suction pump cycles
	Ink pump cycles
	Subcartridge usage
Test patterns	
	Vertical stripes
	Print pattern
	Print mode
	Smart pass
	Direction
	Print length
	Number of copies
	Color
	Horizontal stripes
	Checkerboard
	Grid, 1-dot line
	Solid color
	Gradation
	Media advance accuracy
	Line width check
	Feed media
	Back feed media
Check pattern	
	Nozzle check
	Print head slant check
	Adjustment check
	Print head check pattern
	All print modes
	Check bidirection 1
	Check bidirection 2
	Check bidirection 3
	Check bidirection 4
	Feed media
	Back feed media

### 3.3.1.4 NOZZLE PRINT button

Used to perform nozzle print (before system firmware ver. 3.00).

Used to perform nozzle print and automatic nozzle map (system firmware ver. 3.00 and later).

NOZZLE PRINT
AUTO NOZZ MAP (before system firmware ver. 3.00)

### 3.3.1.5 PH. RECOVERY button

Used to perform normal or strong cleaning.

Normal
Strong

## 3.4 Menu Operation

This section describes details of operations in each menu.

However, explanations are given only for menu items specific to the maintenance mode. Refer to the *User's Guide* for explanations about the other menu items.

### Note

Temperature unit appearing in this section can be converted as follows:  
 Fahrenheit = (Celsius x 9/5) + 32 degrees

### 3.4.1 MENU

#### 3.4.1.1 INFORMATION

##### (1) TOTAL PRINT LENGTH

Press the **MENU** button, select **INFORMATION** with the **Up** and **Down** buttons, and then press the **OK** button.



Select **TOTAL PRINT LENGTH** with the **Up** and **Down** buttons, and then press the **OK** button.



The length of media printed until now is displayed.

This counter is the total length counter and cannot be reset.



**(2) VERSION INFO**

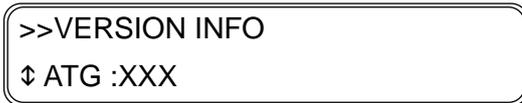
Press the **MENU** button, select **INFORMATION** with the **Up** and **Down** buttons, and then press the **OK** button.



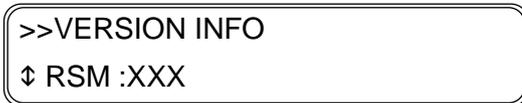
Select **VERSION INFO** with the **Up** and **Down** buttons, and then press the **OK** button.

**(a) ATG version**

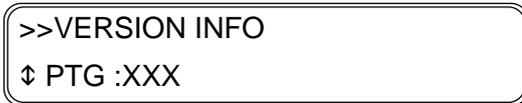
Displays the version of the ATG (FPGA).

**(b) RSM version**

Displays the version of the RSM (FPGA).

**(c) PTG version**

Displays the version of the PTG (FPGA).

**(d) ABC version**

Displays the version of the ABC (FPGA).



**(3) HEAD INFORMATION <maintenance mode>**

This menu displays the print head information.

Press the **MENU** button, select **INFORMATION** with the **Up** and **Down** buttons, and then press the **OK** button.



Select **HEAD INFORMATION** with the **Up** and **Down** buttons, and then press the **OK** button.



CC: Print head color

The display order corresponds to the color order.

After the last color, the first color is displayed again.

Use the **Up** and **Down** buttons to select the information you want to display for the selected print head, and then press the **OK** button.

The date is displayed according to the date format setting.

**(a) MFG DATE**

CC: Print head color

YYYY/MM: Manufacturing date

If the information cannot be determined because of the case below:

- No print head is installed on the printer; or
- A print head information error is detected,

????/? is displayed.

(b) **SERIAL NUMBER**

```
>>>CC SERIAL NUMBER
↓ XXXXXXXYYY
```

CC: Print head color

XXXX: Four ASCII characters

YYYYYY: Serial number (without zero suppression)

(c) **VOLTAGE RANK A**

```
>>>CC VOLTAGE RANK A
↓ XX. XV
```

CC: Print head color

XX.X: Print head voltage rank (aligned to the left)

Unit	V
Range	00.0 to 99.9

If the information cannot be determined because of the case below:

- No print head is installed on the printer; or
- A print head information error is detected,

???.?V is displayed.

(d) **VOLTAGE RANK B**

```
>>>CC VOLTAGE RANK B
↓ XX. XV
```

CC: Print head color

XX.X: Print head voltage rank (aligned to the left)

Unit	V
Range	00.0 to 99.9

If the information cannot be determined because of the case below:

- No print head is installed on the printer; or
- A print head information error is detected,

???.?V is displayed.

(e) **INSTALLED ON:**

```
>>>CC INSTALLED ON:
↓ YYYY/MM/DD
```

CC: Print head color

YYYY/MM/DD: Date of installation

If the information cannot be determined because of the case below:

- No print head is installed on the printer; or
  - A print head information error is detected,
- ????/??/?? is displayed.

(f) **PRINTED DOTS**

```
>>>CC PRINTED DOTS
↓ XXXXXXXXXXXM
```

CC: Print head color

XXXXXXXXXX: The number of dots is displayed in unit of 1 million (aligned to the left, with zero suppression)

If the information cannot be determined because of the case below:

- No print head is installed on the printer; or
  - A print head information error is detected,
- ?????????M is displayed.

(g) **NUMBER OF JAMS**

```
>>>CC NUMBER OF JAMS
↓ XXXXXXXXXXX
```

CC: Print head color

XXXXXXXXXX: Number of jams (aligned to the left, with zero suppression)

If the information cannot be determined because of the case below:

- No print head is installed on the printer; or
  - A print head information error is detected,
- ????????? is displayed.

**(h) COLOR HISTORY**

```
>>>CC COLOR HISTORY
↑ K C M Y Lc Lm Gy
```

CC: Print head color

The ink colors that have been used are displayed.

If the information cannot be determined because of the case below:

- No print head is installed on the printer; or
- A print head information error is detected,

?? is displayed.

Example: When Y and Lc ink have been used, **Y Lc** is displayed.

**(i) PRINT HEAD TYPE**

```
>>>CC PRINT HEAD TYPE
↑ X
```

CC: Print head color

X: Print head type

If the information cannot be determined because of the case below:

- No print head is installed on the printer; or
- A print head information error is detected,

? is displayed.

#### (4) **SENSOR INFO**

This menu displays information about the sensors.

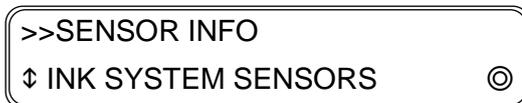
The buzzer sounds when the conditions of the sensors change.

The **CHECK SENSORS** operation is not available when an error has occurred.

Press the **MENU** button, select **INFORMATION** with the **Up** and **Down** buttons, and then press the **OK** button.



Select **SENSOR INFO** with the **Up** and **Down** buttons, and then press the **OK** button.



(a) **PRINTER SENSORS**

This menu displays the sensor conditions in real time.

The buzzer sounds when the conditions of the sensors change.

Select a sensor to display with the **Up** and **Down** buttons.

Sensor	Sensor value
EDGE:	1: Media is installed
HOME POSITION:	1: Carriage is in the home position
CAP POSITION:	1: Caps are close
WIPER POSITION:	1: Wiper is in the home position
SUPPLY SIDE MEDIA:	1: Media is installed
OUTPUT SIDE MEDIA:	
ROLL END:	1: End of the roll media
LEVER:	1: Lever is activated
FRONT COVER (R):	1: Cover is closed
FRONT COVER (L):	
WASTE BOTTLE:	WASTE BOTTLE value is indicated with: - 1 for the printer with waste ink bottle installed; or - 0 for the printer without waste ink bottle installed.
AUTO ADJUST R:	Voltage is displayed by unit of 0.1V.
AUTO ADJUST G:	
AUTO ADJUST B:	
IONIZER (+):	
IONIZER (-):	

>>>PRINTER SENSORS  
 ↓ EDGE: X

X: Sensor value (1/0)

>>>PRINTER SENSORS  
 ↓ HOME POSITION: X

>>>PRINTER SENSORS  
 ↓ CAP POSITION: X

>>>PRINTER SENSORS  
 ↓ WIPER POSITION: X

>>>PRINTER SENSORS  
 ↓ SUPPLY SIDE MEDIA: X

>>>PRINTER SENSORS  
⇅ OUTPUT SIDE MEDIA: X

>>>PRINTER SENSORS  
⇅ ROLL END: X

>>>PRINTER SENSORS  
⇅ LEVER: X

>>>PRINTER SENSORS  
⇅ FRONT COVER (R): X

>>>PRINTER SENSORS  
⇅ FRONT COVER (L): X

>>>PRINTER SENSORS  
⇅ WASTE BOTTLE:

>>>PRINTER SENSORS  
⇅ AUTO ADJUST R: XX.XV

>>>PRINTER SENSORS  
⇅ AUTO ADJUST G: XX.XV

>>>PRINTER SENSORS  
⇅ AUTO ADJUST B: XX.XV

>>>PRINTER SENSORS  
⇅ IONIZER (+): XX.XV

>>>PRINTER SENSORS  
⇅ IONIZER (-): XX.XV

**(b) INK SYSTEM SENSORS**

This menu displays the conditions of the ink system sensors in real time.

The buzzer sounds when the conditions of the sensors change.

Select a sensor to display with the **Up** and **Down** buttons.

Sensor	Sensor value
INK BOX COVER:	1: ink box cover closed
RESERVOIR DRAWER	1: Reservoir drawer closed
INK SUPPLY PUMP 1:	1: Supply pump in home position
INK SUPPLY PUMP 2:	
INK SUPPLY PUMP 3:	
INK SUPPLY PUMP 4:	
INK SUPPLY PUMP 5:	
INK SUPPLY PUMP 6:	
INK SUPPLY PUMP 7:	
INK TRAY 1 (CIS only):	1: Ink tray installed
INK TRAY 2 (CIS only):	
INK TRAY 3 (CIS only):	
INK TRAY 4 (CIS only):	
INK TRAY 5 (CIS only):	
INK TRAY 6 (CIS only):	
INK TRAY 7 (CIS only):	
SUBTANK FULL 1:	1: Subtank is full
SUBTANK FULL 2:	
SUBTANK FULL 3:	
SUBTANK FULL 4:	
SUBTANK FULL 5:	
SUBTANK FULL 6:	
SUBTANK FULL 7:	
SUBTANK END 1:	1: Subtank reached its end
SUBTANK END 2:	
SUBTANK END 3:	
SUBTANK END 4:	
SUBTANK END 5:	
SUBTANK END 6:	
SUBTANK END 7:	
Remaining ink 1 (LCIS only):	Remaining ink in grams
Remaining ink 2 (LCIS only):	
Remaining ink 3 (LCIS only):	
Remaining ink 4 (LCIS only):	
Remaining ink 5 (LCIS only):	
Remaining ink 6 (LCIS only):	

>>> INK SYSTEM SENSORS  
⇅ INK BOX COVER: X

X: Sensor value (1/0)

>>> INK SYSTEM SENSORS  
⇅ RESERV DRAWER: X

(LCIS model only)

X: Sensor value (1/0)

>>> INK SYSTEM SENSORS  
⇅ INK SUPPLY PUMP 1: X

Same for **INK SUPPLY PUMP 2 to 7**

>>> INK SYSTEM SENSORS  
⇅ INK TRAY 1: X

(CIS model only)

Same for **INK TRAY 2 to 7**

>>> INK SYSTEM SENSORS  
⇅ SUBTANK FULL 1: X

Same for **SUBTANK FULL 2 to 7**

>>> INK SYSTEM SENSORS  
⇅ SUBTANK END 1: X

Same for **SUBTANK END 2 to 7**

>>> INK SYSTEM SENSORS  
⇅ REMAIN INK 1: X

(LCIS model only)

Same for **REMAIN INK 2 to 7**

(c) **TUR SENSORS**

This menu displays the conditions of the TUR unit sensors in real time.

The buzzer sounds when the conditions of the sensors change.

Select a sensor to display with the **Up** and **Down** buttons.

↕1/X is not displayed due to the number of displayed characters.

Sensor	Sensor value
TUR DRAWER R:	1: TUR unit is installed
TUR DRAWER L:	1: TUR unit is installed
SLACK UPPER LIMIT:	1: Upper limit (light passes through)
SLACK LOWER LIMIT:	1: Lower limit (light is blocked)
FUNCTION SWITCH 1:	1: Inner take-up selected
FUNCTION SWITCH 2:	1: Outer take-up selected

>>>TUR SENSORS  
 ↕ TUR DRAWER R: X

X: Sensor value (1/0)

>>>TUR SENSORS  
 ↕ TUR DRAWER L: X

>>>TUR SENSORS  
 ↕ SLACK UPPER LIMIT: X

>>>TUR SENSORS  
 ↕ SLACK LOWER LIMIT: X

>>>TUR SENSORS  
 ↕ FUNCTION SWITCH 1: X

Same for **FUNCTION SWITCH 2**

(d) **THERMISTORS**

This menu displays the thermistor conditions in real time.

The buzzer sounds when the conditions of the sensors change.

Select a sensor to display with the **Up** and **Down** buttons.

Thermistor	Thermistor value
AMBIENT T:	Ambient temperature
PREHEATER:	Media preheater temperature
PRINTHEAT.:	Media printheater temperature
AFTERHEAT.:	Media afterheater temperature
HEAD 1:	Print head temperature
HEAD 2:	
HEAD 3:	
HEAD 4:	
HEAD 5:	
HEAD 6:	
HEAD 7:	
HEAD IC 1A:	Print head IC temperature
HEAD IC 1B:	
HEAD IC 2A:	
HEAD IC 2B:	
HEAD IC 3A:	
HEAD IC 3B:	
HEAD IC 4A:	
HEAD IC 4B:	
HEAD IC 5A:	
HEAD IC 5B:	
HEAD IC 6A:	
HEAD IC 6B:	
HEAD IC 7A:	
HEAD IC 7B:	

>>>THERMISTORS  
 ↕ AMBIENT T: XXX.X °C

>>>THERMISTORS  
 ↕ AMBIENT T: XXX.X °F

XXX: Temperatue

Temperatures are displayed (aligned to the left) according to the temperature unit set in the system settings.

**Note:**

Minus sign is displayed when necessary, however, plus sign is not displayed.

>>>THERMISTORS  
 ↕ PREHEATER: XXX.X °C

>>>THERMISTORS  
 ↕ PRINTHEAT.: XXX.X °C

>>>THERMISTORS  
 ↕ AFTERHEAT.: XXX.X °C

>>>THERMISTORS  
 ↕ HEAD 1: XXX.X °C

Same for **HEAD 2 to 7**

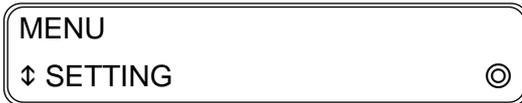
>>>THERMISTORS  
 ↕ HEAD IC 1A: XXX.X °C

Same for **HEAD IC 1B to 7B**

### 3.4.1.2 SETTING

#### (1) SYSTEM

Press the **MENU** button, select **SETTING** with the **Up** and **Down** buttons, and then press the **OK** button.



Select **SYSTEM** with the **Up** and **Down** buttons, and then press the **OK** button.



Select **PART REPLACEMENT** with the **Up** and **Down** buttons, and then press the **OK** button.



#### (a) PART REPLACEMENT

This menu is used to configure whether or not to display warnings regarding consumables.



YYY: Setting after change

On: Display the warnings

Off: Do not display the warnings

The warnings can be disabled for the users especially in Japan, which the maintenance operators often visit.

**(b) DATE SETTING**

This menu is used to configure the system date.

```
>>>DATE SETTING
↓ YY/MM/DD
```

YY: Year

MM: Month

DD: Day

Setting range: 2000/01/01 to 2035/12/31

**(c) TIME SETTING**

This menu is used to configure the system time.

```
>>> TIME SETTING
↓ HH:MM
```

HH: Hours

MM: Minutes

Setting range: 00:00 to 23:59

**(d) SERIAL No.**

This menu is used to configure the board serial number.

```
>>> SERIAL No.
↓ XXXXXXXX
```

XXXXXXXX: Eight-character serial (alphanumeric characters)

**(e) INITIALIZE EEPROM**

This menu is used to initialize the EEPROM parameters.

```
>> SYSTEM
↓ INITIALIZE EEPROM
```

**(f) SAVE DEFAULT SET.**

This menu is used to save the parameters as the default settings.

```
>> SYSTEM
↓ SAVE DEFAULT SET.
```

**(g) LOAD DEFAULT SET.**

This menu is used to load the default settings.

**Note**

Restart the printer after loading the default settings.

**(h) SAVE PRINTER SET.**

This menu is used to save the parameters to the backup area.

**(i) LOAD PRINTER SET.**

This menu is used to load the parameters from the backup area.

**(j) NUMBER OF COLORS (CIS model only)**

This menu is used to configure the number of colors.



YYY: Setting after change

6 COLORS: Y, M, C, K, Lm, Lc

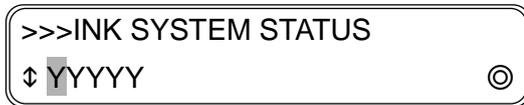
7 COLORS: Y, M, C, K, Lm, Lc, Gy

**Note**

If you have changed the number of colors, it is necessary to restart the printer as prompted by the **RESTART THE PRINTER** message that appears.

(k) **INK SYSTEM STATUS**

This menu is used to configure whether the ink system has been primed or not.



YYY: Setting after change

PRIMED: The sub tanks and the ink circuits are filled with ink.

NOT PRIMED, DRY: The sub tanks and the ink circuits have never been filled with ink.

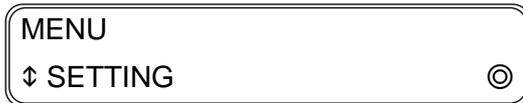
NOT PRIMED, WET: The sub tanks and the ink circuits have been filled with ink, and then the ink has been drained.

(2) **MEDIA HEATER SET.**

(a) **STANDBY TEMP**

This menu is used to configure the standby temperature.

Press the **MENU** button, select **SETTING** with the **Up** and **Down** buttons, and then press the **OK** button.



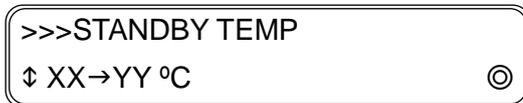
Select **MEDIA HEATER SET.** with the **Up** and **Down** buttons, and then press the **OK** button.



Set the standby temperature for the preheater and the printhead.

Fahrenheit

Celsius



YY: Standby temperature

XXX: Current setting

YYY: Setting after change

Unit: °C (Celsius degree) or °F (Fahrenheit degree)

Setting range: 15 to 40 for Celsius temperature or 59 to 104 for Fahrenheit temperature

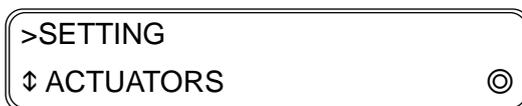
(3) **ACTUATORS** <maintenance mode>

This menu is used to operate the different actuators.

Press the **MENU** button, select **SETTING** with the **Up** and **Down** buttons, and then press the **OK** button.



Select **ACTUATORS** with the **Up** and **Down** buttons, and then press the **OK** button.

(a) **HEATERS**

This menu is used to operate the actuators related to the heaters.



Select **HEATERS** with the **Up** and **Down** buttons, and then press the **OK** button.



Select a heater with the **Up** and **Down** buttons, and then press the **OK** button.

(i) **MEDIA HEATERS**



YYYYYYYYY: Setting after change

Parameter	Description	Remark
OFF	Stopped	
55-55-55	Each heater operates until it reaches the limit temperature below. - Afterheater: 55°C - Printheater: 55°C - Preheater: 55°C	
45-40-45	Each heater operates until it reaches the following temperature required to adjust the platen flatness. - Afterheater: 45°C - Printheater: 40°C - Preheater: 45°C	

(ii) **PRINT HEAD HEATERS**



YYYYYYYYY: Setting after change

Parameter	Description	Remark
OFF	Stopped	
30°C	Heat each print head until they reach 30°C.	

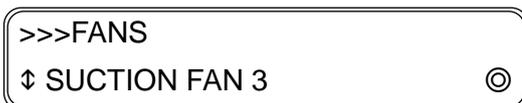
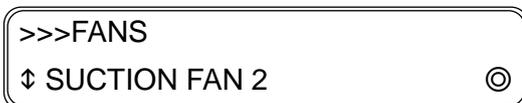
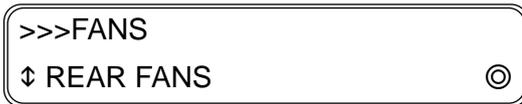
\* The temperature is set uniformly so that this menu is used to check that the print head heaters are operating.

**(b) FANS**

This menu is used to operate the actuators related to the fans.



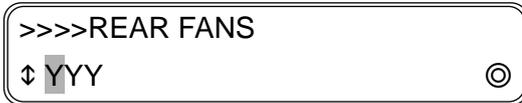
Select **FANS** with the **Up** and **Down** buttons, and then press the **OK** button.



Select a fan with the **Up** and **Down** buttons, and then press the **OK** button.

(i) **REAR FANS**

This menu is used to operate the rear fans.



YYY: Setting after change

Parameter	Description	Remark
OFF	Stopped	
ON	Activated	

(ii) **CARRIAGE FAN**

This menu is used to operate the carriage cooling fan.



YYY: Setting after change

Parameter	Description	Remark
OFF	Stopped	
ON	Activated	Power 100%

(iii) **EXHAUST FAN**

This menu is used to operate the exhaust fan.



YYY: Setting after change

Parameter	Description	Remark
OFF	Stopped	
ON	Activated	

(iv) **SUCTION FAN 1 to 4**

This menu is used to operate the suction fans 1 to 4.



YYY: Setting after change

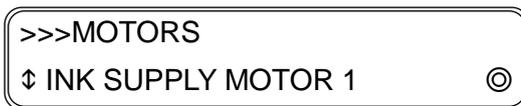
Parameter	Description	Remark
OFF	Stopped	
ON	Activated	Power 32%

(c) **MOTORS**

This menu is used to operate the actuators related to the motors.



Select **MOTORS** with the **Up** and **Down** buttons, and then press the **OK** button.



Same for **INK SUPPLY MOTOR 2 to 7**

Select a motor with the **Up** and **Down** buttons, and then press the **OK** button.

(i) **PUMP/WIPE MOTOR**

This menu is used to operate the pumps and the wipe motor.



YYYYYYYYY: Setting after change

Parameter	Description	Remark
WIPE MOTOR STOP	Stopped	
WIPE MOTOR FAST	Wipe motor runs at high speed.	Runs until <b>WIPE MOTOR STOP</b> is selected. (However stops automatically when it has been running for a long time.)
WIPE MOTOR NORMAL	Wipe motor runs at medium speed.	Runs until <b>WIPE MOTOR STOP</b> is selected. (However stops automatically when it has been running for a long time.)
WIPE MOTOR SLOW	Wipe motor runs at low speed.	Runs until <b>WIPE MOTOR STOP</b> is selected. (However stops automatically when it has been running for a long time.)
SUCTION PUMP ON	Suction pump activated	

(ii) **CAP MOTOR**

This menu is used to operate the cap motor.



YYYYYYYYY: Setting after change

Parameter	Description	Remark
STOP	Stop the cap motor	
OPEN CAP	Stop the cap motor and make it turn in the open direction	Power 35%
CLOSE CAP	Stop the cap motor and make it turn in the closed direction	Power 35%

(iii) **TUR MOTOR**

This menu is used to operate the TUR unit motor.



YYYYYYYYY: Setting after change

Parameter	Description	Remark
OFF	Stop the TUR unit motor	
ON	Activate the TUR unit motor	Power 100%

(iv) **INK SUPPLY MOTOR 1 to 7**

This menu is used to operate the motors of the ink supply pumps 1 to 7.



YYYYYYYYY: Setting after change

Parameter	Description	Remark
STOP, PUMP CLOSED	Close the ink supply pump and stop the motor	Power 100%*
STOP, PUMP OPEN (CIS model only)	Open the ink supply pump and stop the motor	Power 100%*
INK TO SUBTANK	Run the ink supply pump motor in the normal direction (the ink is sent to the subtanks).	Power 100%*
INK TO CARTRIDGE	Run the ink supply pump motor in the reverse direction (the ink returns to the cartridges).	Power 100%*

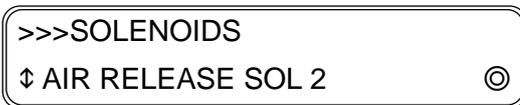
\* The power is 80% for the LCIS model.

(d) **SOLENOIDS**

This menu is used to operate the solenoids.



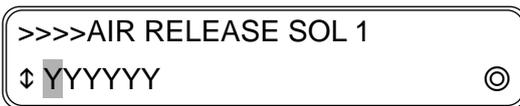
Select **SOLENOIDS** with the **Up** and **Down** buttons, and then press the **OK** button.



Select a solenoid with the **Up** and **Down** buttons, and then press the **OK** button.

(i) **AIR RELEASE SOL 1 to 3**

This menu is used to operate the air release solenoid.



YYYYYY: Setting after change

Parameter	Description	Remark
CLOSE	Stop the air release solenoid (closed position)	
OPEN	Activate the air release solenoid (open position)	

(ii) **TUR EM CLUTCH**



YYYYYY: Setting after change

Parameter	Description	Remark
OFF	Stop the TUR electromagnetic clutch	
ON	Activate the TUR electromagnetic clutch	

If the TUR electromagnetic clutch is left ON for 30 minutes, it automatically goes OFF. The system prevents the clutch from running continuously in case the user forgets to deactivate it.

(e) **LEDS**

This menu is used to operate the LEDs (RGB) for automatic print adjustment.



Select **LEDS** with the **Up** and **Down** buttons, and then press the **OK** button.



Select a LED with the **Up** and **Down** buttons, and then press the **OK** button.



YYY: Setting after change

Parameter	Description	Remark
OFF	Turn off the LED	
ON	Turn on the LED	Power 50%

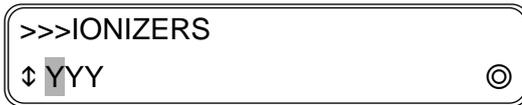
(f) **IONIZERS**

This menu is used to operate the ionizers.



Select **IONIZERS** with the **Up** and **Down** buttons, and then press the **OK** button.

Select a parameter with the **Up** and **Down** buttons, and then press the **OK** button.



YYY: Setting after change

Parameter	Description	Remark
OFF	Stop the ionizer	
ON	Activate the ionizer	

(g) **PRINTER POWER**

This menu is used for power systems diagnosis.



Select a parameter with the **Up** and **Down** buttons, and then press the **OK** button.



YYY: Setting after change

Parameter	Description	Remark
OFF	Turn off all power systems	
ON	Turn on all power systems	

This parameter turns on and off the power supply unit and the carriage power.

## 3.4.2 ADJUST

### 3.4.2.1 BIDIR POSITION

#### (1) PRINT CHCK PATTERN

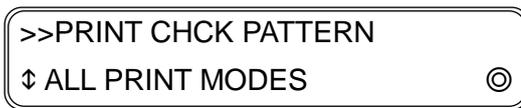
Press the **ADJUST** button, select **BIDIR POSITION** with the **Up** and **Down** buttons, and then press the **OK** button.



Select **PRINT CHCK PATTERN** with the **Up** and **Down** buttons, and then press the **OK** button.



Select a pattern with the **Up** and **Down** buttons, and press the **OK** button to confirm the pattern to print.



ALL PRINT MODES: Print a check pattern for all print modes.

1: DRA,FAST PR,PRO\*: Print a check pattern for draft, fast production, and production print modes.

2: STD & QUALITY: Print a check pattern for standard and quality print modes.

3: HIGH QUALITY: Print a check pattern for high quality print mode.

4: MAX QUALITY: Print a check pattern for max quality print mode.

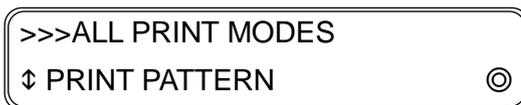
Print the bidirectional position adjustment patterns and set adjustment values.

\* With the LCIS model:

1: FAST PRO, PRO: Print a check pattern for fast production, and production print modes.

#### (a) PRINT PATTERN

Select **PRINT PATTERN** with the **Up** and **Down** buttons, and then press the **OK** button.

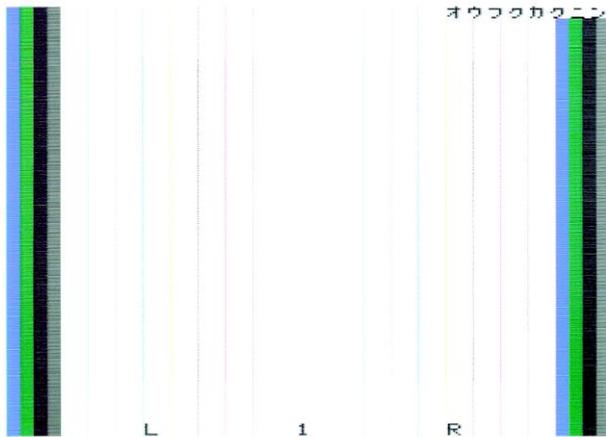


Press the **OK** button to display the print confirmation screen, then press the **OK** button again to start printing.



Panel display during printing

>>>ALL PRINT MODES  
EXECUTING..



(b) **FEED MEDIA** and **BACK FEED MEDIA** (displayed in maintenance mode only)

Select a pattern as shown above and press the **OK** button.

>>PRINT CHCK PATTERN  
↓ ALL PRINT MODES

Select **FEED MEDIA** or **BACK FEED MEDIA** with the **Up** and **Down** buttons.

>>>ALL PRINT MODES  
↓ FEED MEDIA

>>>ALL PRINT MODES  
↓ BACK FEED MEDIA

Hold the **OK** button pressed to feed or backfeed the media.

FEEDING MEDIA...

BACKFEEDING MEDIA...

Release the **OK** button to stop feeding or backfeeding and to return to the previous screen.

>>>ALL PRINT MODES  
↓ FEED MEDIA

>>>ALL PRINT MODES  
↓ BACK FEED MEDIA

### 3.4.2.2 MECHANICAL ADJUST

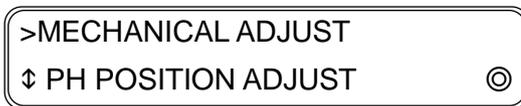
This menu is used to print the print head position adjustment pattern and to set adjustment values for the print head positions and right and left alignment.

#### (1) PH POSITION ADJUST

Press the **ADJUST** button, select **MECHANICAL ADJUST** with the **Up** and **Down** buttons, and then press the **OK** button.

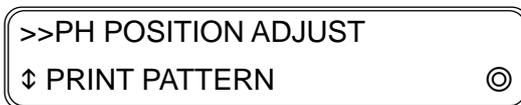


Select **PH POSITION ADJUST** with the **Up** and **Down** buttons, and then press the **OK** button.

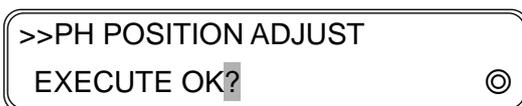


Select **PRINT PATTERN** with the **Up** and **Down** buttons, and then press the **OK** button.

#### (a) PRINT PATTERN



Press the **OK** button to display the print confirmation screen, then press the **OK** button again to start printing.

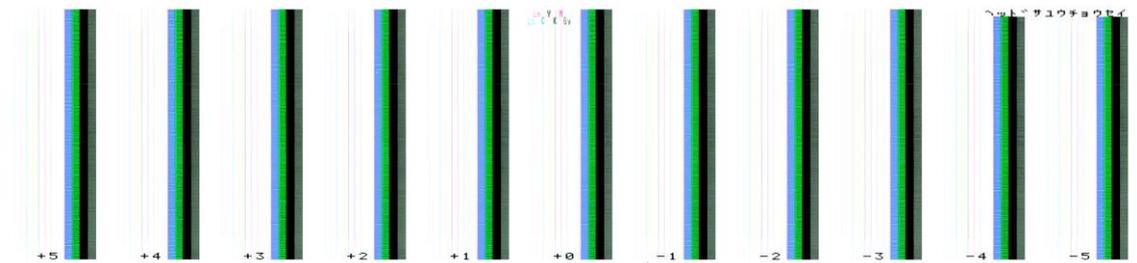
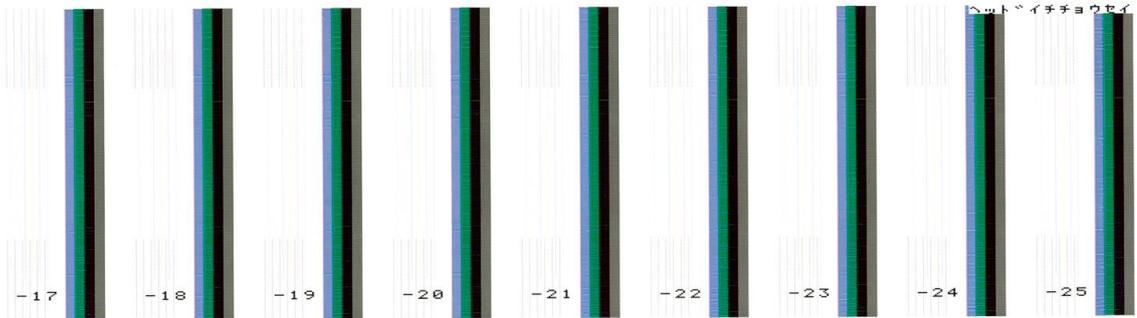


You may press the **CANCEL** button to interrupt the printing.



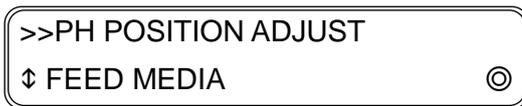


(Enlarged view)



(b) **FEED MEDIA** and **BACK FEED MEDIA**

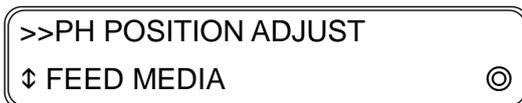
In the **PH POSITION ADJUST** menu, select **FEED MEDIA** or **BACK FEED MEDIA** with the **Up** and **Down** buttons.



Hold the **OK** button pressed to feed or backfeed the media.



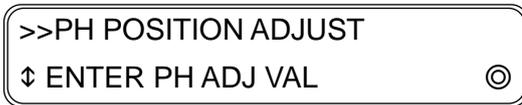
Release the **OK** button to stop feeding or backfeeding and to return to the previous screen.



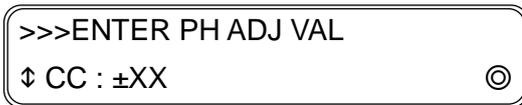
(c) **ENTER PH ADJ VAL**

Enter the print head position adjustment value.

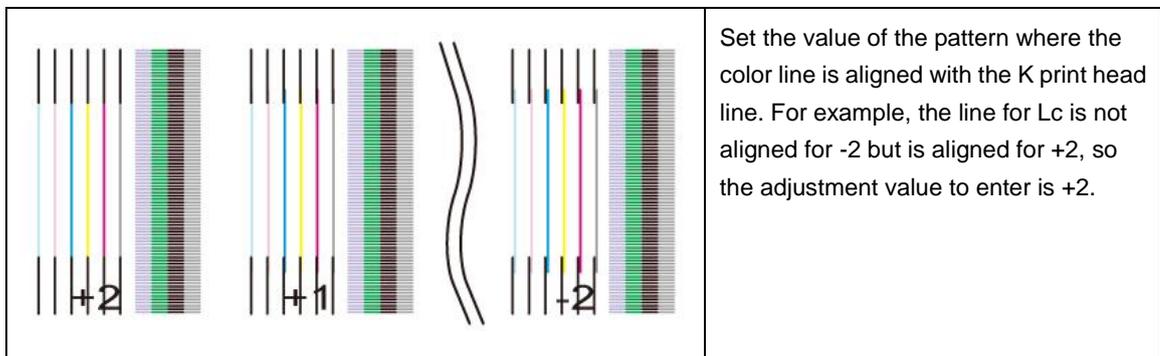
In the **PH POSITION ADJUST** menu, select **ENTER PH ADJ VAL** with the **Up** and **Down** buttons, and then press the **OK** button.



Select ⚡ **CC : ±XX** for each color with the **Up** and **Down** buttons, and then press the **OK** button.



- CC: Print head color
- ±X: Current value
- ±Y: Value after change
- Setting range: -32 to +31



For each color, as the adjustment value enter the value of the pattern with the lines aligned with the K print head line.

\*No adjustment value is required for K print head as it is used as a standard for the other colors.

Select a digit to modify with the **Right** and **Left** buttons, and modify the digit's value with the **Up** and **Down** buttons.

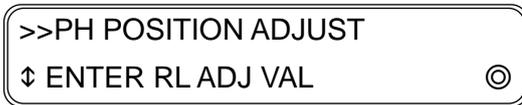
After the value has been modified, press the **OK** button.

Press the **CANCEL** button to return to the previous screen without modifying the value.

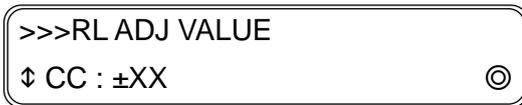
(d) **ENTER RL ADJ VAL**

Enter the print head right and left adjustment value.

In the **PH POSITION ADJUST** menu, select **ENTER RL ADJ VAL** with the **Up** and **Down** buttons, and then press the **OK** button.



Select ⇅ **CC : ±XX** for each color with the **Up** and **Down** buttons, and then press the **OK** button.

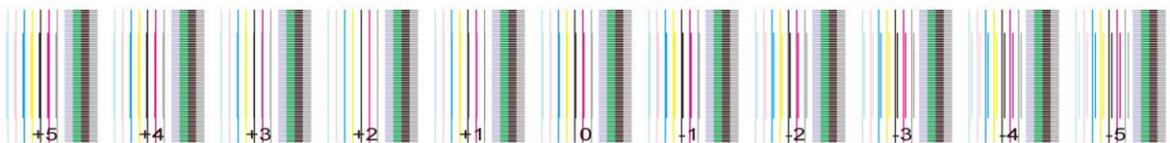


CC: Print head color

±X: Current value

±Y: Value after change

Setting range: -32 to +31



Enter the value of the pattern with the lines aligned for each color as the adjustment value.

Select a digit to modify with the **Right** and **Left** buttons, and modify the digit's value with the **Up** and **Down** buttons.

After the value has been modified, press the **OK** button.

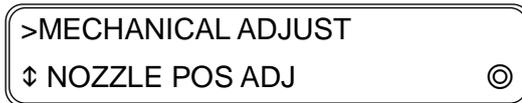
(2) **NOZZLE POS ADJ**

This menu is used to print the nozzle position adjustment pattern and to set adjustment values for the nozzle positions.

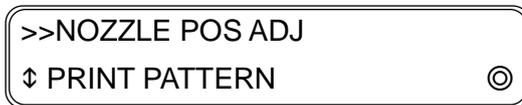
The display order of ink colors is as shown in page 3-6.

(a) **PRINT PATTERN**

Select **NOZZLE POS ADJ** with the **Up** and **Down** buttons, and then press the **OK** button.



Select **PRINT PATTERN** with the **Up** and **Down** buttons, and then press the **OK** button.

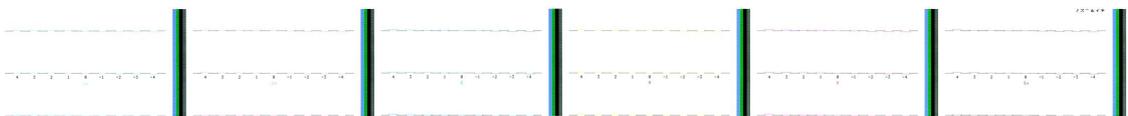


Press the **OK** button to display the print confirmation screen, then press the **OK** button again to start printing.

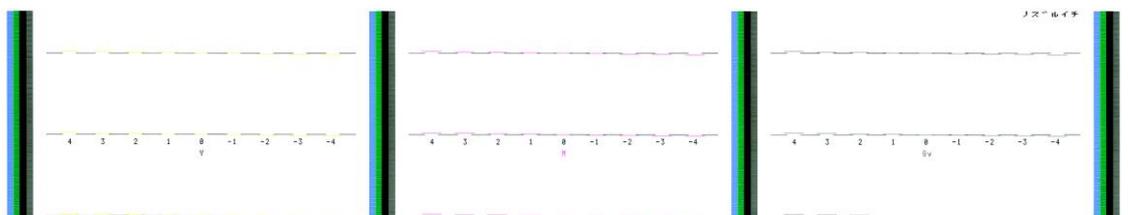


Press the **OK** button to start printing.

You may press the **CANCEL** button to interrupt the printing.



(Enlarged view)



(b) **FEED MEDIA** and **BACK FEED MEDIA**

In the **NOZZLE POS ADJ** menu, select **FEED MEDIA** or **BACK FEED MEDIA** with the **Up** and **Down** buttons.



Hold the **OK** button pressed to feed or backfeed the media.

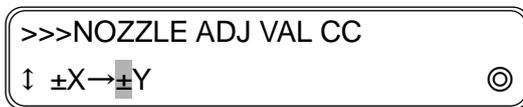


Release the **OK** button to stop feeding or backfeeding and to return to the previous screen.



(c) **Nozzle position adjustment value**

In the **NOZZLE POS ADJ** menu, select **±X→±Y** with the **Up** and **Down** buttons and press the **OK** button.



- CC: Print head color
- ±X: Current value
- ±Y: Value after change
- Setting range: -4 to +4

	<p>Set the value where the line is aligned with the K print head line. For example, the line for M is aligned for +2, so the adjustment value to enter is +2.</p>
--	---

As the adjustment value, enter the value of the pattern with the lines aligned with the K print head line.

\*No adjustment value is required for K print head as it is used as a standard for the other colors.

Select a digit to modify with the **Right** and **Left** buttons, and modify the digit's value with the **Up** and **Down** buttons.

After the value has been modified, press the **OK** button.

Press the **CANCEL** button to return to the previous screen without modifying the value.

### (3) PH SLANT CHECK

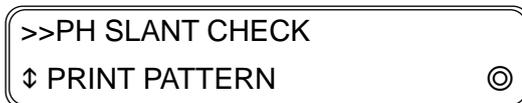
This menu is used to print the print head slant check pattern

#### (a) PRINT PATTERN

Select **PH SLANT CHECK** with the **Up** and **Down** buttons, and then press the **OK** button.



Select **PRINT PATTERN** with the **Up** and **Down** buttons, and then press the **OK** button.



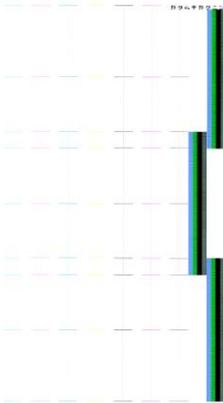
Press the **OK** button to display the print confirmation screen, then press the **OK** button again to start printing.



Press the **OK** button to start printing.

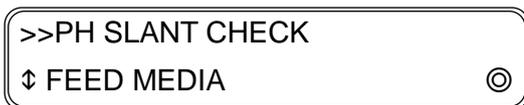
You may press the **CANCEL** button to interrupt the printing.





(b) **FEED MEDIA** and **BACK FEED MEDIA**

In the **PH SLANT CHECK** menu, select **FEED MEDIA** or **BACK FEED MEDIA** with the **Up** and **Down** buttons.



Hold the **OK** button pressed to feed or backfeed the media.



Release the **OK** button to stop feeding or backfeeding and to return to the previous screen.

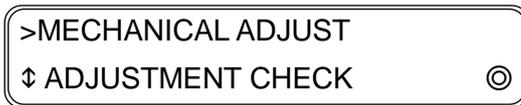


(4) **ADJUSTMENT CHECK**

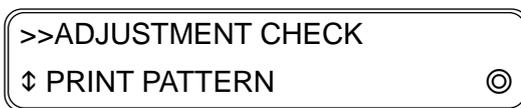
This menu is used to print a adjustment check pattern.

(a) **PRINT PATTERN**

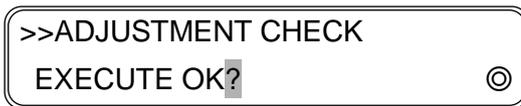
Select **ADJUSTMENT CHECK** with the **Up** and **Down** buttons, and then press the **OK** button.



Select **PRINT PATTERN** with the **Up** and **Down** buttons, and then press the **OK** button.

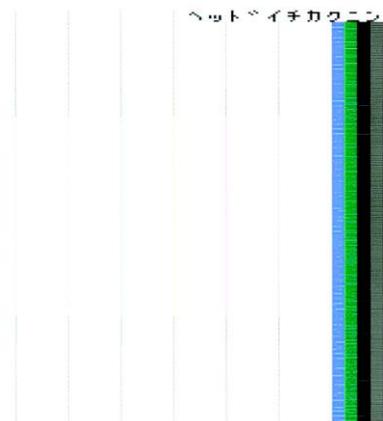
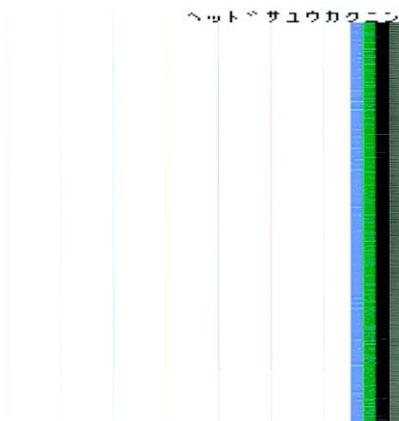
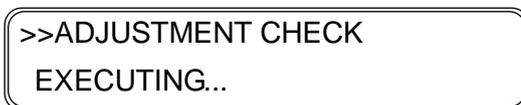


Press the **OK** button to display the print confirmation screen, then press the **OK** button again to start printing.



Press the **OK** button to start printing.

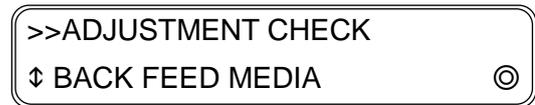
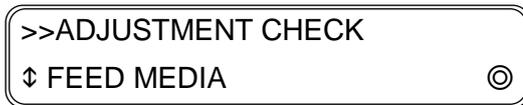
You may press the **CANCEL** button to interrupt the printing.





(b) **FEED MEDIA** and **BACK FEED MEDIA**

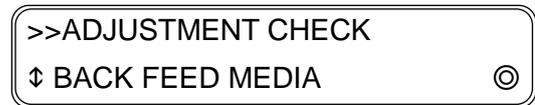
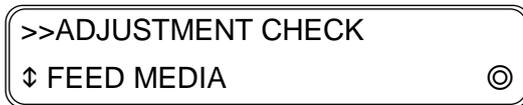
In the **ADJUSTMENT CHECK** menu, select **FEED MEDIA** or **BACK FEED MEDIA** with the **Up** and **Down** buttons.



Hold the **OK** button pressed to feed or backfeed the media.



Release the **OK** button to stop feeding or backfeeding and to return to the previous screen.

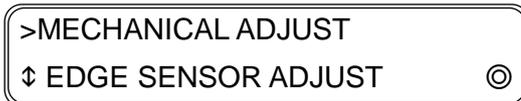


(5) **EDGE SENSOR ADJUST** (displayed in maintenance mode only)

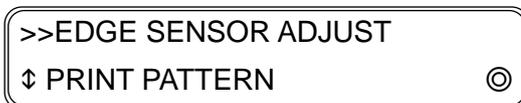
This menu is used to print the edge sensor position adjustment pattern and to set adjustment values for the edge sensor and top and side positions.

(a) **PRINT PATTERN**

Select **EDGE SENSOR ADJUST** with the **Up** and **Down** buttons, and then press the **OK** button.



Select **PRINT PATTERN** with the **Up** and **Down** buttons, and then press the **OK** button.



Press the **OK** button to display the print confirmation screen, then press the **OK** button again to start printing.



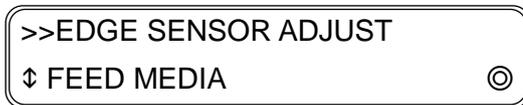
Press the **OK** button to start printing.

You may press the **CANCEL** button to interrupt the printing.



(b) **FEED MEDIA** and **BACK FEED MEDIA**

In the **EDGE SENSOR ADJUST** menu, select **FEED MEDIA** or **BACK FEED MEDIA** with the **Up** and **Down** buttons.



Hold the **OK** button pressed to feed or backfeed the media.



Release the **OK** button to stop feeding or backfeeding and to return to the previous screen.



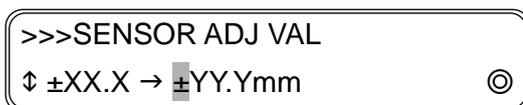
(c) **SENSOR ADJ VAL**

Enter a value for the edge sensor side position.

In the **EDGE SENSOR ADJUST** menu, select **SENSOR ADJ VAL** with the **Up** and **Down** buttons, and then press the **OK** button.



Select **±XX.X** → **±YY.Ymm** with the **Up** and **Down** buttons, and then press the **OK** button.



±XX. X: Current value

±YY.: Value after change

Setting range: 10.0 to 20.0

<p>Print sample</p>	<p>The adjustment value is the length of the margin you have measured on the printout. (Unit : mm)</p>
---------------------	--

Select a digit to modify with the **Right** and **Left** buttons, and modify the digit's value with the **Up** and **Down** buttons.

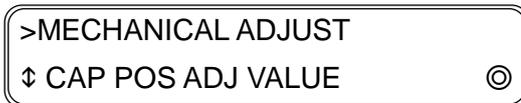
After the value has been modified, press the **OK** button.

Press the **CANCEL** button to return to the previous screen without modifying the value.

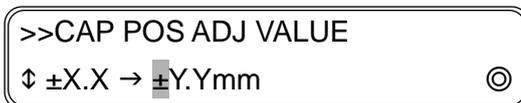
#### (6) CAP POS ADJ VALUE

This menu is used to adjust the cap position.

Select **CAP POS ADJ VALUE** with the **Up** and **Down** buttons, and then press the **OK** button.



Select **±X.X → ±Y.Ymm** with the **Up** and **Down** buttons, and then press the **OK** button.



±XX. X : Current value

±YY. Y : Value after change

Setting range: -5.0 to +5.0

Select a digit to modify with the **Right** and **Left** buttons, and modify the digit's value with the **Up** and **Down** buttons.

After the value has been modified, press the **OK** button.

Press the **CANCEL** button to return to the previous screen without modifying the value.

(7) **WIPING POS ADJUST**

See 7.5 Wiping Position Adjustment.

(8) **RMNG INK SNSOR ADJ (LCIS)**

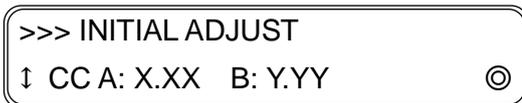
This menu is used to enter adjustment values for the remaining ink sensors and to adjust the sensors.

**Initial adjustment**

Select **RMNG INK SNSOR ADJ** with the **Up** and **Down** buttons, and then press the **OK** button.



Select **INITIAL ADJUST** with the **Up** and **Down** buttons, and then press the **OK** button.

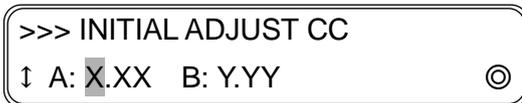


CC: Ink color

X.XX: Adjustment value A

Y.YY: Adjustment value B

Select an ink color with the **Up** and **Down** buttons, and then press the **OK** button.



CC: Ink color

X.XX: Adjustment value A

Y.YY: Adjustment value B

Select a digit to modify with the **Right** and **Left** buttons, and modify the digit's value with the **Up** and **Down** buttons.

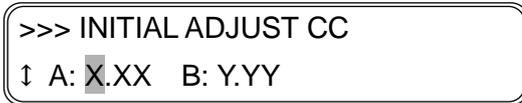
\* A  symbol is displayed on the panel bottom right after you have modified the value.

After entering the values for both A and B, press the **OK** button.

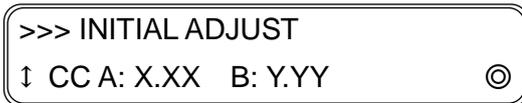
The values for A and B are verified after you have pressed the **OK** button.

(When the entered values are correct)

The © symbol disappears.



To adjust other colors, press the **CANCEL** button and return to the color selection menu.



Select another ink color with the **Up** and **Down** buttons, and then press the **OK** button.

(If the entered values are not correct)

The buzzer sounds and the © symbol does not disappear.

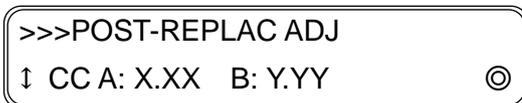


**Post-replacement adjustment**

Select **RMNG INK SNSOR ADJ** with the **Up** and **Down** buttons, and then press the **OK** button.



Select **POST-REPLAC ADJ** with the **Up** and **Down** buttons, and then press the **OK** button.



CC: Ink color

Select the color whose remaining ink sensor has been replaced, and then press the **OK** button.



Press the **OK** button to adjust the sensor, or the **CANCEL** button to interrupt the adjustment.

(When you have pressed the OK button)

EXECUTING..  
PLEASE WAIT

(When the adjustment finishes normally)

The buzzer sounds once and the following message is displayed.

ADJUST COMPLETE  
↓ CC A: X.XX B: Y.YY ©

CC: Ink color

X.XX: Adjustment value A

Y.YY: Adjustment value B

#### Note

After the adjustment is complete, write the adjustment values A and B on the label for remaining sensor replacement (small), and paste it to the position of the corresponding color on the label (large) where all the remaining ink sensor adjustment values are indicated.

After you have written the adjustment values, press the **OK** button.

>>>POST-REPLAC ADJ  
↓ CC A: X.XX B: Y.YY ©

(When the adjustment finishes with an error)

The buzzer sounds three times and the following message is displayed.

- When the drawer is open

CLOSE THE DRAWER AND  
ADJUST SENSOR AGAIN 

<When an error has been detected in the adjustment result>

ABNORMALITY OCCURRED  
CHECK NEW SENSOR 

\* An error occurs if the remaining ink sensor has not been replaced correctly.

After the error has occurred, press the **OK** button to return to the starting screen of the adjustment procedure.

>>>POST-REPLAC ADJ  
↓ CC A: X.XX B: Y.YY 

### 3.4.2.3 PH VOLTAGE OFFSET

Enter an offset value for the print heads voltage.

Press the **ADJUST** button, select **PH VOLTAGE OFFSET** with the **Up** and **Down** buttons, and then press the **OK** button.



Select **CC\_P : ±X.XV** with the **Up** and **Down** buttons, and then press the **OK** button.



CC : Print head color  
 P : Print head right or left  
 X.X : Current offset value



CC : Print head color  
 P : Print head right or left  
 ±X.X : Current value  
 ±Y.Y : Value after change

Select a digit to modify with the **Right** and **Left** buttons, and modify the digit's value with the **Up** and **Down** buttons.

After the value has been modified, press the **OK** button.

Press the **CANCEL** button to return to the previous screen without modifying the value.

#### Note

The offset value is saved in the print heads.

### 3.4.3 MAINTENANCE

#### 3.4.3.1 PH MAINTENANCE

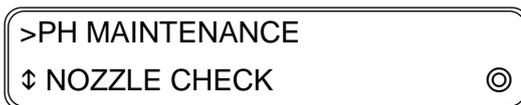
Press the **MAINTENANCE** button, select **PH MAINTENANCE** with the **Up** and **Down** buttons, and then press the **OK** button.



##### (1) NOZZLE CHECK

This menu is used to print a **NOZZLE CHECK** pattern.

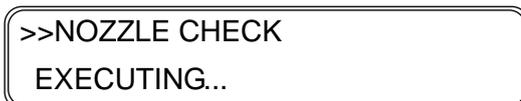
Select **NOZZLE CHECK** with the **Up** and **Down** buttons, and then press the **OK** button.



Press the **OK** button.



The print of the **NOZZLE CHECK** pattern is finished. (You may press the **CANCEL** button during printing to cancel the print.)

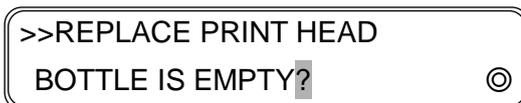


## (2) REPLACE PRINT HEAD

Select **REPLACE PRINT HEAD** with the **Up** and **Down** buttons, and then press the **OK** button.



Check that a waste ink bottle is installed and press the **OK** button.



The carriage stops moving.

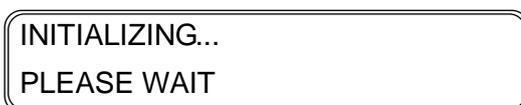


Press the **power** switch to turn the printer off.



Confirm that the print has shut down completely and then replace the print head.

After you have replaced the print head, press power switch to turn the printer on.



For the rest of the procedure, see **3.6.3 Starting the printer after replacing the print head**.

**(3) PH CHECK PATTERN**

This menu is used to print a pattern to evaluate the need to replace the print heads.

Select **PH CHECK PATTERN** with the **Up** and **Down** buttons, and then press the **OK** button.

```
>PH MAINTENANCE
↓ PH CHECK PATTERN      ◎
```

```
>>PH CHECK PATTERN
↓ PRINT HEAD : 1234567  ◎
```

Move the cursor with the **Right** and **Left** buttons, and toggle a digit with the **Up** and **Down** buttons.

A digit that has been toggled disappears.

Finish the selection and press the **OK** button.

```
>>PH CHECK PATTERN
↓ PRINT HEAD : 1 5      ◎
```

Press the **OK** button to execute the operation.

```
>>PH CHECK PATTERN
EXECUTE OK?           ◎
```

The print head check pattern is printed.

```
>>PH CHECK PATTERN
EXECUTING...
```

(4) **PRIME 1 INK COLOR****Note**

Before performing this procedure, open the COVER(CENTER)-F and remove the COVER(R)ASSY-MW (see 6.3.2).

If you start the procedure before removing the COVER(R)ASSY-MW, you will have to performed the procedure again with the COVER(R)ASSY-MW removed after finishing it once by opening the COVER(CENTER)-F.

Select **PRIME 1 INK COLOR** with the **Up** and **Down** buttons, and then press the **OK** button.

```
>PH MAINTENANCE
↓ PRIME 1 INK COLOR      Ⓞ
```

```
>>PRIME 1 INK COLOR
↓ PRINT HEAD : 1234567   Ⓞ
```

Move the cursor with the **Right** and **Left** buttons, and toggle a digit with the **Up** and **Down** buttons.

A digit that has been toggled disappears.

Finish the selection and press the **OK** button.

```
>>PRIME 1 INK COLOR
↓ PRINT HEAD : 1 3      Ⓞ
```

**Note**

Do not select numbers of tubes that have not been replaced as the pumps will run unnecessarily and ink will be wasted.

Install the jigs SINGLE COLOR FILLING TOOL(MV) for the selected colors and press the **OK** button. (See 6.8.1 for how to use the SINGLE COLOR FILLING TOOL(MV).)

Check that a waste ink bottle is installed and press the **OK** button.

```
>>PRIME 1 INK COLOR
BOTTLE IS EMPTY?      Ⓞ
```

Press the **OK** button after you have installed the jigs.

```
INSTALL                XXXXXXXX
INK SUCTION TOOL      Ⓞ
```

Press the **OK** button and open the ink box cover.

OPEN INK BOX COVER

The following message is displayed when the ink cartridges are installed to the main tank. In this case, close the ink box cover.

\* If the ink cartridges are not installed, install them.

CLOSE INK BOX COVER

Press the **OK** button to start priming the system.

START FILLING  
BOTTLE IS EMPTY? 

The pump stops running.

Remove the jig SINGLE COLOR FILLING TOOL(MV) and press the **OK** button.

REMOVE  
INK SUCTION TOOL 

Check that a waste ink bottle is installed and press the **OK** button.

START PH RECOVERY  
BOTTLE IS EMPTY? 

A normal cleaning is performed.

PH RECOVERING	XXXXXXX
REQUIRED TIME	Y:YY

**(5) PRIME 1 PRINT HEAD**

This procedure is used to remove air accumulated in the tubes.

**Note**

Before performing this procedure, open the COVER(CENTER)-F and remove the COVER(R)ASSY-MW (see 6.3.2).

If you start the procedure before removing the COVER(R)ASSY-MW, you will have to performed the procedure again with the COVER(R)ASSY-MW removed after finishing it once by opening the COVER(CENTER)-F.

Select **PRIME 1 PRINT HEAD** with the **Up** and **Down** buttons, and then press the **OK** button.

```
>PH MAINTENANCE
↓ PRIME 1 PRINT HEAD    Ⓞ
```

```
>>PRIME 1 PRINT HEAD
↓ PRINT HEAD : 1234567    Ⓞ
```

Move the cursor with the **Right** and **Left** buttons, and toggle a digit with the **Up** and **Down** buttons.

A digit that has been toggled disappears.

Finish the selection and press the **OK** button.

```
>>PRIME 1 PRINT HEAD
↓ PRINT HEAD : 1 3    Ⓞ
```

Install the jig SINGLE COLOR FILLING TOOL(MV) and press the **OK** button.

(See 6.8.1 for how to use the SINGLE COLOR FILLING TOOL(MV).)

Check that a waste ink bottle is installed and press the **OK** button.

```
>>PRIME 1 PRINT HEAD
BOTTLE IS EMPTY?    Ⓞ
```

Press the **OK** button after you have installed the jig.

```
INSTALL                XXXXXXXX
INK SUCTION TOOL    Ⓞ
```

Press the **OK** button and open the ink box cover.

```
OPEN INK BOX COVER
```

The following message is displayed when the ink cartridges are installed to the main tank. In this case, close the ink box cover.

\* If the ink cartridges are not installed, install them.

CLOSE INK BOX COVER

Press the **OK** button.

START PRIMING PH?  
OK? 

The pump stops running.

**Note**

Again check that the print heads and the jig SINGLE COLOR FILLING TOOL(MV) are correct.

FILLING WITH LIQUID  
TIME REQUIRED Y:YY

Remove the jig SINGLE COLOR FILLING TOOL(MV) and press the **OK** button.

REMOVE  
INK SUCTION TOOL 

Check that a waste ink bottle is installed and press the **OK** button.

START PH RECOVERY  
BOTTLE IS EMPTY? 

A normal cleaning is performed.

PH RECOVERING XXXXXXXX  
REQUIRED TIME Y:YY

## (6) DRAIN 1 INK COLOR

**Note**

Before performing this procedure, open the COVER(CENTER)-F and remove the COVER(R)ASSY-MW (see 6.3.2).

If you start the procedure before removing the COVER(R)ASSY-MW, you will have to performed the procedure again with the COVER(R)ASSY-MW removed after finishing it once by opening the COVER(CENTER)-F.

Select **DRAIN 1 INK COLOR** with the **Up** and **Down** buttons, and then press the **OK** button.

```
>PH MAINTENANCE
↓ DRAIN 1 INK COLOR      Ⓞ
```

```
>>DRAIN 1 INK COLOR
↓ PRINT HEAD : 1234567    Ⓞ
```

Move the cursor with the **Right** and **Left** buttons, and toggle a digit with the **Up** and **Down** buttons.

A digit that has been toggled disappears.

Finish the selection and press the **OK** button.

```
>>>DRAIN 1 INK COLOR
↓ PRINT HEAD : 1 3        Ⓞ
```

Install the jig SINGLE COLOR FILLING TOOL(MV) and press the **OK** button.

(See 6.8.1 for how to use the SINGLE COLOR FILLING TOOL(MV).)

Check that a waste ink bottle is installed and press the **OK** button.

```
>>>DRAIN 1 INK COLOR
BOTTLE IS EMPTY?        Ⓞ
```

Press the **OK** button after you have installed the jig.

```
INSTALL                XXXXXXXX
INK SUCTION TOOL      Ⓞ
```

(CIS model)

Press the **OK** button and open the ink box cover.

```
OPEN INK BOX COVER
```

Remove the ink cartridges.

REMOVE CC INK CARTRIDGE

CC: Ink color

Close the ink box cover.

CLOSE INK BOX COVER

(LCIS model)

Press the **OK** button and open the reservoir drawer.

CLOSE THE  
RESERVOIR DRAWER

Disconnect the two filter module joints, remove the tube, and then close the reservoir drawer.

REMOVE TUBE           XXXXXXXXX  
AND CLOSE THE DRAWER

X: Ink color

Check that a waste ink bottle is installed and press the **OK** button.

START DRAINING  
BOTTLE IS EMPTY?           Ⓞ

A normal cleaning is performed.

DRAINING LIQUID...  
TIME REQUIRED                   Y:YY

The draining has finished.

NO CC CARTRIDGE  
OPEN INK BOX COVER

CC: Ink color

**(7) PRIME FILTERS (LCIS model only)**

This procedure is used in the following cases.

- To remove air accumulated in the filters.
- To remove air in a filter after replacing it.

**Note**

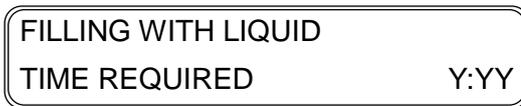
Before starting the procedure, put the printer in the idle state (state with no errors), and open and close the reservoir drawer to supply ink in the sub tanks.



Press the **OK** button.



Press the **OK** button.



Y:YY: Time required (min:sec 10 sec unit)

(Operation is complete)



### 3.4.3.2 OTHER MAINTENANCE

This menu is used to operate the capping unit and the carriage.

Press the **MAINTENANCE** button, select **OTHER MAINTENANCE** with the **Up** and **Down** buttons, and then press the **OK** button.



#### (1) OPEN CAP

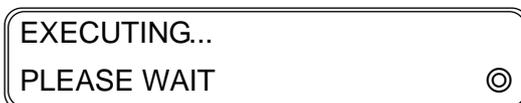
Select **OPEN CAP** with the **Up** and **Down** buttons, and then press the **OK** button.



Press the **OK** button to confirm the operation.



The caps open.



#### (2) CLOSE CAP

This menu is used to operate the capping unit.

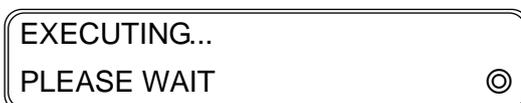
Select **CLOSE CAP** with the **Up** and **Down** buttons, and then press the **OK** button.



Press the **OK** button to confirm the operation.



The caps close.



**(3) TIGHTLY CLOSE CAP**

This menu is used to operate the capping unit.

Select **TIGHTLY CLOSE CAP** with the **Up** and **Down** buttons, and then press the **OK** button.



Press the **OK** button to confirm the operation.



The caps are closed tightly.

**(4) MOVE CARRIAGE**

This menu is used to move the carriage.

Select **MOVE CARRIAGE** with the **Up** and **Down** buttons, and then press the **OK** button.



Select a parameter with the **Up** and **Down** buttons and press the **OK** button.



**HOME POSITION:** The sensor at the home position is activated and the carriage moves to the home position.

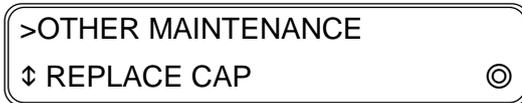
**WIPING POSITION:** The carriage moves to the wiping position.

**MAINTENANCE AREA:** The carriage moves to the maintenance area.

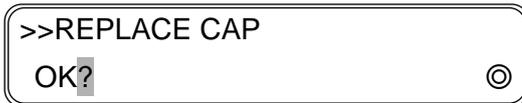
**(5) REPLACE CAP**

This menu is used to condition the caps.

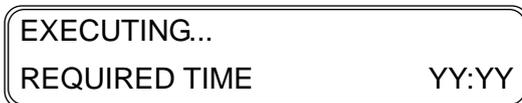
Select **REPLACE CAP** with the **Up** and **Down** buttons, and then press the **OK** button.



Press the **OK** button to confirm the operation.



The operation is performed.



### 3.4.3.3 COUNTERS

This menu is used to enter values for the counters and reset the counters.



Press the **MAINTENANCE** button, select **COUNTERS** with the **Up** and **Down** buttons, and then press the **OK** button.



Select a parameter with the **Up** and **Down** buttons and press the **OK** button.

#### (1) ENTER VALUE

This menu is used to enter values for the counters.



>>ENTER VALUE  
 ↓ SUCTION PUMP

>>ENTER VALUE  
 ↓ INK PUMP CYCLES

(a) **TOTAL PRINT LENGTH**

This menu is used to display and set the length of the printed media.

>>>TOTAL PRINT LENGTH  
 ↓ XXXXXXXX→YYYYYYYm

>>>TOTAL PRINT LENGTH  
 ↓ XXXXXXXX→YYYYYYYft

XXXXXXX: Current setting

YYYYYYY: Setting after change

Unit	m
Range	0 to 2147483

(b) **TOTAL INK USED**

This menu is used to display and set the quantity of ink used.

>>>TOTAL INK USED  
 ↓ CC 00000000

CC: Ink color

Select the ink color with the **Up** and **Down** buttons and press the **OK** button.

>>>>TOTAL INK USED CC  
 ↓ 00000000

CC: Ink color

Unit	ml
Range	0 to 99999999

(c) **Y MOTOR**

This menu is used to display and set the total print length for the Y motor.

>>>Y MOTOR  
 ↓ YYYYYY/XXXXX m

>>>Y MOTOR  
 ↓ YYYYYY/XXXXX ft

XXXXX: Length to display the warning (5 digits)

YYYYYY: Current length (6 digits)

**(d) Y MOTOR PULLEY**

This menu is used to display and set the Y motor pulley operating time.

>>>Y MOTOR PULLEY  
↓ YYYYY/XXXX days

XXXX: Standard period for warning (4 digits)

YYYYY: Current amount of time (5 digits)

**(e) CAP MOTOR**

This menu is used to display and set the operating time of the cap motor.

>>>CAP MOTOR  
↓ YYYY/XXX days

XXX: Standard period for warning (3 digits)

YYYY: Current amount of time (4 digits)

**(f) CAPS**

This menu is used to display and set the cap operating time.

>>> CAPS  
↓ YYYYY/XXXX days

XXXX: Standard period for warning (4 digits)

YYYYY: Current amount of time (5 digits)

**(g) SUCTION PUMP**

This menu is used to display and set the suction pump operating time.

>>>SUCTION PUMP  
↓ YYYY/XXX hours

XXX: Standard period for warning (3 digits)

YYYY: Current amount of time (4 digits)

(h) **SUPPLY PUMP**

(CIS model)

This menu is used to display and set the number of cycles of the supply pumps.

```
>>>SUPPLY PUMP
↓ CC YYYYYYYY CYCL  Ⓞ
```

CC: Ink color

Select the ink color with the **Up** and **Down** buttons and press the **OK** button.

```
>>>>SUPPLY PUMP      CC
↓ YYYYYYYY/XXXXXX CYCL  Ⓞ
```

CC: Ink color

Unit	Cycles
Range	0 to 99999999

(LCIS model)

This menu is used to display and set the operating time of the supply pumps.

```
>>>SUPPLY PUMP
↓ CC YYYY hours  Ⓞ
```

CC: Ink color

Select the ink color with the **Up** and **Down** buttons and press the **OK** button.

```
>>>>SUPPLY PUMP CC
↓ YYYY/XXX hours  Ⓞ
```

CC: Ink color

Unit	H (hours)
Range	0 to 9999

**(2) RESET COUNTER**

This menu is used to reset the counters.

>>RESET COUNTER  
 ↓ TOTAL PRINT LENGTH

>>RESET COUNTER  
 ↓ TOTAL INK USED

>>RESET COUNTER  
 ↓ Y MOTOR

>>RESET COUNTER  
 ↓ Y MOTOR PULLEY

>>RESET COUNTER  
 ↓ CAP MOTOR

>>RESET COUNTER  
 ↓ CAPS

>>RESET COUNTER  
 ↓ SUCTION PUMP

>>RESET COUNTER  
 ↓ INK PUMP CYCLES

>>RESET COUNTER  
 ↓ SUBCART USAGE

**(a) TOTAL PRINT LENGTH**

This menu is used to reset the length of printed media.

>>>TOTAL PRINT LENGTH  
 RESET THIS COUNTER?

Press the **OK** button to reset the counter, or the **CANCEL** button to cancel.

**(b) TOTAL INK USED**

This menu is used to reset the quantity of ink used.

CC: Ink color

Select the ink color with the **Up** and **Down** buttons and press the **OK** button.

Press the **OK** button to reset the counter, or the **CANCEL** button to cancel.

**(c) Y MOTOR**

This menu is used to reset the total print length for the Y motor.

Press the **OK** button to reset the counter, or the **CANCEL** button to cancel.

**(d) Y MOTOR PULLEY**

This menu is used to reset the operating time of the Y motor pulley.

Press the **OK** button to reset the counter, or the **CANCEL** button to cancel.

**(e) CAP MOTOR**

This menu is used to reset the operating time of the cap motor.

Press the **OK** button to reset the counter, or the **CANCEL** button to cancel.

(f) **CAPS**

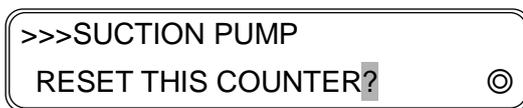
This menu is used to reset the operating time of the cap.



Press the **OK** button to reset the counter, or the **CANCEL** button to cancel.

(g) **SUCTION PUMP**

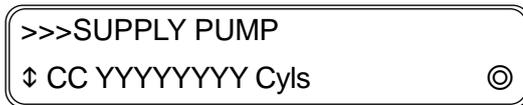
This menu is used to reset the operating time of the suction pump.



(h) **SUPPLY PUMP**

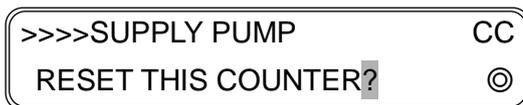
(CIS model)

This menu is used to reset the number of cycles of the supply pumps.



CC: Ink color

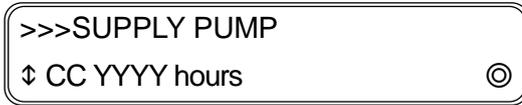
Select the ink color with the **Up** and **Down** buttons and press the **OK** button.



Press the **OK** button to reset the counter, or the **CANCEL** button to cancel.

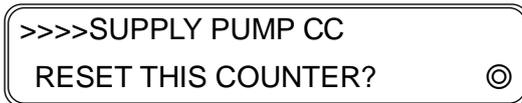
(LCIS model)

This menu is used to reset the operating time of the supply pumps.



CC: Ink color

Select the ink color with the **Up** and **Down** buttons and press the **OK** button.



CC: Ink color

Unit	H (hours)
Range	0 to 9999

(i) **SUBCART USAGE**

This menu is used to reset the operating time of the supply pump.



CC: Ink color

Select the ink color with the **Up** and **Down** buttons and press the **OK** button.



Press the **OK** button to reset the counter, or the **CANCEL** button to cancel.

### 3.4.3.4 TEST PATTERNS

Press the **MAINTENANCE** button, select **TEST PATTERNS** with the **Up** and **Down** buttons, and then press the **OK** button.



Parameter	Description	Remark
VERTICAL STRIPES	Vertical stripes	
HORIZONTAL STRIPES	Horizontal stripes	
CHECKERBOARD	Checkerboard	
GRID,1-DOT LINE	Grid with line width of 1 dot	
SOLID COLOR	Solid color pattern	
GRADATION	Gradation pattern	
MEDIA ADV ACCURACY	Pattern to measure the media advance accuracy	
LINE WIDTH CHECK	Pattern to measure the line width	

Parameter	Description	Remark
PRINT	Print the test pattern.	
MODE	Select the print mode.	
SMART PASS	Configure the smart pass setting.	Normally, set it on.
DIRECTION	Select between bidirectional and unidirectional printing.	
LENGTH	Define the print length.	
NO OF SHEETS	Define the number of sheet.	
K	Select whether or not print the pattern with the K color.	
C	Select whether or not print the pattern with the C color.	
M	Select whether or not print the pattern with the M color.	
Y	Select whether or not print the pattern with the Y color.	
Lc	Select whether or not print the pattern with the Lc color.	
Lm	Select whether or not print the pattern with the Lm color.	
Gy	Select whether or not print the pattern with the Gy color.	

The following is the procedure to print the Vertical Stripes pattern.

To print other patterns, at the beginning select the pattern to print and then follow the same procedure as for Vertical Stripes.

(1) **VERTICAL STRIPES**

```
>TEST PATTERNS
↓ VERTICAL STRIPES
```

Select **VERTICAL STRIPES** with the **Up** and **Down** buttons, and then press the **OK** button.

```
>>VERTICAL STRIPES
↓ PRINT
```

(a) **PRINT**

```
>>VERTICAL STRIPES
↓ PRINT
```

Press the **OK** button.

```
>>VERTICAL STRIPES
PRINT?
```

Press the **OK** button.

```
>>VERTICAL STRIPES
EXECUTING...
```

Change the settings for (b) to (g) below as required before printing.

(b) **MODE**

>>VERTICAL STRIPES  
 ↓ MODE : DRAFT

>>>MODE  
 ↓ MODE : DRAFT

Parameter	Description	Remark
DRAFT	Draft	(CIS model only)
FAST PROD	Fast production	
PRODUCTION	Production	
PRODUCTION HD	Production, high density	(CIS model only)
STANDARD	Standard	(Default)
STANDARD HD	Standard, high density	(CIS model only)
QUALITY	Quality	
QUALITY HD	Quality, high density	(CIS model only)
HIGH QUALITY	High quality	
HIGH QUAL HD	High quality, high density	
MAX QUALITY	Max quality	
MAX QUAL HD	Max quality, high density	

(c) **SMART PASS**

>>VERTICAL STRIPES  
 ↓ SMART PASS : ON

>>>SMART PASS  
 ↓ YY

Parameter	Description	Remark
ON	Smart pass on	(Default)
OFF	Smart pass off (not with the previous print modes)	

(d) **DIRECTION**

>>VERTICAL STRIPES  
 ↓ DIRECTION : BIDIR

>>>DIRECTION  
 ↓ YYYYYY

Parameter	Description	Remark
BIDIR	Bidirectional direction	(Default)
SINGLE	Unidirectional direction	

(e) **LENGTH**

>>VERTICAL STRIPES  
 ↓ LENGTH : 00400mm

>>>LENGTH  
 ↓ 00400 → 00400mm

Unit	mm
Range	1 to 99999

Default: 400 mm

(f) **NO OF SHEETS**

>>VERTICAL STRIPES  
 ↓ NO OF SHEETS : 01

>>>NO OF SHEETS  
 ↓ 01 → 01

Unit	Number of sheet
Range	1 to 99

Default: 1

(g) **K to Gy**

>>VERTICAL STRIPES  
 ↓ CC : ON ⊙

>>>CC  
 ↓  ON ⊙

Parameter	Description	Remark
ON	Use for print	(Default)
OFF	Do not use for print	

(2) **FEED MEDIA** and **BACK FEED MEDIA**

Select **FEED MEDIA** or **BACK FEED MEDIA** with the **Up** and **Down** buttons.

>TEST PATTERNS  
 ↓ FEED MEDIA ⊙

>TEST PATTERNS  
 ↓ BACK FEED MEDIA ⊙

Hold the **OK** button pressed to feed or backfeed the media.

FEEDING MEDIA...

BACKFEEDING MEDIA...

Release the **OK** button to stop feeding or backfeeding and to return to the previous screen.

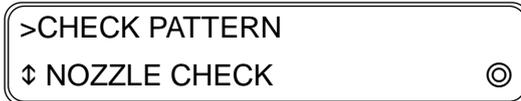
>TEST PATTERNS  
 ↓ FEED MEDIA ⊙

>TEST PATTERNS  
 ↓ BACK FEED MEDIA ⊙

### 3.4.3.5 CHECK PATTERN

#### (1) NOZZLE CHECK

Select **NOZZLE CHECK** with the **Up** and **Down** buttons, and then press the **OK** button.



Press the **OK** button to confirm the execution.

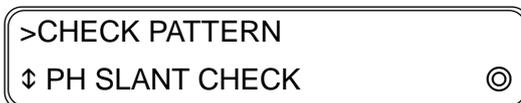


You may press the **CANCEL** button to interrupt the printing.



#### (2) PH SLANT CHECK

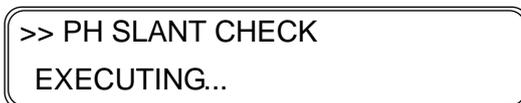
Select **PH SLANT CHECK** with the **Up** and **Down** buttons, and then press the **OK** button.



Press the **OK** button to confirm the execution.

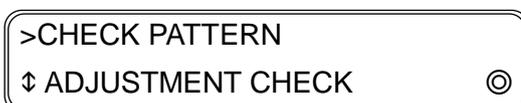


You may press the **CANCEL** button to interrupt the printing.



#### (3) ADJUSTMENT CHECK

Select **ADJUSTMENT CHECK** with the **Up** and **Down** buttons, and then press the **OK** button.



Press the **OK** button to confirm the execution.

```
>>ADJUSTMENT CHECK
EXECUTE OK? 
```

You may press the **CANCEL** button to interrupt the printing.

```
>>ADJUSTMENT CHECK
EXECUTING...
```

#### (4) PH CHECK PATTERN

Select **PH CHECK PATTERN** with the **Up** and **Down** buttons, and then press the **OK** button.

```
>CHECK PATTERN
↓ PH CHECK PATTERN 
```

Press the **OK** button to confirm the execution.

```
>>PH CHECK PATTERN
↓ PRINT HEAD : 1234567 
```

You may press the **CANCEL** button to interrupt the printing.

```
>>PH CHECK PATTERN
↓ PRINT HEAD : 1 3 
```

Move the cursor with the **Right** and **Left** buttons, and toggle a digit with the **Up** and **Down** buttons.

A digit that has been toggled disappears.

Finish the selection and press the **OK** button.

Press the **OK** button to confirm the execution.

```
>>PH CHECK PATTERN
EXECUTE OK? 
```

You may press the **CANCEL** button to interrupt the printing.

```
>>PH CHECK PATTERN
EXECUTING...
```

**(5) ALL PRINT MODES**

Select **ALL PRINT MODES** with the **Up** and **Down** buttons, and then press the **OK** button.

```
>CHECK PATTERN
↓ ALL PRINT MODES      Ⓞ
```

Press the **OK** button to confirm the execution.

```
>> ALL PRINT MODES
EXECUTE OK?           Ⓞ
```

You may press the **CANCEL** button to interrupt the printing.

```
>> ALL PRINT MODES
EXECUTING...
```

**(6) CHECK BIDIRECTION1 to 4**

Select **CHECK BIDIRECTION1** with the **Up** and **Down** buttons, and then press the **OK** button.

```
>CHECK PATTERN
↓ CHECK BIDIRECTION1  Ⓞ
```

Press the **OK** button to confirm the execution.

```
>> CHECK BIDIRECTION1
EXECUTE OK?           Ⓞ
```

You may press the **CANCEL** button to interrupt the printing.

```
>> CHECK BIDIRECTION1
EXECUTING...
```

(7) **FEED MEDIA** and **BACK FEED MEDIA**

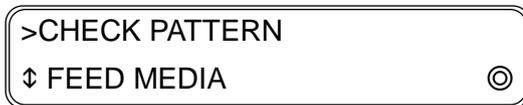
Select **FEED MEDIA** or **BACK FEED MEDIA** with the **Up** and **Down** buttons.



Hold the **OK** button pressed to feed or backfeed the media.



Release the **OK** button to stop feeding or backfeeding and to return to the previous screen.



## 3.5 Special Operations

When the printer is turned on, press the **power switch** and another key as shown in the table below at the same time so that the printer enters a special operation mode. (The **grayed operations** are not available to users.)

Combination of buttons	Special operation modes
<b>Power switch + MENU</b> button	Language setting mode (Enters directly the language menu in system in the user mode.)
<b>Power switch + OK</b> button	Post-head replacement guidance skip mode (After a print head has been replaced, normally the <b>Guidance after print head replacement</b> is displayed when the printer starts. This mode is used to skip this guidance.)
<b>Power switch + CANCEL</b> button	POC skip mode (Start the printer without executing POC.)
<b>Power switch + CANCEL + MENU</b> button	Ignore fatal error mode (Enable panel operation even when a fatal error has occurred.)

### 3.5.1 Language setting mode

This mode is used when the user cannot understand the menus because the wrong language is set.

When the printer enters this mode, the language on the LCD panel changes to English automatically, and the menus to set the language, time zone, length unit, and temperature unit are displayed.

**Note**

See 3.6.1 Starting the printer with setting the language for details.

### 3.5.2 Post-head replacement guidance skip mode

This menu is used to skip the print head replacement guidance when starting the printer.

After a print head has been replaced, normally the guidance after print head replacement is displayed when the printer starts. This mode is used to skip this guidance.

After the printer has started in this skip mode once, it will not display the post-head replacement guidance even if restarted later.

**Note**

See 3.6.3 Starting the printer after replacing the print head for details.

### 3.5.3 POC Skip Mode (Not available to users)

This mode functions in the same way as normal startup operation except that POC is skipped.

This mode is used to operate the printer forcibly when POC error has occurred. (However, this does not ensure printer normal operation as an error has occurred.)

Actually the printer does not skip the POC processing, but always replies the POC error with normal value.

**Note**

POC errors: System errors 1010 to 1e00

### 3.5.4 Ignore fatal error mode (Not available to users)

This mode is used to enable panel operation even when a fatal error has occurred.

When the printer is started in this mode, the password entry screen for the maintenance mode is displayed.



With a password for the maintenance mode, special maintenance mode, production mode, or engineering mode entered, the printer starts and enters the corresponding mode in the offline state.

This mode is used to:

- Clear errors that have been saved for a long time
- Initialize the parameter
- Check the monitor
- Perform an online update
- Check the version with the carriage fixed

Below are the ignore fatal mode operations, i.e., this mode:

- lasts until the printer is shut down.
- prevents the printer from going online.
- disables error detection (errors are not displayed).
- disables carriage functions such as printing and cleaning.
- disables update of the carriage management time.

## 3.6 Special Operations' Guidance

This section explains the guidance for the three special operations below:

- Starting the printer with setting the language;
- Starting the printer with setting the number of color selection; and
- Starting the printer after replacing the print head

For each guidance, a 3-digit time counter appears and decreases at intervals of 10 seconds with the passage of time.

### 3.6.1 Starting the printer with setting the language

The following menu appears when:

- The printer is turned on for the first time after shipping; or
- when

it is started with the **Power** + **MENU** buttons held (special mode).

If no print head is installed, the installation guidance appears after this setting.

INITIALIZING...  
PLEASE WAIT

Select a language and press the **OK** button.

>>>LANGUAGE  
↓ ENGLISH

Press the **OK** button to confirm the selected language or press the **CANCEL** button to select a language again.

>>>LANGUAGE  
ENGLISH OK?

Set a time zone and press the **OK** button.

>>>TIME ZONE (GMT+)  
↓ YY/MM/DD HH:MM +12

Press the **OK** button to confirm the selected time zone or press the **CANCEL** button to select a time zone again.

>>>TIME ZONE (GMT+)  
YY/MM/DD HH:MM OK?

Set a unit of length and press the **OK** button.

>>>LENGTH UNIT  
⇅ INCH

Press the **OK** button to confirm the selected unit or press the **CANCEL** button to select a unit of length again.

>>>LENGTH UNIT  
INCH OK?

Set a unit of temperature and press the **OK** button.

>>>TEMPERATURE UNIT  
⇅ FAHRENHEIT

Press the **OK** button to confirm the selected unit or press the **CANCEL** button to select a unit of temperature again.

>>>TEMPERATURE UNIT  
FAHRENHEIT OK?

End of language setting.

INITIALIZING...  
PLEASE WAIT

### Note

You cannot return to an item once it has been set.  
To cancel a wrong setting, shut down the printer and then enter this mode again.

### 3.6.2 Starting the printer with setting the number of color selection (CIS model only)

When the printer is started with the ink system not primed, the guidance to select the number of ink colors is displayed.

INITIALIZING...  
PLEASE WAIT

Select the number of colors with the **Up** and **Down** buttons, and then press the **OK** button.

>>>NUMBER OF COLORS  
↓ 7 COLORS

Press the **OK** button.

>>>NUMBER OF COLORS  
7 COLORS OK?

Press the **OK** button.

INITIALIZING...  
PLEASE WAIT

Press the **OK** button.

RESTART PRINTER

The printer restarts.

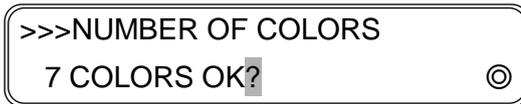
Booting up...  
F/W Ver. X.XX\_XX

INITIALIZING...  
PLEASE WAIT

The number of colors setting screen is displayed again. Press the **OK** button without changing the setting.

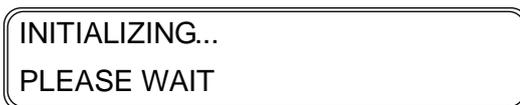


Press the **OK** button.

**Note**

If you change the number of color again, the message prompting you to **RESTART THE PRINTER** will appear once more.

Press the **OK** button.



### 3.6.3 Starting the printer after replacing the print head

This guidance is displayed when starting the printer after executing the print head replacement operation and replacing the print heads.

INITIALIZING...  
PLEASE WAIT

The printer starts and the carriage moves to the home position.

(A special initializing operation is performed.)

REPLACE PRINT HEAD  
↓ PRINT HEAD : 1234567

REPLACE PRINT HEAD  
↓ PRINT HEAD : 1 3

Move the cursor with the **Right** and **Left** buttons, and toggle a digit with the **Up** and **Down** buttons.

A digit that has been toggled disappears.

Finish the selection and press the **OK** button.

The **OK** button operation is disabled if incorrect print head combination is selected.

#### Note

To prevent unnecessary pump operation and ink waste, do not select numbers of print heads that have not been replaced.

Check that a waste ink bottle is installed and press the **OK** button.

>>REPLACE PRINT HEAD  
BOTTLE IS EMPTY?

Install the ink suction tool and press the **OK** button.

INSTALL XXXXXXXX  
INK SUCTION TOOL

Press the **OK** button.

START PRIMING PH?  
OK?

Press the **OK** button and open the ink box cover.

OPEN INK BOX COVER

Install the ink cartridge and close the ink box cover.

CLOSE INK BOX COVER

Check that a waste ink bottle is installed and press the **OK** button.

START FILLING  
BOTTLE IS EMPTY? ©

The filling of the print head starts.

FILLING WITH LIQUID  
TIME REQUIRED Y:YY

After the filling is complete, remove the tool and press the **OK** button.

REMOVE XXXXXXXX  
INK SUCTION TOOL ©

Check that a waste ink bottle is installed and press the **OK** button.

START PH RECOVERY  
BOTTLE IS EMPTY? ©

The cleaning of the print head starts.

PH RECOVERING XXXXXXXX  
REQUIRED TIME Y:YY

The priming of the print head starts.

INITIALIZING...  
PLEASE WAIT

The guidance ends when the print head priming finishes.

PRINTER READY  
01 : PAPER/1626 mm

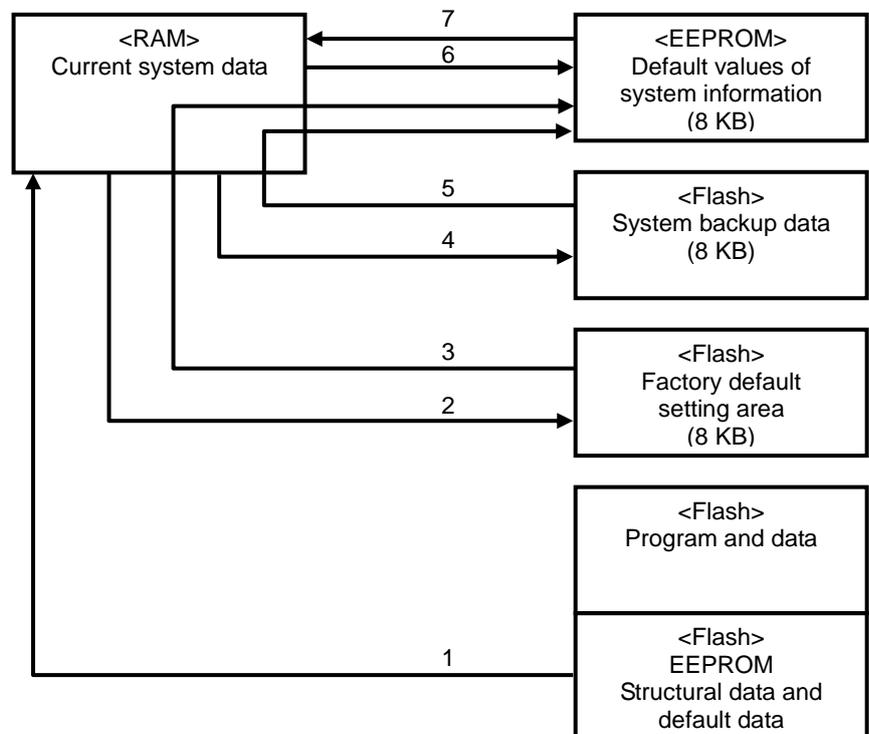
### 3.7 Management of System Information

System information managed by the engine, such as mechanism adjustment parameters, counters of print length, and ink cartridge information, is stored in the serial EEPROM.

System information is loaded to the RAM or flash memory as required during operation or for backup.

The description below explains the information stored in each memory area.

- RAM area: Stores the current system data.
- EEPROM area: Stores the default values of system information at power on.
- Flash memory area: Stores structural data and default data of EEPROM. EEPROM data at the time of shipping and backup data of EEPROM are stored.



**Path 1: Initialization of EEPROM (Flash → EEPROM)**

<Processing>

Initializes EEPROM with the default values of the program. Correction values of the engine become the values before adjustment.

<Operation and start timing>

This initialization can be performed with the maintenance mode's menu on the operation panel.

- System menu: **INITIALIZE EEPROM**

**Note:** Restart the printer after initialization.

**Path 2: Storing factory default settings in the flash memory (EEPROM → Flash)**

<Processing>

Stores all EEPROM data in the factory default setting area of the flash memory.

<Operation and start timing>

This storing can be performed with the maintenance mode's menu on the operation panel.

- System menu: **SAVE DEFAULT SET.**

**Path 3: Restoring factory default settings in the EEPROM (Flash → EEPROM)**

<Processing>

Writes a part of information (\*1) of the EEPROM factory default settings saved in the flash memory into the EEPROM.

\*1: Printer data, media registration data, adjustment parameters (except life-limited parts counters)

<Operation and start timing>

Operation can be executed with the user mode's menu or maintenance mode's menu on the operation panel.

- System menu: **SET ALL TO DEFAULT** (user mode)

- System menu: **LOAD DEFAULT SET.** (maintenance mode)

**Note:** Restart the printer after loading the settings.

**Path 4: Storing EEPROM data for backup in the flash memory (EEPROM → Flash)**

<Processing>

Stores all current system data in the EEPROM backup area of the flash memory.

<Operation and start timing>

- (1) This is performed when the power is shut down.
- (2) This storing operation can be performed with the maintenance mode's menu on the operation panel.
  - System menu: **SAVE PRINTER SET.**

**Path 5: Restoring EEPROM backup data from the flash memory in EEPROM  
(Flash → EEPROM)**

<Processing>

Writes all the EEPROM backup data saved in the flash memory into the EEPROM.

<Operation and start timing>

This restoration operation can be performed with the maintenance mode's menu on the operation panel.

- System menu: **LOAD PRINTER SET.**

**Note:** Restart the printer after loading the settings.

**Path 6: RAM → EEPROM****Path 7: EEPROM → RAM**

Path 6 and Path 7 are used by the engine firmware as required.

### 3.8 CP\_Manager <Maintenance Mode>

This section explains the two kinds of tabs below with CP\_Manager in maintenance mode:

- Blue circled tab in the figure below

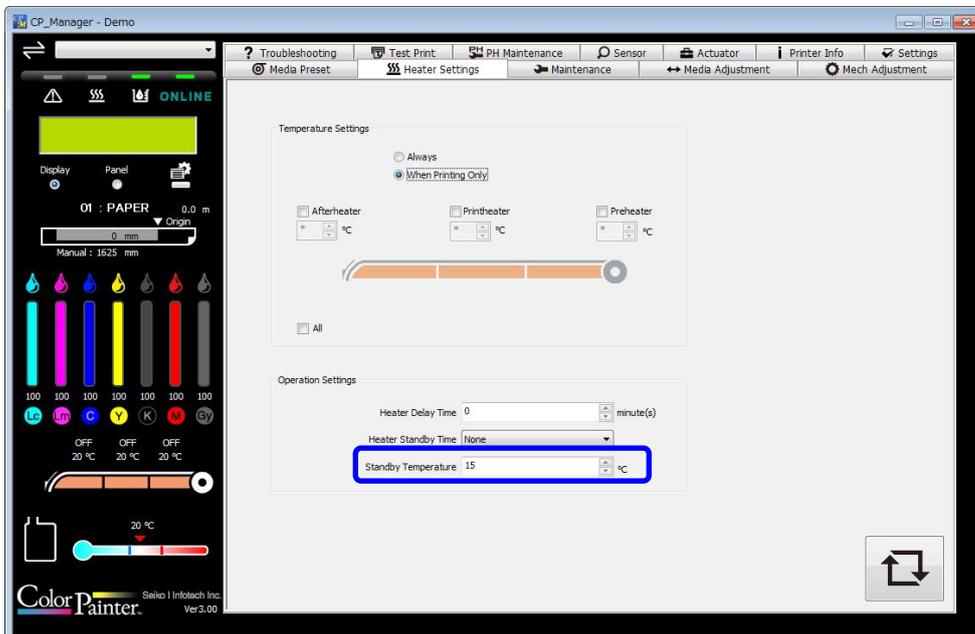
While the tabs are also supported in user mode, their functions have increased in maintenance mode.

- Red circled tab

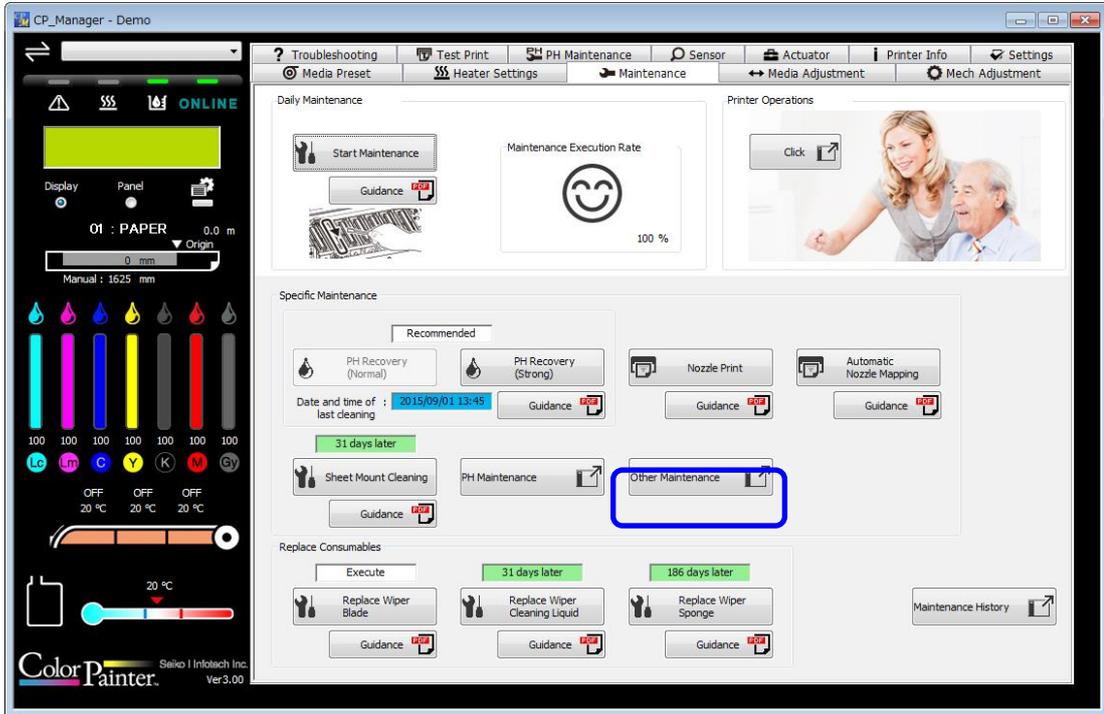
While the tabs are not supported in user mode, they are supported in maintenance mode.



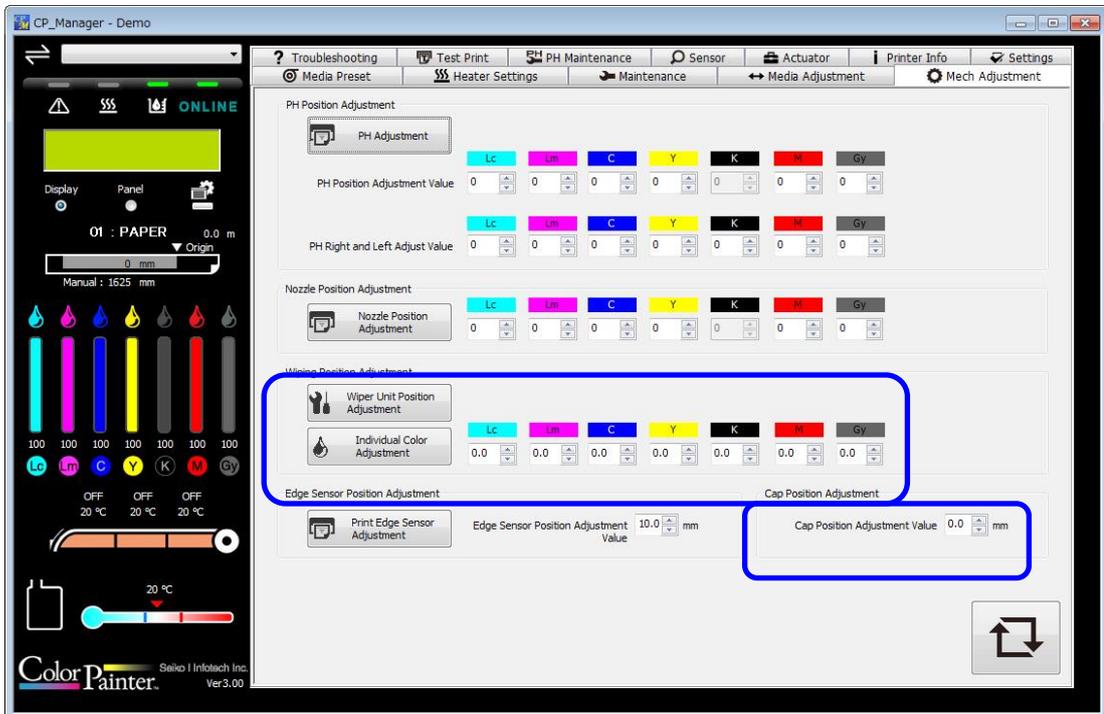
Function added in the **Heater Setting** tab (blue circled tab)



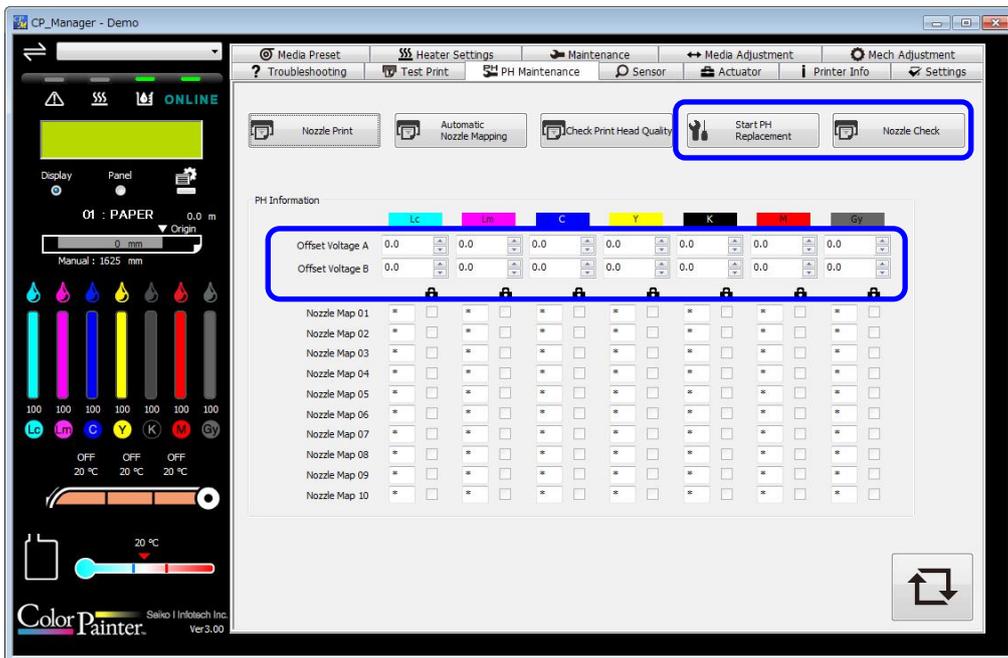
Function added in the **Maintenance** tab (blue circled tab)



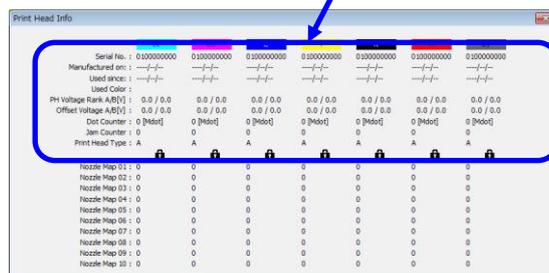
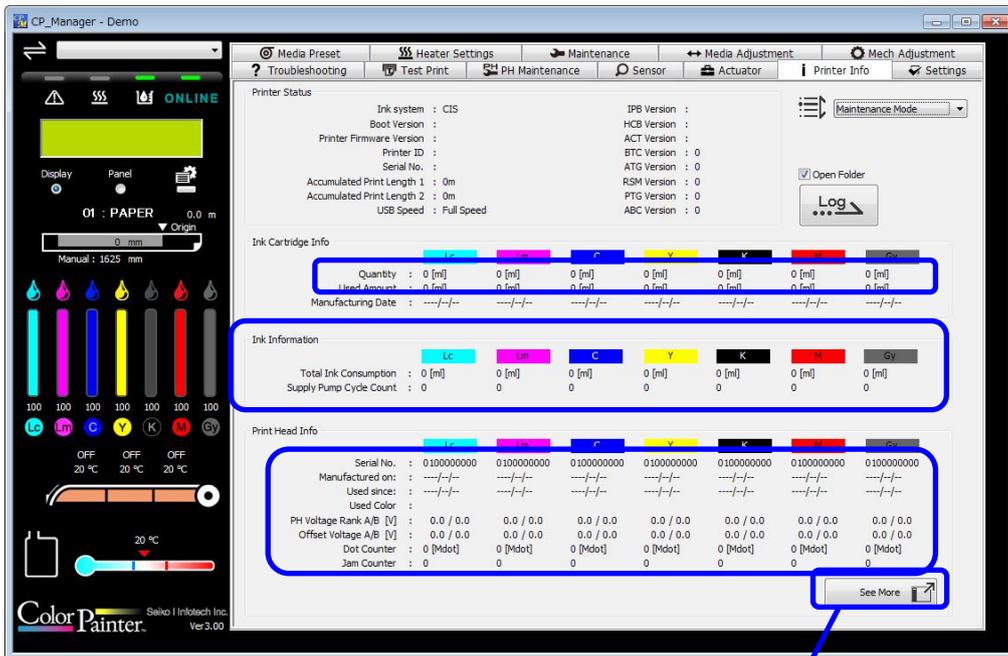
Functions added in the **Mech Adjustment** tab (blue circled tab)



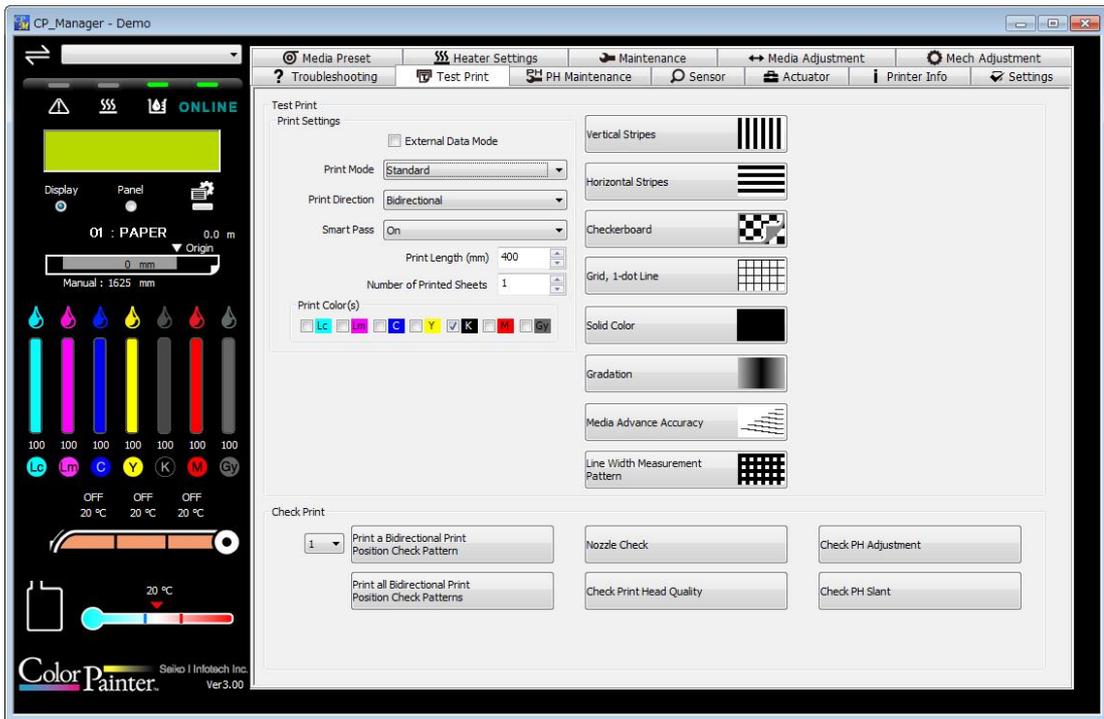
Functions added in the **PH Maintenance** tab (blue circled tab)



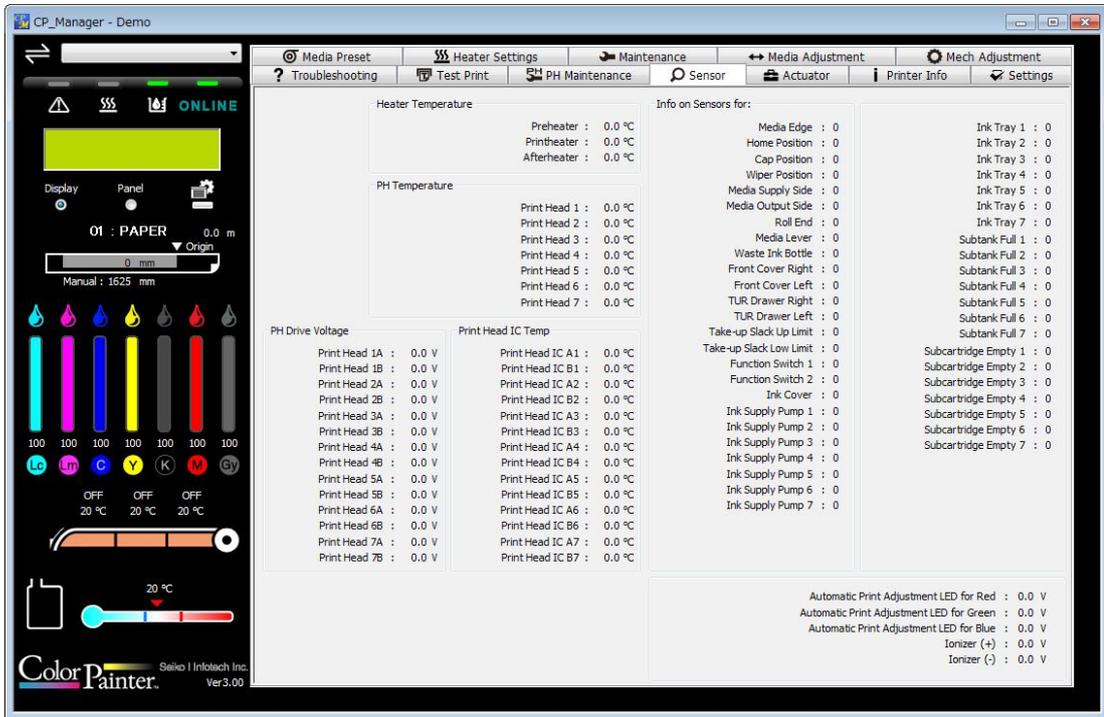
Functions added in the **Printer Info** tab (blue circled tab)



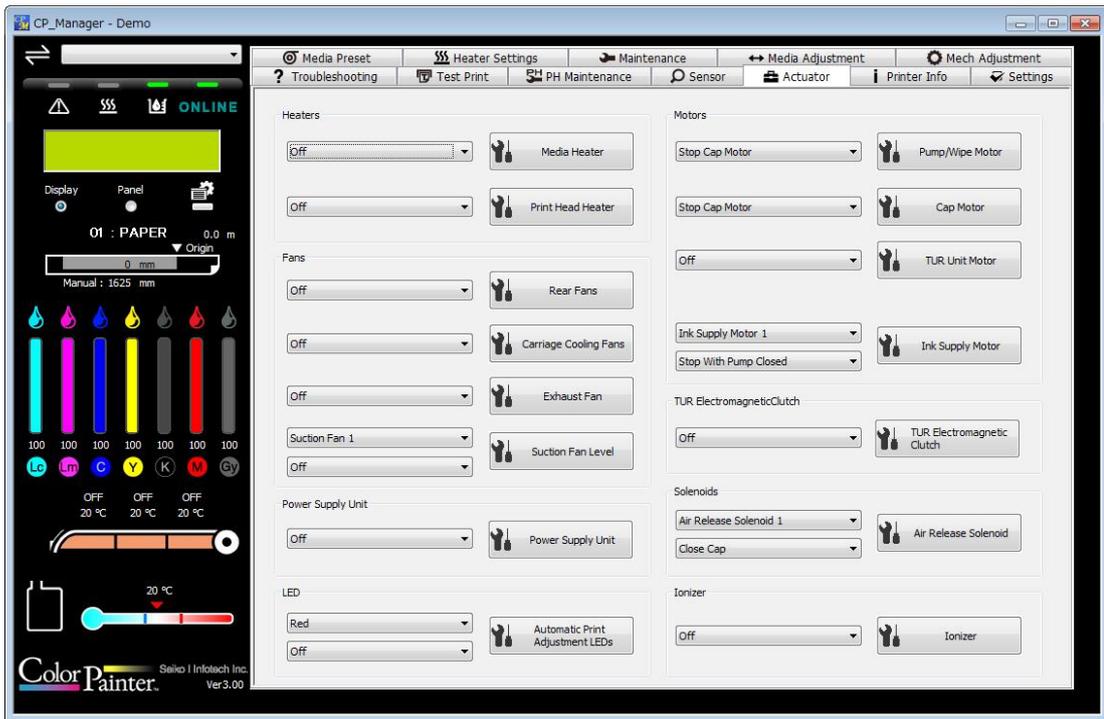
The **Test Print** tab that has been added in maintenance mode only



The **Sensor** tab that has been added in maintenance mode only



The **Actuator** tab that has been added in maintenance mode only



## Chapter 4 Troubleshooting (General)

This chapter describes general troubleshooting for the printer.

Check the following items before suspecting a failure of the printer.

### 4.1 Items to Check when a Problem Occurs

< The printer does not turn on >

Symptom	User inspection and check item	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
The printer does not turn on.	Connection of power cable	Connect the cable properly to the wall outlet.	<ul style="list-style-type: none"> <li>- Check the connection of the fuse harness.</li> <li>- Check the connection of the CABLE(ACT-IPB-IF)-ASSY(MW).</li> <li>- Check the connection of the CABLE(PSU-ACT)-ASSY(MW).</li> <li>- Check the connection of the CABLE(PSU-ACT-IF)-ASSY(MW).</li> <li>- Check the condition of the panel cable harness.</li> <li>- Check the connection of the panel cable harness.</li> </ul>	<ul style="list-style-type: none"> <li>- PCB-ASSY-ACT3</li> <li>- PCB-ASSY-IPB5-100</li> <li>- Power supply unit (38V)</li> <li>- Power supply unit (24V)</li> <li>- FUSE</li> <li>- PANEL, MW</li> </ul>	
	Power supply to outlet	Properly supply power to the outlet. Check that the power supply voltage is correct.			
	Position of the main power switch	Turn the main power switch on. (See <b>Power-on procedure</b> in the <i>User's Guide</i> .)			

< The paper guide does not become hot even after turning the heaters on >

Symptom	User inspection and check item	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
The paper guide does not become hot even after turning the heaters on.	Printer condition	The paper guide becomes hot during printing or when the heater setting is set to ON in the heater control menu. Check that the paper guide becomes hot during printing or when you set the heater ON. (See <b>Adjust the heaters temperatures</b> in the <i>User's Guide</i> .)	<ul style="list-style-type: none"> <li>- Check with a multimeter that the power outlet voltage is between 200V and 240V.</li> <li>- Check that the ambient temperature at the installation location meets the operating conditions (more than 15 degrees).</li> <li>- Check that the preheater, printhead, and afterheater harnesses are not disconnected or broken, and that their jacket is not damaged.</li> <li>- Check the connection of CABLE(TRC-CTL)-ASSY(MW).</li> </ul>	<ul style="list-style-type: none"> <li>- PCB-ASSY-TRC-MW</li> <li>- PCB-ASSY-ACT3</li> <li>- PCB-ASSY-IPB5-100</li> <li>- REAR PAPER GUIDE,MW</li> <li>- CABLE(TRC-CTL)-ASSY(MW)</li> </ul>	
	The RIP software settings on the computer	It is possible to set the heaters temperatures from the RIP software on the computer. Check the settings on the computer.			
	Heater control menu	Print a drawing after setting the target heater (afterheater, printhead, preheater) ON again, or check that the paper guide becomes hot after forcibly setting the heater ON. (See <b>Adjust the heaters temperatures</b> in the <i>User's Guide</i> .)			
	Power supply voltage	Connect the printer to AC 200 V power supply.			

< The printer fails to start or operate normally >

Symptom	User inspection and check item	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
The printer fails to start or operate normally.	Error LED and the LCD message	Take appropriate measures according to the error message. (See <b>When an error message is displayed</b> in the <i>User's Guide</i> .)	See Chapter 5.	See Chapter 5.	Chapter 5

< Cannot print >

Symptom	User inspection and check item	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
Cannot print.	USB cable connection	Connect properly the USB cable. (See <b>To connect the USB cable</b> in the <i>User's Guide</i> .)	Install the last firmware version.	- Firmware version - PCB-ASSY-IPB5-100	
	Error LED and the LCD message	Take appropriate measures according to the error message. (See <b>When an error message is displayed</b> in the <i>User's Guide</i> .)	See Chapter 5.	See Chapter 5.	Chapter 5
	When the error LED is off	Perform a test print. (See <b>Print the NOZZLE PRINT pattern</b> in the <i>User's Guide</i> .) (Check that the test pattern in the RIP software can be printed.)	Install the last firmware version.	- Firmware version - PCB-ASSY-IPB5-100	
	Print heads cleaning	Clean the print head. (See <b>Performing cleaning independently</b> in the <i>User's Guide</i> .)	- Install the last firmware version. - Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation. - Check that the air release solenoid on the capping unit is not soiled with ink.	- Firmware version - CAPPING UNIT,MW - INKJET HEAD,MW	

< Although the printer is in the print mode, printing does not start with PREHEATING displayed on the operation panel >

Symptom	User inspection and check item	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
Although the printer is in the print mode, printing does not start with PREHEATING displayed on the operation panel.	Room temperature	Raise the room temperature. (Recommended temperature: 20 to 25°C)	- Check with a multimeter that the power outlet voltage is between 200V and 240V.	- PCB-ASSY-TRC-MW - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	
	Effect of air flow	If the air from an air conditioner or a fan is blowing against the paper guide, change the air flow direction, the orientation of the printer, or the location of the printer.	- Check that the ambient temperature at the installation location meets the operating conditions (more than 15 degrees). - Check that the preheater, printhead, and afterheater harnesses are not disconnected or broken, and that their jacket is not damaged. - Check the connection of CABLE (TRC-CTL)-ASSY(MW). - Check the connection of HEAD CABLE,MW connectors on the HCB1M and the print heads. - Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors.	- REAR PAPER GUIDE,MW - PLATEN UNIT - FRONT PAPER GUIDE - CABLE (TRC-CTL)-ASSY(MW) - HEAD CABLE,MW - INKJET HEAD,MW - ROBOT CABLE,MW - CARRIAGE FFC,MW - PCB-ASSY-HCB1M - PCB-ASSY-IPB5-100 - ROBOT CABLE,MW - CARRIAGE FFC,MW	

< The transmitted data is not printed >

Symptom	User inspection and check item	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
The transmitted data is not printed.	ONLINE LED (flashing?)	Check the communication conditions to the host computer.	Install the last firmware version.	- Firmware version - PCB-ASSY-IPB5-100	

< Media jams occur frequently >

Symptom	User inspection and check item	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
Media jams occur frequently.	Media type	Check that the media type setting matches the type of the media installed.	<ul style="list-style-type: none"> <li>- Check the connection of the Y motor cable.</li> <li>- Check the connection of the linear encoder connector.</li> <li>- Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5.</li> <li>- Check the connection of ROBOT CABLE,MW connectors.</li> <li>- Check that the ENCODER STRIP,MW is clean and not damaged.</li> <li>- Check the tension of the SUS belt.</li> <li>- Check the tension of the Y motor timing belt.</li> <li>- Check that the non-reflecting tape on the platen is clean.</li> <li>- Check that the edge sensor is clean and correctly installed.</li> <li>- Check the connection of the edge sensor connectors.</li> </ul>	<ul style="list-style-type: none"> <li>- Y DRIVE MOTOR,MW</li> <li>- CABLE NCODER,MW</li> <li>- ENCODER STRIP,MW</li> <li>- PCB-ASSY-ACT3</li> <li>- PCB-ASSY-HCB1M</li> <li>- PCB-ASSY-IPB5-100</li> <li>- CARRIAGE ABLE,MW</li> <li>- ROBOT CABLE,MW</li> <li>- DRIVING PULLEY UNIT,MW</li> <li>- CABLE(Y-MOT)-ASSY(MW)</li> <li>- Media detect and Line sensor OKI Data Infotech</li> </ul>	
	Media installation	Install the media properly. (See <b>Loading the media on the printer</b> in the <i>User's guide</i> .)			
	Obstructions in the carriage path preventing the carriage from moving well	Remove the obstructions. (See <b>How to clear media jams</b> in the <i>User's guide</i> .)			
	Obstructions in the media path preventing the media from advancing well	Remove the obstructions. (See <b>How to clear media jams</b> in the <i>User's guide</i> .)			
	Suction fan power	Reduce the power of the suction fan. (See <b>Prevent the media from sticking and wrinkling</b> in the <i>User's guide</i> .)			
	Heater temperature setting	Lower the heater temperature setting. (See <b>Adjust the heaters temperatures</b> in the <i>User's guide</i> .)			

< Print quality is poor >

Symptom	User inspection and check item	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
Print quality is poor.	See <b>Solve print quality issues</b> in the <i>User's Guide</i> .	See <b>Solve print quality issues</b> in the <i>User's Guide</i> .	See <b>5.1 Poor Print Quality</b> .	See <b>5.1 Poor Print Quality</b> .	📖 5.1 Poor Print Quality.

< Printouts are blank sheets >

Symptom	User inspection and check item	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
Printouts are blank sheets.	Print data	Check the current print data to check if you sent blank sheet data.	Install the last firmware version.	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- PCB-ASSY-IPB5-100</li> </ul>	

< Cannot load the media >

Symptom	User inspection and check item	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
Cannot load the media.	See <b>Procedure to load transparent media and media with a black reverse side</b> in the <i>User's Guide</i> .	See <b>Procedure to load transparent media and media with a black reverse side</b> in the <i>User's Guide</i> .	<ul style="list-style-type: none"> <li>- Check that the rear paper sensor is correctly installed and not dirty.</li> <li>- Check the connection of the rear paper sensor connectors.</li> <li>- Check that the non-reflecting tape on the platen is clean.</li> <li>- Check that the edge sensor is clean and correctly installed.</li> <li>- Check the connection of the edge sensor connectors.</li> </ul>	<ul style="list-style-type: none"> <li>- PCB-ASSY-ACT3</li> <li>- Media detect and Line sensor OKI Data Infotech</li> <li>- PCB-ASSY-HCB1M</li> <li>- PCB-ASSY-IPB5-100</li> </ul>	

< Printing is slow. The carriage moves sometimes only. >

Symptom	User inspection and check item	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
Printing is slow. The carriage moves sometimes only.	USB connection speed	<p>When the data transmission speed is slow, the printer waits for the data with the print heads capped.</p> <p>Check the USB's transmission speed. If the USB connection is full speed, the speed can be improved by changing the conditions of the connection to the computer as follows, so that the connection becomes high speed. (See <b>Check the USB connection status</b> in the <i>User's Guide</i>.)</p> <ul style="list-style-type: none"> <li>- Reconnect the USB cable.</li> <li>- Connect the USB cable to the USB 2.0 port.</li> <li>- Reinstall the driver.</li> <li>- Change the USB cable to a cable supporting high speed transmissions.</li> <li>- If a hub is used, change the hub to a model supporting high speed transmissions.</li> </ul>	<ul style="list-style-type: none"> <li>- Install the last firmware version.</li> <li>- Check that the ambient temperature at the installation location meets the operating conditions (35 degrees or lower).</li> <li>- Check the COOLINGFAN,MW operation in the ACTUATORS menu.</li> <li>- Check that the COOLING FAN,MW connectors are connected correctly.</li> <li>- Check the connection of HEAD CABLE,MW connectors on the HCB1M and the print heads.</li> <li>- Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5.</li> <li>- Check the connection of ROBOT CABLE,MW connectors.</li> </ul>	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- PCB-ASSY-IPB5-100</li> <li>- HEAD CABLE,MW</li> <li>- INKJET HEAD,MW</li> <li>- ROBOT CABLE,MW</li> <li>- CARRIAGE FFC,MW</li> <li>- PCB-ASSY-HCB1M</li> <li>- ROBOT CABLE,MW</li> </ul>	

< Printing is slow. During print, print heads are capped frequently. >

Symptom	User inspection and check item	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
Printing is slow. During print, print heads are capped frequently.	High-temperature environment	If the printer heads temperature is 40°C or more, the printer prints at a lower speed. Set the ambient temperature to 20 to 25°C (recommended temperature), and leave the printer for one hour or more before starting the print.	<ul style="list-style-type: none"> <li>- Check that the ambient temperature at the installation location meets the operating conditions (35 degrees or lower).</li> <li>- Check the COOLINGFAN,MW operation in the ACTUATORS menu.</li> <li>- Check that the COOLING FAN,MW connectors are connected correctly.</li> <li>- Check the connection of HEAD CABLE,MW connectors on the HCB1M and the print heads.</li> <li>- Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5.</li> <li>- Check the connection of ROBOT CABLE,MW connectors.</li> </ul>	<ul style="list-style-type: none"> <li>- PCB-ASSY-IPB5-100</li> <li>- COOLING FAN,MW</li> <li>- HEAD CABLE,MW</li> <li>- INKJET HEAD,MW</li> <li>- ROBOT CABLE,MW</li> <li>- PCB-ASSY-HCB1M</li> <li>- CARRIAGE FFC,MW</li> </ul>	
	Another connected device transferring a large amount of data	Remove any additional devices connected via USB.	Install the last firmware version.	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- PCB-ASSY-IPB5-100</li> </ul>	
	Computer specifications	Connect the printer to a computer satisfying the recommended operational environment for your RIP software. For the recommended operational environment, contact the manufacturer of your RIP software.			
Computer other processing	Terminate other software applications, for example, anti-virus software.				

< You cannot understand the current operation panel display language >

Symptom	User inspection and check item	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
You cannot understand the current operation panel display language.	Language setting	Start with the printer turned off. While holding the <b>MENU</b> button down, press the <b>POWER</b> switch to turn the printer on. The language selection menu appears on the operation panel display. Select your preferred language.	Install the last firmware version.	- Firmware version - PCB-ASSY-IPB5-100	

< Clogged nozzles cannot be cleared >

Symptom	User inspection and check item	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
Clogged nozzles cannot be cleared.	Damaged media edges	If the media is damaged with some sections coming out from the edge guards, it may contact the heads nozzle surfaces and cause nozzles to clog. Cut any damaged sections with a pair of scissors or a cutter before installing the media.	- Install the last firmware version. - Check that ink is sucked when performing the <b>FILL CAP</b> or <b>PH.RECOVERY</b> operation. - Check that the air release solenoid on the capping unit is not soiled with ink.	- Firmware version - CAPPING UNIT,MW - INKJET HEAD,MW	
	Adhesive coming off the vinyl causing the media to rise	Feed the media to beyond the risen area.			
	Media wrinkling and rising	Set the suction fan level to <b>HIGH</b> . Decrease the printhead temperature.			
	Media adhering to the platen	Set the suction fan level to <b>LOW</b> or <b>OFF</b> to make it advance again. Setting media advance mode to <b>BACK &amp; FWD LOW</b> may also prevent the media from adhering to the platen.			
	Daily maintenance	Check that the daily maintenance has been executed and that it is performed periodically.			

< The media is curled or wrinkled >

Symptom	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
Outside the operating temperature/humidity range	(1) Use the printer within the operating temperature/humidity range. * Note that some media may wrinkles even within the operating temperature and humidity range. (2) Use proven media.	- Check that the pinch roller is not damaged. - Check that the pinch roller spring is not missing.	PINCH ROLLER, MW	
The media storage conditions are not the same as the printer operating conditions.	If there is a difference between the media storage conditions and the printer operating conditions, leave the media for a while in the new environment before printing. * The time depends on the media type and the storage conditions.			
The media was not installed properly.	Check that the media was installed properly in the conditions below. - The media is installed parallel to the printer. - The operation panel shows the media type correctly. - The media winding mode is optimal for the installed media. - Check that the leading edge of the media output from the printer is installed straight to the TUR unit paper tube.			
The media wrinkled because of the heater temperatures	(1) If the media wrinkles while the printer is warmed by the heaters, install the media only after the printer is warmed up by the heaters. (2) Change the heater temperature. Decrease all three heaters in increment of 5°C.* <sup>1</sup> (3) Use proven media. (4) If the media is still wrinkled, feed the media until you reach a portion without wrinkles. (5) If the media wrinkles between each print job, change the media advance mode. * <sup>1</sup> When the heaters temperatures are changed, adjust the media advance adjustment value again.			
The media is curled.	(1) Do not use media curled in the vertical direction (vertical to the media). (2) Do not use media curled in the horizontal direction (from the right edge to left edge) if it is so curled that the media edge guards and the suction fan cannot flat the media. (3) Use proven media.			
The suction fan parameter of the preset is LOW.	Set the suction fan parameter of the preset to a stronger setting.			
Wrinkles caused by media advance	(1) Remove the media and install it again. (2) Use proven media.			

# Chapter 5 Troubleshooting

## (Engine Section and USB Controller Section)

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This chapter describes troubleshooting for the engine section and USB controller section of the printer.

Error messages are rarely displayed for poor print quality. But for other cases of error, the error LED lights up, and the relevant error message appears on the LCD.

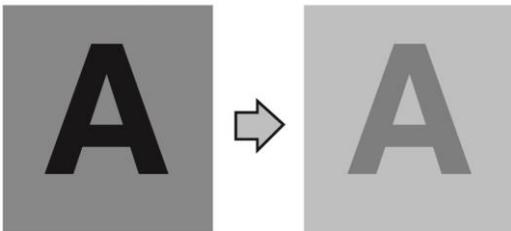
Poor print quality is checked mainly by printing a **NOZZLE CHECK** pattern. When an error message appears, check the possible causes and the location according to the error message and then take appropriate measures. If no error message appears, find the possible causes and the location from the symptom and take appropriate measures.

## 5.1 Poor Print Quality

This section describes the solutions to solve print quality problems.

<The print is pale.>

Basic image



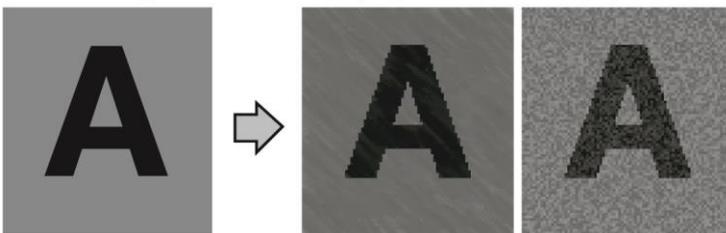
Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
The density setting is not correct.	Set density to HIGH DENSITY if high density printing is required, such as when using backlit banner media.	- Install the last firmware version.	- Firmware version - CAPPING UNIT,MW - INKJET HEAD,MW	
The operating environment is outside the specification of the Printer.	Raise the ambient temperature to 15°C or more (20 to 25°C recommended) to warm the printer adequately.	- Check that the ambient temperature at the installation location meets the operating conditions (35 degrees or lower).		
Media is not selected properly on RIP.	Check the media selection on RIP.	- Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation. - Check that the air release solenoid on the capping unit is not soiled with ink.		

<The printout is blurred or grains appear.>

Basic image

[Symptom A]

[Symptom B]

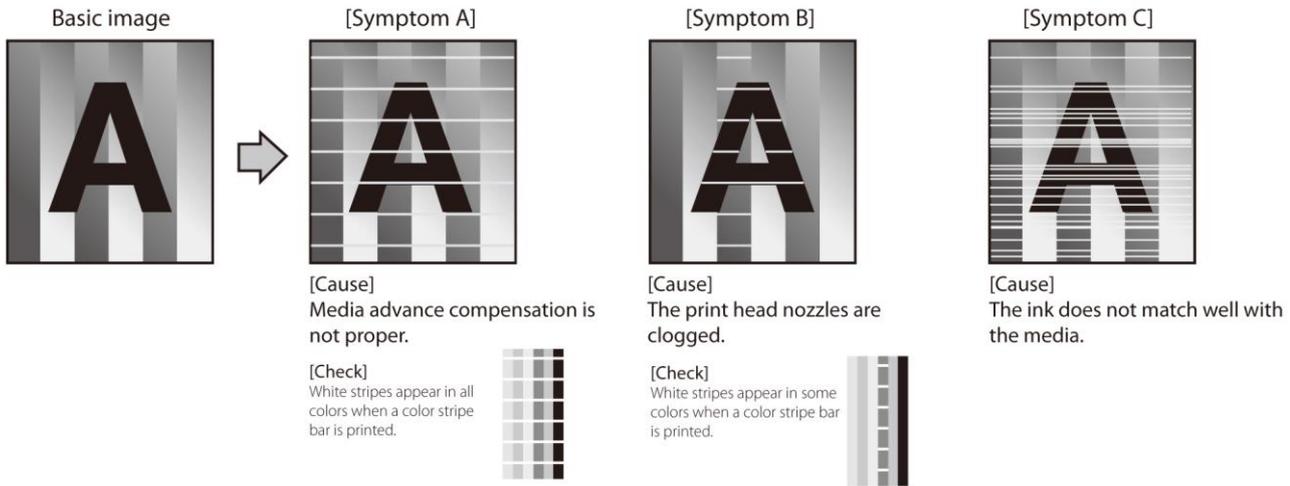


Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
The bidirectional print position adjustment and media advance adjustment values are not correct.	(1) Perform bidirectional print position adjustment and media advance adjustment again. (2) If automatic adjustment has been performed, perform manual adjustment.	- Install the last firmware version. - Check that the ambient temperature at the installation location meets the operating conditions (35 degrees or lower). - Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation. - Check that the air release solenoid on the capping unit is not soiled with ink.	- Firmware version - CAPPING UNIT,MW - INKJET HEAD,MW	

<Missing dots are found at the beginning of printing.>

Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
Outside the operating temperature/humidity range.	Use the printer within the operating temperature/humidity range.	<ul style="list-style-type: none"> <li>- Install the last firmware version.</li> <li>- Check that the nozzles eject ink correctly.</li> <li>- Check the cap position.</li> <li>- Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation.</li> <li>- Check the wiping unit operation.</li> <li>- Check the wiping position.</li> <li>- Fill the system with ink again.</li> </ul>	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- PRINT HAED</li> <li>- CAP, MW</li> <li>- WIPING UNIT,MW</li> </ul>	
Obstructions in the nozzle surface.	Check the platen, the media edge guards, the capping unit, the wiper blade, the pressure roller, and the head guards, and remove any foreign matter. Lint or paper fibers coming from a damaged media may touch the print heads, which may cause missing dots. Replace the media with a media with no lint or paper fibers.			
The media entered into contact with the nozzle surfaces.	Perform normal cleaning. If the problem persists, perform the action.			
Cleaning did not finish normally.	Perform the daily maintenance. Clean the caps.			

<White stripes appear on the print.>



[Symptom A]

Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
Media feed is not adjusted properly.	Adjust the media advance adjustment value. * The media advance adjustment value differs depending on the winding mode, loose or tension. - Be sure to adjust the media advance adjustment value again after changing the winding mode (loose or tension). - Be sure to adjust the media advance adjustment value again after changing the pressure roller lever position. - Be sure to adjust the media advance adjustment value again after changing the suction fan setting of the media preset.	- Install the last firmware version. - Check that the nozzles eject ink correctly. - Check the cap position. - Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation.	- Firmware version - PRINT HAED - CAP, MW - WIPING UNIT, MW	
The media advance accuracy is poor, or is not stable.	(1) Check that the media was installed properly in the conditions below. - The installed media is installed parallel to the printer. - The operation panel shows the media type correctly. - The media winding mode is optimal for the installed media. - If the media is curled or wrinkled, see the description on the problem, The media is curled or wrinkled. (2) Adjust the pressure on the media with the pressure roller lever. *1 (3) Change the print mode to be slower. *1 *2 (4) Check that the media is correctly stretched between the paper roll and the pressure roller. * If the media is loose when performing the media advance adjustment, the value will be incorrect.	- Check the wiping unit operation. - Check the wiping position.		

\*1 Adjust the media advance adjustment value again.

\*2 Note that the print speed differs depending on the mode selected.

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

[Symptom B]

Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
Print head nozzles are clogged.	(1) Perform a nozzle print, and set nozzle map for the clogged nozzles. (2) Check for obstructions such as media lint or ink clot in the nozzle scanning path including the platen surface, and remove them. (3) If the media is curled or wrinkled, solve the problem by referring to the description on the problem, The media is curled or wrinkled. (4) Perform the daily maintenance. * Do not forget to clean the head guard and media edge guards. * Be sure to perform the print head cleaning. (5) Clean the print heads surfaces with print sheet mount cleaning.  Printing with a color stripe bar is effective to prevent missing dots.	- Install the last firmware version. - Check that the nozzles eject ink correctly. - Check the cap position. - Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation. - Check the wiping unit operation. - Check the wiping position.	- Firmware version - PRINT HAED - CAP, MW - WIPING UNIT,MW	
Print head nozzles inclination.	(1) Print a nozzle print pattern, and set nozzle map for the inclined nozzles. (2) Printing with a color stripe bar is effective to prevent missing dots.			

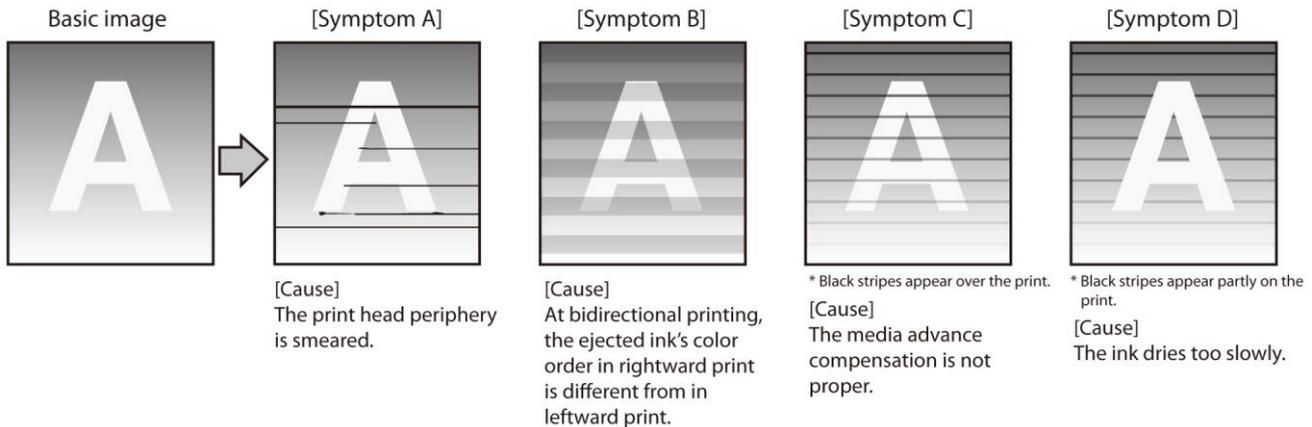
[Symptom C]

Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
The ink does not match the media. (Media with low dot spread rate)	(1) Decrease the temperature of all three heaters by 5°C. *1 * Before starting the print, ensure that the heater temperatures have been decreased to the target temperature. * With some media, the increasing the heater temperatures may be effective. (2) Change the print mode to be slower. *1 *2 (3) Use proven media. (4) Print in high density.	- Install the last firmware version. - Check that the nozzles eject ink correctly. - Check the cap position. - Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation. - Check the wiping unit operation. - Check the wiping position.	- Firmware version - PRINT HAED - CAP, MW - WIPING UNIT,MW	

\*1 Adjust the media advance adjustment value again.

\*2 Note that the print speed differs depending on the mode selected.

<Black stripes appear on the print.>



[Symptom A]

Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
The print heads periphery is smeared.	<ol style="list-style-type: none"> <li>Check for obstructions such as media lint or ink clot in the nozzle scanning path including the platen surface, and remove them.</li> <li>If the media is curled or wrinkled, solve the problem by referring to the description on the problem, The media is curled or wrinkled.</li> <li>Perform the daily maintenance.                             <ul style="list-style-type: none"> <li>* Do not forget to clean the head guard and media edge guards.</li> <li>* Be sure to perform the print head cleaning.</li> </ul> </li> <li>Clean the print heads surfaces with print sheet mount cleaning.</li> </ol>	<ul style="list-style-type: none"> <li>- Install the last firmware version.</li> <li>- Check the connection of HEAD CABLE,MW connectors on the HCB1M and the print heads.</li> <li>- Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5.</li> <li>- Check the connection of ROBOT CABLE,MW connectors.</li> </ul>	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- PCB-ASSY-IPB5-100</li> <li>- HEAD CABLE,MW</li> <li>- INKJET HEAD,MW</li> <li>- ROBOT CABLE,MW</li> <li>- CARRIAGE FFC,MW</li> <li>- PCB-ASSY-HCB1M</li> <li>- ROBOT CABLE,MW</li> </ul>	

[Symptom B]

Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
During bidirectional printing, the order of ejected ink colors in the rightward direction differs from that in the leftward direction.	<ol style="list-style-type: none"> <li>Change the print mode to be slower. *1 *2 *3</li> <li>Print in unidirectional mode. *2</li> <li>Use proven media.</li> </ol>	<ul style="list-style-type: none"> <li>- Install the last firmware version.</li> <li>- Check the connection of HEAD CABLE,MW connectors on the HCB1M and the print heads.</li> <li>- Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5.</li> <li>- Check the connection of ROBOT CABLE,MW connectors.</li> </ul>	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- PCB-ASSY-IPB5-100</li> <li>- HEAD CABLE,MW</li> <li>- INKJET HEAD,MW</li> <li>- ROBOT CABLE,MW</li> <li>- CARRIAGE FFC,MW</li> <li>- PCB-ASSY-HCB1M</li> <li>- ROBOT CABLE,MW</li> </ul>	

\*1 Adjust the media advance adjustment value again.

\*2 Note that the print speed differs depending on the mode selected.

\*3 Be sure to adjust the bidirectional adjustment value again after changing the carriage speed.

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

[Symptom C]

Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
The media advance adjustment value is incorrect.	(1) Adjust the media advance adjustment value. (2) Check that the media is correctly stretched between the paper roll and the pressure roller. * If the media is loose when performing the media advance adjustment, the value will be incorrect. - The adjustment value differs depending on the winding mode, tension or loose. - Be sure to adjust the media advance adjustment value again after changing the suction fan setting. - Be sure to adjust the media advance adjustment value again after changing the pressure roller lever position. - If the ionizer is set to ON, set it to OFF. - If automatic adjustment has been performed, perform manual adjustment.	- Install the last firmware version. - Check the connection of HEAD CABLE,MW connectors on the HCB1M and the print heads. - Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors.	- Firmware version - PCB-ASSY-IPB5-100 - HEAD CABLE,MW - INKJET HEAD,MW - ROBOT CABLE,MW - CARRIAGE FFC,MW - PCB-ASSY-HCB1M - ROBOT CABLE,MW	
The media advance accuracy is poor, or is not stable.	(1) Check that the media was installed properly in the conditions below. - The installed media is installed parallel to the printer. - The operation panel shows the media type correctly. - The media winding mode is optimal for the installed media. - If the media is curled or wrinkled, see the description on the problem, The media is curled or wrinkled. (2) Adjust the pressure on the media with the pressure roller lever. *1 (3) Change the print mode to be slower. *1 *2 (4) Change the suction fan power. *1 (5) If the ionizer is set to ON, set it to OFF.			

\*1 Adjust the media advance adjustment value again.

\*2 Note that the print speed differs depending on the mode selected.

[Symptom D]

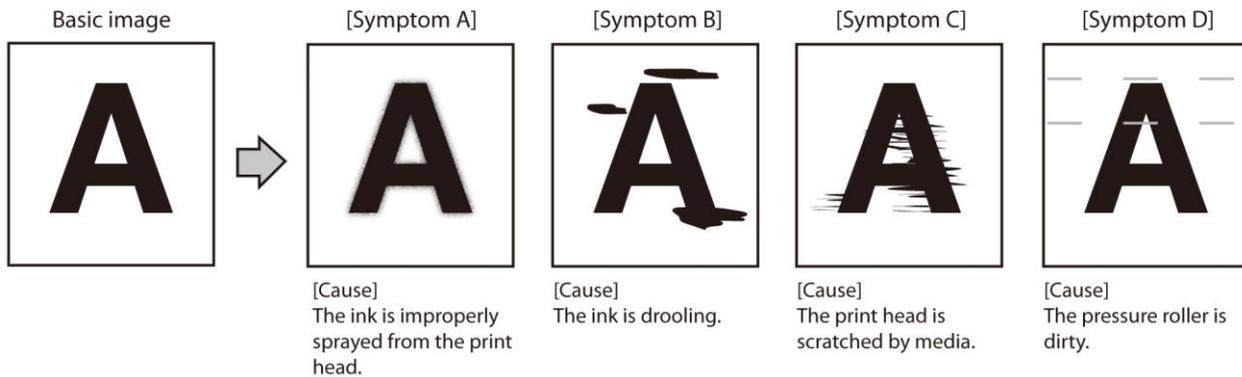
Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
The ink dries too slowly. (Mottling or bleeding occurs.)	(1) Increase the temperature of all three heaters by 5°C. *1 * Before starting the print, ensure that the heater temperatures have been decreased to the target temperature. (2) Change to a more suitable print mode, or set the carriage speed to SLOW. *1 *2 *3 (3) Print in unidirectional mode. *2 (4) Use proven media. (5) With the RIP software, apply the profile with a low ink amount to be ejected. * Note that the hue may change if the ejected ink amount decreases.	- Install the last firmware version. - Check the connection of HEAD CABLE,MW connectors on the HCB1M and the print heads. - Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors.	- Firmware version - PCB-ASSY-IPB5-100 - HEAD CABLE,MW - INKJET HEAD,MW - ROBOT CABLE,MW - CARRIAGE FFC,MW - PCB-ASSY-HCB1M - ROBOT CABLE,MW	

\*1 Adjust the media advance adjustment value again.

\*2 Note that the print speed differs depending on the mode selected.

\*3 Be sure to adjust the bidirectional adjustment value again after changing the carriage speed.

<The printout is not clean.>



[Symptom A]

Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
The ink is improperly ejected from the print heads.	<ol style="list-style-type: none"> <li>(1) Use the printer within the operating temperature/humidity range.</li> <li>(2) Perform the daily maintenance.                             <ul style="list-style-type: none"> <li>* Be sure to clean the head guard, media edge guards, carriage bottom surface, and the right and left sides of the top of the print heads.</li> </ul> </li> <li>(3) Perform print head cleaning (STRONG).</li> <li>(4) Change to a more suitable print mode, or set the carriage speed to SLOW. *1 *2 *3</li> <li>(5) Clean the print heads surfaces with print sheet mount cleaning.</li> <li>(6) If the print heads height setting is set to high, set it to normal. *4</li> <li>* If problems occur with the media used when the print heads height setting is set to normal, set it to another option.</li> </ol>	<ul style="list-style-type: none"> <li>- Install the last firmware version.</li> <li>- Check that the nozzles eject ink correctly.</li> <li>- Check the carriage height.</li> <li>- Check the cap position.</li> <li>- Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation.</li> <li>- Check the wiping unit operation.</li> <li>- Check the wiping position.</li> </ul>	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- PRINT HAED</li> <li>- CAP, MW</li> <li>- WIPING UNIT,MW</li> </ul>	

\*1 Adjust the media advance adjustment value again.

\*2 Note that the print speed differs depending on the mode selected.

\*3 Be sure to adjust the bidirectional adjustment value again after changing the carriage speed.

\*4 Adjust the bidirectional print positions.

[Symptom B]

Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
The ink dribbles.	<ol style="list-style-type: none"> <li>(1) Use the printer within the operating temperature/humidity range.</li> <li>(2) Check for obstructions such as media lint or ink clot in the nozzle scanning path including the platen surface, and remove them.</li> <li>(3) If the media is curled or wrinkled, solve the problem by referring to the description on the problem, The media is curled or wrinkled.</li> <li>(4) Perform the daily maintenance.                             <ul style="list-style-type: none"> <li>* Do not forget to clean the head guard and media edge guards.</li> <li>* Be sure to perform print head cleaning.</li> <li>* Be sure to clean the caps.</li> </ul> </li> <li>(5) Clean the print heads surfaces with print sheet mount cleaning.</li> <li>(6) With media that easily creates static electricity, the static electricity may cause the ink to dribble. With such media, set the ionizer to ON. *1</li> <li>(7) With some banner media, light media edges may touches the print heads, which may cause the ink to dribble.</li> </ol>	<ul style="list-style-type: none"> <li>- Install the last firmware version.</li> <li>- Check that the nozzles eject ink correctly.</li> <li>- Check the carriage height.</li> <li>- Check the cap position.</li> <li>- Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation.</li> <li>- Check the wiping unit operation.</li> <li>- Check the wiping position.</li> <li>- Fill the system with ink again.</li> </ul>	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- PRINT HAED</li> <li>- CAP, MW</li> <li>- WIPING UNIT,MW</li> </ul>	

\*1 Adjust the media advance adjustment value again.

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

[Symptom C]

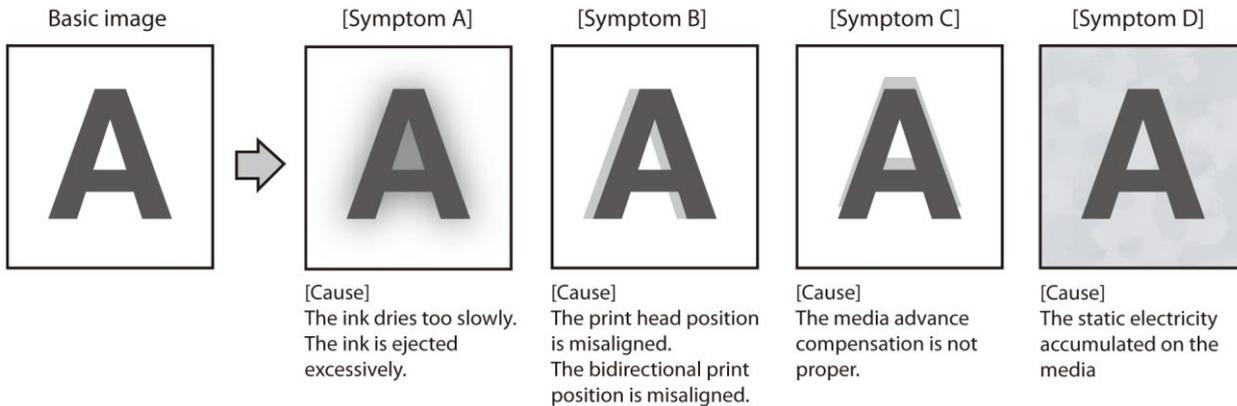
Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
The print heads are scratched by the media.	(1) Check that the media was installed properly in the conditions below. - The installed media is installed parallel to the printer. - The operation panel shows the media type correctly. - The media winding mode is optimal for the installed media. - If the media is curled or wrinkled, see the description on the problem, The media is curled or wrinkled. (2) Check for obstructions such as media lint or ink clot in the nozzle scanning path including the platen surface, and remove them. (3) Perform the daily maintenance. * Do not forget to clean the head guard and media edge guards. * Be sure to perform print head cleaning. (4) Clean the print heads surfaces with print sheet mount cleaning. (5) Set the suction fan parameter of the preset to a stronger setting. *1 (6) If the ionizer is set to ON, set it to OFF.	- Install the last firmware version. - Check that the nozzles eject ink correctly. - Check the carriage height. - Check the cap position. - Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation. - Check the wiping unit operation. - Check the wiping position.	- Firmware version - PRINT HAED - CAP, MW - WIPING UNIT,MW	

\*1 Adjust the media advance adjustment value again.

[Symptom D]

Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
The pressure roller is dirty.	Clean the pressure roller.	- Install the last firmware version. - Check that the pinch roller is not damaged. - Check the connection of HEAD CABLE,MW connectors on the HCB1M and the print heads. - Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors.	- Firmware version - PINCH ROLLER, MW - PCB-ASSY-IPB5-100 - HEAD CABLE,MW - INKJET HEAD,MW - ROBOT CABLE,MW - CARRIAGE FFC,MW - PCB-ASSY-HCB1M - ROBOT CABLE,MW	

<Contours of objects are blurred.>



[Symptom A]

Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
The ink dries too slowly. The ink is ejected excessively.	(1) Decrease the temperature of all three heaters by 5°C. *1 * Before starting the print, ensure that the heater temperatures have been decreased to the target temperature. (2) Change to a more suitable print mode, or set the carriage speed to SLOW. *1 *2 *3 (3) Print in unidirectional mode. *2 (4) If printing in high density, print in normal density. (5) Use proven media. (6) With the RIP software, apply the profile with a low ink amount to be ejected. * Note that the hue may change if the ejected ink amount decreases.	- Install the last firmware version. - Check that the nozzles eject ink correctly. - Check the carriage height. - Check the cap position. - Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation. - Check the wiping unit operation. - Check the wiping position.	- Firmware version - PRINT HAED - CAP, MW - WIPING UNIT,MW	

\*1 Adjust the media advance adjustment value again.

\*2 Note that the print speed differs depending on the mode selected.

\*3 Be sure to adjust the bidirectional adjustment value again after changing the carriage speed.

[Symptom B]

Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
The print heads positions are misaligned. The bidirectional print position is misaligned.	(1) Adjust the print heads positions. (2) Adjust the bidirectional print position. (3) If bidirectional adjustment has been performed automatically, perform it again manually.	- Install the last firmware version. - Check the connection of HEAD CABLE,MW connectors on the HCB1M and the print heads. - Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors.	- Firmware version - PCB-ASSY-IPB5-100 - HEAD CABLE,MW - INKJET HEAD,MW - ROBOT CABLE,MW - CARRIAGE FFC,MW - PCB-ASSY-HCB1M - ROBOT CABLE,MW	

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

[Symptom C]

Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
The media advance adjustment value is incorrect.	<p>Correct the media advance adjustment value. If media advance adjustment has been performed automatically, perform it again manually.</p> <ul style="list-style-type: none"> <li>- The adjustment value differs depending on the winding mode, tension or loose.</li> <li>- Be sure to adjust the media advance adjustment value again after changing the suction fan power.</li> <li>- Be sure to adjust the media advance adjustment value again after changing the pressure roller lever position.</li> <li>- If the ionizer is set to ON, set it to OFF.</li> <li>- If automatic adjustment has been performed, perform manual adjustment.</li> </ul>	<ul style="list-style-type: none"> <li>- Install the last firmware version.</li> <li>- Check the connection of HEAD CABLE,MW connectors on the HCB1M and the print heads.</li> <li>- Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5.</li> <li>- Check the connection of ROBOT CABLE,MW connectors.</li> </ul>	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- PCB-ASSY-IPB5-100</li> <li>- HEAD CABLE,MW</li> <li>- INKJET HEAD,MW</li> <li>- ROBOT CABLE,MW</li> <li>- CARRIAGE FFC,MW</li> <li>- PCB-ASSY-HCB1M</li> <li>- ROBOT CABLE,MW</li> </ul>	
The media advance accuracy is poor, or is not stable.	<ol style="list-style-type: none"> <li>(1) Check that the media was installed properly in the conditions below.                             <ul style="list-style-type: none"> <li>- The installed media is installed parallel to the printer.</li> <li>- The operation panel shows the media type correctly.</li> <li>- The media winding mode is optimal for the installed media.</li> <li>- If the media is curled or wrinkled, see the description on the problem, The media is curled or wrinkled.</li> </ul> </li> <li>(2) Adjust the pressure on the media with the pressure roller lever. *1</li> <li>(3) Change to a more suitable print mode, or set the carriage speed to SLOW. *1 *2 *3</li> <li>(4) Check that the media is correctly stretched between the paper roll and the pressure roller.</li> </ol> <p>* If the media is loose when performing the media advance adjustment, the value will be incorrect.</p> <ol style="list-style-type: none"> <li>(5) If the ionizer is set to ON, set it to OFF.</li> </ol>			

\*1 Adjust the media advance adjustment value again.

\*2 Note that the print speed differs depending on the mode selected.

\*3 Be sure to adjust the bidirectional adjustment value again after changing the carriage speed.

[Symptom D]

Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
Print defect caused by media static electricity / Ink sprayed over white portions of the media.	<ol style="list-style-type: none"> <li>(1) Set the ionizer to ON. *4</li> <li>(2) Change to a more suitable print mode, or set the carriage speed to SLOW. *1 *2 *3</li> <li>(3) Use proven media.</li> </ol>	<ul style="list-style-type: none"> <li>- Install the last firmware version.</li> <li>- Check the connection of HEAD CABLE,MW connectors on the HCB1M and the print heads.</li> <li>- Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5.</li> <li>- Check the connection of ROBOT CABLE,MW connectors.</li> </ul>	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- PCB-ASSY-IPB5-100</li> <li>- HEAD CABLE,MW</li> <li>- INKJET HEAD,MW</li> <li>- ROBOT CABLE,MW</li> <li>- CARRIAGE FFC,MW</li> <li>- PCB-ASSY-HCB1M</li> <li>- ROBOT CABLE,MW</li> </ul>	

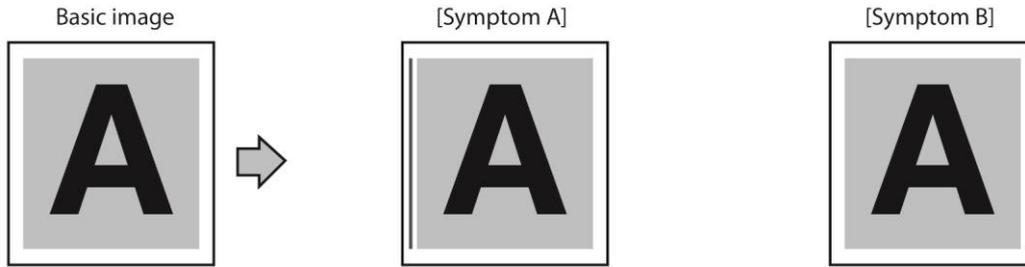
\*1 Adjust the media advance adjustment value again.

\*2 Note that the print speed differs depending on the mode selected.

\*3 Be sure to adjust the bidirectional adjustment value again after changing the carriage speed.

\*4 Set the ionizer to OFF with media where no print defects caused by static electricity occur.

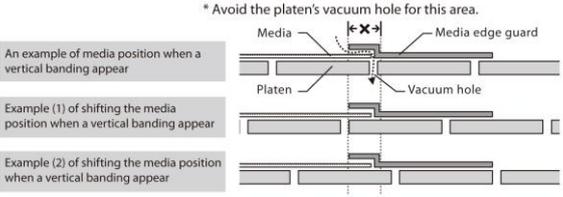
<Vertical banding appears at the printout edges.>



[Cause]  
On the platen, the contacting point of the media left edge and the media edge guard is near the platen's vacuum hole.

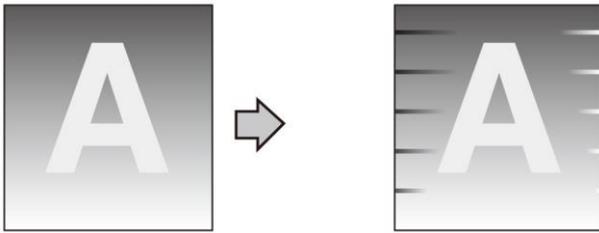
[Cause]  
On the platen, the contacting point of the media right edge and the media edge guard is near the platen's vacuum hole.

[Symptom A] [Symptom B]

Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
<p>When, on the platen, the contacting point between a media edge and the media edge guard is near a platen's vacuum hole, the printer may suck the ejected ink partially between the media and the media edge guard. As a result, vertical banding may appear.</p>	<p>Shift the media so that the contacting point between the media edge and the media edge guard on the platen does not come close to the vacuum hole.</p> 	<ul style="list-style-type: none"> <li>- Install the last firmware version.</li> <li>- Check the connection of HEAD CABLE, MW connectors on the HCB1M and the print heads.</li> <li>- Check the connection of CARRIAGE FFC, MW connectors on the HCB1M and the IPB5.</li> <li>- Check the connection of ROBOT CABLE, MW connectors.</li> </ul>	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- PCB-ASSY-IPB5-100</li> <li>- HEAD CABLE, MW</li> <li>- INKJET HEAD, MW</li> <li>- ROBOT CABLE, MW</li> <li>- CARRIAGE FFC, MW</li> <li>- PCB-ASSY-HCB1M</li> <li>- ROBOT CABLE, MW</li> </ul>	

<Different bands appear on the printout right and left sides.>

Basic image



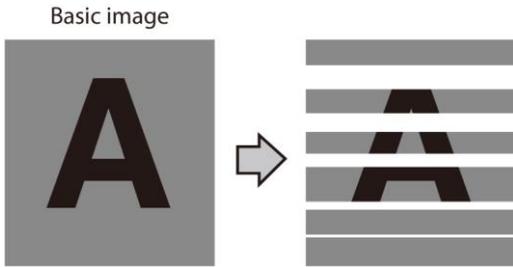
[Cause]  
The media is skewed.

[Symptom A]

Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
<p>A skewed media is fed.</p>	<ol style="list-style-type: none"> <li>(1) Check that the media condition is good. If the media roll is damaged or wound in the shape of a cone, replace the roll with a good one.</li> <li>(2) Check that the media was installed properly in the conditions below.                             <ul style="list-style-type: none"> <li>- The installed media is installed parallel to the printer.</li> <li>- The operation panel shows the media type correctly.</li> <li>- The media winding mode is optimal for the installed media.</li> <li>- If the media is curled or wrinkled, see the description on the problem, The media is curled or wrinkled.</li> </ul> </li> <li>(3) Check that the take up-side media shows no irregular winding. If an irregular winding is found, reinstall the media on the printer and onto the take-up reel unit.</li> <li>(4) Adjust the pressure on the media with the pressure roller lever. *1</li> <li>(5) Use proven media.</li> <li>(6) Check that the media holders on the supply side securely and firmly support the media.</li> <li>(7) Check that the media holders on the supply side are secured to the shaft with the screws.</li> </ol>	<ul style="list-style-type: none"> <li>- Install the last firmware version.</li> <li>- Check that the pinch roller is not damaged.</li> <li>- Check that the pinch roller spring is not missing.</li> <li>- Install the last firmware version.</li> <li>- Check that the nozzles eject ink correctly.</li> <li>- Check the carriage height.</li> <li>- Check the cap position.</li> <li>- Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation.</li> <li>- Check the wiping unit operation.</li> <li>- Check the wiping position.</li> </ul>	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- PINCH ROLLER, MW</li> <li>- PRINT HAED</li> <li>- CAP, MW</li> <li>- WIPING UNIT, MW</li> </ul>	

\*1 Adjust the media advance adjustment value again.

<Clogged nozzles cannot be cleared.>



[Symptom A]

Cause	User Solution	Service Engineer Inspection	Assumed Replacement Part	Reference to Check/ Replace Parts
Damaged media edges.	If the media is damaged with some sections coming out from the edge guards, it may contact the heads nozzle surfaces and cause nozzles to clog. Cut any damaged sections with a pair of scissors or a cutter before installing the media.	<ul style="list-style-type: none"> <li>- Install the last firmware version.</li> <li>- Check that the nozzles eject ink correctly.</li> <li>- Check the carriage height.</li> <li>- Check the cap position.</li> <li>- Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation.</li> <li>- Check the wiping unit operation.</li> <li>- Check the wiping position.</li> <li>- Check the operation of the subtank sensor.</li> <li>- Fill the system with ink again.</li> <li>- Clean the ink system with cleaning liquid.</li> </ul>	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- CAPPING UNIT,MW</li> <li>- INKJET HEAD,MW</li> <li>- WIPING UNIT,MW</li> <li>- CLEANING LIQUID SET</li> <li>- SUBTANK ASSY,MW</li> <li>- SUPPLY-TUBE-ASSY(MW)</li> </ul>	
Adhesive coming off the vinyl causing the media to rise.	Feed the media to beyond the risen area.			
Media wrinkling and rising.	Set the suction fan level to HIGH. Decrease the printhead temperature.			
Media adhering to the platen.	Set the suction fan level to LOW or OFF to make it advance again. Setting media advance mode to BACK & FWD LOW may also prevent the media from adhering to the platen.			
Daily maintenance.	Check that the daily maintenance has been executed and that it is performed periodically.			

## 5.2 Error Message Types

Error messages are classified as follows according to content of errors.

(1) Operator call error

This type of message can be handled by an operator.

(2) Warning

This type of message can be handled by an operator.

(3) System error

This type of message must be handled by our service centers.

### 5.3 Operator Call Error Messages

This section describes the error messages that require actions by the operator.

**Table of errors**

<Ink-related errors>

Panel Message	Error Description	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
<CIS model> <div style="border: 1px solid black; padding: 5px; width: fit-content;">CLOSE INK BOX COVER</div>	The ink box cover is open.	Close the ink box cover properly.	<ul style="list-style-type: none"> <li>- Check that the connector of the ink box cover cable is correctly connected.</li> <li>- Check that the INKBOX-COVER is not damaged.</li> </ul>	<ul style="list-style-type: none"> <li>- PHOTO interrupter</li> <li>- INKBOX-COVER</li> <li>- PCB-ASSY-ACT3</li> </ul>	
<LCIS model> <div style="border: 1px solid black; padding: 5px; width: fit-content;">CLOSE THE RESERVOIR DRAWER</div>	The reservoir drawer is open.	Close the reservoir drawer properly.	Check that the connector contacts properly when the reservoir drawer is closed.	<ul style="list-style-type: none"> <li>- CABLE(LCISWei-Sen)-ASSY(MW)</li> <li>- CABLE(LCISWei-Sen-IF)-ASSY(MW)</li> </ul>	
<CIS model> (With the ink box cover closed) <div style="border: 1px solid black; padding: 5px; width: fit-content;">NO CC CARTRIDGE OPEN INK BOX COVER</div> CC: Ink color	The ink cartridge is not installed.	<ul style="list-style-type: none"> <li>- Reinstall the ink cartridge.</li> <li>- Replace the ink cartridge.</li> </ul>	<ul style="list-style-type: none"> <li>- Install the last firmware version.</li> <li>- Check that the ink chip is recognized in the monitor menu.</li> <li>- Check that the pin on the PCB-ASSY-INK4 is not soiled or damaged.</li> <li>- Check that the PCB-ASSY-INK4 connectors are connected correctly.</li> <li>- Check that the PCB-ASSY-ACT3 connectors are connected correctly</li> <li>- Check that the CABLE(Cartridge)-ASSY(MW) is correctly connected and not damaged.</li> <li>- Check that the guide pin is not damaged.</li> </ul>	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- PCB-ASSY-INK4</li> <li>- PCB-ASSY-ACT3</li> <li>- CABLE(Cartridge)-ASSY(MW)</li> </ul>	
<CIS model> (With the ink box cover open) <div style="border: 1px solid black; padding: 5px; width: fit-content;">SET CC INK CARTRIDGE</div> CC: Ink color					
<CIS model> (With the ink box cover closed) <div style="border: 1px solid black; padding: 5px; width: fit-content;">CC CARTRIDGE ERROR OPEN INKBOX COVER nn</div> CC: Ink color nn: Ink error code	An error occurred with the ink cartridge.	<ul style="list-style-type: none"> <li>- Reinstall the ink cartridge.</li> <li>- Replace the ink cartridge.</li> </ul>	<ul style="list-style-type: none"> <li>- Install the last firmware version.</li> <li>- Check that the ink chip is recognized in the monitor menu.</li> <li>- Check that the pin on the PCB-ASSY-INK4 is not soiled or damaged.</li> <li>- Check that the PCB-ASSY-INK4 connectors are connected correctly.</li> <li>- Check that the PCB-ASSY-ACT3 connectors are connected correctly</li> <li>- Check that the CABLE(Cartridge)-ASSY(MW) is correctly connected and not damaged.</li> <li>- Check that the guide pin is not damaged.</li> </ul>	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- PCB-ASSY-INK4</li> <li>- PCB-ASSY-ACT3</li> <li>- CABLE(Cartridge)-ASSY(MW)</li> </ul>	
<CIS model> (With the ink box cover open) <div style="border: 1px solid black; padding: 5px; width: fit-content;">CHECK CC CARTRIDGE nn</div> CC: Ink color nn: Ink error code					

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

Panel Message	Error Description	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
<CIS model> (With the ink box cover closed) <div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>CC INK HAS RUN OUT OPEN INK BOX COVER</b> </div> CC: Ink color	Ink has run out.	- Reinstall the ink cartridge. - Replace the ink cartridge.	- Check the condition of the ink supply pump tubes. - Check the supply pumps operation in the ACTUATORS menu. - Check the subtank full sensors operation in the MONITOR menu. - Check that the subtank full sensors connectors are connected correctly. - Check the subtank empty sensors operation in the MONITOR menu. - Check that the subtank empty sensors connectors are connected correctly.	- SUPPLY PUMP TUBE,MW - Subtank Sensor(OKI Data Infotech) - PCB-ASSY-ACT3 - CABLE(SubTank1-IF)-ASSY(MW) - CABLE(SubTank2-IF)-ASSY(MW) - CABLE(SubTank1)-ASSY(MW) - CABLE(SubTank2)-ASSY(MW) - CABLE(SubTank3)-ASSY(MW)	
<CIS model> (With the ink box cover open) <div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>REPLACE CC CARTRIDGE</b> </div> CC: Ink color					
<LCIS model> (With the reservoir drawer closed) <div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>CC INK HAS RUN OUT OPEN THE DRAWER</b> </div> CC: Ink color	Ink has run out.	Supply ink to the reservoirs.	- Check the conditions of the ink supply pump tubes. - Check the supply pumps operation in the ACTUATORS menu. - Check the subtank full sensors operation in the MONITOR menu. - Check that the subtank full sensors connectors are connected correctly. - Check the subtank empty sensors operation in the MONITOR menu. - Check that the subtank empty sensors connectors are connected correctly.	- SUPPLY PUMP TUBE,MW - Subtank Sensor(OKI Data Infotech) - PCB-ASSY-ACT3 - CABLE(SubTank1-IF)-ASSY(MW) - CABLE(SubTank2-IF)-ASSY(MW) - CABLE(SubTank1)-ASSY(MW) - CABLE(SubTank2)-ASSY(MW) - CABLE(SubTank3)-ASSY(MW)	
<LCIS model> (When you have opened the reservoir drawer) <div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>SUPPLY INK AND CLOSE THE DRAWER</b> </div> CC: Ink color					
<CIS model> (With the ink box cover closed) <div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>WRONG COLOR FOR CC OPEN INK BOX COVER</b> </div> CC: Ink color	There is a mistake with the ink cartridge color.	- Reinstall the ink cartridge. - Replace the ink cartridge with the correct color.	- Install the last firmware version. - Check that the ink chip is recognized in the MONITOR menu. - Check that the pin on the PCB-ASSY-INK4 is not soiled or damaged. - Check that the PCB-ASSY-INK4 connectors are connected correctly. - Check that the PCB-ASSY-ACT3 connectors are connected correctly. - Check that the CABLE(Cartridge)-ASSY(MW) is correctly connected and not damaged. - Check that the guide pin is not damaged.	- Firmware version -PCB-ASSY-INK4 -PCB-ASSY-ACT3 - CABLE(Cartridge)-ASSY(MW)	
<CIS model> (With the ink box cover open) <div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>INK COLOR ERROR CHECK CC CARTRIDGE</b> </div> CC: Ink color					
<CIS model> (With the ink box cover closed) <div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>INCORRCT CC INK TYPE OPEN INK BOX COVER</b> </div> CC: Ink color	There is a mistake with the ink cartridge type.	- Reinstall the ink cartridge. - Replace the ink cartridge with a genuine cartridge.	- Install the last firmware version. - Check that the ink chip is recognized in the MONITOR menu. - Check that the pin on the PCB-ASSY-INK4 is not soiled or damaged. - Check that the PCB-ASSY-INK4 connectors are connected correctly. - Check that the PCB-ASSY-ACT3 connectors are connected correctly. - Check that the CABLE(Cartridge)-ASSY(MW) is correctly connected and not damaged. - Check that the guide pin is not damaged.	- Firmware version -PCB-ASSY-INK4 -PCB-ASSY-ACT3 - CABLE(Cartridge)-ASSY(MW)	
<CIS model> (With the ink box cover open) <div style="border: 1px solid black; padding: 5px; text-align: center;"> <b>CARTRIDGE TYPE ERROR CHECK CC CARTRIDGE</b> </div> CC: Ink color					

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

Panel Message	Error Description	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
PRIME INK SYSTEM	The ink system is not primed.	Restart the printer.	- Install the last firmware version. - Enter the maintenance mode and check that INK SYSTEM STATUS in the SYSTEM menu is PRIMED.	- Firmware version - PCB-ASSY-IPB5-100 - EEPROM	

<Errors related to the waste ink bottle>

Panel Message	Error Description	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
INSTALL WASTE INK BOTTLE	No waste ink bottle is installed.	- Reinstall the waste ink bottle. - Restart the printer.	- Check that the MICRO SWITCH 4 (WASTEINK BOTTLE ASSY) is not missing. - Check that the MICRO SWITCH 4 connector is connected correctly. - In the CHECK SENSORS menu, select WASTE BOTTLE and execute INSTALLED, and check the MICRO SWITCH 4 operation. - Check that the CN22 connector on the PCB-ASSY-ACT3 is connected correctly. - Check that the connector between the CABLE(TU-SENS1)-ASSY(MW) and the CABLE(TU-SENS2)-ASSY(MW) is connected correctly.	- MICRO SWITCH 4 - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100 - CABLE(TU-SENS1)-ASSY(MW) - CABLE(TU-SENS2)-ASSY(MW)	
REPLACE WASTE INK BOTTLE	The waste ink bottle is full.	- Check the waste ink inside the waste ink bottle. - Reset the waste ink counter. - Restart the printer.	Install the last firmware version.	- Firmware version - PCB-ASSY-IPB5-100 - EEPROM	

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

<Errors related to media jams>

Panel Message	Error Description	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
MEDIA JAM ERROR 1 LIFT THE LEVER	Foreign matter on the carriage path prevents the printer from driving the carriage correctly.	<ul style="list-style-type: none"> <li>- Check that there is no foreign matter on the platen.</li> <li>- Check that all the four leveling feet are properly in contact with the floor.</li> <li>- Restart the printer.</li> </ul>	<ul style="list-style-type: none"> <li>- Check that the Y motor cables are connected correctly.</li> <li>- Check that the linear encoder connectors are connected correctly.</li> <li>- Check that the CARRIAGE FFC,MW connectors are connected correctly to both the HCB1M and the IPB5.</li> <li>- Check that the ROBOT CABLE,MW connectors are connected correctly.</li> <li>- Check that the ENCODER STRIP,MW is not soiled or damaged.</li> <li>- Check the SUS belt tension.</li> <li>- Check the tension of the Y motor timing belt.</li> </ul>	<ul style="list-style-type: none"> <li>-Y DRIVE MOTOR,MW</li> <li>-CABLE ENCODER,MW</li> <li>-ENCODER STRIP,MW</li> <li>-PCB-ASSY-ACT3</li> <li>-PCB-ASSY-HCB1M</li> <li>-PCB-ASSY-IPB5-100</li> <li>-CARRIAGE CABLE,MW</li> <li>-ROBOT CABLE,MW</li> <li>-DRIVING PULLEY UNIT,MW</li> <li>-CABLE(Y-MOT)-ASSY(MW)</li> </ul>	
MEDIA JAM ERROR 2 LIFT THE LEVER	The media is not detected correctly.	<ul style="list-style-type: none"> <li>- Reinstall the media.</li> <li>- Check that the media edges are placed within the gradations.</li> <li>- Check if the problem also occurs with other types of media.</li> <li>- Restart the printer.</li> </ul>	<ul style="list-style-type: none"> <li>- Check that the non-reflecting tape on the platen is not soiled.</li> <li>- Check that the edge sensor is correctly installed and clean.</li> <li>- Check that the edge sensor connector is connected correctly.</li> <li>- Check that the CARRIAGE FFC,MW connectors are connected correctly to both the HCB1M and the IPB5.</li> <li>- Check that the ROBOT CABLE,MW connectors are connected correctly.</li> </ul>	<ul style="list-style-type: none"> <li>-Media detect and Line sensor OKI Data Infotech</li> <li>-PCB-ASSY-ACT3</li> <li>-PCB-ASSY-HCB1M</li> <li>-PCB-ASSY-IPB5-100</li> <li>-CARRIAGE CABLE,MW</li> <li>- ROBOT CABLE,MW</li> </ul>	

<Media-related errors>

Panel Message	Error Description	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
LIFT THE LEVER AND LOAD THE MEDIA	There is no more media.	<ul style="list-style-type: none"> <li>- Install a new media roll.</li> <li>- Check that the media edges are placed within the gradations.</li> <li>- Check if the problem also occurs with other types of media.</li> <li>- Restart the printer.</li> </ul>	<ul style="list-style-type: none"> <li>- Check that the media output sensor is correctly installed and clean.</li> <li>- Check that the media output sensor connector is connected correctly.</li> <li>- Check that the SWITCH(RollEnd)-ASSY connector is connected correctly.</li> </ul>	<ul style="list-style-type: none"> <li>- Media detect and Line sensor OKI Data Infotech</li> <li>- SWITCH(RollEnd)-ASSY</li> <li>- PCB-ASSY-ACT3</li> <li>- PCB-ASSY-IPB5-100</li> </ul>	
LOAD MEDIA	The media cannot be detected.	<ul style="list-style-type: none"> <li>- Reinstall the media.</li> <li>- Check that the media edges are placed within the gradations.</li> <li>- Check if the problem also occurs with other types of media.</li> <li>- Restart the printer.</li> </ul>	<ul style="list-style-type: none"> <li>- Check that the media output sensor is correctly installed and clean.</li> <li>- Check that the media output sensor connector is connected correctly.</li> <li>- Check that the SWITCH(RollEnd)-ASSY connector is connected correctly.</li> </ul>	<ul style="list-style-type: none"> <li>- Media detect and Line sensor OKI Data Infotech</li> <li>- SWITCH(RollEnd)-ASSY</li> <li>- PCB-ASSY-ACT3</li> <li>- PCB-ASSY-IPB5-100</li> </ul>	

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

Panel Message	Error Description	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
MEDIA WIDTH ERROR CHECK MEDIA WIDTH	Media with an invalid size (less than 11 inches or more than 64 inches) is installed.	<ul style="list-style-type: none"> <li>- Install a media type with a standard size.</li> <li>- Check if the problem also occurs with other types of media.</li> <li>- Clean the non-reflecting tape.</li> <li>- Restart the printer.</li> </ul>	<ul style="list-style-type: none"> <li>- Check that the non-reflecting tape on the platen is not soiled.</li> <li>- Check that the edge sensor is correctly installed and clean.</li> <li>- Check that the edge sensor connector is connected correctly.</li> <li>- Check that the linear encoder connectors are connected correctly.</li> <li>- Check that the CARRIAGE FFC,MW connectors are connected correctly to both the HCB1M and the IPB5.</li> <li>- Check that the ROBOT CABLE,MW connectors are connected correctly.</li> <li>- Check that the ENCODER STRIP,MW is not soiled or damaged.</li> </ul>	<ul style="list-style-type: none"> <li>- Media detect and Line sensor OKI Data Infotech</li> <li>- CABLE ENCODER,MW</li> <li>- ENCODER STRIP,MW</li> <li>- PCB-ASSY-ACT3</li> <li>- PCB-ASSY-HCB1M</li> <li>- PCB-ASSY-IPB5-100</li> <li>- CARRIAGE CABLE,MW</li> <li>- ROBOT CABLE,MW</li> </ul>	
MEDIA HAS SKEWED ALIGN MEDIA	The media has skewed.	<ul style="list-style-type: none"> <li>- Reinstall the media.</li> <li>- Check that the media edges are placed within the gradations.</li> <li>- Check if the problem also occurs with other types of media.</li> <li>- Clean the non-reflecting tape.</li> <li>- Restart the printer.</li> </ul>	<ul style="list-style-type: none"> <li>- Check that the non-reflecting tape on the platen is not soiled.</li> <li>- Check that the edge sensor is correctly installed and clean.</li> <li>- Check that the edge sensor connector is connected correctly.</li> <li>- Check that the grid roller is clean and that there is no foreign matter on it.</li> <li>- Check that the pinch roller is not soiled or damaged.</li> </ul>	<ul style="list-style-type: none"> <li>- Media detect and Line sensor OKI Data Infotech</li> <li>- GRID ROLLER</li> <li>- PINCH ROLLER</li> <li>- PCB-ASSY-ACT3</li> <li>- PCB-ASSY-HCB1M</li> </ul>	
MEDIA SKEW. CONTINUE PRINT? OK/CANCEL	A media skew has been detected during printing.	<ul style="list-style-type: none"> <li>- Reinstall the media.</li> <li>- Check that the media edges are placed within the gradations.</li> <li>- Check if the problem also occurs with other types of media.</li> <li>- Clean the non-reflecting tape.</li> <li>- Restart the printer.</li> </ul>	<ul style="list-style-type: none"> <li>- Check that the non-reflecting tape on the platen is not soiled.</li> <li>- Check that the edge sensor is correctly installed and clean.</li> <li>- Check that the edge sensor connector is connected correctly.</li> <li>- Check that the grit roller is clean and that there is no foreign matter on it.</li> <li>- Check that the pinch roller is not soiled or damaged.</li> </ul>	<ul style="list-style-type: none"> <li>- Media detect and Line sensor OKI Data Infotech</li> <li>- GRID ROLLER</li> <li>- PINCH ROLLER</li> <li>- PCB-ASSY-ACT3</li> <li>- PCB-ASSY-HCB1M</li> </ul>	

<Errors related to print heads>

Panel Message	Error Description	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
PH COOLING PROCESS PLEASE WAIT	The monitored temperature of the print heads exceeded 43°C.	<ul style="list-style-type: none"> <li>- Restart the printer.</li> <li>- Check the ambient temperature.</li> </ul>	<ul style="list-style-type: none"> <li>- Check the COOLINGFAN,MW operation in the ACTUATORS menu.</li> <li>- Check that the COOLING FAN,MW connectors are connected correctly.</li> <li>- Check that the CARRIAGE FFC,MW connectors are connected correctly to both the HCB1M and the IPB5.</li> <li>- Check that the HEAD CABLE,MW connectors are connected correctly.</li> </ul>	<ul style="list-style-type: none"> <li>- COOLING FAN,MW</li> <li>- PCB-ASSY-HCB1M</li> <li>- CARRIAGE FFC,MW</li> <li>- HEAD CABLE,MW</li> </ul>	

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

Panel Message	Error Description	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
PH TEMP IS TOO HIGH PRINT? OK/CANCEL	The print heads temperature is not within the operating range (high temperature).	- Restart the printer. - Check the ambient temperature.	- Check the COOLINGFAN,MW operation in the ACTUATORS menu. - Check that the COOLING FAN,MW connectors are connected correctly. - Check that the CARRIAGE FFC,MW connectors are connected correctly to both the HCB1M and the IPB5. - Check that the HEAD CABLE,MW connectors are connected correctly.	- COOLING FAN,MW - PCB-ASSY-HCB1M - CARRIAGE FFC,MW - HEAD CABLE,MW	
COOLING PRINT HEADS XXXX CC nn  XXXX: Print mode cc: Print density nn: Print direction	The monitored temperature of the print heads exceeded 40°C.	- Restart the printer. - Check the ambient temperature.	- Check the COOLINGFAN,MW operation in the ACTUATORS menu. - Check that the COOLING FAN,MW connectors are connected correctly. - Check that the CARRIAGE FFC,MW connectors are connected correctly to both the HCB1M and the IPB5. - Check that the HEAD CABLE,MW connectors are connected correctly.	- COOLING FAN,MW - PCB-ASSY-HCB1M - CARRIAGE FFC,MW - HEAD CABLE,MW	

<Communication-related errors>

Panel Message	Error Description	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
NO DATA RECEIVED CHECK CONNECTION	An error has been detected in the USB connection during print data transfer.	- Replace the USB cable. - Restart the printer and the computer.	Install the last firmware version.	- Firmware version - PCB-ASSY-IPB5-100	
DATA COMMUNICATION WAS INTERRUPTED	A timeout error has occurred during print data transfer.	- Replace the USB cable. - Restart the printer and the computer.	Install the last firmware version.	- Firmware version - PCB-ASSY-IPB5-100	

<Other errors>

Panel Message	Error Description	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
CLOSE COVERS	The front cover is open.	- Close the front cover. - Restart the printer.	Check that the interlock switch connectors are connected correctly.	- Window sensor OKI Data Infotech - PCB-ASSY-ACT3	
PLEASE WARM THE ROOM AND WAIT FOR A WHILE	The ambient temperature is not within the printer operating range (low temperature).	- Restart the printer. - Check the ambient temperature.	- Install the last firmware version. - Check that the ambient temperature thermistor cable is not damaged or broken, and that it is connected correctly.	- Firmware version - Ambient temperature thermistor - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	
ROOM TEMP TOO HIGH PRINT? OK/CANCEL	The ambient temperature is not within the printer operating range (high temperature).	- Restart the printer. - Check the ambient temperature.	- Install the last firmware version. - Check that the ambient temperature thermistor cable is not damaged or broken, and that it is connected correctly.	- Firmware version - Ambient temperature thermistor - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	
DECREASE ROOM TEMP XXXX CC nn  XXXX: Print mode cc: Print density nn: Print direction	The ambient temperature is not within the printer operating range (high temperature).	- Restart the printer. - Check the ambient temperature.	- Install the last firmware version. - Check that the ambient temperature thermistor cable is not damaged or broken, and that it is connected correctly.	- Firmware version - Ambient temperature thermistor - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	

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Panel Message	Error Description	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
PLEASE WARM THE ROOM	The ambient temperature where the printer has been installed is too low (less than 5°C).	- Restart the printer. - Check the ambient temperature.	- Install the last firmware version. - Check that the ambient temperature thermistor cable is not damaged or broken, and that it is connected correctly.	- Firmware version - Ambient temperature thermistor - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	
DECREASE ROOM TEMP	The ambient temperature where the printer has been installed is too high (more than 35°C).	- Restart the printer. - Check the ambient temperature.	- Install the last firmware version. - Check that the ambient temperature thermistor cable is not damaged or broken, and that it is connected correctly.	- Firmware version - Ambient temperature thermistor - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	
MANUALLY ADJUST ADV VAL/PRINT POS	There was a problem with light intensity during automatic print adjustment. Or automatic calculation failed with the read pattern.	- Check if the problem also occurs with other types of media. - Restart the printer with the media installed (POC). - Clean any dirt on the PCB-ASSY-ADJ1.	- Install the last firmware version. - Check that the PCB-ASSY-ADJ1 sensor surface is not soiled. - Check that the PCB-ASSY-ADJ1 connectors are connected correctly. - Check the PCB-ASSY-ADJ1 harness condition. - Check for PCB-ASSY-ADJ1 problems. - Check for PCB-ASSY-HCB1M problems.	- Firmware version - PCB-ASSY-ADJ1 - AUTO ADJFFC,MW - PCB-ASSY-HCB1M	6-63 PCB-ASSY-ADJ1 6.8.4 PCB-ASSY-HCB1M
INSTALL WIDER MEDIA	Media of less than 762 mm (30 inches) was installed when automatic nozzle map was performed.	Use media of 762 mm (30 inches) or larger.	- Install the last firmware version. - Check the size of the media. - Check that the detected media width is correct.	- Firmware version - SENSOR(EDGE) MAINTENANCE - Non-reflecting tape on the platen	6.8.3 PCB-ASSY-SNS1
MANUALLY CONFIGURE NOZZLE MAPPING	There was a problem with light intensity during nozzle map automatic configuration.	- Check if the problem also occurs with other types of media. - Restart the printer with the media installed (POC). - Clean any dirt on the PCB-ASSY-ADJ1.	- Install the last firmware version. - Check that the PCB-ASSY-ADJ1 sensor surface is not soiled. - Check that the PCB-ASSY-ADJ1 connectors are connected correctly. - Check the PCB-ASSY-ADJ1 harness condition. - Check for PCB-ASSY-ADJ1 problems. - Check for PCB-ASSY-HCB1M problems.	- Firmware version - PCB-ASSY-ADJ1 - AUTO ADJFFC,MW - PCB-ASSY-HCB1M	6.8.8 PCB-ASSY-ADJ1 6.8.4 PCB-ASSY-HCB1M
AUTO NOZZ MAP ERROR nn Lc Lm C Y K M Gy	Detection failed due to a problem in the pattern or during media advance.	- Reinstall the media. - Try with a different media. - Check that there is no problem with media advance, such as skew or wrinkles. - Check that the pattern is not soiled or damaged. - Check that the number of clogged nozzles does not exceed the limit of 10.	- Install the last firmware version. - Check that the PCB-ASSY-ADJ1 sensor surface is not soiled. - Check that the PCB-ASSY-ADJ1 connectors are connected correctly. - Check the PCB-ASSY-ADJ1 harness condition. - Check for PCB-ASSY-ADJ1 problems. - Check for PCB-ASSY-HCB1M problems.	- Firmware version - PCB-ASSY-ADJ1 - AUTO ADJFFC,MW - PCB-ASSY-HCB1M - INKJET HEAD,MW (Print head)	6.8.8 PCB-ASSY-ADJ1 6.8.4 PCB-ASSY-HCB1M 6.8.1 Print head replacement

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

Panel Message	Error Description	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
<p><b>AUTO NOZZ MAP ERROR nn</b> Lc Lm C Y K M Gy ©</p> <p>&lt; Error print result of automatic nozzle map &gt; nn: ERROR 3 PERFORM CLEANING 3 Limit exceeded error</p>	<p>The total number of clogged nozzles and overwrite protected nozzles exceeds the limit of 10.</p>	<ul style="list-style-type: none"> <li>- Check that the number of clogged nozzles does not exceed the limit of 10.</li> <li>- Reinstall the media.</li> <li>- Try with a different media.</li> <li>- Check that there is no problem with media advance, such as skew or wrinkles.</li> <li>- Check that the pattern is not soiled or damaged.</li> <li>- Remove the unnecessary overwrite protection settings.</li> </ul>	<ul style="list-style-type: none"> <li>- Install the last firmware version.</li> <li>- Check that the PCB-ASSY-ADJ1 sensor surface is not soiled.</li> <li>- Check that the PCB-ASSY-ADJ1 connectors are connected correctly.</li> <li>- Check the PCB-ASSY-ADJ1 harness condition.</li> <li>- Check for PCB-ASSY-ADJ1 problems.</li> <li>- Check for PCB-ASSY-HCB1M problems.</li> </ul>	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- PCB-ASSY-ADJ1</li> <li>- AUTO ADJFFC,MW</li> <li>- PCB-ASSY-HCB1M</li> <li>- INKJET HEAD,MW (Print head)</li> </ul>	<p>📖 6.8.8 PCB-ASSY-ADJ1</p> <p>📖 6.8.4 PCB-ASSY-HCB1M</p> <p>📖 6.8.1 Print head replacement</p>
<p><b>SUBSCRIPTION CODE HAS EXPIRED</b></p>	<p>The expiration date for the printer subscription code has passed.</p>	/	/	<p>New subscription code</p>	
<p><b>AN ERROR OCCURRED PLEASE WAIT</b></p>	<p>An error has been detected in the printer.</p>	<ul style="list-style-type: none"> <li>- Wait 5 minutes after the error occurrence to see if it switches to a different error.</li> <li>- Restart the printer.</li> </ul>	<ul style="list-style-type: none"> <li>- Install the last firmware version.</li> <li>- After restarting the printer, acquire the log and analyze the error (ERROR.CSV in the log files).</li> </ul>	<p>Firmware version</p>	
<p><b>NO MORE INK AVAILBLE USE EXTENSION CHIP</b></p>	<p>No more ink can be used.</p>	<p>Read an ink amount extension chip with the printer.</p>	/	/	

### 5.3.1 Ink-related messages

(CIS model)

CLOSE INK BOX COVER

#### <Description>

The ink box cover is open.

If the error does not disappear after closing the cover, there may be a problem with the sensor.

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Connection of the ink box cover sensor connectors	Check that the harness connectors are correctly connected to the sensor connectors.
2	PCB-ASSY-ACT3's connector connection	Check that the harness connectors are connected to the PCB-ASSY-ACT3's connector securely.
3	INKBOX-COVER damage	Check that the INKBOX-COVER is not damaged. Replace it if it is damaged.
4	Replacement of the ink box cover sensor	Replace the photo interrupter.
5	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.

(LCIS model)

CLOSE THE  
RESERVOIR DRAWER

## &lt;Description&gt;

The reservoir drawer is open.

If the error does not disappear after closing the reservoir drawer, there may be a problem with the sensor.

## &lt;Action&gt;

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Drawer connectors	Check that the connectors are correctly in contact when the drawer is closed.
2	CABLE(LCISWei-Sen)-ASSY(MW) replacement	Replace the harness if the connectors are damaged or do not contact properly.
3	CABLE(LCISWei-Sen-IF)-ASSY(MW) replacement	Replace the harness if the connectors are damaged or do not contact properly.

(CIS model)

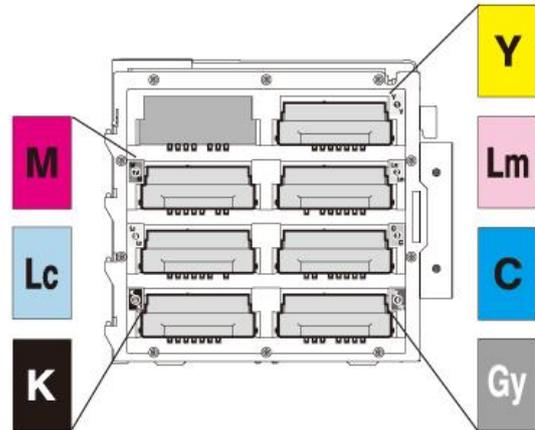
(With the ink box cover closed)

NO CC CARTRIDGE  
OPEN INK BOX COVER

(With the ink box cover open)

SET CC INK CARTRIDGE

CC: Color, position  
7-color mode: Y, Lm, C, Gy, K, Lc, M  
6-color mode: Y, Lm, C, K, Lc, M



<Description>

Possible causes are as follows:

- One ink cartridge is not installed to the printer.
- The contact of the electrode used to check that an ink cartridge is installed is defective.
- The harness, connectors, or boards connected to the electrode above are defective.

<Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	Contact between the ink cartridge electrode and the PCB-ASSY-INK4 connector.	Reinstall the ink cartridge. If the problem is not solved, softly wipe the ink cartridge electrode and the PCB-ASSY-INK4 connector using a soft cloth or lint-free paper dampened with ethanol.
3	PCB-ASSY-INK4's connector connection	Check that the harness connectors are connected to the PCB-ASSY-INK4's connector securely.
4	PCB-ASSY-ACT3's connector connection	Check that the harness connectors are connected to the PCB-ASSY-ACT3's connector securely.
5	CABLE(Cartridge)-ASSY(MW)'s condition	Check that the condition is proper as follows. <ul style="list-style-type: none"> <li>- The connectors are connected securely.</li> <li>- The cable is not disconnected.</li> <li>- The harness is not pinched by other parts.</li> <li>- The cable jacket is not damaged.</li> </ul>
6	INKBOX-UNIT-MW's condition	Check that no part is misaligned, worn, or damaged. Reassemble the ink box or replace a part as necessary.
7	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.

(CIS model)

(With the ink box cover closed)

CC CARTRIDGE ERROR	nn
OPEN INKBOX COVER	

nn: 4 Read/write error  
 5 Authentication error  
 6 Ink information error

(With the ink box cover open)

CHECK CC CARTRIDGE	nn

CC: Color, position  
 7-color mode: Y, Lm, C, Gy, K, Lc, M  
 6-color mode: Y, Lm, C, K, Lc, M

<Description>

Possible causes are as follows:

- A problem occurred with the ink cartridge.
- The contact of the electrode used to read and write the ink cartridge's information is defective.
- The harness, connectors, or boards connected to the electrode above are defective.

<Action>

Perform the same actions as with **OPEN INK BOX COVER SET CC INK CARTRIDGE**.

(CIS model)

(With the ink box cover closed)

CC INK HAS RUN OUT  
OPEN INK BOX COVER

CC: Color, position  
7-color mode: Y, Lm, C, Gy, K, Lc, M  
6-color mode: Y, Lm, C, K, Lc, M

(With the ink box cover open)

REPLACE CC CARTRIDGE

<Description>

Possible causes are as follows.

- All the ink was used.
- An error occurred in the ink supply system.

<Action>

Follow the instruction in the message displayed.

If this message is displayed while the ink cartridge contains enough ink, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Ink supply pump	Check that: - No ink leakage is found. - The pump rotates. If a problem is found, replace the relevant part
2	Subtank full sensor	Check that the harness is connected to the sensor's connector securely. If the problem persists when connected securely, replace the sensor.
3	Subtank empty sensor	Check that the harness is connected to the sensor's connector securely. If the problem persists when connected securely, replace the sensor.
4	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.

(LCIS model)

(With the reservoir drawer closed)

CC INK HAS RUN OUT  
OPEN THE DRAWER

CC: Color, position  
Y, Lm, C, K, Lc, M

(When you have opened the reservoir drawer)

SUPPLY INK AND  
CLOSE THE DRAWER

<Description>

The ink has run out. Or there is a problem with ink supply.

<Action>

Follow the instruction in the message displayed.

If the message is displayed even when ink is available, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Ink supply pump	Check that there is no ink leakage and that the pump operates. Replace the pump if a problem is found.
2	Subtank full sensor	Check that the harness is connected correctly to the sensor connector. If the problem persists with the connection secured, replace the sensor.
3	Subtank empty sensor	Check that the harness is connected correctly to the sensor connector. If the problem persists with the connection secured, replace the sensor.
4	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.

(CIS model)

(With the ink box cover closed)

WRONG COLOR FOR CC  
OPEN INK BOX COVER

CC: Color, position  
7-color mode: Y, Lm, C, Gy, K, Lc, M  
6-color mode: Y, Lm, C, K, Lc, M

(With the ink box cover open)

INK COLOR ERROR  
CHECK CC CARTRIDGE

<Description>

Wrong ink cartridge color

<Action>

Perform the same actions as with **OPEN INK BOX COVER SET CC INK CARTRIDGE**.

(CIS model)

(With the ink box cover closed)

INCORRCT CC INK TYPE  
OPEN INK BOX COVER

CC: Color, position  
7-color mode: Y, Lm, C, Gy, K, Lc, M  
6-color mode: Y, Lm, C, K, Lc, M

(With the ink box cover open)

CARTRIDGE TYPE ERROR  
CHECK CC CARTRIDGE

<Description>

Wrong ink cartridge type

<Action>

Perform the same actions as with **OPEN INK BOX COVER SET CC INK CARTRIDGE**.

**PRIME INK SYSTEM**

## &lt;Description&gt;

The ink system is not primed.

## &lt;Action&gt;

Follow the instruction in the message displayed.

If this message is displayed while the ink system has been primed, set the service menu **INK SYSTEM STATUS** to **PRIMED**.

If the message is still displayed, check the Items to be Checked on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	EEPROM	Replace the EEPROM (see <b>5.9.2</b> ).
3	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.3.2 Waste ink bottle related messages

INSTALL  
WASTE INK BOTTLE

#### <Description>

Possible causes are as follows.

- No waste ink bottle is installed to the printer.
- The sensor for checking the waste ink bottle is defective.
- The harness, connectors, or boards connected to the sensor above are defective.

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	A waste ink bottle is installed	If no waste ink bottle is installed, install it.
2	Waste ink bottle sensor (see <b>6.11.2 MICRO SWITCH 4(WASTE INK BOTTLE ASSY)</b> )	Check that the waste ink bottle is fixed securely. Then on the operation panel's <b>MONITOR</b> menu, select <b>WASTE BOTTLE</b> and set <b>INSTALLED</b> . Check that the switch operation is correct.
3	Waste ink bottle sensor's connector	Remove the connector, and then re-connect it. Then on the operation panel's <b>MONITOR</b> menu, select <b>WASTE BOTTLE</b> and set <b>INSTALLED</b> . Check that the switch operation is correct.
4	Connection of the CN22 connector on PCB-ASSY-ACT3	Remove the connector, and then re-connect it. Then on the operation panel's <b>MONITOR</b> menu, select <b>WASTE BOTTLE</b> and set <b>INSTALLED</b> . Check that the switch operation is correct.
5	Connection of the CABLE(TU-SENS1)-ASSY(MW) and CABLE(TU-SENS2)-ASSY(MW) cables.	Remove the connectors, and then re-connect them. Then on the operation panel's <b>MONITOR</b> menu, select <b>WASTE BOTTLE</b> and set <b>INSTALLED</b> . Check that the switch operation is correct.
6	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3 board. Then on the operation panel's <b>MONITOR</b> menu, select <b>WASTE BOTTLE</b> and set <b>INSTALLED</b> . Check that the switch operation is correct.
7	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100 board. Then on the operation panel's <b>MONITOR</b> menu, select <b>WASTE BOTTLE</b> and set <b>INSTALLED</b> . Check that the switch operation is correct.

**REPLACE  
WASTE INK BOTTLE**

## &lt;Description&gt;

Possible causes are as follows.

- The waste ink bottle is full.
- The sensor for checking the waste ink bottle is defective.
- The harness, connectors, or boards connected to the sensor above are defective.

## &lt;Action&gt;

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Waste ink bottle replacement	Replace the waste ink bottle following the instruction in the message displayed.
2	Waste ink bottle sensor (see 6.11.2 <b>MICRO SWITCH 4(WASTE INK BOTTLE ASSY)</b> )	Check that the waste ink bottle is fixed securely. Then on the operation panel's <b>MONITOR</b> menu, select <b>WASTE BOTTLE</b> and set <b>INSTALLED</b> . Check that the switch operation is correct.
3	Waste ink bottle sensor's connector	Remove the connector, and then re-connect it. Then on the operation panel's <b>MONITOR</b> menu, select <b>WASTE BOTTLE</b> and set <b>INSTALLED</b> . Check that the switch operation is correct.
4	Connection of the CN22 connector on PCB-ASSY-ACT3	Remove the connector, and then re-connect it. Then on the operation panel's <b>MONITOR</b> menu, select <b>WASTE BOTTLE</b> and set <b>INSTALLED</b> . Check that the switch operation is correct.
5	Connection of the CABLE(TU-SENS1)-ASSY(MW) and CABLE(TU-SENS2)-ASSY(MW) cables.	Remove the connectors, and then re-connect them. Then on the operation panel's <b>MONITOR</b> menu, select <b>WASTE BOTTLE</b> and set <b>INSTALLED</b> . Check that the switch operation is correct.
6	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3 board. Then on the operation panel's <b>MONITOR</b> menu, select <b>WASTE BOTTLE</b> and set <b>INSTALLED</b> . Check that the switch operation is correct.
7	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100 board. Then on the operation panel's <b>MONITOR</b> menu, select <b>WASTE BOTTLE</b> and set <b>INSTALLED</b> . Check that the switch operation is correct.

### 5.3.3 Media jam related messages

MEDIA JAM ERROR	1
LIFT THE LEVER	

#### <Description>

One of the following errors was detected in the Y motor servo control program.

- Overcurrent
- Servo interruption error
- Outsync error
- In-position timeout error

#### <Action>

Follow the instruction in the message displayed.

If this error occurs when there are actually no media jams, or there are no obstacles in the carriage or media path, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Linear scale smeared or scratched	Softly wipe the linear scale with a soft cloth or lint-free paper dampened with ethanol. Be careful so that: <ul style="list-style-type: none"> <li>- The linear scale is not scratched, or</li> <li>- The attached parts are not removed.</li> </ul> If the linear scale is damaged, replace it.
2	Linear encoder's connector connection	Check that the harness connector is connected securely to the board's connector.
3	The Plate-Fix(FFC) metal plate fixed on the FFC's PCB-ASSY-HCB1M	Check that the screws are tightened.
4	FFC connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
5	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
6	Y motor's connector connection	Check that the three connectors below connecting the motor unit and the board unit are connected securely <ul style="list-style-type: none"> <li>- Connector on the motor unit side</li> <li>- Connector on the relay part</li> <li>- Connector on the board unit side</li> </ul>
7	SUS belt tension	Check that the SUS belt tension is within the adequate range. If it is not within the range, adjust it.
8	Timing belt tension	Adjust it.

No	Items to be Checked	Action
9	Carriage operation	On the operation panel, press <b>MAINTENANCE</b> button, go to <b>PRINT HEAD MAINTENANCE</b> , select <b>RESEAT PRINT HEAD</b> , and move the carriage. Then turn the printer power off while the front cover is opened. With the Y motor's connector disconnected, manually move the carriage, and check that the carriage moves smoothly. If a problem is found, identify the cause of the problem, and replace the defective part.
10	Y motor	Replace the motor.
11	CABLE(Y-MOT)-ASSY(MW) condition	Check that the harness condition is proper as follows. - The cable is not disconnected. - The harness is not pinched by other parts. - The cable jacket is not damaged. If a problem is found, replace the cable.
12	FFC's external damage	Check the following to ensure that the FFC is not damaged. - FFC's terminal is detached from its base. - FFC's edges have not been abraded by friction. If the FFC is damaged, replace it.
13	Robot cable	Replace the robot cable.
14	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
15	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
16	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
17	FFC	Replace the all four FFCs.

MEDIA JAM ERROR	2
LIFT THE LEVER	

## &lt;Description&gt;

One of the following problems has occurred.

- The media edge is not detected.
- The sheet media is used, and its media length a standard size.

## &lt;Action&gt;

Solve the problem following the instruction in the message displayed.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Media surface condition	The media edge may not be detected when the condition is as follows. <ul style="list-style-type: none"> <li>- Black-surface media; or</li> <li>- Matte media.</li> </ul> Try another media.
2	Non-reflecting tape condition on the platen	Check that the tape is not smeared. If it is, softly wipe it with a soft cloth or lint-free paper dampened with wiper cleaning liquid or cap cleaning liquid.
3	Media edge sensor condition	Check that the harness connector is securely connected to the board's connector. Check that the sensor is fixed securely. Remove the sensor, softly wipe it with a soft cloth or lint-free paper dampened with ethanol, and re-connect it. If the error persists, replace the sensor.
4	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
5	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
6	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
7	Robot cable	Replace the robot cable.
8	FFC	Replace all four FFCs.

### 5.3.4 Media-related messages

LIFT THE LEVER AND  
LOAD THE MEDIA

<Description>

The media feed sensor has turned off, or the both the media feed and media output sensors have turned on.

<Action>

Solve the problem, following the instruction in the message displayed.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Rear-side media condition	The media edge may not be detected when the condition is as follows. - Black-surface media; or - Matte media. Try another media.
2	Paper guide	Check that the media feed sensor and the media output sensor are not covered with the paper guide.
3	Roll end switch	Replace the switch.
4	Media feed sensor and media output sensor	Replace the sensors.
5	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
6	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

LOAD MEDIA

<Description>

The media feed sensor is turned off, or the both the media feed and media output sensors are turned off.

<Action>

Follow the instruction in the message displayed.

If the problem is not solved, perform the same actions as with LIFT THE LEVER AND LOAD THE MEDIA until the problem is solved.

**MEDIA WIDTH ERROR**  
**CHECK MEDIA WIDTH**

## &lt;Description&gt;

After the media installation, an incorrect media width was detected.

- Incorrect media width: less than 11 inches or more than 64 inches.

## &lt;Action&gt;

Install a media type with a correct width.

If the error persists after a correct media type has been installed, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Media surface condition	The media edge may not be detected when the condition is as follows. <ul style="list-style-type: none"> <li>- Black-surface media; or</li> <li>- Matte media.</li> </ul> Try another media.
2	Non-reflecting tape condition on the platen	Check that the tape is not smeared. If it is, softly wipe it with a soft cloth or lint-free paper dampened with wiper cleaning liquid or cap cleaning liquid.
3	SENSOR(EDGE)MAINTENANCE	Check that the harness connector is securely connected to the board's connector. Remove the sensor, softly wipe it with a soft cloth or lint-free paper dampened with ethanol, and re-connect it. If the error persists, replace the sensor.
4	Linear scale dirt or damage	Softly wipe off any dirt on the linear scale with a soft cloth or lint-free paper dampened with ethanol. Pay attention not to damage the linear scale or remove any attached part. If the linear scale is damaged, replace it.
5	Connection of the linear encoder connector	Check that the harness connector are correctly connected to the board connector.
6	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
7	The width of the V-shaped folded part of the FFC on the HCB1M board	Check that the width of the V-shaped folded part of the FFC is proper, and adjust if it is not. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
8	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
9	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
10	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
11	Robot cable	Replace the robot cable.
12	FFC	Replace all four FFCs.

**MEDIA HAS SKEWED  
ALIGN MEDIA**

<Description>

With the skew check after the media installation, 100-mm media was fed, and, the media edge was misaligned by ±2 mm or more.

<Action>

Re-install the media.

If the error persists after re-installing the media, check the **Items to be Checked** on the table below,, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Media surface condition	The media edge may not be detected when the condition is as follows. - Black-surface media; or - Matte media. Try another media.
2	Non-reflecting tape condition on the platen	Check that the tape is not smeared. If it is, softly wipe it with a soft cloth or lint-free paper dampened with wiper cleaning liquid or cap cleaning liquid.
3	SENSOR(EDGE)MAINTENANCE	Check that the harness connector is securely connected to the board's connector. Remove the sensor, softly wipe it with a soft cloth or lint-free paper dampened with ethanol, and re-connect it. If the error persists, replace the sensor.

**MEDIA HAS SKEWED  
ALIGN MEDIA**

<Description>

It has been detected that the media edges are misaligned by 3 mm or more due to a media skew.

<Action>

Reinstall the media.

If the problem is not solved even after reinstalling the media, perform the same actions as with **MEDIA HAS SKEWED ALIGN MEDIA.**

### 5.3.5 Messages related to print heads

PH COOLING PROCESS  
PLEASE WAIT

<Description>

The monitored temperature of the print heads exceeded 43°C.

<Action>

Follow the instruction in the message displayed.

If this error occurs even when the ambient temperature is 40°C or below, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Print head cooling fan	Check that the connectors of the head cooling fan harness are correctly connected to the board connectors. Check the head cooling fan operation in the ACTUATORS menu. Replace it if it does not operate.
2	Print head cable	Check that the connectors of the print head cable are correctly connected to the board connectors and the print heads. Replace the cable if the problem is not solved.
3	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
4	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
5	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
6	FFC	Replace all four FFCs.

PH TEMP IS TOO HIGH  
PRINT? OK/CANCEL



<Description>

The print heads temperature is not within the operating range (high temperature)

<Action>

Follow the instruction in the message displayed.

If this error occurs even when the ambient temperature is 40°C or below, perform the same actions as with **PH COOLING PROCESS PLEASE WAIT** until the problem is solved.

COOLING PRINT HEADS  
CCCC CC nn

XXXX: Print mode  
cc: Print density  
nn: Print direction

<Description>

The monitored temperature of the print heads exceeded 40°C.

<Action>

Follow the instruction in the message displayed.

If this error occurs even when the ambient temperature is 40°C or below, perform the same actions as with **PH COOLING PROCESS PLEASE WAIT** until the problem is solved.

### 5.3.6 Communication-related messages

NO DATA RECEIVED  
CHECK CONNECTION

<Description>

An error has been detected in the USB connection during print data transfer.

<Action>

If the problem is not solved even after replacing the USB cable check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

DATA COMMUNICATION  
WAS INTERRUPTED

<Description>

A timeout error has occurred during print data transfer.

<Action>

If the problem is not solved even after replacing the USB cable, perform the same actions as with **NO DATA RECEIVED CHECK CONNECTION**.

### 5.3.7 Others

CLOSE COVER

<Description>

The front cover is open.

<Action>

Close the front cover securely.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Connection of the connector on the front cover switch harness	Check that the harness connector is securely connected to the board's connector.
2	Condition of the front cover switch harness	Check that the harness condition is proper as follows. - The cable is not disconnected. - The harness is not pinched by other parts. - The cable jacket is not damaged. If a problem is found, replace the harness.
3	Front cover switch	Replace the switch.
4	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.

When the temperature is too high before the printing starts

ROOM TEMP TOO HIGH  
 PRINT? OK/CANCEL 

When the temperature is too high during printing

DECREASE ROOM TEMP  
 QUALITY ND UNI

When the temperature is too low

DECREASE ROOM TEMP  
 AND WAIT FOR A WHILE

<Description>

Ambient temperature is not within the printer's operating temperature range.

## &lt;Action&gt;

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	Connection of the harness connector on the ambient temperature thermistor	Check that the harness connector is securely connected to the board's connector.
3	Condition of the harness on the ambient temperature thermistor	Check that the harness condition is proper as follows. <ul style="list-style-type: none"> <li>- The cable is not disconnected.</li> <li>- The harness is not pinched by other parts.</li> <li>- The cable jacket is not damaged.</li> </ul> If a problem is found, replace the harness.
4	Ambient temperature thermistor	Replace the part. Note The ambient temperature thermistor is fixed on the SUBTANK BOX ASSY.
5	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
6	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

When the ambient temperature is low

PLEASE WARM THE ROOM

When the ambient temperature is high

DECREASE ROOM TEMP

## &lt;Description&gt;

The ambient temperature where the printer is installed is 5°C or lower, or 35°C or higher.

## &lt;Action&gt;

If the problem persists when the ambient temperature is between 5°C and 35°C, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	Connection of the ambient temperature thermistor harness	Check that the harness connectors are correctly connected to the board connectors.
3	Condition of the ambient temperature thermistor harness	Check that the harness is not broken, trapped by other parts, or damaged. Replace it if a problem is found.
4	Ambient temperature thermistor	Replace the part. Caution: The ambient temperature thermistor is secured to the subtank unit.
5	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
6	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

MANUALLY ADJUST	nn
ADV VAL/PRINT POS	©

- nn :
- 1 Calibration lower limit error
  - 2 Calibration higher limit error
  - 3 Adjustment value judgment error

<Description>

One of the following errors has been detected during automatic print adjustment.

1. Calibration lower limit error: The sensor light intensity is below the lower limit.
2. Calibration higher limit error: The sensor light intensity is above the higher limit.
3. Adjustment value determination error: A problem has been detected with the detection results.

<Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	The media	Try with a different media.
3	Restart the printer with the media installed and check that POC is skipped.	If POC is not skipped, the problem is not with the media but probably with the PCB-ASSY-ADJ1 path. Perform the following solutions in the given order.
4	Dirt on the PCB-ASSY-ADJ1 sensor surface	If soiled, clean the sensor surface with a soft cloth.
5	The connection of the PCB-ASSY-ADJ1 harness connectors	Check that the harness connectors are properly connected to the board connectors.
6	The PCB-ASSY-ADJ1 harness condition	<ul style="list-style-type: none"> <li>- Check that the cables are not disconnected, caught in order parts, and that the jackets are not damaged.</li> <li>- Check that the AUTO ADJFFC,MW terminal is not damaged.</li> <li>- If a problem is found, replace the part.</li> </ul>
7	PCB-ASSY-ADJ1	Replace the PCB-ASSY-ADJ1.
8	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.

**INSTALL WIDER MEDIA**



## &lt;Description&gt;

Media of less than 762 mm (30 inches) was installed when automatic nozzle map was performed.

## &lt;Action&gt;

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	Check that the media is 762 mm (30 inches) or larger.	Use media of 762 mm (30 inches) or larger.
3	The detected width of the media	<ul style="list-style-type: none"> <li>- Reinstall the media.</li> <li>- Check that there are no problems with the media width detection.</li> </ul>

MANUALLY CONFIGURE	nn
NOZZLE MAPPING	©

- nn : 1 Calibration lower limit error  
 2 Calibration higher limit error

<Description>

There was a problem with light intensity of PCB-ASSY-ADJ1 sensor during nozzle map automatic configuration.

1. Calibration lower limit error: The light intensity of the sensor is below the lower limit.
2. Calibration higher limit error: The light intensity of the sensor is above the higher limit.

<Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	The media	Try with a different media.
3	Restart the printer with the media installed and check that POC is skipped.	If POC is not skipped, the problem is not with the media but probably with the PCB-ASSY-ADJ1 path. Perform the following solutions in the given order.
4	Dirt on the PCB-ASSY-ADJ1 sensor surface	If soiled, clean the sensor surface with a soft cloth.
5	The connection of the PCB-ASSY-ADJ1 harness connectors	Check that the harness connectors are properly connected to the board connectors.
6	The PCB-ASSY-ADJ1 harness condition	<ul style="list-style-type: none"> <li>- Check that the cables are not disconnected, caught in order parts, and that the jackets are not damaged.</li> <li>- Check that the AUTO ADJFFC,MW terminal is not damaged.</li> <li>- If a problem is found, replace the part.</li> </ul>
7	PCB-ASSY-ADJ1	Replace the PCB-ASSY-ADJ1.
8	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.

MANUALLY CONFIGURE nn  
 NOZZLE MAPPING ©

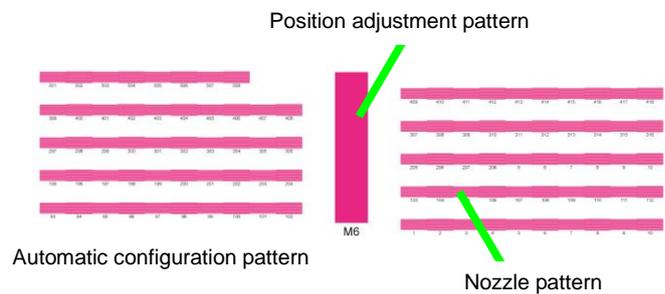
< Error print result of automatic nozzle map >  
 nn: ERROR n MANUALLY CONFIGURE  
 nn: ERROR n MANUALLY CONFIGURE

n: 1 Voltage variation error  
 2 Position adjustment error

<Description>

Detection failed due to a problem in the pattern or during media advance.

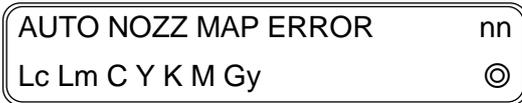
1. Voltage variation error: An error occurred when reading the nozzle pattern.
2. Position adjustment error: An error occurred when reading the position adjustment pattern.



<Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	The media	Try with a different media.
3	Check that there is no problem with media advance, such as skew or wrinkles.	- Reinstall the media. - Try with a different media.
4	Dirt or damage on the pattern	Try again with a media with no dirt or damage.
5	Check that the number of clogged nozzles does not exceed the limit of 10.	Perform cleaning to clear the clogged nozzle. Replace print heads as necessary.
6	Dirt on the PCB-ASSY-ADJ1 sensor surface	If soiled, clean the sensor surface with a soft cloth.
7	The connection of the PCB-ASSY-ADJ1 harness connectors	Check that the harness connectors are properly connected to the board connectors.
8	The PCB-ASSY-ADJ1 harness condition	- Check that the cables are not disconnected, caught in order parts, and that the jackets are not damaged. - Check that the AUTO ADJFFC,MW terminal is not damaged. - If a problem is found, replace the part.
9	PCB-ASSY-ADJ1	Replace the PCB-ASSY-ADJ1.
10	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.



< Error print result of automatic nozzle map >  
nn:            ERROR 3 PERFORM CLEANING  
  
                  3 Limit exceeded error

<Description>

**1 voltage variation error** or **2 position adjustment error** has not been detected but the total number of clogged nozzles and overwrite protected nozzles exceeds the limit of 10.

<Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	The total number of clogged nozzles	- Remove the unnecessary overwrite protection settings. - Perform cleaning to clear the clogged nozzle. - Replace print heads as necessary.
3	The media	Try with a different media.
4	Dirt or damage on the pattern	Try again with a media with no dirt or damage.
5	Dirt on the PCB-ASSY-ADJ1 sensor surface	If soiled, clean the sensor surface with a soft cloth.
6	The connection of the PCB-ASSY-ADJ1 harness connectors	Check that the harness connectors are properly connected to the board connectors.
7	The PCB-ASSY-ADJ1 harness condition	- Check that the cables are not disconnected, caught in order parts, and that the jackets are not damaged. - Check that the AUTO ADJFFC,MW terminal is not damaged. - If a problem is found, replace the part.
8	PCB-ASSY-ADJ1	Replace the PCB-ASSY-ADJ1.
9	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.



<Description>

The expiration date for the subscription code has passed (23:59:59 of the expiration date).

<Action>

Enter a new subscription code.

AN ERROR OCCURRED  
PLEASE WAIT

## &lt;Description&gt;

An error has been detected in the printer.

## &lt;Action&gt;

If the display does not change after five minutes, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	Printer log	Acquire the printer log, and perform the procedure to solve the error.

(LCIS model)

NO MORE INK AVAILBLE  
USE EXTENSION CHIP

## &lt;Description&gt;

No more ink can be used.

## &lt;Action&gt;

Read an ink amount extension chip with the printer.

## 5.4 Warning Messages

This section describes the warning messages.

Warning events displayed on the LCD are resolved by pressing any button on the operation panel.

Warning events indicated with blinking LEDs are resolved by correcting their cause.

Warnings are categorized as follows.

- (1) Warnings displayed on the LCD
- (2) Warnings indicated with a warning sound only
- (3) Warnings displayed on the LCD and indicated with a warning sound
- (4) Warnings indicated by a blinking LED on the panel

The causes and solutions for each warning are indicated in the table below.

Warning	Cause	Panel/LED Display	Warning Sound	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
Cap open warning	5 minutes have passed since the caps are open.	None	The buzzer beeps once every second.	Close the caps.	Install the last firmware version.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	
Cap open warning (low)	1 minute has passed since the caps are open.	None	The buzzer beeps four times every minute.	Close the caps.	Install the last firmware version.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	
The cleaning sheet has not been removed.	72 hours has passed with the cleaning sheet still in place after the sheet mount cleaning operation.	None	The buzzer beeps once every second.	Follow the instructions to remove the sheet.	- Install the last firmware version. - Check the system time.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	
Media wrinkles check	After the media has been installed, it has not been fed for four hours and 10 minutes.	CHECK MEDIA FOR WRINKLES	None	Raise the pressure roller lever, or execute FEED MEDIA or BACK FEED MEDIA.	- Install the last firmware version. - Check the system time.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	
The bidirectional print position has not been adjusted.	You have not set the bidirectional position adjustment value in the media preset menu after installing the media, or after choosing for the first time a media preset for a new media.	ADJUST BIDIRECTIONAL PRINT POSITION	None	Perform automatic adjustment or adjust the bidirectional print position manually. * The warning disappears even without registering the media when adjusting the bidirectional print position manually.	- Install the last firmware version. - Check the system time.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

Warning	Cause	Panel/LED Display	Warning Sound	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
The media advance value has not been adjusted.	You have not set the media advance value in the media preset menu after installing the media, or after choosing for the first time a media preset for a new media.	ADJUST MEDIA ADVANCE VALUE	None	Perform automatic adjustment or adjust the media advance value manually. * The warning disappears even without registering the media when adjusting the media advance value manually.	- Install the last firmware version. - Check the system time.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	
The start maintenance has not been performed.	20 hours has passed since the last start maintenance operation.	PERFORM LAUNCH MAINTENANCE	None	Perform start maintenance.	- Install the last firmware version. - Check the system time.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	
It is recommended to perform PH recovery.	It is recommended to perform cleaning (PH recovery) to prevent the missing dots problem.	PH RECOVERY RECOMMENDED	None	Perform PH RECOVERY.	- Install the last firmware version. - Check the system time.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	
The print heads have not been cleaned.	Automatic cleaning will be performed when the next printing starts.	PERFORM PH RECOVERY NOW	None	Perform PH RECOVERY.	- Install the last firmware version. - Check the system time.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	
Sheet mount cleaning has not been performed.	One month has passed since the last sheet mount cleaning.	PERFORM SHEET MOUNT CLEANING	None	Perform sheet mount cleaning.	- Install the last firmware version. - Check the system time.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	
Some start maintenance operations have not been performed.	Some of the start maintenance operations have not been performed.	PERFORM LAUNCH MAINTENANCE	None	Perform the start maintenance operations that have been omitted.	- Install the last firmware version. - Check the system time.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	
The waste ink bottle is almost full.	The waste ink quantity exceeds 75% of the bottle capacity. Since the bottle capacity is 4000 ml, the warning is displayed when the bottle contains more than 3000 ml of waste ink.	WASTE INK BOTTLE IS ALMOST FULL	None	Replace the waste ink bottle.	Install the last firmware version.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	
Ink is running low. (CIS model)	The ink quantity remaining in the cartridge reached 45 ml (3% of 1.5 l).	CC INK IS RUNNING OUT CC: Color	None	Replace the corresponding ink cartridge.	Install the last firmware version.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	
The reservoir is almost empty. (LCIS model)	The ink quantity remaining in the reservoir reached 250 ml.	CC INK IS RUNNING OUT CC: Color	None	Supply ink in the reservoir.	Install the last firmware version.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	
The subscription expiration date is close.	The subscription code will expire within one week.	SUBSCRIPTION LIMIT XXXX/XX/XX	None	Enter a new subscription code.	Provide a new subscription code.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	
The amount of ink that can be used is low. (LCIS model)	The amount of ink that can be used reached 0.5 l.	AVAILABLE INK IS RUNNING OUT	None	Read an ink amount extension chip with the printer.	Provide a new subscription code.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

Warning	Cause	Panel/LED Display	Warning Sound	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
TUR unit operation timeout	A timeout error has occurred in the take-up reel unit. This error occurs when the take-up slack upper limit sensor detects the media during a prescribed time.	CHECK TUR UNIT	The buzzer beeps once every second.	<ul style="list-style-type: none"> <li>- Check that the paper tube is correctly installed on the TUR unit.</li> <li>- Check that the TUR switch is turned to on.</li> </ul>	<ul style="list-style-type: none"> <li>- Check that the TUR switch cable is not damaged or broken, and that its connector is connected correctly.</li> <li>- Check that the connector of the TUR slide switch cable is correctly connected.</li> <li>- Check that the PHOTO-IC (light-emitting side) cable is not damaged or broken, and that its connector is connected correctly.</li> <li>- Check that the PHOTO-IC (light-receiving side) cable is not damaged or broken, and that its connector is connected correctly.</li> <li>- Check that the TUR motor cable is not damaged or broken, and that its connector is connected correctly.</li> <li>- Check that the TUR motor gears are not damaged, and that there is no foreign matter on them.</li> <li>- Check the electromagnetic clutch operation in the ACTUATORS menu.</li> </ul>	<ul style="list-style-type: none"> <li>- CABLE(TU-Switch)-ASSY</li> <li>- TAKE UP SENSOR,MW</li> <li>- TAKE UP MOTOR UNIT,MW</li> <li>- ELECTROMAGNETIC, MW</li> <li>- PCB-ASSY-ACT3</li> <li>- CABLE(TU-ACT-IF)-ASSY(MW)</li> <li>- CABLE(TU-ACT-IF2)-ASSY(MW)</li> </ul>	
TUR unit	The TUR unit is not installed properly and the take-up direction switch is set to OFF.	PUSH TUR UNIT AS FAR AS IT GOES	The buzzer beeps once every second.	Push the TUR unit as far as it goes under the printer.	<ul style="list-style-type: none"> <li>- Check that the TUR switch cable is not damaged or broken, and that its connector is connected correctly.</li> <li>- Check that the connector of the TUR slide switch cable is correctly connected.</li> </ul>	<ul style="list-style-type: none"> <li>- CABLE(TU-Switch)-ASSY</li> <li>- ROLL END SENSOR,MW</li> <li>- PCB-ASSY-ACT3</li> </ul>	
Ink is running low.	Remaining ink has almost run out.	The ink LED  is blinking.	None	Prepare a new ink cartridge.	Install the last firmware version.	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- PCB-ASSY-IPB5-100</li> </ul>	

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

<Part replacement warnings>

Warning	Cause	Panel/LED Display	Warning Sound	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
Wiper blade replacement	The wiper blades will need to be replaced soon.	REPLACE WIPER BLADE	None	Replace the wiper blades.	- Install the last firmware version. - Check the system time.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	
Wiper sponge replacement	The wiper sponge will need to be replaced soon.	REPLACE WIPER SPONGE	None	Replace the wiper sponge.	- Install the last firmware version. - Check the system time.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	
Wiper cleaning liquid replacement	The wiper cleaning liquid will need to be replaced soon.	REPLACE WIPER CLEANING LIQUID	None	Replace the wiper cleaning liquid.	- Install the last firmware version. - Check the system time.	- Firmware version - EEPROM - PCB-ASSY-IPB5-100	
Part replacement	Some parts will need to be replaced soon.	TO REPLACE XXXXXX CONTACT YOUR DEALER  XXXX: Part number	None	Contact our service center and ask for part replacement.	Replace the part.	Refer to the corresponding pages.	

### 5.4.1 Cap open warning

The buzzer beeps once every second.

<Description>

Five minutes have passed with the caps open.

<Action>

Close the caps.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	Printer system time	Check that the time is correct, and correct the setting if not.
3	EEPROM	Replace the EEPROM (see <b>5.9.2</b> ).
4	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.4.2 Cap open warning (low)

The buzzer beeps four times every minute.

<Description>

One minute has passed with the caps open.

<Action>

Close the caps.

If the warning does not disappear, perform the same actions as in **5.4.1 Cap open warning**.

### 5.4.3 The cleaning sheet has not been removed

The buzzer beeps once every second.

<Description>

The printer has been waiting for the sheet removal operation after sheet mount cleaning for 72 hours or more.

<Action>

Follow the instructions to remove the sheet.

If the warning does not disappear, perform the same actions as in **5.4.1 Cap open warning**.

#### 5.4.4 Media wrinkles check

CHECK MEDIA  
FOR WRINKLES

<Description>

After the media has been installed, it has not been fed for four hours and 10 minutes.

<Action>

Raise the pressure roller lever, or execute **FEED MEDIA** or **BACK FEED MEDIA**.

If the warning does not disappear, perform the same actions as in **5.4.1 Cap open warning**.

#### 5.4.5 The bidirectional print position has not been adjusted

ADJUST BIDIRECTIONAL  
PRINT POSITION

<Description>

You have not set the bidirectional position adjustment value in the media preset menu after you installed the media, or after you chose for the first time a media preset for a new media.

<Action>

You have not set the bidirectional position adjustment value in the media preset menu after:

- You installed the media; or
- You chose for the first time a media preset for a new media.

If the warning does not disappear, perform the same actions as in **5.4.1 Cap open warning**.

#### 5.4.6 The media advance has not been adjusted

ADJUST MEDIA  
ADVANCE VALUE

<Description>

You have not set the bidirectional position adjustment value in the media preset menu after:

- You installed the media; or
- You chose for the first time a media preset for a new media.

<Action>

Perform automatic print adjustment or manual media advance adjustment.

\*In case of manual media advance adjustment, registering the media is not required.

If the warning does not disappear, perform the same actions as in **5.4.1 Cap open warning**.

#### 5.4.7 The start maintenance has not been performed

PERFORM  
START MAINTENANCE

<Description>

20 hours has passed since the last start maintenance operation.

<Action>

Perform start maintenance.

If the warning does not disappear, perform the same actions as in **5.4.1 Cap open warning**.

#### 5.4.8 It is recommended to perform PH recovery

PH RECOVERY  
RECOMMENDED

<Description>

It is recommended to perform cleaning (PH recovery) to prevent the missing dots problem.

<Action>

Perform **PH RECOVERY**.

If the warning does not disappear, perform the same actions as in **5.4.1 Cap open warning**.

### 5.4.9 The print heads have not been cleaned

PERFORM  
PH RECOVERY NOW

<Description>

Automatic cleaning will be performed when the next printing starts.

<Action>

Perform **PH RECOVERY**.

Performing cleaning in advance prevent automatic cleaning when the next printing starts.

If the warning does not disappear, perform the same actions as in **5.4.1 Cap open warning**.

### 5.4.10 Sheet mount cleaning has not been performed

PERFORM  
SHEET MOUNT CLEANING

<Description>

One month has passed since the last sheet mount cleaning.

<Action>

Perform sheet mount cleaning.

If the warning does not disappear, perform the same actions as in **5.4.1 Cap open warning**.

### 5.4.11 Some start maintenance operations have not been performed

PERFORM  
START MAINTENANCE

<Description>

Some of the start maintenance operations have not been performed.

<Action>

Perform the start maintenance operations that have been omitted.

Meet the conditions to clear the **The start maintenance has not been performed** warning.

If the warning does not disappear, perform the same actions as in **5.4.1 Cap open warning**.

### 5.4.12 The waste ink bottle is almost full

WASTE INK BOTTLE IS  
ALMOST FULL

<Description>

The waste ink quantity exceeds 75% of the bottle capacity.

Since the bottle capacity is 4000 ml, the warning is displayed when the bottle contains more than 3000 ml of waste ink.

If the warning does not disappear, perform the same actions as in **5.4.1 Cap open warning**.

<Action>

Replace the waste ink bottle.

Press any button.

### 5.4.13 Ink is running low (CIS model)

CC INK IS  
RUNNING OUT

<Description>

The ink quantity remaining in the cartridge reached 45 ml (3% of 1.5 l).

<Action>

Replace the corresponding ink cartridge.

Press any button.

If the warning does not disappear, perform the same actions as in **5.4.1 Cap open warning**.

### 5.4.14 The reservoir is almost empty. (LCIS model)

CC INK IS  
RUNNING OUT

CC: Color, position  
Y, Lm, C, K, Lc, M

<Description>

The ink quantity remaining in the reservoir reached 250 ml.

<Action>

Supply ink in the reservoir.

Press any button.

If the warning does not disappear, perform the same actions as in **5.4.1 Cap open warning**.

### 5.4.15 The subscription expiration date is close

SUBSCRIPTION LIMIT  
2012/09/30

<Description>

The subscription code will expire within one week.

The printer cannot be used anymore after the subscription has expired so we recommend obtaining a new code when this message appears. The new code can be entered before or after the expiration date of the previous one.

<Action>

Enter a new subscription code.

Press any button.

### 5.4.16 The amount of ink that can be used is low. (LCIS model)

AVAILABLE INK IS  
RUNNING OUT

<Description>

The amount of ink that can be used reached 0.5 l.

If the ink that can be used runs out, the printer will not be able to print for short period of time.

Therefore, when this message is displayed, prepare a new ink bottle and read the ink amount extension chip attached to the ink bottle using the printer.

The new ink amount extension chip can be read before or after the available ink runs out.

<Action>

Read a new ink amount extension chip with the printer.

Press any button.

If the warning does not disappears, check the **Items to be Checked** on the table below, and perform the actions starting from the top.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	EEPROM	Replace the EEPROM (see 5.9.2).
3	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.4.17 TUR unit operation timeout

#### CHECK TUR UNIT

The buzzer beeps once every second.

#### <Description>

A timeout error has occurred in the take-up reel unit.

This error occurs when the take-up slack upper limit sensor detects the media during a prescribed time.

#### <Action>

Remove the media between the light-emitting unit and the light-receiving unit of both the take-up slack upper and lower limit sensors.

If the problem persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved .

No	Items to be Checked	Action
1	Condition of the TUR switch harness	Check that the harness connectors are connected correctly. Check also that the harness is not broken, trapped, or damaged. Replace the harness if a problem is found.
2	Condition of the TUR sensor harness	Check that the harness connectors are connected correctly. Check also that the harness is not broken, trapped, or damaged. Replace the harness if a problem is found.
3	TUR sensor	Check that the sensor responds using the SENSOR menu. If there is no response, adjust the light axis of the light-emitting sensor. If there is still no response, replace the sensor.
4	Condition of the TUR motor harness	Check that the harness connectors are connected correctly. Check also that the harness is not broken, trapped, or damaged. Replace the harness if a problem is found.
5	TUR motor gears	Check that the TUR motor gears are not damaged, and there is no foreign matter on them. Remove any foreign matter.
6	TUR motor	Check the TUR motor operation in the ACTUATORS menu. Replace it if it does not operate.
7	Electromagnetic clutch	Check the electromagnetic clutch operation in the ACTUATORS menu. Replace it if it does not operate.
8	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.

### 5.4.18 The TUR unit is not installed properly

PUSH TUR UNIT  
AS FAR AS IT GOES

The buzzer beeps once every second.

#### <Description>

The TUR unit is not installed properly and the take-up direction switch is set to OFF.

#### <Action>

Push the TUR unit as far as it goes under the printer.

If the problem is not solved, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Condition of the TUR switch harness	Check that the harness connectors are connected correctly. Check also that the harness is not broken, trapped, or damaged. Replace the harness if a problem is found.
2	Condition of the TUR slide switch harness	Check that the harness connectors are connected correctly. Check also that the harness is not broken, trapped, or damaged. Replace the harness if a problem is found.
3	TUR slide switch	Check that the sensor responds using the SENSOR menu. If it does not respond, replace the sensor.
4	Condition of the TUR motor harness	Check that the harness connectors are connected correctly. Check also that the harness is not broken, trapped, or damaged. Replace the harness if a problem is found.
5	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.

### 5.4.19 Remaining ink has almost run out

CC INK IS  
RUNNING OUT

<Description>

The ink LED  is blinking.

<Action>

Replace the cartridge with a new one.

If the warning does not disappear, perform the same actions as in **5.4.1 Cap open warning**.

### 5.4.20 Wiper blade replacement

REPLACE WIPER BLADE

<Description>

The wiper blades will need to be replaced soon.

<Action>

Replace the wiper blades.

If the warning does not disappear, perform the same actions as in **5.4.1 Cap open warning**.

### 5.4.21 Wiper sponge replacement

REPLACE WIPER SPONGE

<Description>

The wiper sponge will need to be replaced soon.

<Action>

Replace the wiper sponge.

If the warning does not disappear, perform the same actions as in **5.4.1 Cap open warning**.

### 5.4.22 Wiper cleaning liquid replacement

REPLACE WIPER  
CLEANING LIQUID

<Description>

The wiper cleaning liquid will need to be replaced soon.

<Action>

Replace the wiper cleaning liquid.

If the warning does not disappear, perform the same actions as in **5.4.1 Cap open warning**.

### 5.4.23 Part replacement

TO REPLACE XXXXXX  
CONTACT YOUR DEALER

X: Part number

Warning message for part numbers 2 and 5.

TO REPLACE 25  
CONTACT YOUR DEALER

Warning message for all parts.

TO REPLACE 123456  
CONTACT YOUR DEALER

<Description>

Some parts will need to be replaced soon.

A system error will occur and the printer will not operate anymore after a while if the part is not replaced.

Part Number	Part
1	Y motor
2	Y motor pulley
3	Cap up/down motor
4	Caps
5	Suction pump
6	Supply pump

<Action>

Replace the part corresponding to the part number displayed.

Then reset the corresponding counter.

See **3.4.3.3 COUNTERS** for the procedure to reset the counters.

## 5.5 System Error Messages

Each system error message indicates that an error has occurred while the printer was being operated.

When an error message appears, advise the user to reboot the system. If the error persists, advise the user to contact the service center.

Then ask the user to explain the conditions when the error occurred, such as the occurrence time, occurrence frequency, operations just before the error occurred, and the ambient temperature.

If a system error has occurred, take the following actions.

- (1) When the failure is identified with the error message, replace the defective part.
- (2) When, with the error message(s), you assume that multiple failures occur, identify the faulty parts with the procedure below.
  - (a) Start the printer with ignore fatal error mode. For details of the mode, see **3.5.4 Ignore fatal error mode (Not available to users)**.
  - (b) On the password entry screen, enter the password to enter the maintenance mode.
  - (c) With the monitor function, check the contents detected by the sensor to judge whether the circuit system is normal.

Note that the printer can operate if the system operates normally even where a system error has occurred.

Error No.	Cause	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
100X	CPU Exception	Restart the printer.	Install the last firmware version.	- Firmware version - PCB-ASSY-IPB5-100	5.5.1
1100	Hardware mismatch error	Restart the printer.	<i>ditto</i>	<i>ditto</i>	5.5.2.
1101	Hardware mismatch error	Restart the printer.	<i>ditto</i>	- Firmware version - PCB-ASSY-IACT3	5.5.2
1102	Hardware mismatch error	Restart the printer.	<i>ditto</i>	- Firmware version - PCB-ASSY-HCB1M	5.5.2
1200	FPGA(ATG RSM) Load Error	Restart the printer.	<i>ditto</i>	- Firmware version - PCB-ASSY-IPB5-100	5.5.3
1300	CRG-FFC Connection Error (HCB1M CN9)	Restart the printer.	Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5.	- CARRIAGE FFC,MW - PCB-ASSY-HCB1M - PCB-ASSY-IPB5-100	5.5.4
1301	CRG-FFC Connection Error (HCB1M CN10)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	5.5.4
1302	CRG-FFC Connection Error (HCB1M CN11)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	5.5.4
1303	CRG-FFC Connection Error – (HCB1M CN12)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	5.5.4
1310	FPGA(PTG) Load Error	Restart the printer.	- Install the last firmware version. - Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors	- Firmware version - CARRIAGE FFC,MW - PCB-ASSY-HCB1M - PCB-ASSY-IPB5-100 - ROBOT CABLE,MW	5.5.5
1320	Data Transfer Error from FPGA-RSM to FPGA-PTG	Restart the printer.	Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5.	- CARRIAGE FFC,MW - PCB-ASSY-HCB1M - PCB-ASSY-IPB5-100	5.5.6
1400	PCB-ASSY-ACT3 Connection Error	Restart the printer.	Check the cable between ACT3 and IPB5.	- PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	5.5.7
1410	FPGA(ABC) Load Error	Restart the printer.	- Install the last firmware version. - Check the cable between ACT3 and IPB5.	- Firmware version - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	5.5.8

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

Error No.	Cause	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
1500	PCB-ASSY-TRC-MW Connection Error	Restart the printer.	Check the connection of CABLE(TRC-CTL)-ASSY(MW).	- CABLE(TRC-CTL)-ASSY(MW) - PCB-ASSY-TRC-MW - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	📖 5.5.9
1600	RSM Register Read/Write Error	Restart the printer.	Install the last firmware version.	- PCB-ASSY-IPB5-100	📖 5.5.10
1610	Flash Check Sum Error	Restart the printer.	<i>ditto</i>	- Firmware version - PCB-ASSY-IPB5-100	📖 5.5.11
1620	PCB-ASSY-IPB5-100 Initialization Error	Restart the printer.	Install the last firmware version.	- PCB-ASSY-IPB5-100	📖 5.5.12
1630	Band Memory Read/write Error	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.13
1640	USB Chip Register Read/write Error (Peripheral)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.14
1641	USB Chip Register Read/write Error (Host)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.14
1650	EEPROM Initialization Check Error	Restart the printer.	Check the connection of IC(EEPROM).	- IC(EEPROM) - PCB-ASSY-IPB5-100	📖 5.5.15
1660	RSM Mask Memory Read/write Error	Restart the printer.	Install the last firmware version.	PCB-ASSY-IPB5-100	📖 5.5.16
1670	ATG Register Read/write Error	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.17
1700	ABC Register Read/write Error	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.18
1800	PTG Register R/W Error	Restart the printer.	- Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors	- CARRIAGE FFC,MW - PCB-ASSY-HCB1M - PCB-ASSY-IPB5-100 - ROBOT CABLE,MW	📖 5.5.19
1900	Power Supply Unit Error (PCB-ASSY-ACT3 P12V)	Restart the printer.	- Check the connection of CABLE(ACT-IPB-IF)-ASSY(MW). - Check the connection of CABLE(PSU-ACT)-ASSY(MW). - Check the connection of CABLE(PSU-ACT-IF)-ASSY(MW).	- PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100 - Power supply unit (38V)	📖 5.5.20
1901	Power Supply Unit Error (PCB-ASSY-ACT3 P24V)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.20
1902	Power Supply Unit Error (PCB-ASSY-ACT3 P24VAR)	Restart the printer.	Check the connection of the interlock switch connectors.	- Window sensor OKI Data Infotech - PCB-ASSY-ACT3 - Power supply unit (24V) - PCB-ASSY-IPB5-100	📖 5.5.20
1903	Power Supply Unit Error (PCB-ASSY-ACT3 P24VSF)	Restart the printer.	- Check the connection of CABLE(ACT-IPB-IF)-ASSY(MW). - Check the connection of CABLE(PSU-ACT)-ASSY(MW). - Check the connection of CABLE(PSU-ACT-IF)-ASSY(MW).	- PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100 - Power supply unit (38V)	📖 5.5.20
1905	Power Supply Unit Error (PCB-ASSY-ACT3 P38V)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.20
1906	Power Supply Unit Error (PCB-ASSY-ACT3 P38VAR)	Restart the printer.	Check the connection of the interlock switch connectors.	- Window sensor OKI Data Infotech - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100 - Power supply unit (38V)	📖 5.5.20
1907	Power Supply Unit Error (PCB-ASSY-ACT3 P38VAF)	Restart the printer.	- Check the connection of CABLE(ACT-IPB-IF)-ASSY(MW). - Check the connection of CABLE(PSU-ACT)-ASSY(MW). - Check the connection of CABLE(PSU-ACT-IF)-ASSY(MW).	- PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100 - Power supply unit (38V)	📖 5.5.20
1908	Power Supply Unit Error (PCB-ASSY-IPB5-100 P38VAF)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.20
1909	Power Supply Unit Error (PCB-ASSY-IPB5-100 P38VCRG)	Restart the printer.	- Check the connection of the interlock switch connectors.	- Window sensor OKI Data Infotech - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100 - Power supply unit (38V)	📖 5.5.20
190a	Power Supply Unit Error (ACT P36VARHCB)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.20
1a00	Carriage Power Error (CRG P38VAF)	Restart the printer.	- Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors.	- ROBOT CABLE,MW - CARRIAGE FFC,MW - PCB-ASSY-HCB1M - PCB-ASSY-IPB5-100	📖 5.5.21
1a01	Carriage Power Error (CRG PREF)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.21
1a02	Carriage Power Error (CRG P1.2V)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.21
1a03	Carriage Power Error (CRG P3.3V)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.21

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

Error No.	Cause	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
1a04	Carriage Power Error (CRG P5V)	Restart the printer.	- Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors.	- ROBOT CABLE,MW - CARRIAGE FFC,MW - PCB-ASSY-HCB1M - PCB-ASSY-IPB5-100	☞ 5.5.21
1a05	Carriage Power Error (CRG P24V_FAN1)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.21
1a07	Carriage Power Error (CRG P12V_FAN3)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.21
1a08	Carriage Power Error (CRG P38V/CRG)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.21
1a0a	Carriage Power Error (CRG VDD2A1)	Restart the printer.	- Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors. - Check the connection of HEAD CABLE,MW connectors on the HCB1M and the print heads.	- ROBOT CABLE,MW - CARRIAGE FFC,MW - HEAD CABLE,MW - INKJET HEAD,MW - PCB-ASSY-HCB1M - PCB-ASSY-IPB5-100	☞ 5.5.21
1a0b	Carriage Power Error (CRG VDD2B1)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.21
1a0c	Carriage Power Error (CRG VDD2A2)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.21
1a0d	Carriage Power Error (CRG VDD2B2)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.21
1a0e	Carriage Power Error (CRG VDD2A3)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.21
1a0f	Carriage Power Error (CRG VDD2B3)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.21
1a10	Carriage Power Error (CRG VDD2A4)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.21
1a11	Carriage Power Error (CRG VDD2B4)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.21
1a12	Carriage Power Error (CRG VDD2A5)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.21
1a13	Carriage Power Error (CRG VDD2B5)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.21
1a14	Carriage Power Error (CRG VDD2A6)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.21
1a15	Carriage Power Error (CRG VDD2B6)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.21
1a16	Carriage Power Error (CRG VDD2A7)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.21
1a17	Carriage Power Error (CRG VDD2B7)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.21
1c00	Thermistor Connection Error (Ambient temperature)	Restart the printer.	Check that the ambient temperature thermistor harness is not disconnected or broken, and that its jacket is not damaged.	- Ambient temperature thermistor - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	☞ 5.5.22
1c01	Thermistor Connection Error (Preheater)	Restart the printer.	Check that the preheater thermistor harness is not disconnected or broken, and that its jacket is not damaged.	- REAR PAPER GUIDE,MW - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	☞ 5.5.22
1c02	Thermistor Connection Error (Afterheater)	Restart the printer.	Check that the afterheater thermistor harness is not disconnected or broken, and that its jacket is not damaged.	- FRONT PAPER GUIDE,MW - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	☞ 5.5.22
1c05	Thermistor Connection Error (Printheater)	Restart the printer.	Check that the printheater thermistor harness is not disconnected or broken, and that its jacket is not damaged.	- PLATEN ASSY,MW - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	☞ 5.5.22
1e00	Cap Correction Value Error	Restart the printer.	- Check the cap position correction value. - Check the connection of the IC(EEPROM).	- IC(EEPROM) - PCB-ASSY-IPB5-100	☞ 5.5.23
2010	Long-term Storage Error		- Start the printer in Ignore Fatal Error mode. - Check that the ink did not dry inside the PUMP-F-ASSY,MW tube. - Check that the ink did not dry inside the SUPPLY PUMP TUBE,MW. - Restart the printer. - Check that the printer system time is correct.	- PUMP-F-ASSY,MW - SUPPLY PUMP TUBE,MW - IC(EEPROM) - PCB-ASSY-IPB5-100	☞ 5.5.24
2030	Periodic Part Replacement Error (Supply Pump No.1)		Replace the supply pump, reset the printer operating hours, and restart the printer.	- SUPPLY PUMP TUBE,MW - IC(EEPROM) - PCB-ASSY-IPB5-100	☞ 5.5.25

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

Error No.	Cause	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
2031	Periodic Part Replacement Error (Supply Pump No.2)		Replace the supply pump, reset the printer operating hours, and restart the printer.	- SUPPLY PUMP TUBE,MW - IC(EEPROM) - PCB-ASSY-IPB5-100	📖 5.5.25
2032	Periodic Part Replacement Error (Supply Pump No.3)		<i>ditto</i>	<i>ditto</i>	📖 5.5.25
2033	Periodic Part Replacement Error (Supply Pump No.4)		<i>ditto</i>	<i>ditto</i>	📖 5.5.25
2034	Periodic Part Replacement Error (Supply Pump No.5)		<i>ditto</i>	<i>ditto</i>	📖 5.5.25
2035	Periodic Part Replacement Error (Supply Pump No.6)		<i>ditto</i>	<i>ditto</i>	📖 5.5.25
2036	Periodic Part Replacement Error (Supply Pump No.7)		<i>ditto</i>	<i>ditto</i>	📖 5.5.25
2100	EEPROM I/O Error	Restart the printer.	Check the connection of IC(EEPROM).	- IC(EEPROM) - PCB-ASSY-IPB5-100	📖 5.5.26
2200	Data Path Time-out	Restart the printer.	Install the last firmware version.	PCB-ASSY-IPB5-100	📖 5.5.27
2210	USB DMA Time-out	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.28
2300	Suction Fan Error (Suction fan 1)	Restart the printer.	- Check that the suction fan harness is not disconnected or broken, and that its jacket is not damaged. - Check that the suction fan is operating in the ACTUATORS menu.	- FAN4 - PCB-ASSY-ACT3 - CABLE(SFAN)-ASSY(MW)	📖 5.5.29
2301	Suction Fan Error (Suction fan 2)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.29
2302	Suction Fan Error (Suction fan 3)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.29
2303	Suction Fan Error (Suction fan 4)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.29
2310	Home Position Sensor Error	Restart the printer.	- Check that the home position sensor is clean and not damaged. - Check that the home position cable is not disconnected or broken, and that its jacket is not damaged.	- PHOTO INTERRUPTER - PCB-ASSY-HCB1M - CABLE(HPOS)-ASSY(MW)	📖 5.5.30
2320	Wiper Position Sensor Error	Restart the printer.	- Check that the wiper is operating in the ACTUATORS menu. - Check that the wiper position sensor is correctly installed. - Check that the sensor and motor harnesses are not disconnected or broken, and that their jacket is not damaged.	- MICRO SWITCH 4 - MOTOR(WIPE) - PCB-ASSY-ACT3 - CABLE(PumpWipe)-ASSY (MW)	📖 5.5.31
2330	Wiper Operation Error	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.32
2340	Capping Unit Sensor Error	Restart the printer.	- Check that the sensor and motor harnesses are not disconnected or broken, and that their jacket is not damaged. - Check that the capping unit is operating up and down in the ACTUATORS menu.	- MICRO SWITCH 4 - MOTOR(CAP)-UD - PCB-ASSY-ACT3 - CABLE(CAP-IF)-ASSY (MW)	📖 5.5.33
2350 (LCIS)	Remaining Ink Sensor (No.1) Error	Restart the printer.	- Check that no ink adheres to the weight sensor - Check that the weight sensor operates	PTM-ASSY(LCIS)	📖 5.5.34
2351 (LCIS)	Remaining Ink Sensor (No.2) Error	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.34
2352 (LCIS)	Remaining Ink Sensor (No.3) Error	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.34
2353 (LCIS)	Remaining Ink Sensor (No.4) Error	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.34
2354 (LCIS)	Remaining Ink Sensor (No.5) Error	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.34
2355 (LCIS)	Remaining Ink Sensor (No.6) Error	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.34
2400	Environmental Temperature Thermistor Error	Restart the printer.	Check that the ambient temperature thermistor harness is not disconnected or broken.	- Ambient temperature thermistor - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	📖 5.5.35
2501	Media Heater Thermistor Error (Preheater)	Restart the printer.	Check that the preheater thermistor harness is not disconnected or broken, and that its jacket is not damaged.	- REAR PAPER GUIDE,MW - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	📖 5.5.36
2502	Media Heater Thermistor Error (Printheater)	Restart the printer.	Check that the printhead thermistor harness is not disconnected or broken, and that its jacket is not damaged.	- PLATEN UNIT - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	📖 5.5.36

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

Error No.	Cause	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
2503	Media Heater Thermistor Error (Afterheater)	Restart the printer.	Check that the after thermistor harness is not disconnected or broken, and that its jacket is not damaged.	- FRONT PAPER GUIDE - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	📖 5.5.36
2511	Media Heater Error (High temperature) (Preheater)	Restart the printer.	Check that the preheater thermistor harness is not disconnected or broken, and that its jacket is not damaged.	- REAR PAPER GUIDE,MW - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	📖 5.5.37
2512	Media Heater Error (High temperature) (Printheater)	Restart the printer.	Check that the printheater thermistor harness is not disconnected or broken, and that its jacket is not damaged.	- PLATEN UNIT - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	📖 5.5.37
2513	Media Heater Error (High temperature) (Afterheater)	Restart the printer.	Check that the after thermistor harness is not disconnected or broken, and that its jacket is not damaged.	- FRONT PAPER GUIDE - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100	📖 5.5.37
2521	Media Heater Error (Target temperature not reached) (Preheater)	- Restart the printer. - Check the ambient temperature.	- Check with a multimeter that the power outlet voltage is between 200V and 240V. - Check that the ambient temperature at the installation location meets the operating conditions (more than 15 degrees). - Check that the preheater thermistor harness is not disconnected or broken, and that its jacket is not damaged. - Check the connection of CABLE(TRC-CTL)-ASSY(MW).	- PCB-ASSY-TRC-MW - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100 - REAR PAPER GUIDE,MW - CABLE(TRC-CTL)-ASSY(MW)	📖 5.5.38
2522	Media Heater Error (Target temperature not reached) (Printheater)	- Restart the printer. - Check the ambient temperature.	- Check with a multimeter that the power outlet voltage is between 200V and 240V. - Check that the ambient temperature at the installation location meets the operating conditions (more than 15 degrees). - Check that the printheater thermistor harness is not disconnected or broken, and that its jacket is not damaged. - Check the connection of CABLE(TRC-CTL)-ASSY(MW).	- PCB-ASSY-TRC-MW - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100 - PLATEN ASSY,MW - CABLE(TRC-CTL)-ASSY(MW)	📖 5.5.38
2523	Media Heater Error (Target temperature not reached) (Afterheater)	- Restart the printer. - Check the ambient temperature.	- Check with a multimeter that the power outlet voltage is between 200V and 240V. - Check that the ambient temperature at the installation location meets the operating conditions (more than 15 degrees). - Check that the after thermistor harness is not disconnected or broken, and that its jacket is not damaged. - Check the connection of CABLE(TRC-CTL)-ASSY(MW).	- PCB-ASSY-TRC-MW - PCB-ASSY-ACT3 - PCB-ASSY-IPB5-100 - FRONT PAPER GUIDE,MW - CABLE(TRC-CTL)-ASSY(MW)	📖 5.5.38
2531	Media Heater Error (No interrupt) (Preheater)	Restart the printer.	Install the last firmware version.	- Firmware version - PCB-ASSY-IPB5-100	📖 5.5.39
2532	Media Heater Error (No interrupt) (Printheater)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.39
2533	Media Heater Error (No interrupt) (Afterheater)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.39
2600	Subtank Sensor Error (No.1)	- Restart the printer. - Reinstall the ink cartridge.	- Check that the subtank harness is not disconnected or broken, and that its jacket is not damaged. - Check that the subtank sensor is clean and correctly installed. - Check that the subtank sensor tester changes in the MONITOR menu.	- Subtank Sensor(OKI Data Infotech) - SUBTANK ASSY, MW - PCB-ASSY-ACT3 - CABLE(SubTank1-IF)-ASSY(MW) - CABLE(SubTank2-IF)-ASSY(MW) - CABLE(SubTank1)-ASSY(MW) - CABLE(SubTank2)-ASSY(MW) - CABLE(SubTank3)-ASSY(MW)	📖 5.5.40
2601	Subtank Sensor Error (No.2)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	📖 5.5.40
2602	Subtank Sensor Error (No.3)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	📖 5.5.40

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

Error No.	Cause	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
2603	Subtank Sensor Error (No.4)	- Restart the printer. - Reinstall the ink cartridge.	- Check that the subtank harness is not disconnected or broken, and that its jacket is not damaged. - Check that the subtank sensor is clean and correctly installed. - Check that the subtank sensor tester changes in the MONITOR menu.	- Subtank Sensor(OKI Data Infotech) - SUBTANK ASSY, MW - PCB-ASSY-ACT3 - CABLE(SubTank1-IF)-ASSY(MW) - CABLE(SubTank2-IF)-ASSY(MW) - CABLE(SubTank1)-ASSY(MW) - CABLE(SubTank2)-ASSY(MW) - CABLE(SubTank3)-ASSY(MW)	📖 5.5.40
2604	Subtank Sensor Error (No.5)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	📖 5.5.40
2605	Subtank Sensor Error (No.6)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	📖 5.5.40
2606	Subtank Sensor Error (No.7)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	📖 5.5.40
2610	Subtank Full Sensor Error (No.1)	- Restart the printer. - Reinstall the ink cartridge.	- Check that the subtank harness is not disconnected or broken, and that its jacket is not damaged. - Check that the subtank sensor is clean and correctly installed. - Check that the subtank sensor tester changes in the MONITOR menu. - Check that the air release solenoid on the capping unit is not soiled with ink. - Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation.	- SUBTANK ASSY, MW - INKJET HEAD,MW - CAPPING UNIT,MW - Subtank Sensor(OKI Data Infotech) - PCB-ASSY-ACT3 - CABLE(SubTank1-IF)-ASSY(MW) - CABLE(SubTank2-IF)-ASSY(MW) - CABLE(SubTank1)-ASSY(MW) - CABLE(SubTank2)-ASSY(MW) - CABLE(SubTank3)-ASSY(MW)	📖 5.5.41
2611	Subtank Full Sensor Error (No.2)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	📖 5.5.41
2612	Subtank Full Sensor Error (No.3)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	📖 5.5.41
2613	Subtank Full Sensor Error (No.4)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	📖 5.5.41
2614	Subtank Full Sensor Error (No.5)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	📖 5.5.41
2615	Subtank Full Sensor Error (No.6)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	📖 5.5.41
2616	Subtank Full Sensor Error (No.7)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	📖 5.5.41
2620	Subtank Empty Sensor Error (No.1)	- Restart the printer. - Reinstall the ink cartridge.	- Check that the subtank harness is not disconnected or broken, and that its jacket is not damaged. - Check that the subtank sensor is clean and correctly installed. - Check that the subtank sensor tester changes in the MONITOR menu. - Check that the air release solenoid on the capping unit is not soiled with ink. - Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation.	- Subtank ASSY MW - INKJET HEAD,MW - CAPPING UNIT,MW - Subtank Sensor(OKI Data Infotech) - PCB-ASSY-ACT3 - CABLE(SubTank1-IF)-ASSY(MW) - CABLE(SubTank2-IF)-ASSY(MW) - CABLE(SubTank1)-ASSY(MW) - CABLE(SubTank2)-ASSY(MW) - CABLE(SubTank3)-ASSY(MW)	📖 5.5.42
2621	Subtank Empty Sensor Error (No.2)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	📖 5.5.42
2622	Subtank Empty Sensor Error (No.3)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	📖 5.5.42
2623	Subtank Empty Sensor Error (No.4)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	📖 5.5.42
2624	Subtank Empty Sensor Error (No.5)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	📖 5.5.42
2625	Subtank Empty Sensor Error (No.6)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	📖 5.5.42

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

Error No.	Cause	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
2626	Subtank Empty Sensor Error (No.7)	- Restart the printer. - Reinstall the ink cartridge.	- Check that the subtank harness is not disconnected or broken, and that its jacket is not damaged. - Check that the subtank sensor is clean and correctly installed. - Check that the subtank sensor tester changes in the MONITOR menu. - Check that the air release solenoid on the capping unit is not soiled with ink. - Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation.	- Subtank ASSY,MW - INKJET HEAD,MW - CAPPING UNIT,MW - Subtank Sensor(OKI Data Infotech) - PCB-ASSY-ACT3 - CABLE(SubTank1-IF)-ASSY(MW) - CABLE(SubTank2-IF)-ASSY(MW) - CABLE(SubTank1)-ASSY(MW) - CABLE(SubTank2)-ASSY(MW) - CABLE(SubTank3)-ASSY(MW)	☞ 5.5.42
2700	Ink Supply Pump Sensor Error (No.1)	- Restart the printer. - Reinstall the ink cartridge.	- Check that the ink supply pump harness is not disconnected or broken, and that its jacket is not damaged. - Check that the supply pump sensor tester changes in the MONITOR menu. - Check that the ink did not dry inside the supply pump tube.	- SUPPLY PUMP,MW - PCB-ASSY-ACT3	☞ 5.5.43
2701	Ink Supply Pump Sensor Error (No.2)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.43
2702	Ink Supply Pump Sensor Error (No.3)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.43
2703	Ink Supply Pump Sensor Error (No.4)	- Restart the printer. - Reinstall the ink cartridge.	- Check that the ink supply pump harness is not disconnected or broken, and that its jacket is not damaged. - Check that the supply pump sensor tester changes in the MONITOR menu. - Check that the ink did not dry inside the supply pump tube.	- SUPPLY PUMP,MW - PCB-ASSY-ACT3	☞ 5.5.43
2704	Ink Supply Pump Sensor Error (No.5)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.43
2705	Ink Supply Pump Sensor Error (No.6)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.43
2706	Ink Supply Pump Sensor Error (No.7)	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.43
2710 (LCIS)	Ink Supply Pump (No.1) Error	- Restart the printer. - Reinstall the ink cartridge.	- Check that the supply pump harness is not damaged or broken, and that the connectors are connected correctly. - Check the supply pump operation in the ACTUATORS menu. - Check that no ink has solidified in the supply pump tube.	- SUPPLY PUMP,MW - PCB-ASSY-ACT3	☞ 5.5.44
2711 (LCIS)	Ink Supply Pump (No.2) Error	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.44
2712 (LCIS)	Ink Supply Pump (No.3) Error	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.44
2713 (LCIS)	Ink Supply Pump (No.4) Error	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.44
2714 (LCIS)	Ink Supply Pump (No.5) Error	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.44
2715 (LCIS)	Ink Supply Pump (No.6) Error	- Restart the printer. - Reinstall the ink cartridge.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.44
2800	Ink Usage Upper-limit Error (No.1)	- Restart the printer. - Replace the ink cartridge.	- Install the last firmware version. - Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation. - Check that the air release solenoid on the capping unit is not soiled with ink.	- Firmware version - CAPPING UNIT,MW - INKJET HEAD,MW	☞ 5.5.45
2801	Ink Usage Upper-limit Error (No.2)	- Restart the printer. - Replace the ink cartridge.	<i>ditto</i>	<i>ditto</i>	☞ 5.5.45

## Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

Error No.	Cause	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
2802	Ink Usage Upper-limit Error (No.3)	- Restart the printer. - Replace the ink cartridge.	- Install the last firmware version. - Check that ink is sucked when performing the FILL CAP or PH.RECOVERY operation. - Check that the air release solenoid on the capping unit is not soiled with ink.	- Firmware version - CAPPING UNIT,MW - INKJET HEAD,MW	 5.5.45
2803	Ink Usage Upper-limit Error (No.4)	- Restart the printer. - Replace the ink cartridge.	<i>ditto</i>	<i>ditto</i>	 5.5.45
2804	Ink Usage Upper-limit Error (No.5)	- Restart the printer. - Replace the ink cartridge.	<i>ditto</i>	<i>ditto</i>	 5.5.45
2805	Ink Usage Upper-limit Error (No.6)	- Restart the printer. - Replace the ink cartridge.	<i>ditto</i>	<i>ditto</i>	 5.5.45
2806	Ink Usage Upper-limit Error (No.7)	- Restart the printer. - Replace the ink cartridge.	<i>ditto</i>	<i>ditto</i>	 5.5.45
2900	Take-up Motor Overcurrent	- Restart the printer. - Check the weight of the media used is less than 50 kg.	- Check that the TUR motor cable is not disconnected or broken, and that its jacket is not damaged. - Check that the TUR motor gear is not damaged and that there is no foreign matter on it. - Check that the electromagnetic is operating in the ACTUATORS menu.	- TAKE UP MOTOR UNIT,MW - ELECTROMAGNETIC,MW - PCB-ASSY-ACT3 - CABLE(TU-ACT-IF)-ASSY(MW) - CABLE(TU-ACT-IF2)-ASSY(MW)	 5.5.46
2a01	Servo Error (initial operation)	Restart the printer.	- Check the connection of the Y motor cable. - Check the connection of the rear encoder connector. - Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors. - Check that the ENCODER STRIP,MW is clean and not damaged. - Check the tension of the SUS belt. - Check the tension of the Y motor timing belt.	- Y DRIVE MOTOR,MW - CABLE ENCODER,MW - ENCODER STRIP,MW - PCB-ASSY-ACT3 - PCB-ASSY-HCB1M - PCB-ASSY-IPB5-100 - CARRIAGE CABLE,MW - ROBOT CABLE,MW - DRIVING PULLEY UNIT,MW - CABLE(Y-MOT)-ASSY(MW)	 5.5.47
2a02	Servo Error (interruption error)	Restart the printer.	Install the last firmware version.	- Firmware version - PCB-ASSY-IPB5-100	 5.5.47
2b00	FIRE END Detection Error	Restart the printer.	- Check that the ENCODER STRIP,MW is clean and not damaged. - Check the connection of the rear encoder connector. - Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors.	- CABLE ENCODER,MW - ENCODER STRIP,MW - PCB-ASSY-HCB1M - PCB-ASSY-IPB5-100 - CARRIAGE CABLE,MW - ROBOT CABLE,MW	 5.5.48
2c00	Ionizer voltage upper limit error (+)	Restart the printer.	Check that the IONIZER UNIT,MW harness is not disconnected or broken, and that its jacket is not damaged.	- IONIZER UNIT,MW - PCB-ASSY-HCB1M - CABLE(ADJ-AD)-ASSY	 5.5.49
2c01	Ionizer voltage lower limit error (+)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	 5.5.49
2c02	Ionizer voltage upper limit error (-)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	 5.5.49
2c03	Ionizer voltage lower limit error (-)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	 5.5.49
2d00	Automatic print adjustment calibration upper limit error	- Restart the printer. - Check whether the same problem occurs with different media.	- Check that the PCB-ASSY-ADJ1 is clean and correctly installed. - Check the connection of ADJ FFC connectors on the HCB1M and the ADJ1.	- PCB-ASSY-ADJ1 - PCB-ASSY-HCB1M - FFC-ADJ - CABLE(ADJ-AD)-ASSY	 5.5.50
2d01	Automatic print adjustment calibration lower limit error	- Restart the printer. - Check whether the same problem occurs with different media.	<i>ditto</i>	<i>ditto</i>	 5.5.50
3010	CRG-FFC Connection Error (CN9)	Restart the printer.	Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5.	- CARRIAGE FFC,MW - PCB-ASSY-HCB1M - PCB-ASSY-IPB5-100	 5.5.4

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

Error No.	Cause	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
3011	CRG-FFC Connection Error (CN10)	Restart the printer.	Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5.	- CARRIAGE FFC,MW - PCB-ASSY-HCB1M - PCB-ASSY-IPB5-100	📖 5.5.4
3012	CRG-FFC Connection Error (CN11)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.4
3013	CRG-FFC Connection Error (CN12)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.4
3020	RSM-PTG FIFO Connection Error	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.51
3100	Edge sensor Error	- Restart the printer. - Clean the non-reflecting tape.	- Check that the non-reflecting tape on the platen is clean. - Check that the edge sensor is clean and correctly installed. - Check the connection of the edge sensor connectors. - Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors.	- Media detect and Line sensor OKI Data Infotech - PCB-ASSY-HCB1M - CARRIAGE FFC,MW - ROBOT CABLE,MW	📖 5.5.52
3140	Head Cooling Fan Error	- Restart the printer. - Check the ambient temperature.	- Check that COOLING FAN,MW is operating in the ACTUATORS menu. - Check the connection of COOLING FAN,MW connectors. - Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors.	- COOLING FAN,MW - PCB-ASSY-HCB1M - CARRIAGE FFC,MW - ROBOT CABLE,MW	📖 5.5.53
3200	Head Drive Voltage Error (No.1)	Restart the printer.	- Check the connection of HEAD CABLE,MW connectors on the HCB1M and the print heads. - Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors.	- HEAD CABLE,MW - INKJET HEAD,MW - ROBOT CABLE,MW - CARRIAGE FFC,MW - PCB-ASSY-HCB1M - PCB-ASSY-IPB5-100	📖 5.5.54
3201	Head Drive Voltage Error (No.2)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.54
3202	Head Drive Voltage Error (No.3)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.54
3203	Head Drive Voltage Error (No.4)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.54
3204	Head Drive Voltage Error (No.5)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.54
3205	Head Drive Voltage Error (No.6)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.54
3206	Head Drive Voltage Error (No.7)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.54
3301	No Head (No.1)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.55
3302	No Head (No.2)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.55
3303	No Head (No.3)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.55
3304	No Head (No.4)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.55
3305	No Head (No.5)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.55
3306	No Head (No.6)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.55
3307	No Head (No.7)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.55
3401	Head Information Error (No.1)	Restart the printer.	- Check the connection of HEAD CABLE,MW connectors on the HCB1M and the print heads. - Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors.	- HEAD CABLE,MW - INKJET HEAD,MW - ROBOT CABLE,MW - CARRIAGE FFC,MW - PCB-ASSY-HCB1M - PCB-ASSY-IPB5-100	📖 5.5.56
3402	Head Information Error (No.2)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.56
3403	Head Information Error (No.3)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.56
3404	Head Information Error (No.4)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.56
3405	Head Information Error (No.5)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.56
3406	Head Information Error (No.6)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.56
3407	Head Information Error (No.7)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.56
3501	Head Thermistor Error (No.1)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.57
3502	Head Thermistor Error (No.2)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.57
3503	Head Thermistor Error (No.3)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.57
3504	Head Thermistor Error (No.4)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.57
3505	Head Thermistor Error (No.5)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.57
3506	Head Thermistor Error (No.6)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.57
3507	Head Thermistor Error (No.7)	Restart the printer.	<i>ditto</i>	<i>ditto</i>	📖 5.5.57

Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

Error No.	Cause	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
3600	Head Heater Error (High Temperature) (No.1)	- Restart the printer. - Check the ambient temperature.	- Check that the ambient temperature at the installation location meets the operating conditions (less than 35 degrees). - Check that COOLING FAN,MW is operating in the <b>ACTUATORS</b> menu. - Check the connection of COOLING FAN,MW connectors. - Check the connection of HEAD CABLE,MW connectors on the HCB1M and the print heads. - Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors.	- COOLING FAN,MW - HEAD CABLE,MW - INKJET HEAD,MW - ROBOT CABLE,MW - CARRIAGE FFC,MW - PCB-ASSY-HCB1M - PCB-ASSY-IPB5-100 - ROBOT CABLE,MW - CARRIAGE FFC,MW	5.5.58
3601	Head Heater Error (High Temperature) (No.2)	- Restart the printer. - Check the ambient temperature.	<i>ditto</i>	<i>ditto</i>	5.5.58
3602	Head Heater Error (High Temperature) (No.3)	- Restart the printer. - Check the ambient temperature.	<i>ditto</i>	<i>ditto</i>	5.5.58
3603	Head Heater Error (High Temperature) (No.4)	- Restart the printer. - Check the ambient temperature.	<i>ditto</i>	<i>ditto</i>	5.5.58
3604	Head Heater Error (High Temperature) (No.5)	- Restart the printer. - Check the ambient temperature.	<i>ditto</i>	<i>ditto</i>	5.5.58
3605	Head Heater Error (High Temperature) (No.6)	- Restart the printer. - Check the ambient temperature.	<i>ditto</i>	<i>ditto</i>	5.5.58
3606	Head Heater Error (High Temperature) (No.7)	- Restart the printer. - Check the ambient temperature.	<i>ditto</i>	<i>ditto</i>	5.5.58
3610	Head Heater Error (Target Temperature Not Reached) (No.1)	- Restart the printer. - Check the ambient temperature.	- Check that the ambient temperature at the installation location meets the operating conditions (more than 15 degrees). - Check the connection of HEAD CABLE,MW connectors on the HCB1M and the print heads. - Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors.	- HEAD CABLE,MW - INKJET HEAD,MW - ROBOT CABLE,MW - CARRIAGE FFC,MW - PCB-ASSY-HCB1M - PCB-ASSY-IPB5-100 - ROBOT CABLE,MW - CARRIAGE FFC,MW	5.5.59
3611	Head Heater Error (Target Temperature Not Reached) (No.2)	- Restart the printer. - Check the ambient temperature.	<i>ditto</i>	<i>ditto</i>	5.5.59
3612	Head Heater Error (Target Temperature Not Reached) (No.3)	- Restart the printer. - Check the ambient temperature.	<i>ditto</i>	<i>ditto</i>	5.5.59
3613	Head Heater Error (Target Temperature Not Reached) (No.4)	- Restart the printer. - Check the ambient temperature.	<i>ditto</i>	<i>ditto</i>	5.5.59
3614	Head Heater Error (Target Temperature Not Reached) (No.5)	- Restart the printer. - Check the ambient temperature.	- Check that the ambient temperature at the installation location meets the operating conditions (more than 15 degrees). - Check the connection of HEAD CABLE,MW connectors on the HCB1M and the print heads. - Check the connection of CARRIAGE FFC,MW connectors on the HCB1M and the IPB5. - Check the connection of ROBOT CABLE,MW connectors.	- HEAD CABLE,MW - INKJET HEAD,MW - ROBOT CABLE,MW - CARRIAGE FFC,MW - PCB-ASSY-HCB1M - PCB-ASSY-IPB5-100 - ROBOT CABLE,MW - CARRIAGE FFC,MW	5.5.59
3615	Head Heater Error (Target Temperature Not Reached) (No.6)	- Restart the printer. - Check the ambient temperature.	<i>ditto</i>	<i>ditto</i>	5.5.59
3616	Head Heater Error (Target Temperature Not Reached) (No.7)	- Restart the printer. - Check the ambient temperature.	<i>ditto</i>	<i>ditto</i>	5.5.59

## Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

Error No.	Cause	User Solution	Service Engineer Inspection (For inspection criteria, see Reference to Check/Replace Parts.)	Assumed Replacement Part	Reference to Check/Replace Parts
4000	Firmware Internal Error (Mechanical group)	Restart the printer.	<ul style="list-style-type: none"> <li>- Install the last firmware version.</li> <li>- Check that the home position sensor is correctly installed and clean.</li> <li>- Check that the home position sensor connector is connected correctly.</li> <li>- Check that the CARRIAGE FFC,MW connectors are connected correctly to both the HCB1M and the IPB5.</li> <li>- Check that the ROBOT CABLE,MW connectors are connected correctly.</li> </ul>	<ul style="list-style-type: none"> <li>- Firmware version</li> <li>- Home position sensor</li> <li>- Robot cable</li> <li>- FFC</li> <li>- PCB-ASSY-HCB1M</li> <li>- PCB-ASSY-IPB5-100</li> <li>- PCB-ASSY-IPB5-100</li> </ul>	📖 5.5.60
5000	Firmware Internal Error (UI group)	Restart the printer.	Install the last firmware version.	Firmware version	📖 5.5.60

### 5.5.1 System Error 100X: CPU Exception

#### <Description>

A general CPU exception has occurred.

The number indicated by the letter X is displayed as shown below depending on the error.

X	Description of error
0	TLB error exception or TLB disable exception (Read)
1	TLB error exception or TLB disable exception (Write)
2	Initial page writing exception
3	TLB protection exception (Read)
4	TLB protection exception (Write)
5	CPU address error (Read)
6	CPU address error (Write)
7	Unconditional trap (TRAPA instruction)
8	Reserve instruction code exception
9	Slot error instruction exception
a	User breakpoint trap
b	Non-maskable interrupt

#### <Faulty part>

PCB-ASSY-IPB5-100

#### <Action>

Restart the Printer.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.2 System Error 11XX: Hardware Mismatch Error

<Description>

- 1100: The configuration of the firmware and main board is incorrect.
- 1101: The configuration of the firmware and actuator board is incorrect.
- 1102: The configuration of the firmware and carriage board is incorrect.

<Faulty part>

- 1100: PCB-ASSY-IPB5-100
- 1101: PCB-ASSY-ACT3
- 1102: PCB-ASSY-HCB1M

<Action>

- Upgrade the firmware to the latest version.
- If the error persists, replace the board corresponding to the error code.

### 5.5.3 System Error 1200: FPGA(ATG RSM) Load Error

<Description>

Failed to write config from the flash ROM on the PCB-ASSY-IPB5-100 to the ASIC on the PCB-ASSY-IPB5-100.

<Faulty part>

PCB-ASSY-IPB5-100

<Action>

Restart the Printer.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.4 System Error 130X/301X: CRG-FFC Connection Error

#### <Description>

The carriage cable (FFC) has been disconnected from the PCB-ASSY-IPB5-100.

If any of the four FFC connectors on the IPB or HCB side is disconnected, the disconnection detection line assigned to both ends is opened, resulting in this error.

The system error is classified into two: 130X and 301X. They differ depending on the printer status when the system error is detected as follows.

- System error 130X: Detected when the printer starts.
- System error 301X: Detected during printing.

The following shows the correspondence between the number X and the print head numbers.

X	FFC connector between IPB and HCB
0	CN9
1	CN10
2	CN11
3	CN12

#### <Faulty part>

- (1) PCB-ASSY-HCB1M
- (2) PCB-ASSY-IPB5-100
- (3) Carriage cable (FFC): CARRIAGE FFC, MW

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

#### Note

For this error, be sure to perform the items 1 to 4 below.

No	Items to be Checked	Action
1	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
2	FFC's external damage	Check the following to ensure that the FFC is not damaged. <ul style="list-style-type: none"> <li>- FFC's terminal is detached from its base.</li> <li>- FFC's edges have not been abraded by friction.</li> </ul> If the FFC is damaged, replace it.
3	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
4	Robot cable's connector connection	Reconnect the robot cable on both the PCB-ASSY-HCB1M side and PCB-ASSY-ACT3 side. Before connecting, check that the connector terminals and cable connection part are not disconnected. If a connection failure is found, replace the robot cable.
5	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
6	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

## Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

<b>No</b>	<b>Items to be Checked</b>	<b>Action</b>
7	FFC	Replace all four FFCs.
8	Robot cable	Replace the robot cable.

### 5.5.5 System Error 1310: FPGA(PTG) Load Error

<Description>

Failed to write config from the flash ROM on the PCB-ASSY-IPB5-100 to the ASIC on the PCB-ASSY-HCB1M.

<Faulty part>

- (1) PCB-ASSY-HCB1M
- (2) PCB-ASSY-IPB5-100
- (3) Carriage cable (FFC): CARRIAGE FFC, MW
- (4) Robot cable: ROBOT CABLE, MW

<Action>

Restart the printer.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

**Note:**

For this error, be sure to perform the items 1 to 5.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
3	FFC's external damage	Check the following to ensure that the FFC is not damaged. - FFC's terminal is detached from its base. - FFC's edges have not been abraded by friction. If the FFC is damaged, replace it.
4	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
5	Robot cable's connector connection	Reconnect the robot cable on both the PCB-ASSY-HCB1M side and PCB-ASSY-ACT3 side. Before connecting, check that the connector terminals and cable connection part are not disconnected. If a connection failure is found, replace the robot cable.
6	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
7	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
8	FFC	Replace all four FFCs.
9	Robot cable	Replace the robot cable.

### 5.5.6 System Error 1320: Data Transfer Error from FPGA-RSM to FPGA-PTG

#### <Description>

Connection failed with the carriage cable (FFC) connected to the PCB-ASSY-IPB5-100.

This error is detected through the process below:

- (1) The printer is started; and
- (2) The write test from the PCB-ASSY-IPB5-100(RSM) to the PCB-ASSY-HCB1M(PTG) fails.

#### <Faulty part>

- (1) PCB-ASSY-HCB1M
- (2) PCB-ASSY-IPB5-100
- (3) Carriage cable (FFC): CARRIAGE FFC, MW

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	The Plate-Fix(FFC) metal plate fixed on the FFC's PCB-ASSY-HCB1M	Check that the screws are tightened.
2	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
3	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
4	FFC's external damage	Check the following to ensure that the FFC is not damaged. - FFC's terminal is detached from its base. - FFC's edges have not been abraded by friction. If the FFC is damaged, replace it.
5	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
6	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
7	FFC	Replace all four FFCs.

### 5.5.7 System Error 1400: PCB-ASSY-ACT3 Connection Error

<Description>

Could not confirm the connection with the PCB-ASSY-ACT3.

<Faulty part>

- (1) PCB-ASSY-ACT3
- (2) PCB-ASSY-IPB5-100

<Action>

Restart the printer.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	PCB-ASSY-IPB5-100 and PCB-ASSY-ACT3 cables.	Check that the cable condition is proper as follows. - The connectors are connected securely. - The cable is not disconnected. - The cable is not pinched by other parts. - The cable jacket is not damaged.
2	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
3	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.8 System Error 1410: FPGA(ABC) Load Error

<Description>

Failed to write config from the flash ROM on the PCB-ASSY-IPB5-100 to the ASIC on the PCB-ASSY-ACT3.

<Faulty part>

- (1) PCB-ASSY-ACT3
- (2) PCB-ASSY-IPB5-100

<Action>

Restart the printer.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	PCB-ASSY-IPB5-100 and PCB-ASSY-ACT3 cables	Check that the cable condition is proper as follows. <ul style="list-style-type: none"> <li>- The connectors are connected securely.</li> <li>- The cable is not disconnected.</li> <li>- The cable is not pinched by other parts.</li> <li>- The cable jacket is not damaged.</li> </ul>
3	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
4	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.9 System Error 1500: PCB-ASSY-TRC-MW Connection Error

<Description>

PCB-ASSY-TRC-MW is not connected.

<Faulty part>

- (1) CABLE(TRC-CTL)-ASSY(MW)
- (2) PCB-ASSY-TRC-MW
- (3) PCB-ASSY-ACT3
- (4) PCB-ASSY-IPB5-100

<Action>

Restart the printer.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	CABLE(TRC-CTL)-ASSY(MW) condition	Check that the cable condition is proper as follows. <ul style="list-style-type: none"> <li>- The connectors are connected securely.</li> <li>- The cable is not disconnected.</li> <li>- The cable is not pinched by other parts.</li> <li>- The cable jacket is not damaged.</li> </ul>
2	PCB-ASSY-TRC-MW	Replace the PCB-ASSY-TRC-MW.
3	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
4	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.10 System Error 1600: RSM Register Read/Write Error

#### <Description>

The register on the PCB-ASSY-IPB5-100 could not be read or write normally.

This error is detected through the process below:

- (1) The printer is started;
- (2) The printer writes test data to the register in 8- or 32-bit access; and
- (3) Though the printer reads the data from the register, the read data is not same as the written data.

#### <Faulty part>

PCB-ASSY-IPB5-100

#### <Action>

Restart the printer.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to be the latest.
2	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.11 System Error 1610: Flash Check Sum Error

<Description>

Could not read normally the programs stored in the flash ROM.

This error is detected when performing checksum in the program area after turning the printer on.

<Faulty part>

PCB-ASSY-IPB5-100

<Action>

Restart the printer.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.12 System Error 1620: PCB-ASSY-IPB5-100 Initialization Error

<Description>

The PCB-ASSY-IPB5-100 is not initialized.

This error is detected when the PCB-ASSY-IPB5-100's SHA-1 code was not read correctly after starting the printer.

<Faulty part>

PCB-ASSY-IPB5-100

<Action>

Restart the printer.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.13 System Error 1630: Band Memory Read/write Error

#### <Description>

Could not read or write normally the SDRAM (band memory) on the PCB-ASSY-IPB5-100 from the CPU.

This error is detected through the process below:

- (1) The printer is started;
- (2) The printer writes test data on the band memory; and
- (3) Though the printer reads the data on the band memory, the read data is not same as the written data.

#### <Faulty part>

PCB-ASSY-IPB5-100

#### <Action>

Restart the printer.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.14 System Error 164X: USB Chip Register Read/write Error

#### <Description>

The CPU could not correctly read from or write to the PCB-ASSY-IPB5-100's USB controller.

This error is detected through the process below:

- (1) The printer is started;
- (2) The printer writes test data on the USB chip's register; and
- (3) Though the printer reads the data on the register, the read data is not same as the written data.

X	USB controller
0	Peripheral
1	Host

#### <Faulty part>

PCB-ASSY-IPB5-100

#### <Action>

Restart the printer.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.15 System Error 1650: EEPROM Initialization Check Error

<Description>

Could not normally read the parameters stored in the EPROM on the PCB-ASSY-IPB5-100.

This error is detected when performing keyword check and checksum in the parameter area after turning the printer on.

<Faulty part>

- (1) IC(EEPROM)
- (2) PCB-ASSY-IPB5-100

<Action>

Restart the printer.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	EEPROM	Re-insert the EEPROM. If the problem persists, replace the EEPROM.
2	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.16 System Error 1660: RSM Mask Memory Read/write Error

<Description>

The PCB-ASSY-IPB5-100's RSM mask memory was not read or written normally.

This error is detected through the process below:

- (1) The printer is started;
- (2) The printer writes test data on the mask memory; and
- (3) Though the printer reads the data on the band memory, the read data is not same as the written data.

<Faulty part>

PCB-ASSY-IPB5-100

<Action>

Restart the printer.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.17 System Error 1670: ATG Register Read/write Error

<Description>

The PCB-ASSY-IPB5-100's ATG register was not read or written normally.

This error is detected through the process below:

- (1) The printer is started;
- (2) The printer writes test data on the ATG register; and
- (3) Though the printer reads the data on the ATG register, the read data is not same as the written data.

<Faulty part>

PCB-ASSY-IPB5-100

<Action>

Restart the printer.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.18 System Error 1700: ABC Register Read/write Error

#### <Description>

The printer could not read or write correctly the data on the PCB-ASSY-ACT3's ABC register.

This error is detected through the process below:

- (1) The printer is started;
- (2) The printer writes test data to the register in 8-bit access; and
- (3) Though the printer reads the data from the register, the read data is not same as the written data.

#### <Faulty part>

- (1) PCB-ASSY-ACT3
- (2) PCB-ASSY-IPB5-100

#### <Action>

Restart the printer.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	Cable between the ACT3 and IPB5	Reconnect the CABLE(ACT-IPB-IF)-ASSY(MW) to the ACT3 and the IPB5.
3	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
4	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.19 System Error 1800: PTG Register R/W Error

#### <Description>

Could not read or write normally the PTG register.

This error is detected through the process below:

- (1) The printer is started;
- (2) The printer writes test data on the PTG register in 16-bit access; and
- (3) Though the printer reads the data on the PTG register, the read data is not same as the written data.

#### <Faulty part>

- (1) Carriage cable (FFC): CARRIAGE FFC, MW
- (2) PCB-ASSY-HCB1M
- (3) PCB-ASSY-IPB5-100
- (4) Robot cable: ROBOT CABLE, MW

#### <Action>

Restart the printer.

If the error persists, check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

#### Note:

For this error occurs, be sure to perform the following items 1 to 4.

No	Items to be Checked	Action
1	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
2	FFC's external damage	Check the following to ensure that the FFC is not damaged. - FFC's terminal is detached from its base. - FFC's edges have not been abraded by friction. If the FFC is damaged, replace it.
3	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
4	Robot cable's connector connection	Reconnect the robot cable on both the PCB-ASSY-HCB1M side and PCB-ASSY-ACT3 side. Before connecting, check that the connector terminals and cable connection part are not disconnected. If a connection failure is found, replace the robot cable
5	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
6	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
7	FFC	Replace all four FFCs.
8	Robot cable	Replace the robot cable.

## 5.5.20 System Error 190x: Power Supply Unit Error

### <Description>

Voltage errors are detected when the following power voltages are checked.

X	Board	Power name	Power supply system	Reference
0	PCB-ASSY-ACT3	P12V	PSU38V → ACT3	—
1	PCB-ASSY-ACT3	P24V	PSU24V → ACT3	—
2	PCB-ASSY-ACT3	P24VAR	PSU24V → ACT3	The power is cut by the interlock
3	PCB-ASSY-ACT3	P24VSF	PSU38V → ACT3	—
5	PCB-ASSY-ACT3	P38V	PSU38V → ACT3	—
6	PCB-ASSY-ACT3	P38VAR	PSU38V → ACT3	The power is cut by the interlock
7	PCB-ASSY-ACT3	P38VAF	PSU38V → ACT3	—
8	PCB-ASSY-IPB5-100	P38VAF	PSU38V → ACT3 → IPB5	—
9	PCB-ASSY-IPB5-100	P38VCRG	PSU38V → ACT3 → IPB5	The power is cut by the interlock
A	PCB-ASSY-ACT3	P38ARHCB	PSU38V → ACT3 → HCB1M	The power is cut by the interlock

\* For the details of the power supplies' relationship, see the **Appendix 3 Power Supply Schematic Diagram**.

### <Faulty part>

- (1) PCB-ASSY-ACT3
- (2) PCB-ASSY-IPB5-100
- (3) Power supply unit (24V) (PSU 24V): POWER SUPPLY 24V, MW
- (4) Window sensor OKI Data Infotech (interlock switch)
- (5) Power supply unit (38V) (PSU 38V): POWER SUPPLY 36V, MW

#### **Note:**

If the PSU 38V output is cut, the power of the CPU and the peripheral circuits is also cut on the PCB-ASSY-IPB5-100, preventing this error from occurring. Therefore the error 190X is rarely caused by a PSU 38V problem.

<Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

#### Case 1

The problem below occurred:

X=0 (PCB-ASSY-ACT3 P12V)

X=3 (PCB-ASSY-ACT3 P24VSF)

X=5 (PCB-ASSY-ACT3 P38V)

X=7 (PCB-ASSY-ACT3 P38VAF)

#### Note:

The power supply system related to this error number is generated from the PSU 38V, and the power does not pass through the interlock relay. So check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Power supply unit (38V) harness	(1) Reconnect the CABLE(PSU-ACT-IF)-ASSY(MW) to the ACT3 and the power supply. (2) Reconnect the CABLE(PSU-ACT)-ASSY(MW) to the ACT3 and the power supply.
2	Cable between the ACT3 and IPB5	Reconnect the CABLE(ACT-IPB-IF)-ASSY(MW) to the ACT3 and the IPB5.
3	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
4	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
5	Power supply unit (38V)	Replace the power supply unit (38V).

## Case 2

The problem below occurred:

X=8 (PCB-ASSY-IPB5-100 P38VAF)

**Note:**

The power supply system related to this error number is generated from the PSU 38V, and the power is supplied by passing through the interlock relay. So check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Power supply unit (38V) harness	(1) Reconnect the CABLE(PSU-ACT-IF)-ASSY(MW) to the ACT3 and the power supply. (2) Reconnect the CABLE(PSU-ACT)-ASSY(MW) to the ACT3 and the power supply.
2	Cable between the ACT3 and IPB5	Reconnect the CABLE(ACT-IPB-IF)-ASSY(MW) to the ACT3 and the IPB5.
3	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
4	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
5	Power supply unit (38V)	Replace the power supply unit (38V).

## Case 3

The problem below occurred:

X=6 (PCB-ASSY-ACT3 P38VAR)

**Note:**

The power supply system related to this error number is generated from the PSU 38V, and the power is supplied to the PCB-ASSY-IPB5-100 by passing through the interlock relay. So check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Check that the printer detects the interlock switch position (ON/OFF)	Open and close the front cover, and check that the printer detects the interlock switch position. If the Printer does not react to the interlock switch position, check that the PCB-ASSY-ACT3's connector CN2 is connected. If the error persists, check that the interlock switch's connector is connected. If the error still persists, replace the interlock switch.
2	Cable between the ACT3 and IPB5	Reconnect the CABLE(ACT-IPB-IF)-ASSY(MW) to the ACT3 and the IPB5.
3	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
4	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
5	Power supply unit (38V)	Replace the power supply unit (38V).

## Case 4

The problem below occurred:

X=9 (PCB-ASSY-IPB5-100 P38VCRG)

**Note:**

The power supply system related to this error number is generated from the PSU 38V, and the power is supplied to the PCB-ASSY-IPB5-100 after passing through the interlock relay. So check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Check that the printer detects the interlock switch position (ON/OFF)	Open and close the front cover, and check that the printer detects the interlock switch position. If the Printer does not react to the interlock switch position, check that the PCB-ASSY-ACT3's connector CN2 is connected. If the error persists, check the interlock switch's connector is connected. If the error still persists, replace the interlock switch.
2	Cable between the ACT3 and IPB5	Reconnect the CABLE(ACT-IPB-IF)-ASSY(MW) to the ACT3 and the IPB5.
3	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
4	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
5	Power supply unit (38V)	Replace the power supply unit (38V).

## Case 5

The problem below occurred:

X=1 (PCB-ASSY-ACT3 P24V)

**Note:**

The power supply system related to this error number is generated from the PSU 24V, and the power does not pass through the interlock relay. So check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Power supply unit (24V) harness	(1) Reconnect the CABLE(PSU-ACT-IF)-ASSY(MW) to the ACT3 and the power supply. (2) Reconnect the CABLE(PSU-ACT)-ASSY(MW) to the ACT3 and the power supply.
2	Cable between the ACT3 and IPB5	Reconnect the CABLE(ACT-IPB-IF)-ASSY(MW) to the ACT3 and the IPB5.
3	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
4	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
5	Power supply unit (24V)	Replace the power supply unit (24V).

## Case 6

The problem below occurred:

X=2 (PCB-ASSY-ACT3 P24VAR)

**Note:**

The power supply system related to this error number is generated from the PSU 24V, and the power is supplied after passing through the interlock relay. So check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Check that the printer detects the interlock switch position (ON/OFF)	Open and close the front cover, and check that the printer detects the interlock switch position. If the Printer does not react to the interlock switch position, check that the PCB-ASSY-ACT3's connector CN2 is connected. If the error persists, check the interlock switch's connector is connected. If the error still persists, replace the interlock switch.
2	Cable between the ACT3 and IPB5	Reconnect the CABLE(ACT-IPB-IF)-ASSY(MW) to the ACT3 and the IPB5.
3	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
4	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
5	Power supply unit (24V)	Replace the power supply unit (24V).

## Case 7

The problem below occurred:

X=A (PCB-ASSY-ACT3 P38VARHCB)

**Note:**

The power supply system related to this error number is generated from the PSU 38V, and the power is supplied to the PCB-ASSY-HCB1M after passing through the interlock relay. So check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Check that the printer detects the interlock switch position (ON/OFF)	Open and close the front cover, and check that the printer detects the interlock switch position. If the Printer does not react to the interlock switch position, check that the PCB-ASSY-ACT3's connector CN2 is connected. If the error persists, check the interlock switch's connector is connected. If the error still persists, replace the interlock switch.
2	Cable between the ACT3 and IPB5	Reconnect the CABLE(ACT-IPB-IF)-ASSY(MW) to the ACT3 and the IPB5.
3	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
4	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
5	Power supply unit (38V)	Replace the power supply unit (38V).

### 5.5.21 System Error 1aXX: Carriage Power Error

#### <Description>

The power voltage of the carriage board was obtained by AD conversion, but an error exceeding the permissible range (+/-10%) occurred between the unconverted and converted values.

XX	Carriage Power	XX	Carriage Power
00	CRG P38VAF	0d	CRG VDD2B2
01	CRG PREF	0e	CRG VDD2A3
02	CRG P1.2V	0f	CRG VDD2B3
03	CRG P3.3V	10	CRG VDD2A4
04	CRG P5V	11	CRG VDD2B4
05	CRG P24V_FAN1	12	CRG VDD2A5
07	CRG P12V_FAN3	13	CRG VDD2B5
08	CRG P38VCRG	14	CRG VDD2A6
0a	CRG VDD2A1	15	CRG VDD2B6
0b	CRG VDD2B1	16	CRG VDD2A7
0c	CRG VDD2A2	17	CRG VDD2B7

#### <Faulty part>

- (1) PCB-ASSY-HCB1M
- (2) PCB-ASSY-IPB5-100
- (3) Carriage cable (FFC): CARRIAGE FFC, MW
- (4) Robot cable: ROBOT CABLE, MW

## Case 1

An error between 1A00 and 1A08 has occurred.

## &lt;Action&gt;

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

**Note:**

For this error occurs, be sure to perform the actions at the steps 1 to 4.

No	Items to be Checked	Action
1	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
2	FFC's external damage	Check the following to ensure that the FFC is not damaged. - FFC's terminal is detached from its base. - FFC's edges have not been abraded by friction. If the FFC is damaged, replace it.
3	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
4	Robot cable's connector connection	Reconnect the robot cable on both the PCB-ASSY-HCB1M side and PCB-ASSY-ACT3 side. Before connecting, check that the connector terminals and cable connection part are not disconnected. If a connection failure is found, replace the robot cable.
5	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
6	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
7	FFC	Replace all four FFCs.
8	Robot cable	Replace the robot cable.

## Case 2

An error between 1A0A and 1A19 has occurred.

Error	Faulty parts
1A0A to 1A0B	Print head 1 and cable connected to print head 1
1A0C to 1A0D	Print head 2 and cable connected to print head 2
1A0E to 1A0F	Print head 3 and cable connected to print head 3
1A10 to 1A11	Print head 4 and cable connected to print head 4
1A12 to 1A13	Print head 5 and cable connected to print head 5
1A14 to 1A15	Print head 6 and cable connected to print head 6
1A16 to 1A17	Print head 7 and cable connected to print head 7

## &lt;Action&gt;

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

**Note:**

If this error occurs, be sure to perform the actions at the steps 1 to 5.

No	Items to be Checked	Action
1	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
2	FFC's external damage	Check the following to ensure that the FFC is not damaged. - FFC's terminal is detached from its base. - FFC's edges have not been abraded by friction. If the FFC is damaged, replace it.
3	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
4	Robot cable's connector connection	Reconnect the robot cable on both the PCB-ASSY-HCB1M side and PCB-ASSY-ACT3 side. Before connecting, check that the connector terminals and cable connection part are not disconnected. If a connection failure is found, replace the robot cable.
5	The unit connected to the PCB-ASSY-HCB1M	(1) Check that the print head cable jacket is not damaged. If damaged, replace it. (2) If not damaged, reconnect it and restart the printer. (3) If the problem persists, replace the cable of the faulty print head with one of a print head operating normally. If the error number changes, the faulty part is the print head cable so replace it. (4) Connect the print head cable to another print head. If the error number changes for the newly connected print head, check the other items to be checked below.  *The print head cable for the seventh print head is used only for 7-color printers.
6	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
7	INKJET HEAD,MW (print head)	Replace the faulty print head.
8	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
9	FFC	Replace all four FFCs.
10	Robot cable	Replace the robot cable.
11	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.

## 5.5.22 System Error 1c0X: Thermistor Connection Error

### <Description>

An error occurred in the thermistors values.

See the table below for the correspondence between the numbers and the thermistors.

X	Thermistor	Action
0	Ambient temperature	See <b>5.5.35 System Error 2400: Environmental Temperature Thermistor Error.</b>
1	Preheater	See <b>5.5.36 System Error 250X: Media Heater Thermistor Error.</b>
2	Afterheater	
5	Printheater	

### <Faulty part>

- (1) PCB-ASSY-ACT3
- (2) PCB-ASSY-IPB5-100
- (3) For 1c00: Ambient temperature thermistor
- (4) For 1c01: Supply side paper guide
- (5) For 1c02: Take-up side paper guide: FRONT PAPER GUIDE, MW
- (6) For 1c05: Platen

### <Action>

Restart the printer.

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	External damage on the thermistor's harness	Check that the condition of the harness causing the error is proper as follows. <ul style="list-style-type: none"> <li>- The connectors are connected securely.</li> <li>- The cable is not disconnected.</li> <li>- The harness is not pinched by the other parts.</li> <li>- The cable jacket is not damaged.</li> </ul>
2	Thermistor	Replace the whole unit including the thermistor causing the error.
3	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
4	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.23 System Error 1e00: Cap Correction Value Error

<Description>

The correction value of the cap position is 0 (not corrected).

(The correction value of the cap position must be a value other than 0.)

<Faulty part>

- (1) IC(EEPROM)
- (2) PCB-ASSY-IPB5-100

<Action>

Restart the printer.

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Cap position correction value	Start the printer in the ignore fatal error mode (see Section <b>3.5.4</b> ). Perform the procedure in <b>7.4 Correcting the Cap Position</b> , and apply a value other than 0 as the correction value.
2	EEPROM	Replace the EEPROM (see <b>5.9.2</b> ).
3	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.24 System Error 2010: Long-term Storage Error

#### <Description>

If the printer is powered off for one month (31 days) or more, this error message is displayed to indicate that maintenance by a service engineer is required.

However, if this error is displayed when the printer has been powered off for less than 31 days, it can be assumed that some parts are defective.

This error cannot be recovered by restarting the printer.

#### <Part to inspect and replace>

- (1) SUPPLY PUMP TUBE, MW
- (2) PUMP F ASSY, MW

#### <Faulty part>

- (1) IC(EEPROM)
- (2) PCB-ASSY-IPB5-100

#### <Action>

As routine maintenance, be sure to perform the actions at the steps 1-4 listed below.

If the two conditions below are met, check the **Items to be Checked** on the table below, and perform the actions starting from the step 5 until the problem is solved.

- The error persists after performing the steps 1-4.
- The error occurred when the printer has been powered off for less than 31 days.

No	Items to be Checked	Action
1	Error flag's reset	Start the printer in the Ignore Fatal Error mode and enter the password (see 3.5.4). Then press the power switch on the operation panel to turn off the printer.
2	PUMP-TUBE-ASSY	Check that all SUPPLY-PUMP-TUBE-ASSY tubes are not clogged with ink by: - Visually inspecting the exterior; and - Touching the tubes with your fingers (See 6.12.6). If a tube is clogged, replace the corresponding SUPPLY-PUMP-TUBE-ASSY. After replacement, reset the pump operating time counter of the corresponding SUPPLY-PUMP-TUBE-ASSY (see 3.4.3.3).
3	PUMP-F-ASSY	Check that all PUMP-F-ASSY tubes are not clogged with ink by: - Visually inspecting the exterior; and - Touching the tubes with your fingers (See 6.10.4). If a tube is clogged, replace the corresponding PUMP-F-ASSY.
4	Printer start process	Supply power to the printer, and check that the error was cleared.
5	Printer's system time	Check that the printer's system time is correct. If not, set the correct system time.
6	EEPROM	Replace the EEPROM (see 5.9.2).
7	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.25 System Error 203X: Periodic Part Replacement Error

#### <Description>

An ink supply pump was operated for 259,700 cycles or more.

The following shows the correspondence between number X and the print head numbers.

203X:

X	Supply Pump No.
0	No.1
1	No.2
2	No.3
3	No.4
4	No.5
5	No.6
6	No.7

#### <Faulty part>

- (1) SUPPLY PUMP-UNIT
- (2) IC(EEPROM)
- (3) PCB-ASSY-IPB5-100

#### <Action>

Replace the SUPPLY PUMP-UNIT.

Perform the steps 1 to 3.

If the error is not recovered, check the **Items to be Checked** on the table below, and perform the actions starting from the step 4 until the problem is solved.

No	Items to be Checked	Action
1	SUPPLY PUMP-UNIT	Replace the SUPPLY PUMP-UNIT corresponding to the error code
2	Supply pump counter	Start the printer in the Ignore Fatal Error mode and enter the password (see <b>3.5.4</b> ). Reset the operating time counter of the SUPPLY PUMP-UNIT corresponding to the error code (see <b>3.4.3.3</b> ).
3	Printer start process	Supply the power to the printer, and check that the error was cleared.
4	EEPROM	Replace the EEPROM (see <b>5.9.2</b> ).
5	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.26 System Error 2100: EEPROM I/O Error

<Description>

Could not read or write normally the EEPROM on the PCB-ASSY-IPB5-100.

<Faulty part>

- (1) IC(EEPROM)
- (2) PCB-ASSY-IPB5-100

<Action>

Restart the printer.

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	EEPROM installation condition	Remove the EEPROM from the socket, check that its pins are not bent nor damaged, then set the EEPROM back to the original position so that its direction is the same as the original.
2	EEPROM	Replace the EEPROM (see <b>5.9.2</b> ).
3	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.27 System Error 2200: Data Path Time-out

<Description>

Block clear processing in the band memory has not finished.

<Faulty part>

PCB-ASSY-IPB5-100

<Action>

Restart the printer.

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.28 System Error 2210: USB DMA Time-out

<Description>

USB data transmission DMA was not completed from the USB controller to the band memory.

<Faulty part>

PCB-ASSY-IPB5-100

<Action>

Restart the printer.

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.29 System Error 230X: Suction Fan Error

<Description>

The suction fan is not rotating.

X	Suction fan.
0	Suction fan 1
1	Suction fan 2
2	Suction fan 3
3	Suction fan 4

<Faulty part>

- (1) FAN4 (suction fan)
- (2) PCB-ASSY-ACT3
- (3) CABLE(SFAN)-ASSY(MW)

<Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Suction fan's operation	Unload the media from the printer, turn the printer on, and enter the maintenance mode. From the <b>ACTUATORS</b> menu, operate the suction fan motor causing the error, and check the fan's operating sound.
2	Suction fan's harness condition	Check that the harness condition is proper as follows. <ul style="list-style-type: none"> <li>- The connectors are connected securely.</li> <li>- The cable is not disconnected.</li> <li>- The harness is not pinched by other parts.</li> <li>- The cable jacket is not damaged.</li> </ul>
3	Suction fan	Replace the suction fan motor causing the error.
4	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.

### 5.5.30 System Error 2310: Home Position Sensor Error

<Description>

Could not detect the home position of the carriage.

<Faulty part>

- (1) PHOTO INTERRUPTER (home position sensor)
- (2) PCB-ASSY-HCB1M
- (3) CABLE(HPOS)-ASSY(MW)

<Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Home position sensor condition	Check that the sensor is fixed securely, and visually inspect that it is not damaged. Then softly wipe the sensor's surface with a soft cloth or lint-free paper dampened with ethanol.
2	Harness condition	Check that the harness condition is proper as follows. - The connectors are connected securely. - The cable is not disconnected. - The harness is not pinched by other parts. - The cable jacket is not damaged.
3	Home position sensor	Replace the sensor.
4	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.

### 5.5.31 System Error 2320: Wiper Position Sensor Error

<Description>

Could not detect the home position of the wiper.

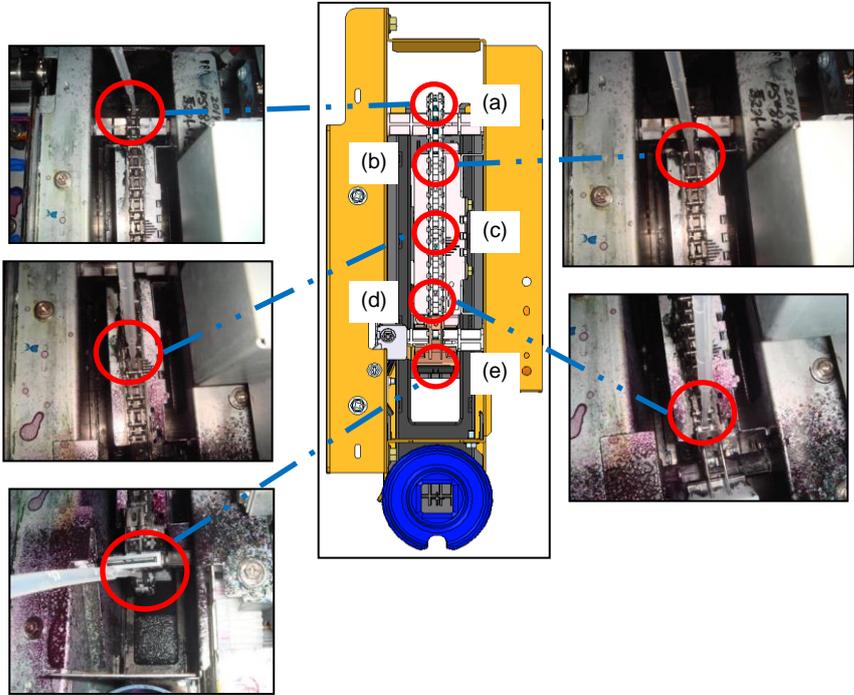
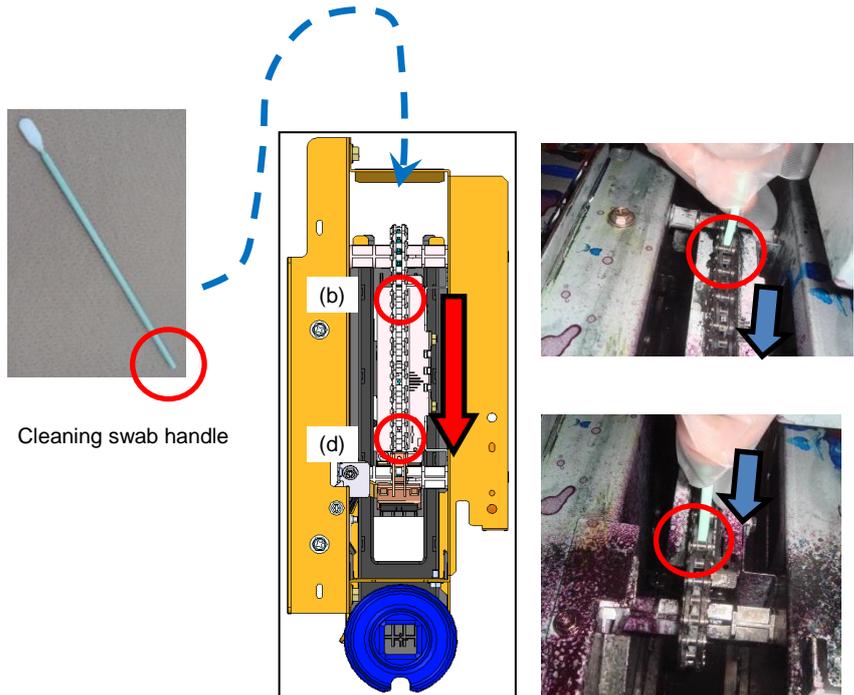
<Faulty part>

- (1) MICRO SWITCH 4 (wiper position sensor)
- (2) MOTOR(WIPE) (wiping motor)
- (3) PCB-ASSY-ACT3
- (4) CABLE(PumpWipe)-ASSY(MW)

<Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	<p>Wiper's operation</p> <p>◆ Required items</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p>(1) Dropper (1)</p> </div> <div style="text-align: center;">  <p>(2) Sheet mount cleaning liquid (1 bottle)</p> </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 20px;"> <div style="text-align: center;">  <p>(3) Gloves (1 pair)</p> </div> <div style="text-align: center;">  <p>(4) Cleaning swab (1)</p> </div> </div> <p>◆ Procedure</p> <ul style="list-style-type: none"> <li>(1) Open the front cover and then the capping unit cover.</li> <li>(2) Draw 1 cc of sheet mount cleaning liquid using the dropper.</li> </ul>	<p>Enter the maintenance mode, and from the actuators menu operate the wiping motor.</p> <p>If you hear the motor running but the wiper does not move, the wiper chain may stick to the mechanism. In such a case, use the procedure below to resolve the problem.</p>

No	Items to be Checked	Action
	<p><b>(3)</b> Insert the dropper tip in the area (a) on the chain shown in the figure below, and inject the sheet mount cleaning liquid.</p> <p>In the same manner, inject 1 cc of sheet mount cleaning liquid to the areas (b), (c), (d), and (e) shown in the figure.</p>  <p>The diagram shows a yellow chain mechanism with five red circles labeled (a) through (e) indicating injection points. Surrounding the diagram are five photographs, each with a red circle and a blue arrow pointing to the corresponding location on the physical machine.</p>	<p><b>(4)</b> Wait 5 minutes.</p> <p><b>(5)</b> Insert the cleaning swab handle in the area (b) shown in the figure of the chain below and move it in the direction of the arrow until it reaches the area (d).</p>  <p>The diagram shows the same yellow chain mechanism with red circles (b) and (d). A red arrow points downwards from (b) to (d). To the left, a photograph shows a blue cleaning swab handle with a red circle around its tip. To the right, two photographs show a person's hand using the swab handle on the machine, with blue arrows indicating the downward movement from (b) to (d).</p>

No	Items to be Checked	Action
2	Wiper position sensor's condition	Check that the sensor is fixed securely.
3	Harness condition	Check that the harness condition is proper as follows. - The connectors are connected securely. - The cable is not disconnected. - The harness is not pinched by other parts. - The cable jacket is not damaged.
4	Wiper position sensor	If the error persists when the wiper operates, replace the sensor.
5	Wiping motor	Replace the motor.
6	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.

### 5.5.32 System Error 2330: Wiper Operation Error

<Description>

An error has been detected in the wiper operation.

<Faulty part>

- (1) MICRO SWITCH 4 (wiper position sensor)
- (2) MOTOR(WIPE) (wiping motor)
- (3) PCB-ASSY-ACT3
- (4) CABLE(PumpWipe)-ASSY(MW)

<Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Wiper's operation	Enter the maintenance mode, and from the actuators menu operate the wiping motor. If the wiper does not operate while the motor's operating sound can be heard, reassemble the wiping unit.
2	Wiper position sensor's condition	Check that the sensor is fixed securely.
3	Harness condition	Check that the harness condition is proper as follows. - The connectors are connected securely. - The cable is not disconnected. - The harness is not pinched by other parts. - The cable jacket is not damaged.
4	Wiper position sensor	If the error persists when the wiper operates, replace the sensor.
5	Wiping motor	Replace the motor.
6	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.

### 5.5.33 System Error 2340: Capping Unit Sensor Error

<Description>

The capping unit sensor status does not change.

<Faulty part>

- (1) MICRO SWITCH 4 (capping unit sensor)
- (2) MOTOR(CAP)-UD (capping unit up/down motor)
- (3) PCB-ASSY-ACT3
- (4) CABLE(CAP-IF)-ASSY(MW)

<Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Harness condition	Check that the harness condition is proper as follows. - The connectors are connected securely. - The cable is not disconnected. - The harness is not pinched by other parts. - The cable jacket is not damaged.
2	Capping unit sensor	Enter the maintenance mode, and from the actuators menu operate the motor. If the cap operates up and down, replace the sensor.
3	Capping unit up/down motor	Replace the motor.
4	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.

### 5.5.34 System Error 235X: Remaining Ink Sensor Error (LCIS model)

#### <Description>

The remaining sensor value is 8 kg or higher.

X	Sensor No.
0	No.1
1	No.2
2	No.3
3	No.4
4	No.5
5	No.6
6	No.7

#### <Faulty part>

- (1) PTM-ASSY(LCIS)
- (2) CABLE(LCISWei-Sen)-ASSY(MW)
- (3) CABLE(LCISWei-Sen-IF)-ASSY(MW)

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem of the remaining ink sensor that caused the error is solved.

No	Items to be Checked	Action
1	Reservoir tray condition	Check that the reservoir tray is not stuck.
2	Weight sensor	Check that there is no ink on the weight sensor. Check that the weight sensor operates by moving the reservoir tray up and down. Replace the weight sensor if a problem is found.
3	Harness condition	Check that the connector is in contact when the drawer is closed. Replace the harness if a problem is found.

### 5.5.35 System Error 2400: Environmental Temperature Thermistor Error

#### <Description>

The ambient temperature sensor's value is:

- -10°C or less; or
- 85°C or more

#### <Faulty part>

- (1) PCB-ASSY-ACT3
- (2) PCB-ASSY-IPB5-100
- (3) Ambient temperature thermistor
- (4) CABLE(SubTank2-IF)-ASSY(MW)

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Thermistor's harness condition	Check that the thermistor harness condition is proper as follows. <ul style="list-style-type: none"> <li>- The connectors are connected securely.</li> <li>- The cable is not disconnected.</li> <li>- The harness is not pinched by other parts.</li> <li>- The cable jacket is not damaged.</li> </ul>
2	Thermistor	Replace the thermistor.
3	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
4	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.36 System Error 250X: Media Heater Thermistor Error

#### <Description>

The heater thermistor read value is:

- -20°C or less; or
- 200°C or more

X	Media Heater
1	Preheater
2	Printheater
3	Afterheater

#### <Faulty part>

- (1) PCB-ASSY-ACT3
- (2) PCB-ASSY-IPB5-100
- (3) For 2501: Supply-side paper guide
- (4) For 2503: Take-up side paper guide
- (5) For 2502: Platen
- (6) CABLE(Thermistor)-ASSY(MW)

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Thermistor's harness condition	Check that the harness condition is proper as follows. <ul style="list-style-type: none"> <li>- The connectors are connected securely.</li> <li>- The cable is not disconnected.</li> <li>- The harness is not pinched by other parts.</li> <li>- The cable jacket is not damaged.</li> </ul>
2	Thermistor	Replace the whole unit including the thermistor causing the error.
3	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
4	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.37 System Error 251X: Media Heater Error (High temperature)

#### <Description>

The heater thermistor value is 85°C or more.

As the media heater control is defective, the temperature was increased excessively.

X	Media Heater
1	Preheater
2	Printheater
3	Afterheater

#### <Faulty part>

- (1) PCB-ASSY-TRC-MW
- (2) PCB-ASSY-ACT3
- (3) PCB-ASSY-IPB5-100

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Media heater operation	Start the printer in the ignore fatal error mode. If the heater temperature increases without + (plus) displayed in the heater display mode, perform the action No. 2. If this error occurred with OFF displayed in the heater display mode, perform the same actions as for system error 250X.
2	PCB-ASSY-TRC-MW	Replace the PCB-ASSY-TRC-MW.
3	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
4	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.38 System Error 252X: Media Heater Error (Target temperature not reached)

#### <Description>

After 30 minutes, the heater temperature is still less than the set temperature.

X	Media Heater
1	Preheater
2	Printheater
3	Afterheater

#### <Faulty part >

- (1) CABLE(TRC-CTL)-ASSY(MW)
- (2) PCB-ASSY-TRC-MW
- (3) PCB-ASSY-ACT3
- (4) PCB-ASSY-IPB5-100
- (5) For 2521: Supply-side paper guide
- (6) For 2523: Take-up side paper guide: FRONT PAPER GUIDE, MW
- (7) For 2522: Platen

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Ambient temperature	Check that the ambient temperature is within the operating temperature range.
2	Power supply voltage	Check that the voltage supplied from the socket used for the heaters is between 200 V and 240 V.
3	Heater's harness condition	Check that the harness condition is proper as follows. <ul style="list-style-type: none"> <li>- The connectors are connected securely.</li> <li>- The cable is not disconnected.</li> <li>- The harness is not pinched by other parts.</li> <li>- The cable jacket is not damaged.</li> </ul>
4	Thermistor condition	Check that the thermistor properly contacts the heater.
5	CABLE(TRC-CTL)-ASSY(MW) condition	Check that the cable condition is proper as follows. <ul style="list-style-type: none"> <li>- The connectors are connected securely.</li> <li>- The cable is not disconnected.</li> <li>- The cable is not pinched by other parts.</li> <li>- The cable jacket is not damaged.</li> </ul>
6	PCB-ASSY-TRC-MW	Replace the PCB-ASSY-TRC-MW.
7	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
8	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.39 System Error 253X: Media Heater Error (No interrupt)

#### <Description>

No heater sequence interruption is generated.

X	Media Heater
1	Preheater
2	Printheater
3	Afterheater

#### <Faulty part>

- (1) FUSE
- (2) CABLE(TRC-CTL)-ASSY(MW)
- (3) CABLE(ACT-IPB-IF)-ASSY(MW)
- (4) PCB-ASSY-TRC-MW
- (5) PCB-ASSY-ACT3
- (6) PCB-ASSY-IPB5-100

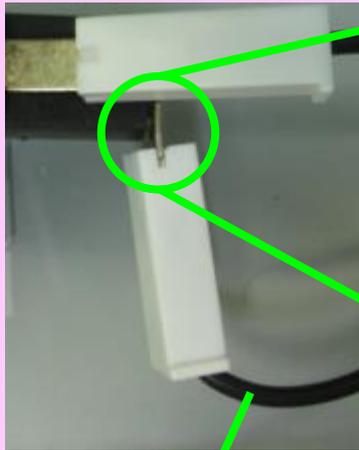
#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

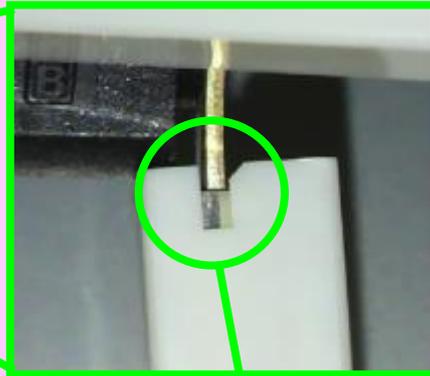
No	Items to be Checked	Action
1	Power supply voltage	Check that the voltage supplied from the socket used for the heaters is between 200 V and 240 V.
2	Fuse condition	Check that the fuse has not blown. Check the condition of the harness connected to the fuse to confirm that the connectors are properly connected.
3	Heater's harness condition	Check that the harness condition is proper as follows. <ul style="list-style-type: none"> <li>- The connectors are connected securely.</li> <li>- The cable is not disconnected.</li> <li>- The harness is not pinched by other parts.</li> <li>- The cable jacket is not damaged.</li> </ul>
4	CABLE(TRC-CTL)-ASSY(MW) condition	Check that the cable condition is proper as follows. <ul style="list-style-type: none"> <li>- The connectors are connected securely.</li> <li>- The cable is not disconnected.</li> <li>- The cable is not pinched by other parts.</li> <li>- The cable jacket is not damaged.</li> </ul>
5	Cable between the ACT3 and IPB5	Reconnect the CABLE(ACT-IPB-IF)-ASSY(MW) to the ACT3 and the IPB5.
6	PCB-ASSY-TRC-MW	Replace the PCB-ASSY-TRC-MW.
7	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
8	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

**Important points when checking the harness connected to the fuse**

Check that the contact is inserted completely so that the metal part of the contact is visible. If the metal part is not visible, hold the wire and insert the contact as far as it goes so that the contact's metal part is visible.



Hold this part and insert the contact completely.



The metal part of the contact must be visible.

### 5.5.40 System Error 260X: Subtank Sensor Error

#### <Description>

Subtank sensor FULL status and EMPTY status are detected at the same time.

X	Subtank No.
0	No.1
1	No.2
2	No.3
3	No.4
4	No.5
5	No.6
6	No.7

#### <Faulty part>

- (1) Subtank
- (2) Subtank Sensors(OKI Data Infotech) (subtank empty sensor and subtank full sensor)
- (3) PCB-ASSY-ACT3
- (4) CABLE(SubTank1-IF)-ASSY(MW)
- (5) CABLE(SubTank2-IF)-ASSY(MW)
- (6) CABLE(SubTank1)-ASSY(MW)
- (7) CABLE(SubTank2)-ASSY(MW)
- (8) CABLE(SubTank3)-ASSY(MW)

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions on the subtank causing the error starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Harness condition	Check that the harness condition is proper as follows. - The connectors are connected securely. - The connectors are connected to the proper locations. - The cable is not disconnected. - The harness is not pinched by other parts. - The cable jacket is not damaged.
2	Sensor condition	Check that the sensor is not loose.
3	Sensor operation	Enter the <b>MONITOR</b> menu in the maintenance mode and check that the subtank empty sensor and full sensor operates properly. If the sensor operates properly, perform the action No.6. If the sensor does not operate, perform the actions No.4 and 5.
4	Sensor	Replace the defective sensors.
5	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
6	Subtank	Replace the subtank.

After the problem has been solved, reset the SUBCART USAGE counter following the procedure below.

1. Start the printer.
2. When the printer is idle, enter the maintenance password to enter the maintenance mode.
3. Press the **MAINTENANCE** button to enter the **COUNTERS** menu.
4. In this menu, select **RESET COUNTERS** then **SUBCART USAGE**.
5. Reset the counter of the ink color that generated the error (see page **3-87** for the procedure to reset the subcart usage counter).

### 5.5.41 System Error 261x: Subtank Full Sensor Error

#### <Description>

The subtank full sensor continues to indicate **FULL** though a certain quantity of ink has been supplied from that subtank.

X	Subtank No.
0	No.1
1	No.2
2	No.3
3	No.4
4	No.5
5	No.6
6	No.7

#### <Faulty part>

- (1) SUBTANK ASSY, MW
- (2) INKJET HEAD,MW (print head)
- (3) Capping unit
- (4) CAP,MW
- (5) PUMP-F-ASSY,MW
- (6) Subtank Sensors(OKI Data Infotech) (subtank empty sensor and subtank full sensor)
- (7) PCB-ASSY-ACT3
- (8) CABLE(SubTank1-IF)-ASSY(MW)
- (9) CABLE(SubTank2-IF)-ASSY(MW)
- (10) CABLE(SubTank1)-ASSY(MW)
- (11) CABLE(SubTank2)-ASSY(MW)
- (12) CABLE(SubTank3)-ASSY(MW)

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions on the subtank causing the error starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Harness condition	Check that the harness condition is proper as follows. - The connectors are connected securely. - The connectors are connected to the proper locations. - The cable is not disconnected. - The harness is not pinched by other parts. - The cable jacket is not damaged.
2	Sensor condition	Check that the sensor is not loose.

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No	Items to be Checked	Action
3	Sensor operation	Enter the <b>MONITOR</b> menu in the maintenance mode and check that the subtank empty sensor and full sensor operates properly. If the sensor operates properly, perform the action No.4. If the sensor does not operate, perform the action No.7.
4	Subtank	Replace the subtank. Then perform the actions No.5 and 6 as preventive measures.
5	Capping unit	(1) Check that the air release solenoid valve is not soiled with ink. If soiled, clean it with a cleaning stick and the cap cleaning liquid. (2) Check that the pump operates by performing the <b>FILL CAP</b> or <b>PH.RECOVERY</b> operation. If the pump does not operate, replace the capping unit. (3) Regardless of the results of the actions above, replace the cap and pump corresponding to the error number.
6	Print head	If 11 or more nozzles are clogged on the print head of the subtank causing the error, perform the <b>FILL CAP</b> or <b>PH.RECOVERY</b> operation. If the problem persists, replace the print head.
7	Sensor	Replace the defective sensor found in the step 3.
8	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.

### 5.5.42 System Error 262x: Subtank Empty Sensor Error

#### <Description>

The subtank empty sensor does not indicate **EMPTY** though a certain quantity of ink has been supplied to that subtank.

X	Subtank No.
0	No.1
1	No.2
2	No.3
3	No.4
4	No.5
5	No.6
6	No.7

#### <Faulty part>

- (1) SUBTANK ASSY, MW
- (2) INKJET HEAD,MW (print head)
- (3) Capping unit
- (4) CAP,MW
- (5) PUMP-F-ASSY,MW
- (6) Subtank Sensors(OKI Data Infotech) (subtank empty sensor and subtank full sensor)
- (7) PCB-ASSY-ACT3
- (8) CABLE(SubTank1-IF)-ASSY(MW)
- (9) CABLE(SubTank2-IF)-ASSY(MW)
- (10) CABLE(SubTank1)-ASSY(MW)
- (11) CABLE(SubTank2)-ASSY(MW)
- (12) CABLE(SubTank3)-ASSY(MW)

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions on the subtank causing the error starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Harness condition	Check that the harness condition is proper as follows. - The connectors are connected securely. - The connectors are connected to the proper locations. - The cable is not disconnected. - The harness is not pinched by other parts. - The cable jacket is not damaged.
2	Sensor condition	Check that the sensor is not loose.

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No	Items to be Checked	Action
3	Sensor operation	Enter the <b>MONITOR</b> menu in the maintenance mode and check that the subtank empty sensor and full sensor operates properly. If the sensor operates properly, perform the action No.4. If the sensor does not operate, perform the action No.7.
4	Subtank	Replace the subtank. Then perform the actions No.5 and 6 as preventive measures.
5	Capping unit	(1) Check that the air release solenoid valve is not soiled with ink. If soiled, clean it with a cleaning stick and the cap cleaning liquid. (2) Check that the pump operates by performing the <b>FILL CAP</b> or <b>PH.RECOVERY</b> operation. If the pump does not operate, replace the capping unit. (3) Regardless of the results of the actions above, replace the cap and pump corresponding to the error number.
6	Print head	If 11 or more nozzles are clogged on the print head of the subtank causing the error, perform the <b>FILL CAP</b> or <b>PH.RECOVERY</b> operation. If the problem persists, replace the print head.
7	Sensor	Replace the defective sensor found in the step 3.
8	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.

### 5.5.43 System Error 270X: Ink Supply Pump Sensor Error

#### <Description>

While the ink supply motor for the subtank is running, ink supply pump sensor X condition does not change even after a specified time period has passed.

X	Ink supply pump sensor No.
0	No.1
1	No.2
2	No.3
3	No.4
4	No.5
5	No.6
6	No.7

#### <Faulty part>

- (1) PCB-ASSY-ACT3
- (2) SUPPLY PUMP, MW

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions on the ink supply pump sensor starting from the top until the problem is solved.

(For LCIS models only)

Check that there is the connector for LCIS model identification.

No	Items to be Checked	Action
1	Harness condition	Check that the harness condition is proper as follows. <ul style="list-style-type: none"> <li>- The connectors are connected securely.</li> <li>- The cable is not disconnected.</li> <li>- The harness is not pinched by other parts.</li> <li>- The cable jacket is not damaged.</li> </ul>
2	Motor and sensor operation	Enter the <b>ACTUATORS</b> menu in the maintenance mode, and operate the ink supply pump causing the error with <b>INK TO SUBTANK</b> or <b>INK TO CARTRIDGE</b> . Then check that the motor operates. If the motor does not operate, the error was caused by a motor-related problem. If the motor operates, the error was caused by a sensor-related problem or a defective roller (PUMP). Then stop the ink supply pump operation with <b>STOP, PUMP CLOSED</b> .
3	SUPPLY PUMP	Replace the SUPPLY PUMP.
4	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.

### 5.5.44 System Error 271X: Ink Supply Pump Error (LCIS model)

#### <Description>

The position of the subtank sensor X does not change after a specific time regardless of the operation of the motor to supply ink to the subtank.

X	Ink supply pump No.
0	No.1
1	No.2
2	No.3
3	No.4
4	No.5
5	No.6

#### <Faulty part>

- (1) PCB-ASSY-ACT3
- (2) SUPPLY PUMP, MW

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem of the ink supply pump that caused the error is solved.

No	Items to be Checked	Action
1	Harness condition	Check the condition of the motor and sensor harnesses (correctly connected to the proper connectors, not broken, trapped, or damaged).
2	Motor and sensor operation	Operate the ink supply pump that caused the error by executing <b>TO SUBTANK</b> or <b>TO INKPAC</b> in ACTUATORS menu in maintenance mode to check the motor operation. If it does not operate, the problem is related to the motor. If it operates, the problem is related to the sensor or the roller (pump). Stop the operation with <b>STOP(CLOSE)</b> .
3	SUPPLY PUMP	Replace the SUPPLY PUMP.
4	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.

### 5.5.45 System Error 280X: Ink Usage Upper-limit Error

#### <Description>

The ink usage amount calculated by the printer exceeded the ink cartridge's capacity.

X	Ink supply pump sensor No.
0	No.1
1	No.2
2	No.3
3	No.4
4	No.5
5	No.6
6	No.7

If this error occurred, the related ink cartridge cannot be used with the printer anymore, even when ink remains inside. This error is caused by a defective part or sometimes caused by the improper ink usage, such as improper ink topping up.

#### <Faulty part>

- (1) Capping unit
- (2) CAP,MW
- (3) PUMP-F-ASSY,MW
- (4) INKJET HEAD,MW (print head)

#### <Action>

Replace the ink cartridge causing the error.

Then check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Printer's maintenance and error history	Using CP_Manager, obtain the printer's maintenance and error history before this error (see 3.8).
2	Firmware	Upgrade the firmware to the latest version.
3	Capping unit	<ol style="list-style-type: none"> <li>(1) Check that the air release solenoid valve is not soiled with ink. If soiled, clean it with a cleaning stick and the cap cleaning liquid.</li> <li>(2) Check that the pump operates by performing the <b>FILL CAP</b> or <b>PH.RECOVERY</b> operation. If the pump does not operate, replace the capping unit.</li> <li>(3) Regardless of the results of the actions above, replace the cap and pump corresponding to the error number.</li> </ol>
4	Print head	<p>If 11 or more nozzles are clogged on the print head of the subtank causing the error, perform the <b>FILL CAP</b> or <b>PH.RECOVERY</b> operation.</p> <p>If the problem persists, replace the print head.</p>

### 5.5.46 System Error 2900: Take-up Motor Overcurrent

<Description>

Overcurrent has been detected in the take-up motor.

<Faulty part>

- (1) Take-up motor: TAKE UP MOTOR UNIT, MW
- (2) PCB-ASSY-ACT3
- (3) CABLE(TU-ACT-IF)-ASSY(MW)
- (4) CABLE(TU-ACT-IF2)-ASSY(MW)
- (5) ELECTROMAGNETIC CLUTCH, MW

<Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Media	Check that the weight of the media that has been taken-up does not exceed the maximum applicable weight.
2	Gear	Visually check that the motor's gear is not damaged.
3	Electromagnetic clutch	Check that the electromagnetic clutch is normal.
4	Motor	Replace the motor.
5	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.

### 5.5.47 System Error 2a0X: Servo Error

#### <Description>

An error occurred with the servo control.

X	Servo error
1	Though the Y motor was driven during the initial operation, the linear encoder value did not change.
2	Servo interruption error

#### <Faulty part>

##### ■ System error 2a01:

- (1) PCB-ASSY-ACT3
- (2) PCB-ASSY-IPB5-100
- (3) PCB-ASSY-HCB1M
- (4) Y DRIVE MOTOR, MW (including the bracket used for installation and the pulley)
- (5) DRIVING PULLEY UNIT, MW  
(Y motor SUS belt and timing belt pulley assy, with rotation axis adjustment completed)
- (6) CABLE ENCODER, MW (Linear encoder)
- (7) Linear scale: ENCODER STRIP, MW
- (8) Carriage cable: CARRIAGE FFC, MW
- (9) Robot cable: ROBOT CABLE, MW
- (10) CABLE(Y-MOT)-ASSY(MW)

##### ■ System error 2a02:

- (1) PCB-ASSY-IPB5-100

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

##### ■ System error 2a01:

No	Items to be Checked	Action
1	Y motor's harness condition	Check that the harness condition is proper as follows. - The connectors are connected securely. - The cable is not disconnected. - The harness is not pinched by other parts. - The cable jacket is not damaged.
2	CABLE ENCODER, MW's or linear encoder's harness condition	Check that the harness condition is proper as follows. - The connectors are connected securely. - The cable is not disconnected. - The harness is not pinched by other parts. - The cable jacket is not damaged.

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No	Items to be Checked	Action
3	Linear encoder condition	Check that the linear encoder is clean and not damaged. (1) Clean the linear encoder by wiping it softly with a soft cloth moisten with ethanol. Take care not to damage the encoder or remove any attach part. (2) If the encoder is damaged, replace it.
4	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
5	FFC's external damage	Check the following to ensure that the FFC is not damaged. - FFC's terminal is detached from its base. - FFC's edges have not been abraded by friction. If the FFC is damaged, replace it.
6	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
7	Robot cable's connector connection	Reconnect the robot cable on both the PCB-ASSY-HCB1M side and PCB-ASSY-ACT3 side. Before connecting, check that the connector terminals and cable connection part are not disconnected. If a connection failure is found, replace the robot cable.
8	SUS belt	Replace the SUS belt.
9	Timing belt	Replace the timing belt.
10	Y motor	Replace the Y motor.
11	CABLE ENCODER, MW (linear encoder)	Replace the linear encoder, CABLE ENCODER, MW
12	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
13	PCB-ASSY-ACT3	Replace the PCB-ASSY-ACT3.
14	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
15	FFC	Replace all four FFCs.
16	Robot cable	Replace the robot cable.
17	Driving pulley	Replace the driving pulley.
18	Driven pulley	Replace the driven pulley.

## ■ System error 2a02:

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

### 5.5.48 System Error 2b00: FIRE END Detection Error

#### <Description>

This error occurs when the **FIRE END** flag could not be detected.

Normally, at each scan, the **FIRE END** flag is issued when the droplets ejection is completed.

#### <Faulty part>

- (1) CABLE ENCODER, MW (linear encoder)
- (2) PCB-ASSY-HCB1M
- (3) PCB-ASSY-IPB5-100
- (4) Linear scale: ENCODER STRIP, MW
- (5) Carriage cable (FFC): CARRIAGE FFC, MW
- (6) Robot cable: ROBOT CABLE, MW

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	CABLE ENCODER, MW's or linear encoder's harness condition	Check that the harness condition is proper as follows. - The connectors are connected securely. - The cable is not disconnected. - The harness is not pinched by other parts. - The cable jacket is not damaged.
2	Linear encoder condition	Check that the linear encoder is clean and not damaged. (1) Clean the linear encoder by wiping it softly with a soft cloth moisten with ethanol. Take care not to damage the encoder or remove any attach part. (2) If the encoder is damaged, replace it.
3	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
4	FFC's external damage	Check the following to ensure that the FFC is not damaged. - FFC's terminal is detached from its base. - FFC's edges have not been abraded by friction. If the FFC is damaged, replace it.
5	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
6	Robot cable's connector connection	Reconnect the robot cable on both the PCB-ASSY-HCB1M side and PCB-ASSY-ACT3 side. Before connecting, check that the connector terminals and cable connection part are not disconnected. If a connection failure is found, replace the robot cable.
7	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
8	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

<b>No</b>	<b>Items to be Checked</b>	<b>Action</b>
9	CABLE ENCODER, MW (linear encoder)	Replace the Encoder Sensor(OKI Data Infotech) (linear encoder).
10	FFC	Replace all four FFCs.
11	Robot cable	Replace the robot cable.

### 5.5.49 System Error 2c0X: Ionizer Voltage Error

#### <Description>

An abnormal voltage has been detected during the ionizer feedback voltage check.

X	Ionizer error
0	A value exceeding the voltage upper limit of the (+) module has been detected.
1	A value exceeding the voltage lower limit of the (+) module has been detected.
2	A value exceeding the voltage upper limit of the (-) module has been detected.
3	A value exceeding the voltage lower limit of the (-) module has been detected.

#### <Faulty part>

- (1) IONIZER UNIT, MW
- (2) PCB-ASSY-HCB1M
- (3) CABLE(ADJ-AD)-ASSY

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Harness condition	Check that the harness condition is proper as follows. - The connectors are connected securely. - The cable is not disconnected. - The harness is not pinched by other parts. - The cable jacket is not damaged. If the harness is damaged, replace it.
2	Ionizer	Replace the ionizer.
3	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.

### 5.5.50 System Error 2d0X: Automatic Print Adjustment Calibration Error

#### <Description>

An abnormal voltage has been detected during the voltage check of the automatic print adjustment.

#### <Faulty part>

- (1) PCB-ASSY-ADJ1
- (2) PCB-ASSY-HCB1M
- (3) CABLE(ADJ-AD)-ASSY
- (4) FFC-ADJ

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	PCB-ASSY-ADJ1 sensor condition	Check that the sensor used in automatic print adjustment is clean. Softly wipe the sensor surface with a soft cloth or a piece of paper. *Do not use ethanol or other substance.
2	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
3	FFC's external damage	Check the following to ensure that the FFC is not damaged. - FFC's terminal is detached from its base. - FFC's edges have not been abraded by friction. If the FFC is damaged, replace it.
4	Harness condition	Check that the harness condition is proper as follows. - The connectors are connected securely. - The cable is not disconnected. - The harness is not pinched by other parts. - The cable jacket is not damaged. If the harness is damaged, replace it.
5	PCB-ASSY-ADJ1	Replace the PCB-ASSY-ADJ1.
6	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.

### 5.5.51 System Error 3020: RSM-PTG FIFO Connection Error

#### <Description>

A connection error occurred with the carriage cable (FFC) connected to the PCB-ASSY-IPB5-100.

This error occurs if the printer is unable to perform the write test successfully on the FIFO between PCB-ASSY-IPB5-100(RSM) and PCB-ASSY-HCB1M(PTG).

This error is detected during the printer's operation.

#### <Faulty part>

- (1) PCB-ASSY-HCB1M
- (2) PCB-ASSY-IPB5-100
- (3) Carriage cable: CARRIAGE FFC, MW

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
2	FFC's external damage	Check the following to ensure that the FFC is not damaged. - FFC's terminal is detached from its base. - FFC's edges have not been abraded by friction. If the FFC is damaged, replace it.
3	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
4	Robot cable's connector connection	Reconnect the robot cable on both the PCB-ASSY-HCB1M side and PCB-ASSY-ACT3 side. Before connecting, check that the connector terminals and cable connection part are not disconnected. If a connection failure is found, replace the robot cable.
5	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
6	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
7	FFC	Replace all four FFCs.

### 5.5.52 System Error 3100: Edge Sensor Error

#### <Description>

Though the edge sensor's sensitivity was adjusted, the output voltage is not within the expected range.

#### <Faulty part>

- (1) Media detect and Line sensor OKI Data Infotech
- (2) PCB-ASSY-HCB1M
- (3) Carriage cable (FFC): CARRIAGE FFC, MW
- (4) Robot cable: ROBOT CABLE, MW

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Non-reflecting tape condition on the platen	Check that the tape is not smeared. If it is, softly wipe it with a soft cloth or lint-free paper moistened with wiper cleaning liquid or cap cleaning liquid.
2	SENSOR(EDGE)MAINTENANCE	Check that the harness connector condition is proper as follows. <ul style="list-style-type: none"> <li>- The connectors are connected securely.</li> <li>- The cable is not disconnected.</li> <li>- The harness is not pinched by other parts.</li> <li>- The cable jacket is not damaged.</li> </ul> Check that the sensor is fixed securely. Remove the sensor, softly wipe it with a soft cloth or lint-free paper moistened with ethanol, and re-connect it. If the error persists, replace the sensor.
3	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
4	FFC's external damage	Check the following to ensure that the FFC is not damaged. <ul style="list-style-type: none"> <li>- FFC's terminal is detached from its base.</li> <li>- FFC's edges have not been abraded by friction.</li> </ul> If the FFC is damaged, replace it.
5	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
6	Robot cable's connector connection	Reconnect the robot cable on both the PCB-ASSY-HCB1M side and PCB-ASSY-ACT3 side. Before connecting, check that the connector terminals and cable connection part are not disconnected. If a connection failure is found, replace the robot cable.
7	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
8	FFC	Replace all four FFCs.
9	Robot cable	Replace the robot cable.

### 5.5.53 System Error 3140: Head Cooling Fan Error

#### <Description>

The print head cooling fan has been rotating for a specified period, but the print head temperature did not decrease.

#### <Faulty part>

- (1) COOLING FAN, MW (print head cooling fan)
- (2) PCB-ASSY-HCB1M
- (3) Carriage cable (FFC)
- (4) Robot cable
- (5) CABLE(CarriageFan)-ASSY(MW)

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Ambient temperature	Check that the ambient temperature is within the operating temperature range.
2	COOLING FAN, MW (print head cooling fan)	Enter the <b>ACTUATORS</b> menu in the maintenance mode, operate the print head cooling fan, and check that the fans operate. If any fan does not operate, check that the harness condition of the defective fan is proper as follows. - The connectors are connected securely. - The cable is not disconnected. - The harness is not pinched by other parts. - The cable jacket is not damaged. If no problem is found with the harness, replace the fans.
3	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
4	FFC's external damage	Check the following to ensure that the FFC is not damaged. - FFC's terminal is detached from its base. - FFC's edges have not been abraded by friction. If the FFC is damaged, replace it.
5	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
6	Robot cable's connector connection	Reconnect the robot cable on both the PCB-ASSY-HCB1M side and PCB-ASSY-ACT3 side. Before connecting, check that the connector terminals and cable connection part are not disconnected. If a connection failure is found, replace the robot cable.
7	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
8	FFC	Replace all four FFCs.
9	Robot cable	Replace the robot cable.
10	CABLE(CarriageFan)-ASSY(MW)	Replace the CABLE(CarriageFan)-ASSY(MW).

### 5.5.54 System Error 320X: Head Drive Voltage Error

#### <Description>

The head drive voltage is not the expected voltage.

X	Print Head No.
0	Print head 1
1	Print head 2
2	Print head 3
3	Print head 4
4	Print head 5
5	Print head 6
6	Print head 7

#### <Faulty part>

- (1) HEAD CABLE, MW
- (2) PCB-ASSY-HCB1M
- (3) PCB-ASSY-IPB5-100
- (4) Carriage cable (FFC): CARRIAGE FFC, MW
- (5) Robot cable: ROBOT CABLE, MW
- (6) INKJET HEAD,MW (print head)

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

#### Note:

For this error, be sure to perform the actions 1 to 5.

No	Items to be Checked	Action
1	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
2	FFC's external damage	Check the following to ensure that the FFC is not damaged. - FFC's terminal is detached from its base. - FFC's edges have not been abraded by friction. If the FFC is damaged, replace it.
3	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
4	Robot cable's connector connection	Reconnect the robot cable on both the PCB-ASSY-HCB1M side and PCB-ASSY-ACT3 side. Before connecting, check that the connector terminals and cable connection part are not disconnected. If a connection failure is found, replace the robot cable.

No	Items to be Checked	Action
5	The unit connected to the PCB-ASSY-HCB1M	(1) Check that the print head cable jacket is not damaged. If damaged, replace it. (2) If not damaged, reconnect it and restart the printer. (3) If the problem persists, replace the cable of the faulty print head with one of a print head operating normally. If the error number changes, the faulty part is the print head cable so replace it. (4) Connect the print head cable to another print head. If the error number changes for the newly connected print head, check the other items to be checked below. * The print head cable for the seventh print head is used only for 7-color printers.
6	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
7	INKJET HEAD,MW (print head)	Replace the defective print head.
8	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
9	FFC	Replace all four FFCs.
10	Robot cable	Replace the robot cable.

### 5.5.55 System Error 330X: No Head

#### <Description>

Could not detect the connection with the print head.

X	Print Head No.
1	Print head 1
2	Print head 2
3	Print head 3
4	Print head 4
5	Print head 5
6	Print head 6
7	Print head 7

#### <Faulty part>

- (1) PCB-ASSY-HCB1M
- (2) HEAD CABLE, MW (print head cable)
- (3) INKJET HEAD,MW (print head)
- (4) Carriage cable (FFC): CARRIAGE FFC, MW
- (5) Robot cable: ROBOT CABLE, MW

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

#### Note:

For this error, be sure to perform the actions 1 to 5.

No	Items to be Checked	Action
1	The unit connected to the PCB-ASSY-HCB1M	<ol style="list-style-type: none"> <li>(1) Check that the print head cable jacket is not damaged. If damaged, replace it.</li> <li>(2) If not damaged, reconnect it and restart the printer.</li> <li>(3) If the problem persists, replace the cable of the faulty print head with one of a print head operating normally. If the error number changes, the faulty part is the print head cable so replace it.</li> <li>(4) Connect the print head cable to another print head. If the error number changes for the newly connected print head, check the other items to be checked below.</li> </ol> <p>* The print head cable for the seventh print head is used only for 7-color printers.</p>
2	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
3	FFC's external damage	<p>Check the following to ensure that the FFC is not damaged.</p> <ul style="list-style-type: none"> <li>- FFC's terminal is detached from its base.</li> <li>- FFC's edges have not been abraded by friction.</li> </ul> <p>If the FFC is damaged, replace it.</p>

## Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

No	Items to be Checked	Action
4	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
5	Robot cable's connector connection	Reconnect the robot cable on both the PCB-ASSY-HCB1M side and PCB-ASSY-ACT3 side. Before connecting, check that the connector terminals and cable connection part are not disconnected. If a connection failure is found, replace the robot cable.
6	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
7	INKJET HEAD,MW (print head)	Replace the defective print head.
8	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
9	FFC	Replace all four FFCs.
10	Robot cable	Replace the robot cable.

### 5.5.56 System Error 340X: Head Information Error

#### <Description>

An error has been detected in the print head information.

X	Print Head No.
1	Print head 1
2	Print head 2
3	Print head 3
4	Print head 4
5	Print head 5
6	Print head 6
7	Print head 7

#### <Faulty part>

- (1) PCB-ASSY-HCB1M
- (2) HEAD CABLE, MW (print head cable)
- (3) INKJET HEAD,MW (print head)
- (4) Carriage cable (FFC): CARRIAGE FFC, MW
- (5) Robot cable: ROBOT CABLE, MW

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

#### Note:

For this error, be sure to perform the actions 1 to 5.

No	Items to be Checked	Action
1	The unit connected to the PCB-ASSY-HCB1M	<ol style="list-style-type: none"> <li>(1) Check that the print head cable jacket is not damaged. If damaged, replace it.</li> <li>(2) If not damaged, reconnect it and restart the printer.</li> <li>(3) If the problem persists, replace the cable of the faulty print head with one of a print head operating normally. If the error number changes, the faulty part is the print head cable so replace it.</li> <li>(4) Connect the print head cable to another print head. If the error number changes for the newly connected print head, check the other items to be checked below.</li> </ol> <p>* The print head cable for the seventh print head is used only for 7-color printers.</p>
2	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
3	FFC's external damage	<p>Check the following to ensure that the FFC is not damaged.</p> <ul style="list-style-type: none"> <li>- FFC's terminal is detached from its base.</li> <li>- FFC's edges have not been abraded by friction.</li> </ul> <p>If the FFC is damaged, replace it.</p>

## Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

No	Items to be Checked	Action
4	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
5	Robot cable's connector connection	Reconnect the robot cable on both the PCB-ASSY-HCB1M side and PCB-ASSY-ACT3 side. Before connecting, check that the connector terminals and cable connection part are not disconnected. If a connection failure is found, replace the robot cable.
6	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
7	INKJET HEAD,MW (print head)	Replace the defective print head.
8	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
9	FFC	Replace all four FFCs.
10	Robot cable	Replace the robot cable.

### 5.5.57 System Error 350X: Head Thermistor Error

#### <Description>

The print head thermistor's value is:

- -15°C or less; or
- 95°C or more

The following shows the correspondence between number X and the print head numbers.

X	Print Head No.
1	Print head 1
2	Print head 2
3	Print head 3
4	Print head 4
5	Print head 5
6	Print head 6
7	Print head 7

#### <Faulty part>

- (1) HEAD CABLE, MW (print head cable)
- (2) PCB-ASSY-HCB1M
- (3) INKJET HEAD,MW (print head)
- (4) Carriage cable (FFC): CARRIAGE FFC, MW
- (5) Robot cable: ROBOT CABLE, MW

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

#### Note:

For this error, be sure to perform the actions 1 to 5.

No	Items to be Checked	Action
1	The unit connected to the PCB-ASSY-HCB1M	<ol style="list-style-type: none"> <li>(1) Check that the print head cable jacket is not damaged. If damaged, replace it.</li> <li>(2) If not damaged, reconnect it and restart the printer.</li> <li>(3) If the problem persists, replace the cable of the faulty print head with one of a print head operating normally. If the error number changes, the faulty part is the print head cable so replace it.</li> <li>(4) Connect the print head cable to another print head. If the error number changes for the newly connected print head, check the other items to be checked below.</li> </ol> <p>* The print head cable for the seventh print head is used only for 7-color printers.</p>

No	Items to be Checked	Action
2	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
3	FFC's external damage	Check the following to ensure that the FFC is not damaged. - FFC's terminal is detached from its base. - FFC's edges have not been abraded by friction. If the FFC is damaged, replace it.
4	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
5	Robot cable's connector connection	Reconnect the robot cable on both the PCB-ASSY-HCB1M side and PCB-ASSY-ACT3 side. Before connecting, check that the connector terminals and cable connection part are not disconnected. If a connection failure is found, replace the robot cable.
6	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
7	INKJET HEAD,MW (print head)	Replace the defective print head.
8	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
9	FFC	Replace all four FFCs.
10	Robot cable	Replace the robot cable.

### 5.5.58 System Error 360X: Head Heater Error (High Temperature)

#### <Description>

The thermistor for the print head heater temperature detected a temperature exceeding 45°C.

X	Print Head No.
0	Print head 1
1	Print head 2
2	Print head 3
3	Print head 4
4	Print head 5
5	Print head 6
6	Print head 7

#### <Faulty part>

- (1) HEAD CABLE, MW (print head cable)
- (2) PCB-ASSY-HCB1M
- (3) INKJET HEAD,MW (print head)
- (4) Carriage cable (FFC): CARRIAGE FFC, MW
- (5) Robot cable: ROBOT CABLE, MW
- (6) COOLING FAN, MW

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

#### Note:

For this error, be sure to perform the actions 1 to 7.

No	Items to be Checked	Action
1	Ambient temperature	Check that the ambient temperature is within the operating temperature range.
2	COOLING FAN, MW (print head cooling fan)	<p>Enter the <b>ACTUATORS</b> menu in the maintenance mode, operate the print head cooling fan, and check that the fans operate.</p> <p>If any fan do not operate, check that the harness condition of the defective fan is proper as follows.</p> <ul style="list-style-type: none"> <li>- The connectors are connected securely.</li> <li>- The cable is not disconnected.</li> <li>- The harness is not pinched by other parts.</li> <li>- The cable jacket is not damaged.</li> </ul> <p>If no problem is found with the harness, replace the fans.</p>

No	Items to be Checked	Action
3	The unit connected to the PCB-ASSY-HCB1M	(1) Check that the print head cable jacket is not damaged. If damaged, replace it. (2) If not damaged, reconnect it and restart the printer. (3) If the problem persists, replace the cable of the faulty print head with one of a print head operating normally. If the error number changes, the faulty part is the print head cable so replace it. (4) Connect the print head cable to another print head. If the error number changes for the newly connected print head, check the other items to be checked below. * The print head cable for the seventh print head is used only for 7-color printers.
4	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
5	FFC's external damage	Check the following to ensure that the FFC is not damaged. - FFC's terminal is detached from its base. - FFC's edges have not been abraded by friction. If the FFC is damaged, replace it.
6	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
7	Robot cable's connector connection	Reconnect the robot cable on both the PCB-ASSY-HCB1M side and PCB-ASSY-ACT3 side. Before connecting, check that the connector terminals and cable connection part are not disconnected. If a connection failure is found, replace the robot cable.
8	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
9	INKJET HEAD,MW (print head)	Replace the defective print head.
10	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
11	FFC	Replace all four FFCs.
12	Robot cable	Replace the robot cable.

### 5.5.59 System Error 361X: Head Heater Error (Target Temperature Not Reached)

#### <Description>

The print head did not reach the specified temperature in 15 minutes after the control panel shows **PREHEATING** or **PH WARMING UP**.

X	Print Head No.
0	Print head 1
1	Print head 2
2	Print head 3
3	Print head 4
4	Print head 5
5	Print head 6
6	Print head 7

#### <Faulty part>

- (1) HEAD CABLE, MW (print head cable)
- (2) PCB-ASSY-HCB1M
- (3) INKJET HEAD,MW (print head)

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

#### Note:

For this error, be sure to perform the actions 1 to 6.

No	Items to be Checked	Action
1	Ambient temperature	Check that the ambient temperature is within the operating temperature range.
2	The unit connected to the PCB-ASSY-HCB1M	<ol style="list-style-type: none"> <li>(1) Check that the print head cable jacket is not damaged. If damaged, replace it.</li> <li>(2) If not damaged, reconnect it and restart the printer.</li> <li>(3) If the problem persists, replace the cable of the faulty print head with one of a print head operating normally. If the error number changes, the faulty part is the print head cable so replace it.</li> <li>(4) Connect the print head cable to another print head. If the error number changes for the newly connected print head, check the other items to be checked below.</li> </ol> <p>* The print head cable for the seventh print head is used only for 7-color printers.</p>
3	The width of the V-shaped folded part on the PCB-ASSY-HCB1M-side FFC	Check that the width of the V-shaped folded part on the FFC is proper. If not, adjust it. For the adjustment procedure, see <b>6.8.4 PCB-ASSY-HCB1M</b> .
4	FFC's external damage	<p>Check the following to ensure that the FFC is not damaged.</p> <ul style="list-style-type: none"> <li>- FFC's terminal is detached from its base.</li> <li>- FFC's edges have not been abraded by friction.</li> </ul> <p>If the FFC is damaged, replace it.</p>

## Chapter 5 Troubleshooting (Engine Section and USB Controller Section)

No	Items to be Checked	Action
5	FFC's connector connection	Reconnect the FFC on both the PCB-ASSY-HCB1M side and the PCB-ASSY-IPB5-100 side. If the cable terminals are smeared, softly wipe them with a soft cloth or lint-free paper dampened with ethanol before connecting them.
6	Robot cable's connector connection	Reconnect the robot cable on both the PCB-ASSY-HCB1M side and PCB-ASSY-ACT3 side. Before connecting, check that the connector terminals and cable connection part are not disconnected. If a connection failure is found, replace the robot cable.
7	PCB-ASSY-HCB1M	Replace the PCB-ASSY-HCB1M.
8	INKJET HEAD,MW (print head)	Replace the defective print head.
9	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.
10	FFC	Replace all four FFCs.
11	Robot cable	Replace the robot cable.

### 5.5.60 System Error 4XXX and 5XXX: Firmware Internal Error

<Description>

A firmware internal error occurred.

<Faulty part>

- (1) Firmware
- (2) PCB-ASSY-IPB5-100

<Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

## 5.6 If No Error Message Appears

### 5.6.1 Nothing is displayed

#### <Description>

Normally the message **Booting up...** appears when initializing the system program. An error has occurred if this message is not displayed.

#### <Faulty part>

- (1) PANEL, MW (operation panel)
- (2) PCB-ASSY-IPB5-100
- (3) Panel cable: CABLE(PANEL)-ASSY(MW)
- (4) CABLE(ACT-IPB-IF)-ASSY(MW)

#### <Action>

Check the **Items to be Checked** on the table below, and perform the actions starting from the top until the problem is solved.

No	Items to be Checked	Action
1	Firmware	Upgrade the firmware to the latest version.
2	CABLE(ACT-IPB-IF)-ASSY(MW)	Check the harness condition and that the connectors are connected securely.
3	Panel cable's harness condition	Check that the harness condition is proper as follows. <ul style="list-style-type: none"> <li>- The connectors are connected securely.</li> <li>- The cable is not disconnected.</li> <li>- The harness is not pinched by other parts.</li> <li>- The cable jacket is not damaged.</li> </ul> If the harness is damaged, replace it.
4	PANEL, MW (operation panel)	Replace the PANEL, MW.
5	PCB-ASSY-IPB5-100	Replace the PCB-ASSY-IPB5-100.

## 5.7 Updating the Firmware

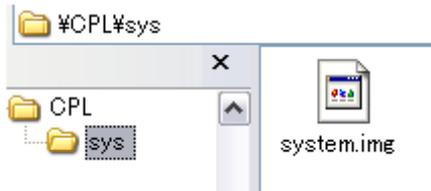
### 5.7.1 Create an USB drive for updating the firmware

Create an USB drive for update by writing the system file on it.

#### <Procedure>

- (1) Create a folder with the name **CPL** on the USB drive root directory.
- (2) Create a subfolder with the name **sys** in the CPL folder.
- (3) Copy the system image file **system.img** in the **sys** folder.

#### <File tree in the USB drive>

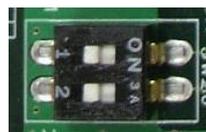
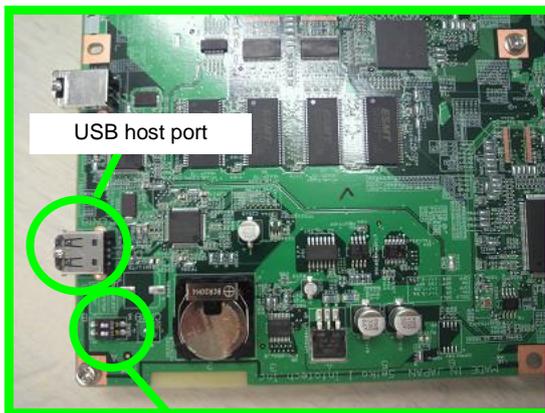
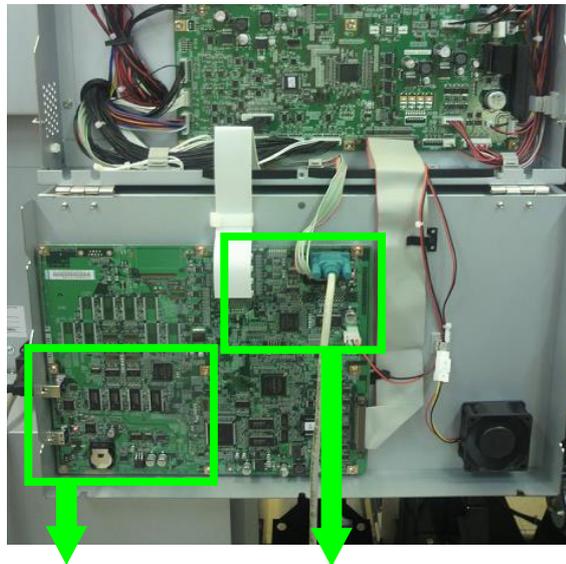


### 5.7.2 Updating with the USB drive

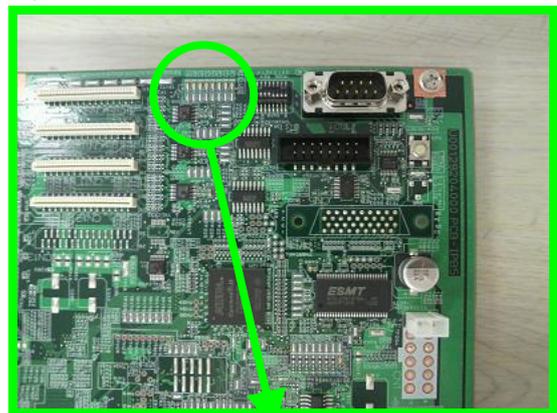
This function is provided in the boot program.

The procedure is as follows.

- (1) Turn the printer off.
- (2) Loosen the seven screws of the electric box and open the box. Then insert the USB drive for updating the version into the USB host port of the PCB-ASSY-IPB5-100 board.



DIP switches



LED(s) [BTC-LED]

- (3) Set the DIP switches 1 and 2 below the USB host port to ON.

DIP switch 1 ON: Update the system program.

DIP switch 2 ON: Update the boot program.

**Note:**

When both the DIP switches 1 and 2 are set to ON simultaneously, first the system program is updated, and then the boot program is updated.

- (4) Turn the printer on.

**Note:**

For the operation panel messages during the updating operation, see the description on the next page.

- (5) Turn the printer off after updating the firmware.  
(6) Set both DIP switches 1 and 2 to OFF.  
(7) Remove the USB drive, close the power box, and tighten the seven screws.  
(8) Turn the printer on.

The update progress can be checked with the operation panel and the PCB-ASSY-IPB5-100 LED(s) [BTC-LED].

**Notes:**

- (a) During the updating operation, do not cut off the printer power.  
(b) The time required to update the system program is approx. 2 minutes.  
(c) The time required to update the boot program is approx. 1 minute.

<System program update messages>

Operation panel	LED status
<p>READING SYSTEM XXX/128</p> <p>XXX: Counter for data processing</p>	[BTC-LED]: ALL OFF (light out)
<p>READING SYSTEM DONE</p>	[BTC-LED]: ALL OFF (light out)
<p>UPGRADING SYSTEM ERASING XXX/127</p> <p>XXX: Counter for data processing</p>	[BTC-LED]: Counter for data processing
<p>UPGRADING SYSTEM VERIFYING XXX/127</p> <p>XXX : Counter for data processing</p>	[BTC-LED] : Counter for data processing
<p>UPGRADING SYSTEM WRITING XXX/127</p> <p>XXX: Counter for data processing</p>	[BTC-LED]: Counter for data processing
<p>UPGRADING SYSTEM VERIFYING XXX/127</p> <p>XXX: Counter for data processing</p>	[BTC-LED]: Counter for data processing
<p>SYSTEM IS VALID RESTART</p>	<p>[BTC-LED]: [0]-[6] = ON (lit) [7] = OFF (light out)</p>

<Boot program update messages>

Operation panel	LED status
<p>READING SYSTEM XXX/128</p> <p>XXX: Counter for data processing</p>	[BTC-LED]: ALL OFF (light out)
<p>READING SYSTEM DONE</p>	[BTC-LED]: ALL OFF (light out)
<p>UPGRADING BOOT ERASING XX/08</p> <p>XX: Counter for data processing</p>	[BTC-LED]: Counter for data processing
<p>UPGRADING BOOT VERIFYING XX/08</p> <p>XX: Counter for data processing</p>	[BTC-LED]: Counter for data processing
<p>UPGRADING BOOT WRITING XX/08</p> <p>XX: Counter for data processing</p>	[BTC-LED]: Counter for data processing
<p>UPGRADING BOOT VERIFYING XX/08</p> <p>XX: Counter for data processing</p>	[BTC-LED]: Counter for data processing
<p>SYSTEM IS VALID RESTART</p>	<p>[BTC-LED]: [0]-[2] = OFF (light out) [3] = ON (lit) [4]-[7] =OFF (light out)</p>

**<Error messages>**

If one of the following errors occurs, the process cannot be continued.

**Operation panel**

USB memory detection error

UPGRADING  
USB DETECT ERROR

Memory reservation error

UPGRADING  
MEMORY ALLOC ERROR

File read error

UPGRADING  
FILE READ ERROR

File format error

UPGRADING  
ILLEGAL FILE ERROR

Sum error

UPGRADING  
SUM ERROR

Erase error

UPGRADING  
ERASE ERROR

Write error

UPGRADING  
WRITE ERROR

Erase verification error

UPGRADING  
ERASE VERIFY ERROR

Write verification error

UPGRADING  
WRITE VERIFY ERROR

### 5.7.3 Online updating the firmware

The firmware is online updated when the printer is idle in online.

To online update the firmware, use the online update tool.

Before starting online updating the firmware, check that the printer's operation panel shows the message below.

Message indicating that the printer is idle in online

PRINTER READY  
01: PAPER/1626mm

When the online update starts, the panel indication changes as follows.

Online update starts.

PREPARING FW UPDATE  
PLEASE WAIT

RECEIVING DATA...  
PLEASE WAIT

RECEPTION COMPLETE

UPDATING FIRMWARE...  
DELETING                      XXX/XXX

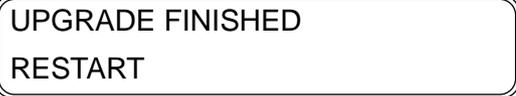
UPDATING FIRMWARE...  
WRITING                        XXX/XXX

UPDATING FIRMWARE...  
VERIFYING                      XXX/XXX

## (1) Panel indication with the firmware updated successfully

When the online update completes successfully, the message below appears

Online update has completed.



UPGRADE FINISHED  
RESTART

After the online update, restart the printer.

The printer is restarting...



Booting up...  
F/W Ver. X.XX\_XX

\* With the firmware version, X. XX\_XX on the message, check that the firmware has been updated correctly.

The printer is initializing...



INITIALIZING..  
PLEASE WAIT

The printer has restarted.



PRINTER READY  
01: PAPER/1626mm

## (2) Panel indication with an error detected

If an error occurs while updating the firmware, the message below appears.

An error has occurred.



UPDATE FAILED                      XXXX  
RESTART PRINTER

XXXX: Error code

Error Codes	Description
0002	The data size is too large.
0003	The data size is too small.
0004	The data is not correct.
0005	CRC error
0006	Write error
0007	Verify error
0008	USB cable disconnect error
0009	Protocol error

## 5.8 Settings when Replacing the Engine Board (IPB5)

### (1) When the EEPROM is normal (only the engine board is defective)

When the EEPROM on the current board can be mounted on the new board, perform the following steps.

- (a) Remove the EEPROM from the current board and mount it on the new engine board, and then replace the engine board.
  - If necessary, rewrite the engine firmware program.
- (b) Turn the printer on.
- (c) Perform the following in the **SYSTEM** menu in the maintenance mode on the operation panel.
  - **SAVE DEFAULT SET.:** Saves EEPROM data in the factory default setting area of the flash memory.
  - **SAVE PRINTER SET.:** Saves EEPROM data in the backup area of the flash memory. For the workflow and management of engine's system information saved in the EEPROM or flash memory, see **3.7 Management of System Information.**

### (2) When replacing the EEPROM (only the EEPROM is defective)

To mount a new EEPROM on the current engine board, perform the following steps.

- (a) Mount a new EEPROM on the current engine board.
  - If necessary, rewrite the engine firmware program.
- (b) Turn the printer on.
  - The printer starts up with an EEPROM error (1650) because the EEPROM is not initialized.
  - The EEPROM data is restored from the system backup data on the board during the firmware recovery process.
- (c) Restart the printer.
  - If the EEPROM error 1650 still remains, the backup data is broken. Start the printer in the POC skip mode (CANCEL + power on) and perform **LOAD DEFAULT SET.** in the **SYSTEM** menu.
- (d) Restart the printer.

(3) **When replacing the EEPROM and the engine board (both the EEPROM and engine board are defective)**

When the EEPROM and engine board are replaced at the same time, the followings are lost:

- Mechanical adjustment parameters; and
- Counter data such as accumulated print length

To avoid this, perform the steps (1) or (2) above to acquire the EEPROM data or the data in the flash memory backup area. If the engine's system information is not available, perform the following steps.

(a) Install a new engine board.

- If necessary, rewrite the engine firmware program.

(b) Skip POC and start the printer.

- Press the **CANCEL** button and the **POWER** switch on the operation panel at the same time to start the printer while skipping POC.
- The printer starts up with an EEPROM error because the EEPROM is not initialized, and the panel guidance is displayed in English.

(c) Perform the following in the **SYSTEM** menu in the maintenance mode on the operation panel.

- INITIALIZE EEPROM: Initializes the EEPROM.
- DATE SETTING: Set the year, month, and day.
- TIME SETTING: Set the system time (hour/minute/second).
- SERIAL No.: Set the serial number of the printer.

Select **PRIMED** for **INK SYSTEM STATUS**.

(d) Restart the printer.

(e) Enter the adjustment values for mechanical adjustment and print head adjustment.

<When the parameters are recorded>

- When mechanical adjustment parameters of the engine are recorded, no adjustment is required. Enter the adjustment values for mechanical adjustment and print head adjustment.

<When the parameters are not recorded>

- Perform mechanical adjustment and print head adjustment, and then enter the adjustment values.

## &lt;Adjustment values for mechanical and print head adjustments&gt;

- Correcting the cap position: See section **7.4**.
- CAPPING-UNIT-CV Cam Position Adjustment:
- Adjusting the wiping position: See section **7.5**.
- Nozzle position adjustment: See the **User's Guide**.
- Head position adjustment (main scan direction): See the **User's Guide**.
- Bidirectional adjustment: See the **User's Guide**.
- Media advance adjustment: See the **User's Guide**.
- Sensor adjustment (top): See the **User's Guide**.
- Sensor adjustment (side): See the **User's Guide**.
- Print head R/L adjustment: See the **User's Guide**.

(f) Perform the following in the **SYSTEM** menu in the maintenance mode on the operation panel.

- SAVE DEFAULT SET.: Saves EEPROM data in the factory default setting area of the flash memory.
- SAVE PRINTER SET.: Saves EEPROM data in the backup area of the flash memory.

(g) Restart the printer.

**Notes**

- When replacing the IPB5 board, turn off the power without executing fill cap. Note that the fill cap status in the new IPB5 board is set as not being performed yet.
- After replacing the IPB5 board, update the firmware to the latest version.

## 5.9 About the PCB-ASSY-IPB5-100 Board

### 5.9.1 Lithium battery problem

<Symptom>

Date and time function does not operate properly even after configuring the time zone setting.

<Faulty part>

PCB-ASSY-IPB5-100

<Action>

Replace the PCB-ASSY-IPB5-100.

#### Notes

- Do not replace only the lithium battery, as it may cause an explosion if a different battery type is installed.
- Dispose of the lithium battery according to the local regulations.

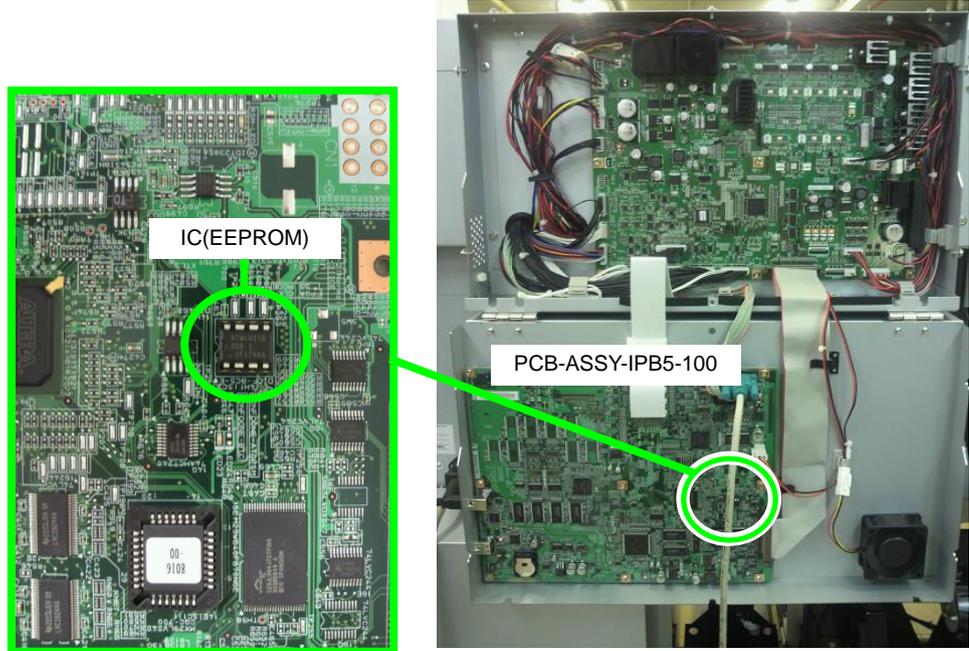
#### Caution

Risk of explosion if battery is replaced by an incorrect type.  
Dispose of used batteries according to the instructions.

## 5.9.2 IC (EEPROM)

### <Removal>

To remove the IC(EEPROM) on the PCB-ASSY-IPB5-100, insert a flat-head precision screwdriver under it.



### Notes

- Confirm that the power has been turned off before replacing the EEPROM.
- Take measures against static electricity.
- Pay attention not to bend the legs of the EEPROM when removing it.
- Pay attention to the position of the pin 1 when installing the EEPROM.
- The indentation on the pin 1 side should be placed on the right side. If the orientation of the EEPROM is wrong, it will break when turning the printer on.
- See **6.7.1 PCB-ASSY-IPB5-100 and PCB-ASSY-ACT3** when replacing the IC(EEPROM).

# Chapter 6 Parts Replacement (Disassembly/Reassembly)

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This chapter explains the procedures for disassembly and reassembly required when replacing parts of the printer.

## 6.1 How to Read Disassembly/Reassembly Procedures

This chapter describes the procedures for replacing parts (disassembly/reassembly) based on the following definitions.

<Removal>: Describes a disassembly procedure.

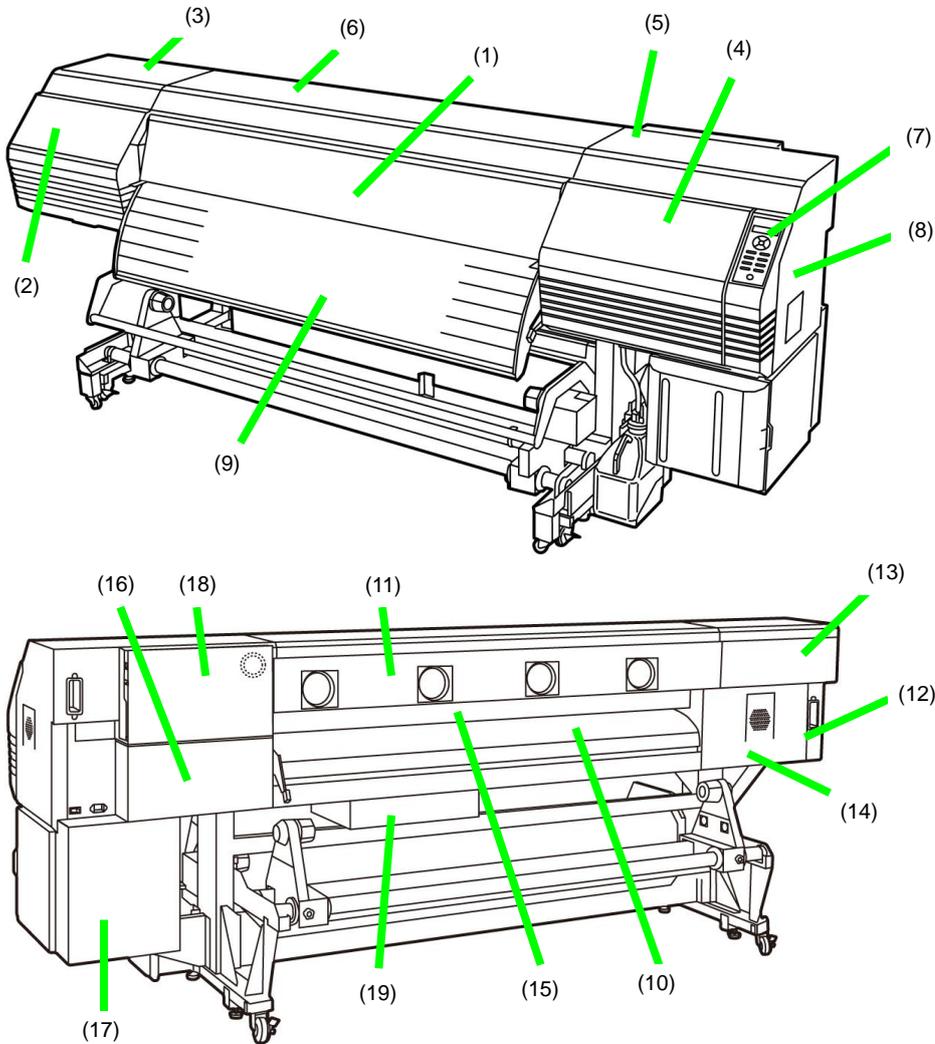
<Assembly>: Describes a reassembly procedure. However, the descriptions of the reassembly procedures are omitted here and only the necessary cautions are described, because the reassembly procedure is usually the exact opposite of the disassembly procedure.

### **Note**

To facilitate the reassembling procedure after replacing parts, check carefully how the device is assembled before starting disassembly.

## 6.2 Part Names

### 6.2.1 Names and layout of parts



- |                                |                            |
|--------------------------------|----------------------------|
| (1) COVER(FRONT)ASSY-MW        | (11) STAY-REAR-FAN-MW      |
| (2) COVER(L)ASSY-MW            | (12) COVER(SIDE-L)-MW      |
| (3) COVER(Y-RAIL)-SL-MW        | (13) STAY(HANDLE-L)-MW     |
| (4) COVER(L)ASSY-MW            | (14) COVER(R-L)-MW         |
| (5) COVER(Y-RAIL)-SR-MW        | (15) COVER(PINCH-D)64-MW   |
| (6) COVER(Y-RAIL)-64-MW        | (16) COVER(SUBTANK)-MW     |
| (7) OP-PANEL-UNIT-MW           | (17) COVER(INKBOX-REAR)-MW |
| (8) COVER(SIDE-R)-MW           | (18) CONTROLLER BOX        |
| (9) PG-DELIVERY(64)-UNIT-MW    | (19) POWER BOX             |
| (10) PAPER-GUIDE-FEEDING64(MW) |                            |

Figure 6.1 Name of each part of the printer exterior

## 6.3 Disassembling and Reassembling Exterior Parts

### 6.3.1 COVER(FRONT)ASSY-MW

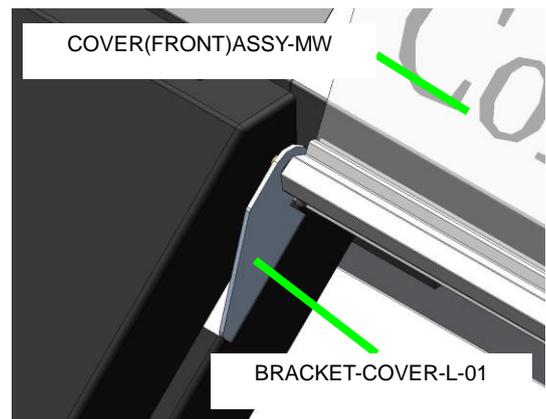
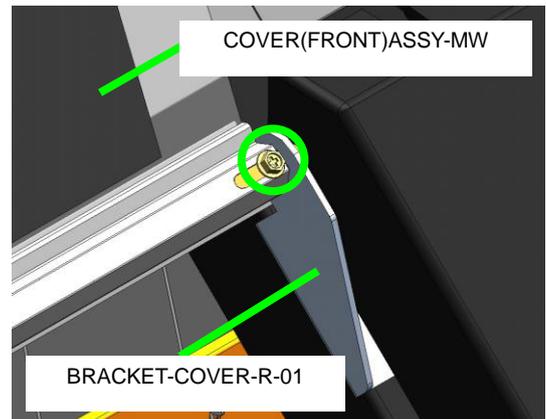
<Removal>

1. Open COVER(FRONT)ASSY-MW and loosen the slide stop screw on the right hinge.
2. Slide the screw to the left, retract the pin, and detach the COVER(FRONT)ASSY-MW slightly from the right the BRACKET-COVER-R-01.

**Note**

Move COVER(FRONT)ASSY-MW slightly to prevent damage to the left hinge.

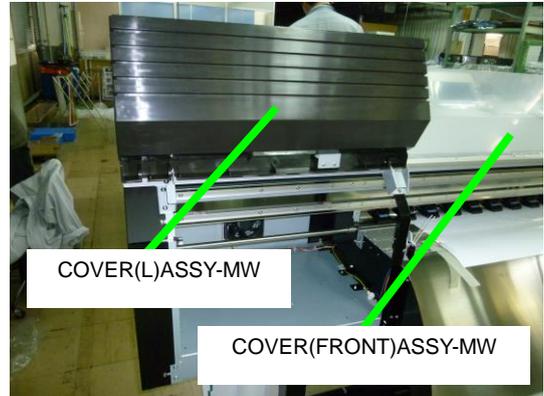
3. Move the COVER(FRONT)ASSY-MW to the right from the left BRACKET-COVER-L-01 to remove it.



### 6.3.2 COVER(L)ASSY-MW, and COVER(R)ASSY-MW

<Removal>

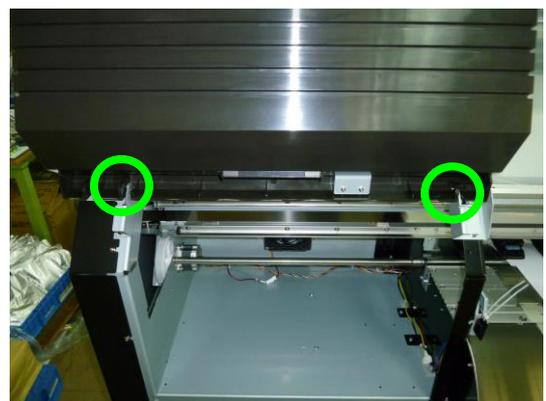
1. Open the COVER(FRONT)ASSY-MW.
2. Open the COVER(L)ASSY-MW (or COVER(R)ASSY-MW).



3. Bend upward the tab on the right hinge.



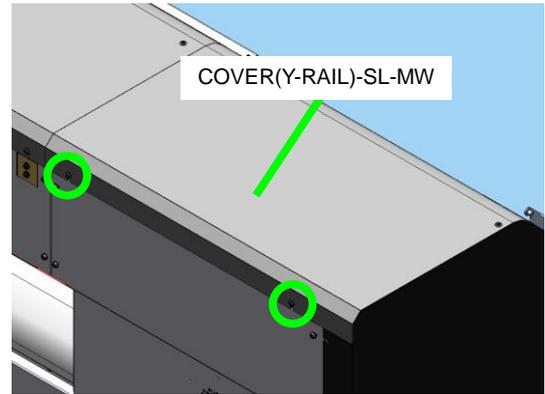
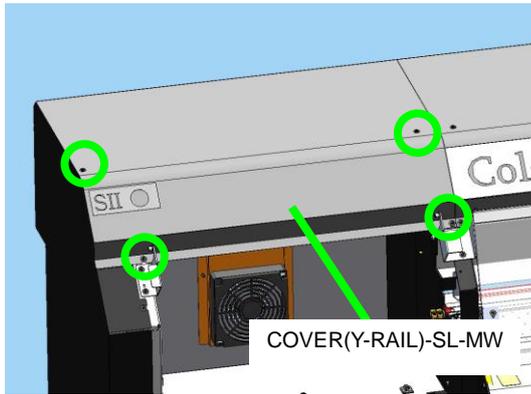
4. Slide the COVER(L)ASSY-MW (or COVER(R)ASSY-MW) to the left, remove the right and left hinges, and remove the cover.



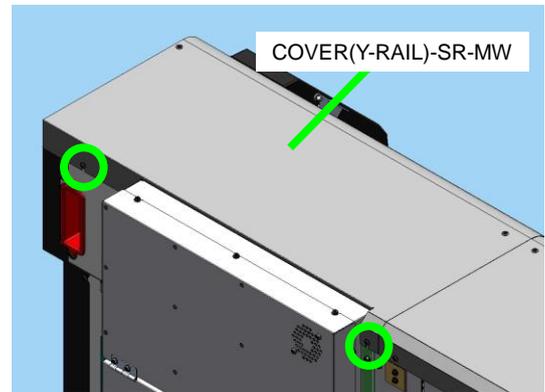
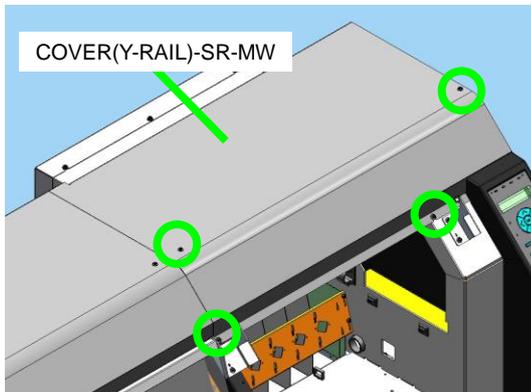
### 6.3.3 COVER(Y-RAIL)-SL-MW, and COVER(Y-RAIL)-SR-MW

<Removal>

1. Remove the COVER(L)ASSY-MW and COVER(R)ASSY-MW (see 6.3.2).
2. COVER(Y-RAIL)-SL-MW :  
Remove the COVER(Y-RAIL)-SL-MW with six fixing screws.



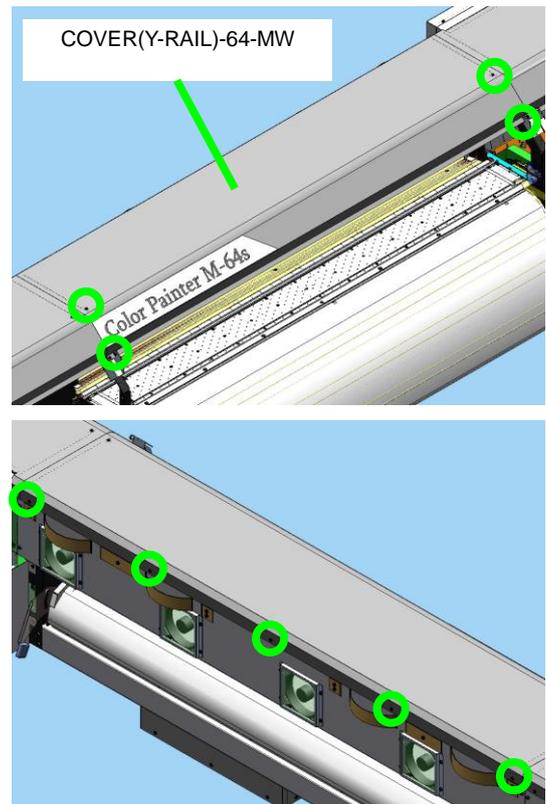
COVER(Y-RAIL)-SR-MW :  
Remove the COVER(Y-RAIL)-SR-MW with six fixing screws.



### 6.3.4 COVER(Y-RAIL)-64-MW

<Removal>

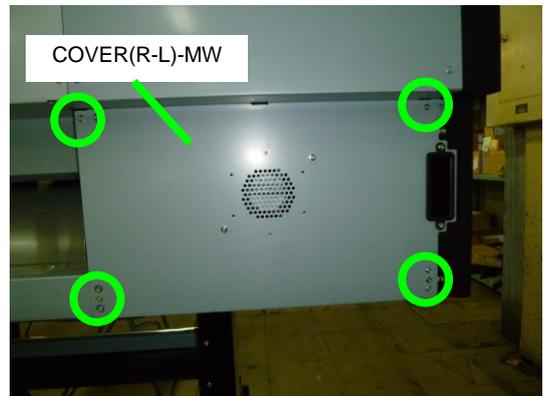
1. Remove the COVER(FRONT)ASSY-MW (see 6.3.1).
2. Remove the COVER(L)ASSY-MW and the COVER(R)ASSY-MW (see 6.3.2).
3. Remove the COVER(Y-RAIL)-64-MW with nine fixing screws.



### 6.3.5 COVER(R-L)-MW

<Removal>

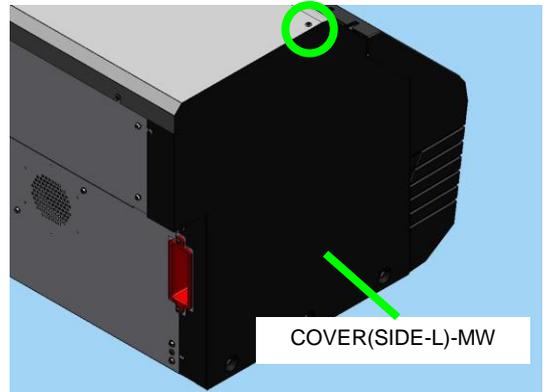
1. Open the COVER(FRONT)ASSY-MW.
2. Open the COVER(L)ASSY-MW and the COVER(R)ASSY-MW.
3. Disconnect the FAN(REAR)ASSY MW connector.
4. Remove the COVER(R-L)-MW with four fixing screws.



### 6.3.6 COVER(SIDE-L)-MW

<Removal>

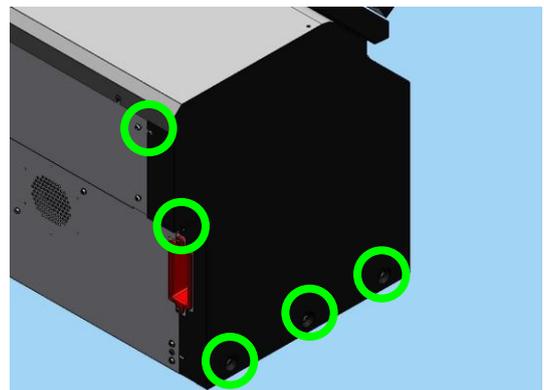
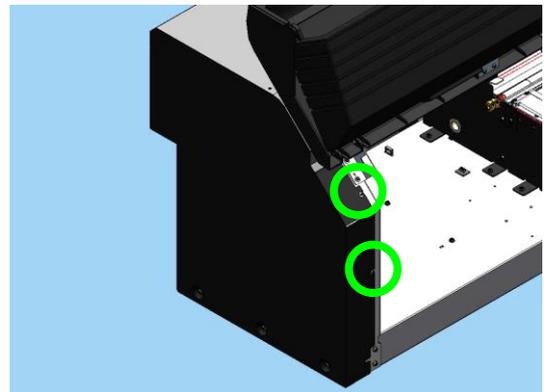
1. Remove the screw securing the COVER(SIDE-L)-MW.
2. Open the COVER(FRONT)ASSY-MW and the COVER(L)ASSY-MW.



3. Remove the COVER(SIDE-L)-MW with seven fixing screws.

**Note**

Remove the COVER(SIDE-L)-MW while holding it with your hand to prevent it from falling.



### 6.3.7 COVER(SIDE-R)-MW

<Removal>

1. Open the COVER(FRONT)ASSY-MW and the COVER(R)ASSY-MW.
2. Disconnect the FAN(REAR)ASSY MW connector on the back of the COVER(SIDE-R)-MW.



3. Remove the COVER(SIDE-R)-MW with eight fixing screws.

**Note**

Remove the COVER(SIDE-R)-MW while holding it with your hand to prevent it from falling.



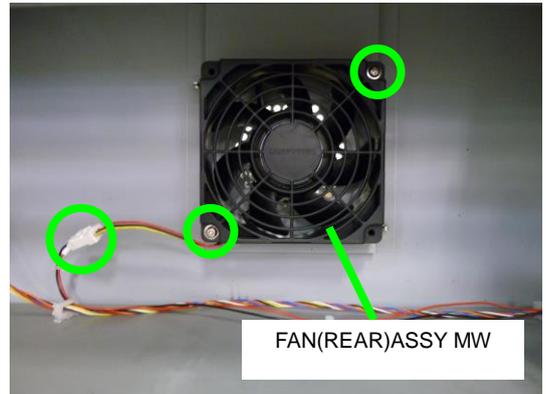
### 6.3.8 FAN(REAR)ASSY MW

<Removal>

1. Open the COVER(FRONT)ASSY-MW and the COVER(L)ASSY-MW.

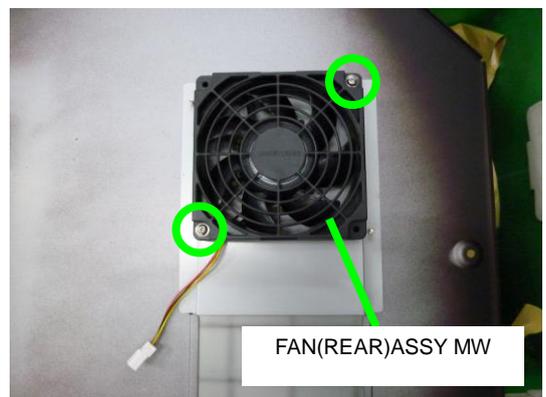


2. Remove the two screws securing the FAN(REAR)ASSY MW, disconnect the connector, and then remove the FAN(REAR)ASSY MW.



3. Remove the COVER(SIDE-R)-MW (see 6.3.7).

4. Remove the FAN(REAR)ASSY MW and two fixing screws.



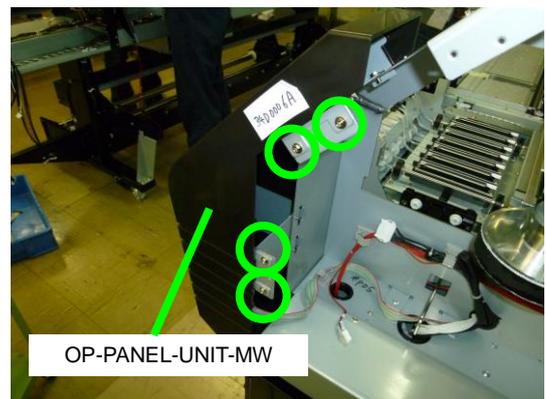
### 6.3.9 OP-PANEL-UNIT-MW

<Removal>

1. Remove the COVER(SIDE-R)-MW (see 6.3.7).
2. Disconnect the connector connected to the PCB-ASSY-MCP4M.



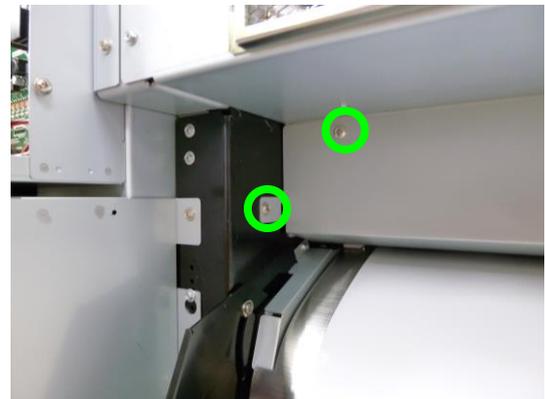
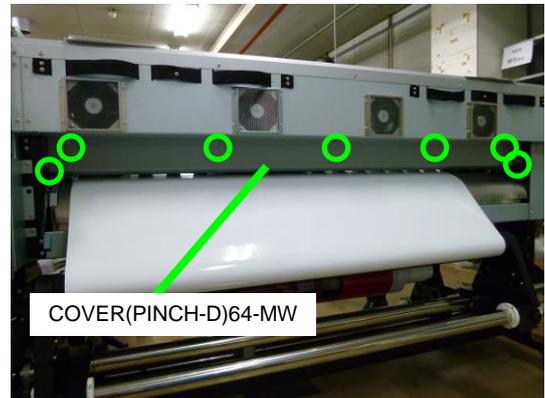
3. Remove the OP-PANEL-UNIT-MW and five fixing screws.



### 6.3.10 COVER(PINCH-D)64-MW

<Removal>

1. Remove the COVER(PINCH-D)64-MW and seven fixing screws.

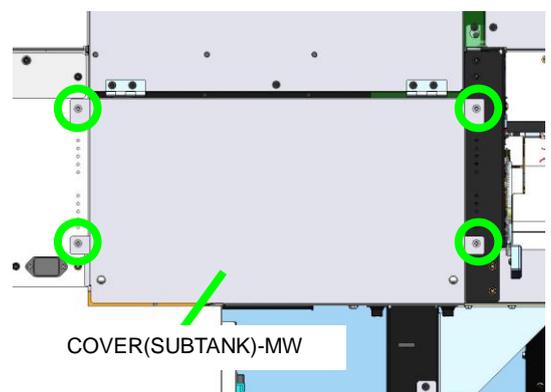


### 6.3.11 COVER(SUBTANK)-MW

<Removal>

1. Remove the COVER(SUBTANK)-MW with four fixing screws.

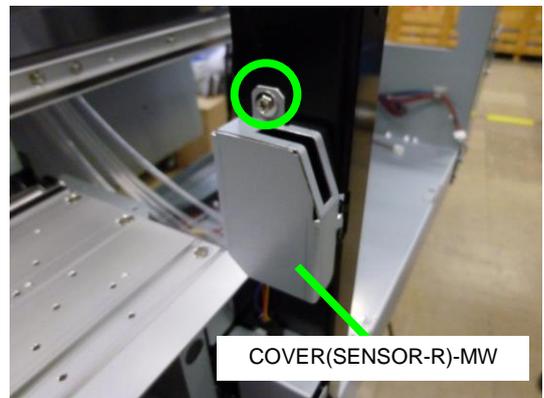
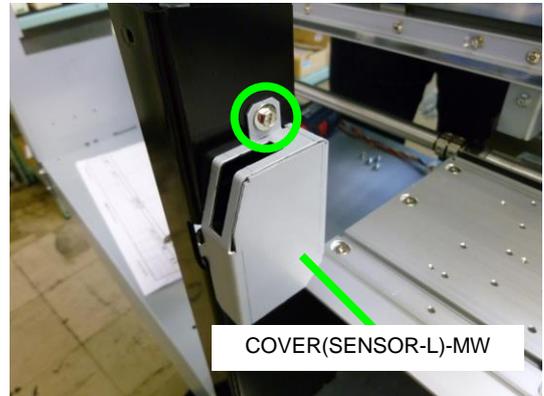
**Note**  
Remove the COVER(SUBTANK)-MW while holding it with your hand to prevent it from falling.



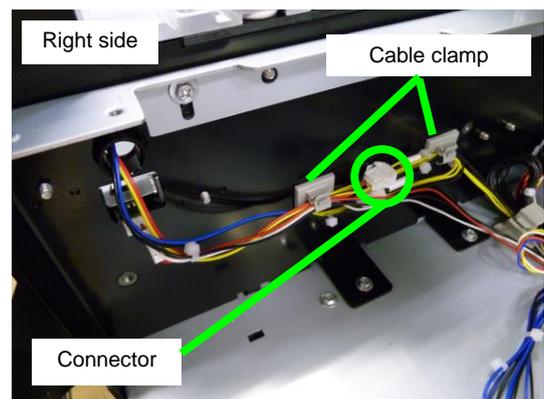
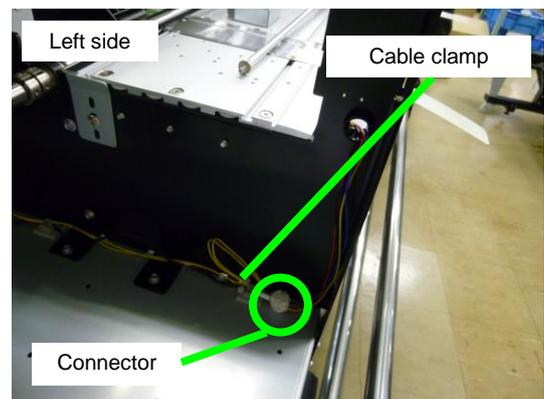
### 6.3.12 SWITCH(Interlock)-ASSY and SWITCH(COVER)-ASSY

<Removal>

1. Open the COVER(FRONT)ASSY-MW, and remove the following:
  - COVER(SENSOR-L)-MW or COVER(SENSOR-R)-MW; and
  - One fixing screw



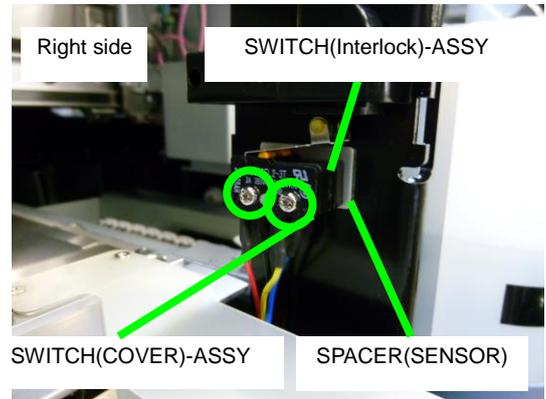
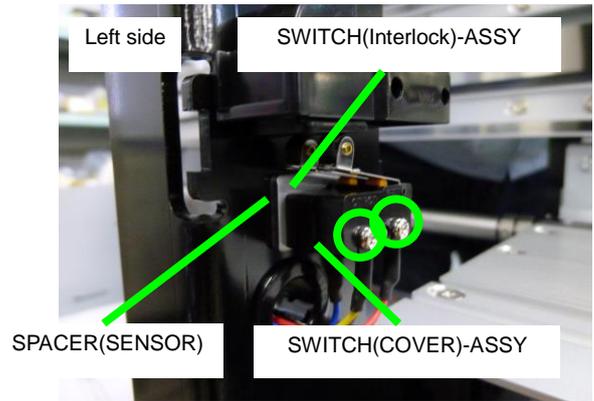
2. Disconnect the connector connecting the SWITCH(Interlock)-ASSY cable with the SWITCH(COVER)-ASSY cable, and remove the cables from the three clamps (one on the left side and two on the right side).



3. Remove the following:
- Two screws securing together the SWITCH(Interlock)-ASSY and the SWITCH(COVER)-ASSY
  - SWITCH(Interlock)-ASSY
  - SWITCH(COVER)-ASSY.

**Note**

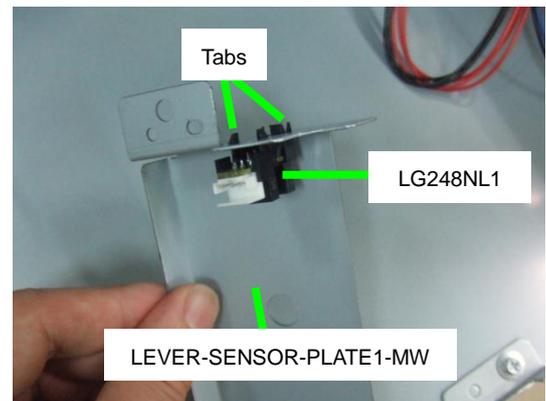
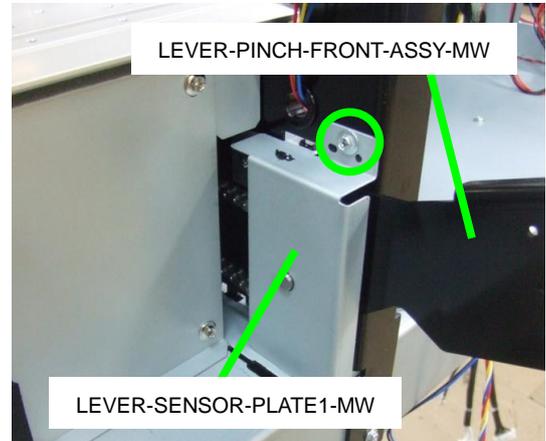
The SPACER(SENSOR) on the back of the SWITCH(Interlock)-ASSY can also be removed, so pay attention not to lose it.



### 6.3.13 Photo sensor LG248NL1

<Removal>

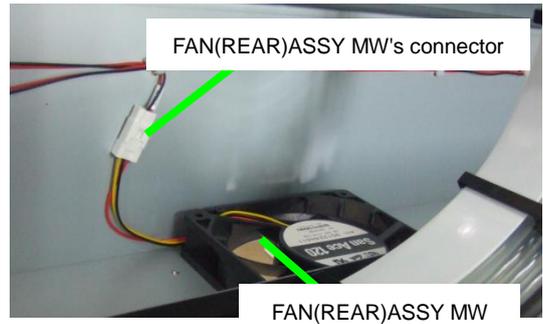
1. Open the COVER(FRONT)ASSY-MW (see 6.3.1), and remove the PAPER-GUIDE-DELIVERY64-MW-ASSY (See 6.14.1).
2. Lower the LEVER-PINCH-FRONT-ASSY-MW.
3. Remove the screw securing the LEVER-SENSOR-PLATE1-MW, disconnect the connector and remove the two tabs fixing the Photo sensor LG248NL1 to the LEVER-SENSOR-PLATE1-MW, and then remove the Photo sensor LG248NL1.



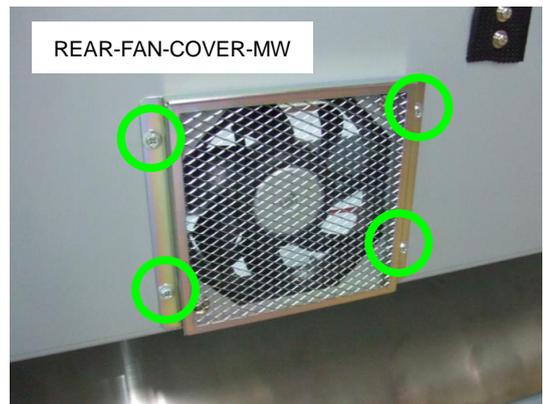
### 6.3.14 FAN(REAR)ASSY MW

<Removal>

1. Remove the COVER(Y-RAIL)-64-MW (see 6.3.4).
2. On the upper rear side of the printer, remove the connector of the FAN(REAR)ASSY MW to be removed.



3. On the rear side of the printer, remove the REAR-FAN-COVER-MW with four fixing screws.

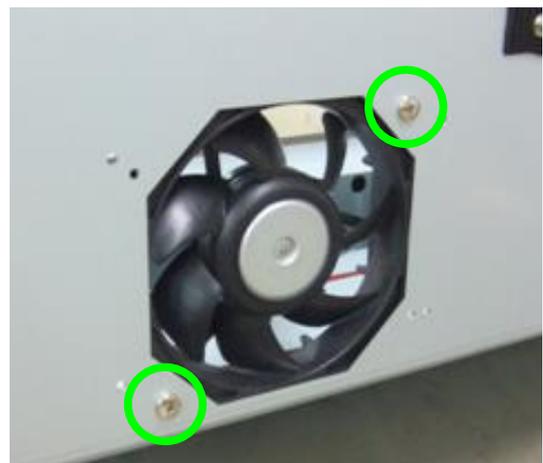


4. Remove the two screws securing each FAN(REAR)ASSY MW (eight screws in total).

**Note for installation**

Orient the fans so that:

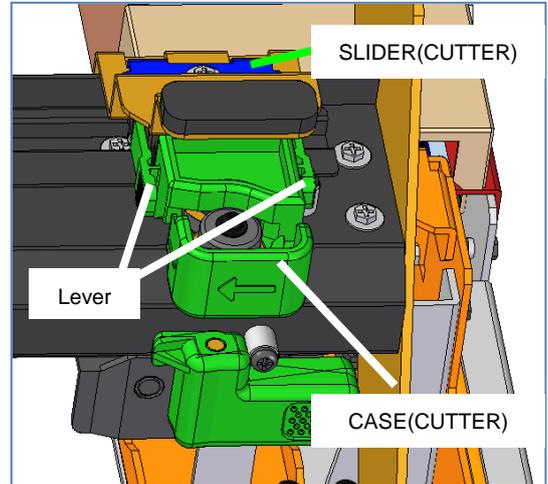
- The air flows from the outside to the inside of the printer; and
- The nameplate faces the inside of the printer.



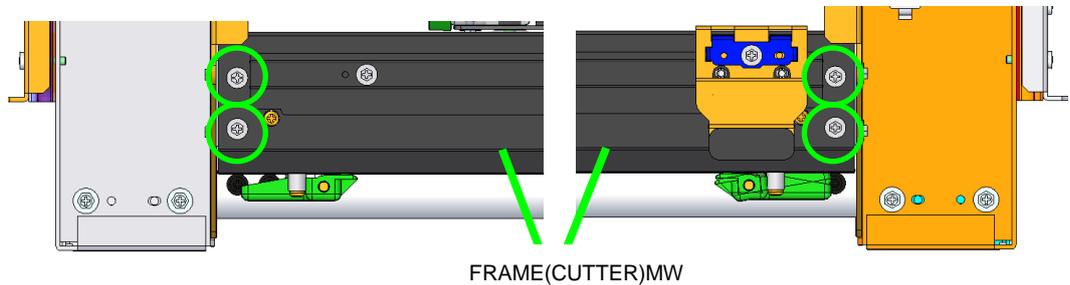
### 6.3.15 CASE(CUTTER) and SLIDER(CUTTER)

<Removal>

1. Grab the levers on both sides of the CASE(CUTTER), and remove the CASE(CUTTER) from the SLIDER(CUTTER).



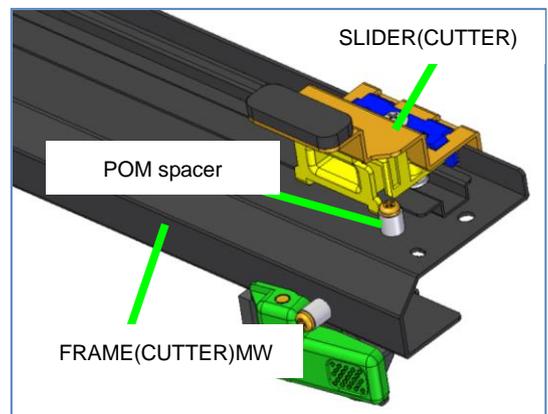
2. Remove the FRAME(CUTTER)MW with four fixing screws (two screws on each side).



3. From the FRAME(CUTTER)MW, remove the POM spacer and one fixing screw.

**Note**

One POM spacer is fixed on the printer's right and left (total of two), and either of the two will be removed. The right figure shows the POM spacer with one fixing screw taking the right-side ones as example.



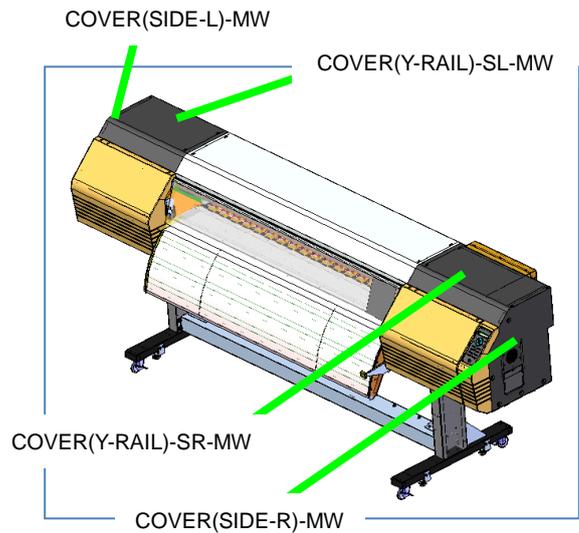
4. Slide the SLIDER(CUTTER) to remove it from the FRAME(CUTTER)MW.

## 6.4 Disassembling and Reassembling the Y Driver

### 6.4.1 Y DRIVE MOTOR and DRIVING PULLEY

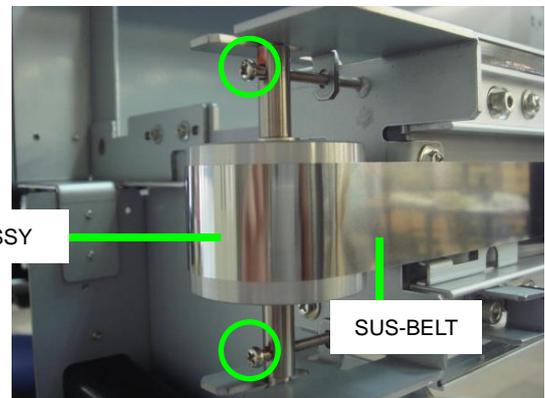
<Removal>

1. Remove the following parts.
  - COVER(Y-RAIL)-SL-MW (see 6.3.2)
  - COVER(Y-RAIL)-SR-MW (see 6.3.3)
  - COVER(SIDE-L)-MW (see 6.3.6)
  - COVER(SIDE-R)-MW (see 6.3.7)

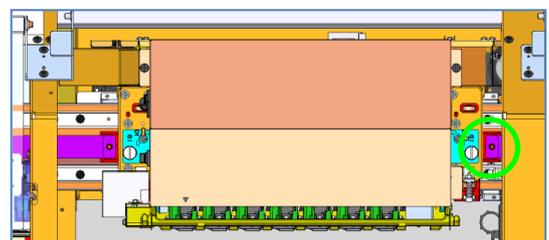


2. Turn the two screws on the Y-TENSION-PULLEY-ASSY to loosen the SUS-BELT.

Y-TENSION-PULLEY-ASSY



3. Remove the screw on the right side of the carriage part that fixes the SUS-BELT, and remove the SUS-BELT from the protruding part of the carriage.

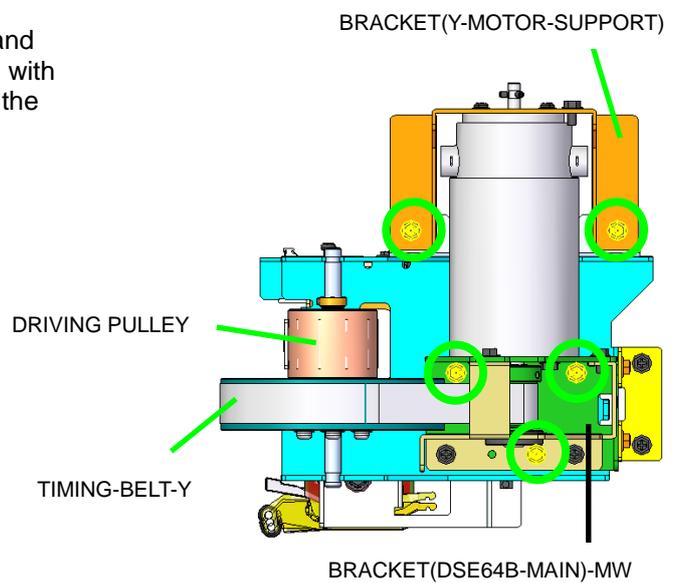


4. Disconnect the two connectors connected to the motor.

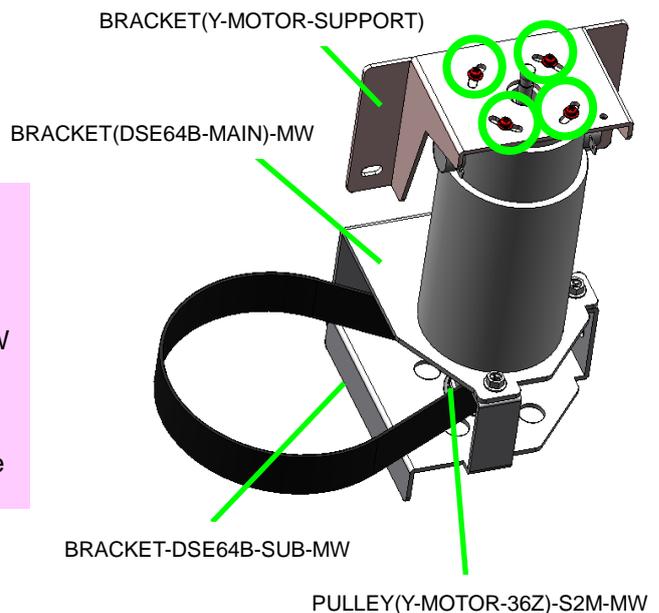
Y-DRIVE-MOTOR-ASSY  
(including the TIMING-BELT-Y)



5. Remove the BRACKET(Y-MOTOR-SUPPORT) and the BRACKET(DSE64B-MAIN)-MW with five fixing screws, and then remove the Y-DRIVE-MOTOR-ASSY and the DRIVING PULLEY together.



6. Remove the four screws, and remove the BRACKET(Y-MOTOR-SUPPORT) from the motor.

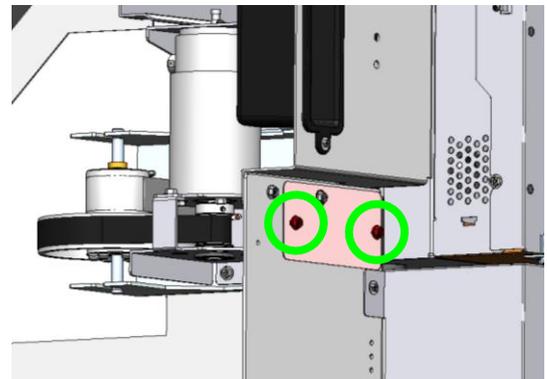
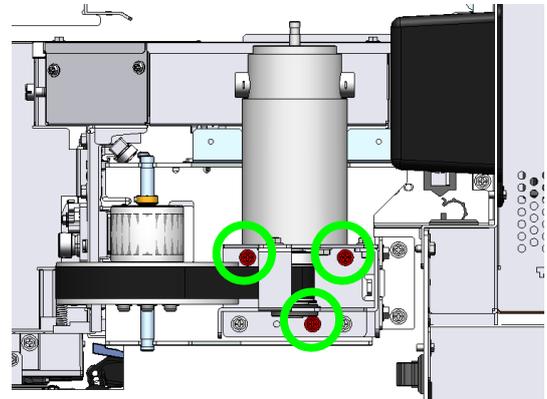


**Note**

Do not detach:  
 - BRACKET-DSE64B-MAIN-MW; and  
 - BRACKET-DSE64B-SUB-MW  
 from the PULLEY(Y-MOTOR-36Z)-S2M-MW attached to the Y DRIVE MOTOR.  
 Note that the rotation axis adjustment has been completed for the PULLEY(Y-MOTOR-36Z)-S2M-MW with the two brackets above installed.

## &lt;Assembly&gt;

1. Put the DRIVING PULLEY and Y DRIVE MOTOR in place together, and temporarily fix the three screws with the timing belt loosened.
2. Attach the hole at the SUS-BELT extremity to the carriage protrusion.
3. Attach the SUS-BELT securing screw and tighten it at 1.5 N·m (15 kgf·cm) torque.
4. Adjust the SUS-BELT tension (see 7.2).
5. Remove the PLATE-CLOSEHOLE-MW with two fixing screws.
6. Adjust the timing belt tension (see 7.3).

**Note**

Adjust the tension of the timing belt after the SUS-BELT. The tension of the timing belt will be high if it is adjusted first.

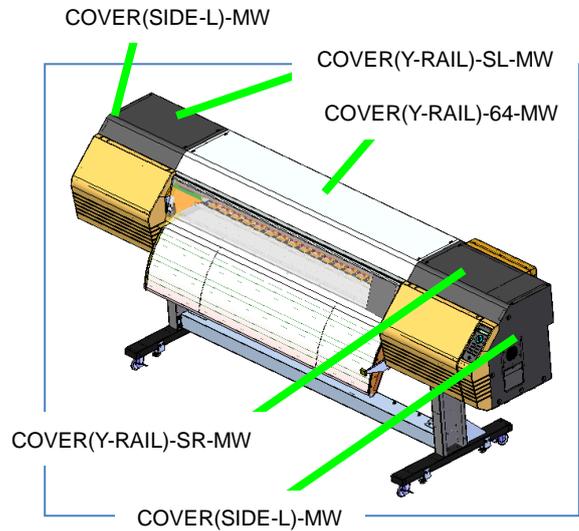
- 7.** Install the BRACKET(Y-MOTOR-SUPPORT).  
To avoid applying stress to the motor position, first temporarily fix the six screws before tightening them.  
The tightening torque for the screws is as follows.
  - Two M4 screws: 1.5 N·m (15 kgf·cm) torque
  - Four M2.6 screws: 0.4 N·m (4 kgf·cm) torque
  
- 8.** Connect the two cables to the motor, the red one to the right and the black one to the left.
  
- 9.** Install the PLATE-CLOSEHOLE-MW.
  
- 10.** Re-install the covers you have removed.



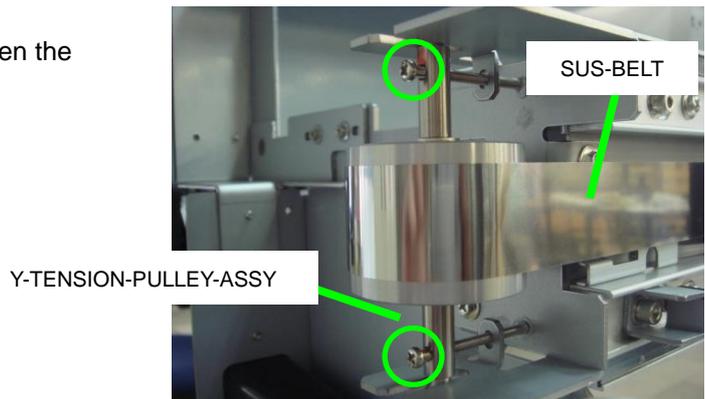
## 6.4.2 BELT(SUS)

<Removal>

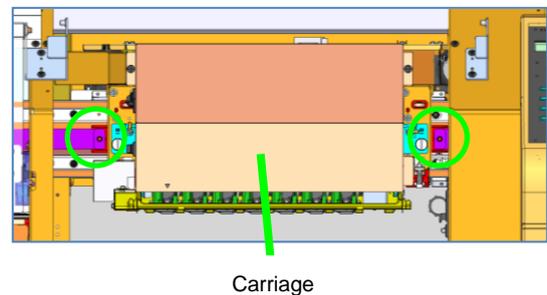
1. Remove the following parts.
  - COVER(Y-RAIL)-SR-MW (see 6.3.3)
  - COVER(Y-RAIL)-SL-MW (see 6.3.3)
  - COVER(Y-RAIL)-64-MW (see 6.3.4)
  - COVER(SIDE-L)-MW (see 6.3.6)
  - COVER(SIDE-R)-MW (see 6.3.7)



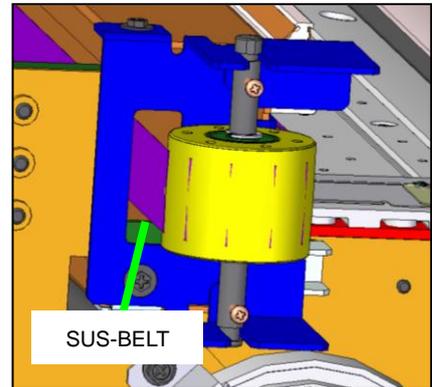
2. Turn the two screws on the Y-TENSION-PULLEY-ASSY to loosen the SUS-BELT.



3. Remove the two screws on the carriage's right and left parts that fix the SUS-BELT.



4. Pull the SUS-BELT to remove it from the hole shown in the figure to the right.



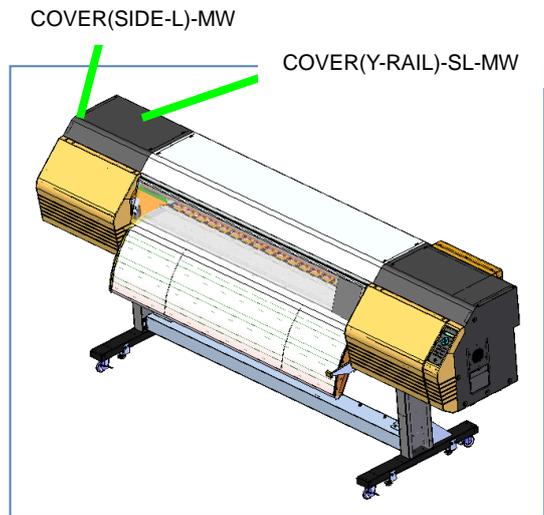
#### Notes for installation

- The procedure to install the SUS-BELT is the reverse order of the removal procedure, but it may help to attach the SUS-BELT with adhesive tape to a metal measuring tape to pass it through the hole. Or you may also attach the new SUS-BELT to the old one before removing it.
- Always adjust the tension after installing the new SUS-BELT.  
(See 7.2 SUS-BELT)

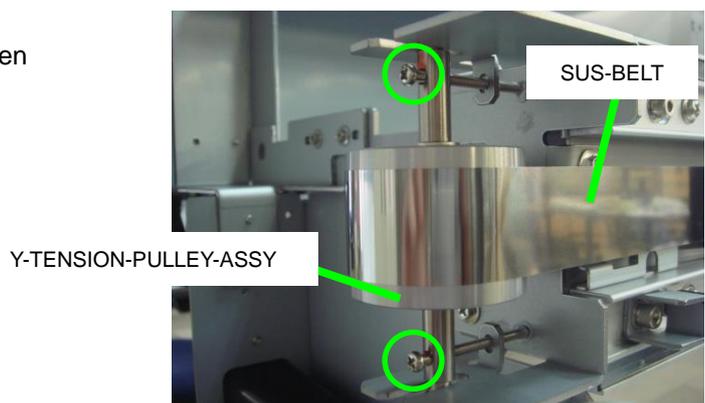
### 6.4.3 Y-TENSION-PULLEY

<Removal>

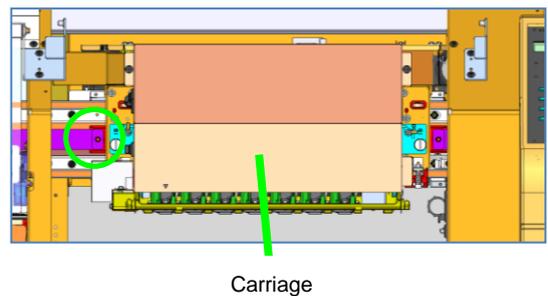
1. Remove the following parts.
  - COVER(Y-RAIL)-SL-MW (see 6.3.3)
  - COVER(SIDE-L)-MW (see 6.3.6)



2. Turn the two screws on the Y-TENSION-PULLEY-ASSY to loosen the SUS-BELT.



3. Remove the screw on the left side of the carriage part securing the SUS-BELT.



4. Remove the Y-TENSION-PULLEY.

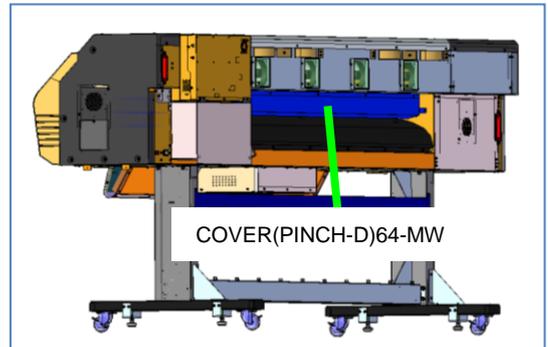
**Note for installation**

Always adjust the tension of the SUS-BELT after installation.  
(See 7.2 SUS-BELT)

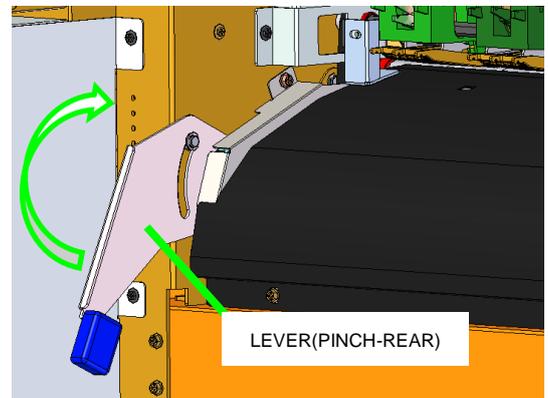
### 6.4.4 ROLLER(PINCH)

<Removal>

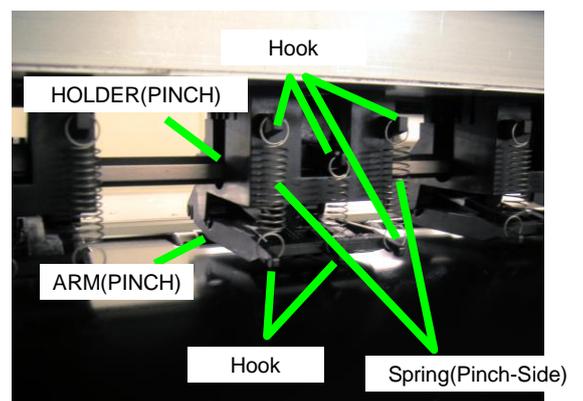
1. Remove the COVER(PINCH-D)64-MW (see 6.3.10).



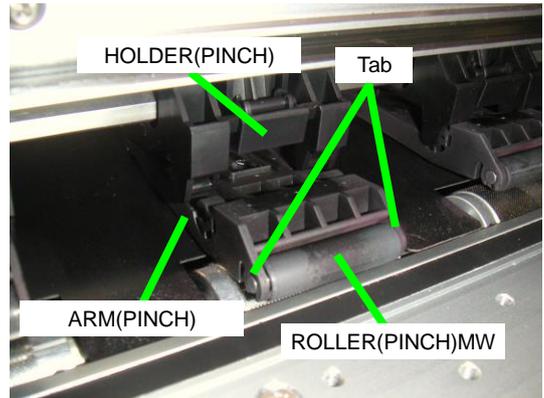
2. Lift the LEVER(PINCH-REAR) to release the pinch.



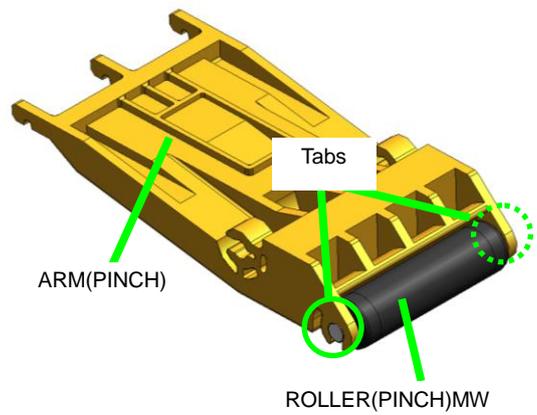
3. Remove:
  - Two SPRING(PINCH-SIDE); and
  - One SPRING(PINCH-CENTER)from the HOLDER(PINCH) and the ARM(PINCH) hooks.



4. Pull the ARM(PINCH) from the front side, remove the tab, and then remove the ARM(PINCH).



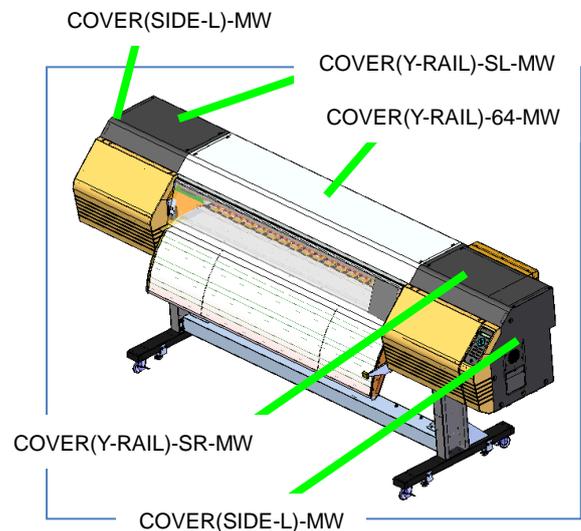
5. Remove the ROLLER(PINCH)MW from the ARM(PINCH) tabs.



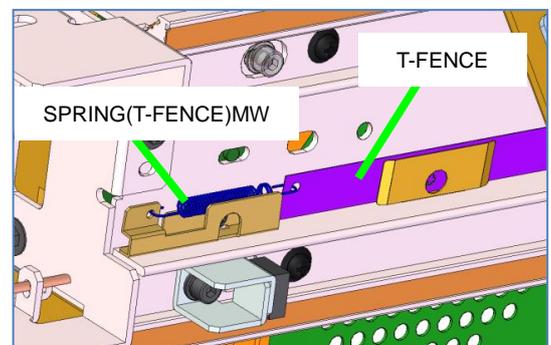
## 6.4.5 T-FENCE

<Removal>

1. Remove the following parts.
  - COVER(Y-RAIL)-SR-MW (see 6.3.3)
  - COVER(Y-RAIL)-SL-MW (see 6.3.3)
  - COVER(Y-RAIL)-64-MW (see 6.3.4)
  - COVER(SIDE-L)-MW (see 6.3.6)
  - COVER(SIDE-R)-MW (see 6.3.7)



2. Remove the SUS-BELT (see 6.4.2).
3. Remove the Y-ENCODER from the carriage (see 6.8.6).
4. Remove the two SPRING(T-FENCE)MW.
5. Remove the T-FENCE.



### Note for installation

Pay attention to the orientation of the T-FENCE when installing it.

- (For the old model) The part of the T-FENCE that will be attached comes to the printer left side (maintenance area side).
- (For the new model) The longer side of the black part on the T-FENCE comes to the printer right side (home position side).
- (For both models) The holes on the right and left sides of the T-FENCE (used to attach the SPRING(T-FENCE)MW) come to the top.

### 6.4.6 ROBOT CABLE, MW

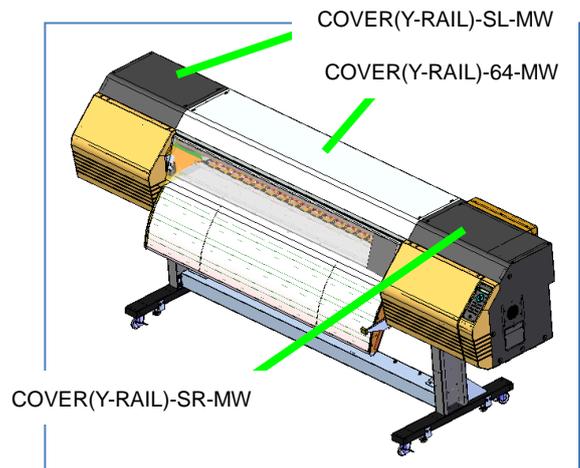
The ROBOT CABLE, MW is made of two different harnesses below:

- At the bottom of the printer (PCB-ASSY-ACT3 board side):  
CABLE(Board-Power)-ASSY(MW)
- At the top of the printer (PCB-ASSY-HCB1M board side):  
CABLE(ACT-HCB)1-ASSY(HV104)

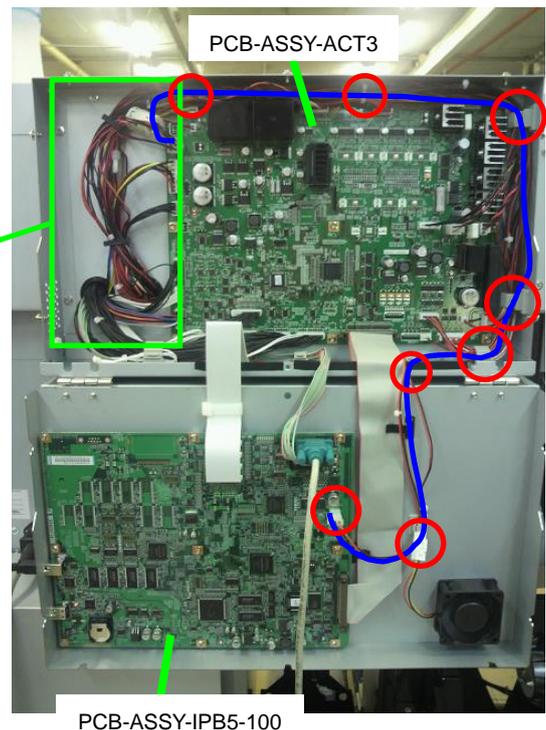
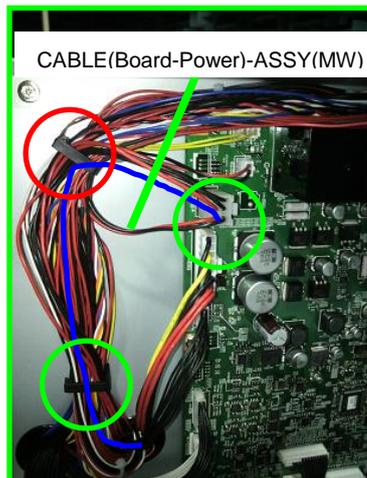
Only the CABLE(ACT-HCB)1-ASSY(HV104) uses the robot cable..

<Removal>

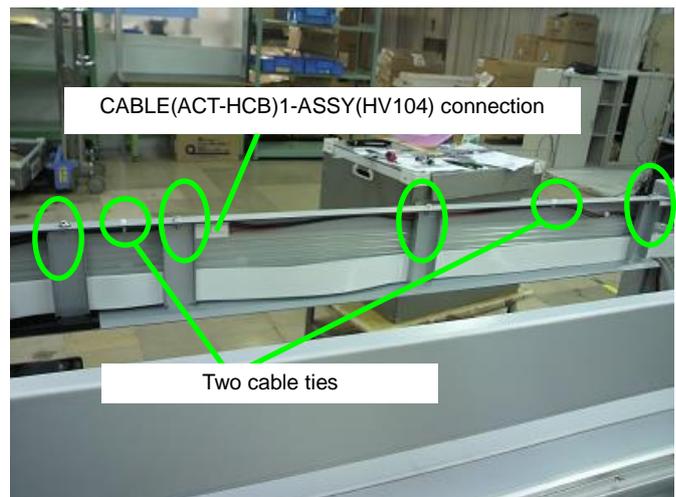
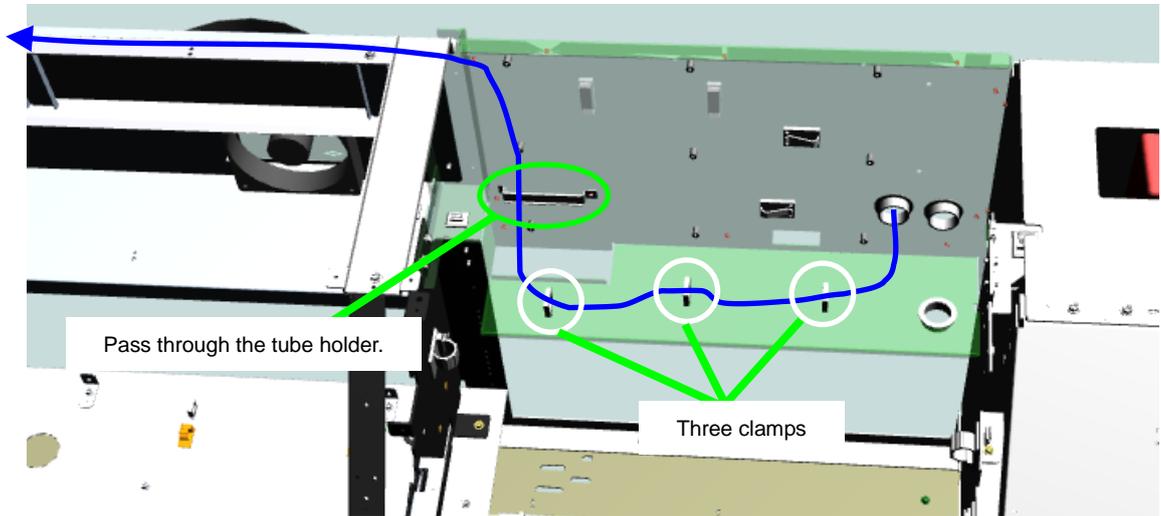
1. Before starting the procedure, be sure to disconnect the power cord from the outlet.
2. Remove the following parts.
  - COVER(Y-RAIL)-SR-MW (see 6.3.3)
  - COVER(Y-RAIL)-SL-MW (see 6.3.3)
  - COVER(Y-RAIL)-64-MW (see 6.3.4)



3. Open the controller box and remove the CABLE(Board-Power)-ASSY(MW) harness from the PCB-ASSY-ACT3. As the harness is also connected to the PCB-ASSY-IPB5-100, remove the board, too. Note that totally nine clamps at the red-circled positions must be removed.

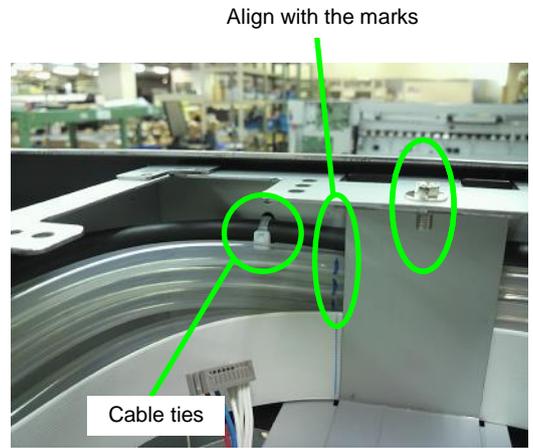


4. Remove the three clamps, the two cable ties, and the four metal plates securing the harness, and then remove the CABLE(Board-Power)-ASSY(MW).



5. Remove the PCB-ASSY-HCB1M board (see 6.8.4).

6. Remove:
- Cable ties fixed to the carriage; and
  - Two metal plates securing the harness,
- and then remove the CABLE(ACT-HCB)1-ASSY(HV104).



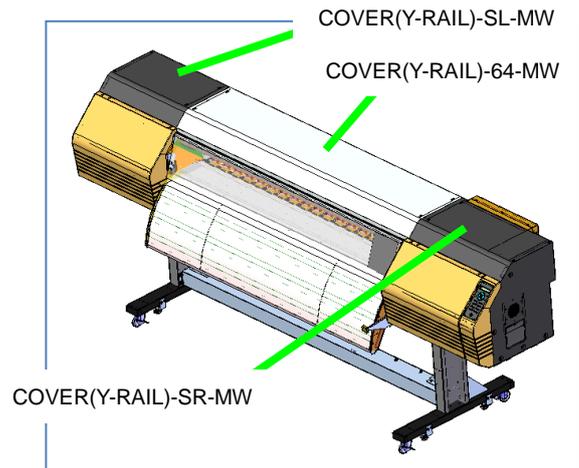
**Note for installation**

Firmly secure the CABLE(ACT-HCB)1-ASSY(HV104) so that it does not move with the carriage vibrations.

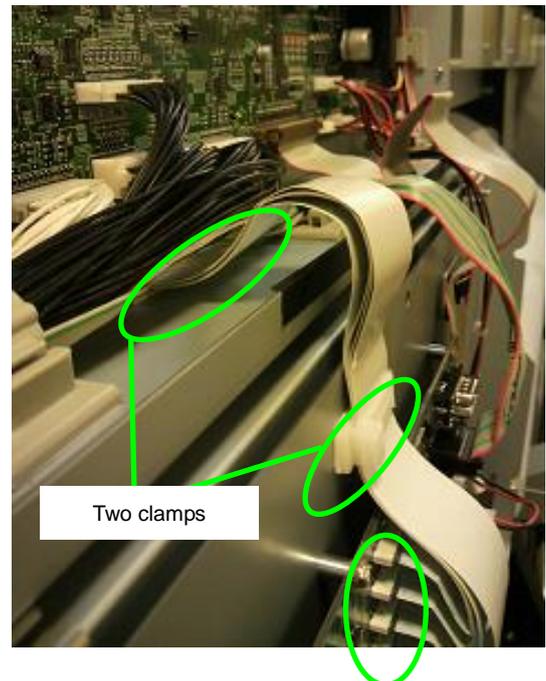
### 6.4.7 CARRIAGE FFC, MW

<Removal>

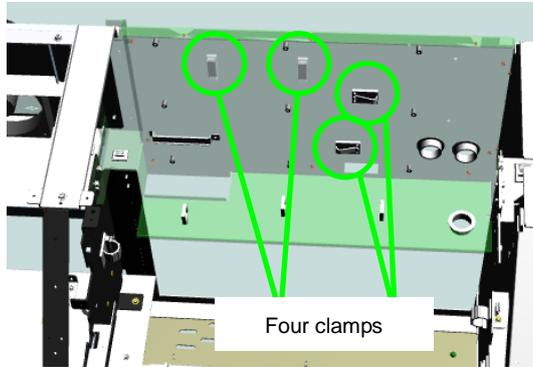
1. Before starting the procedure, be sure to disconnect the power cord from the outlet b.
2. Remove the following parts.
  - COVER(Y-RAIL)-SR-MW (see 6.3.3)
  - COVER(Y-RAIL)-SL-MW (see 6.3.3)
  - COVER(Y-RAIL)-64-MW (see 6.3.4)



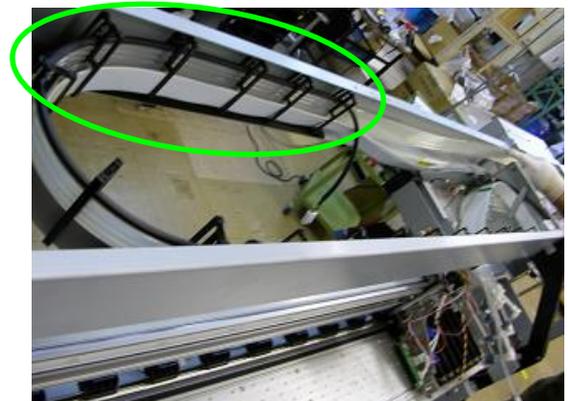
3. Open the controller box and remove the FFC-CRG(MW) from the PCB-ASSY-IPB5-100. Also remove the two clamps.



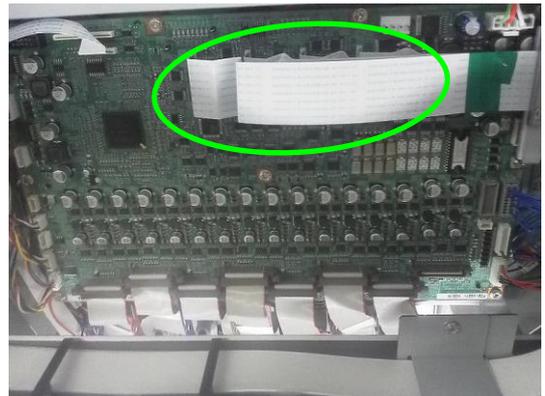
- 4.** Remove:
- Four clamps on the back of the controller box; and
  - Four metal plates securing the FFC.



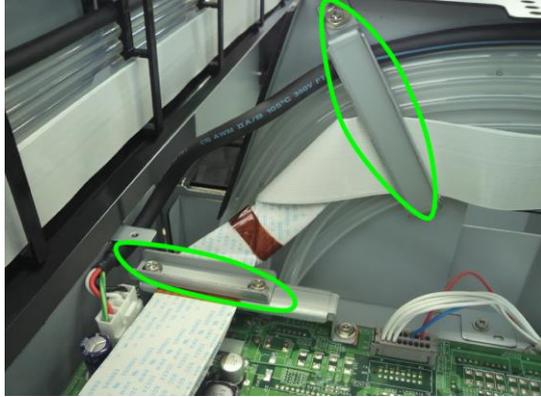
- 5.** Remove the fixed part of the FFC, and then remove the FFC.



- 6.** Remove the FFC from the PCB-ASSY-HCB1M board.



7. Remove the three metal plates securing the harness to the carriage.



**Note for installation**

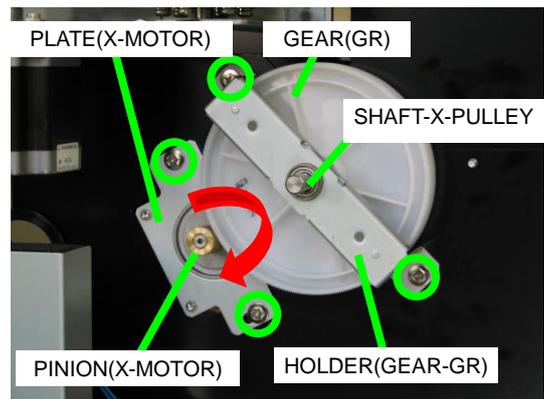
Firmly secure the FFC-CRG(MW) with metal plates so that the FFC-CRG(MW) does not move with the carriage vibrations.

## 6.5 Disassembling and Reassembling the X Driver

### 6.5.1 X-MOTOR-ASSY (with PINION)

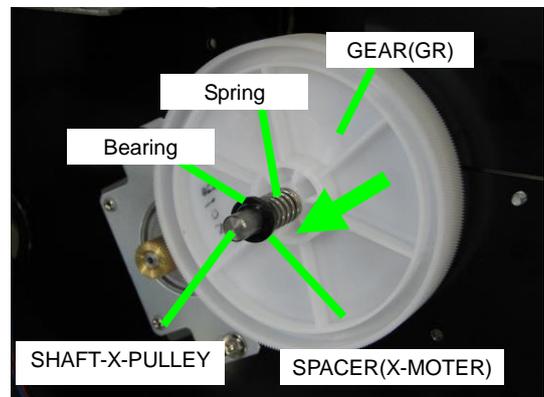
<Removal>

1. Remove the COVER(SIDE-L)-MW (see 6.3.5).
2. Loosen the two screws securing the PLATE(X-MOTOR) and move the PLATE(X-MOTOR) to the arrow direction. Then separate the PINION(X-MOTOR) and the GEAR(GR).
3. Remove the two screws securing the HOLDER(GEAR-GR), and remove the HOLDER(GEAR-GR) and the bearing.
4. Remove the SPACER(X-MOTOR), Spring(GR), GEAR(GR), and the parallel pin from the SHAFT-X-PULLEY.



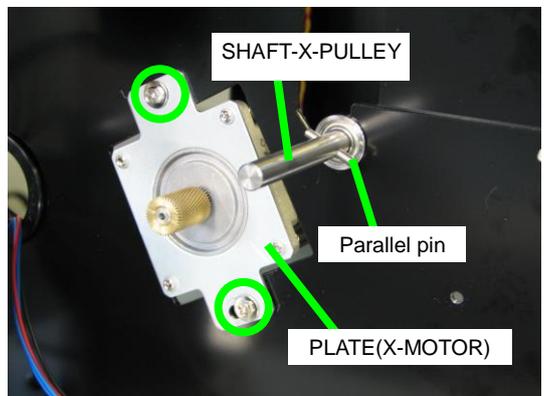
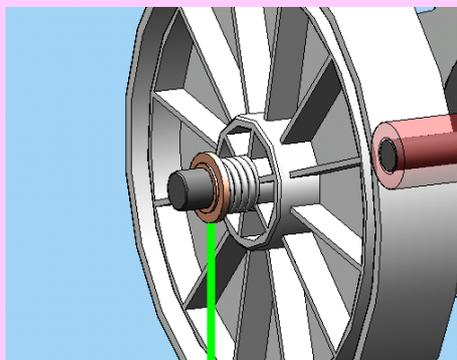
#### Note

Be careful not to drop the parallel pin when removing the GEAR(GR).

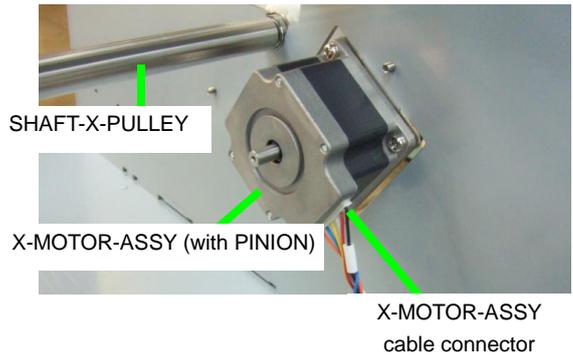


#### Note for installation

Install the SPACER(X-MOTOR) with the protrusion facing the outside.



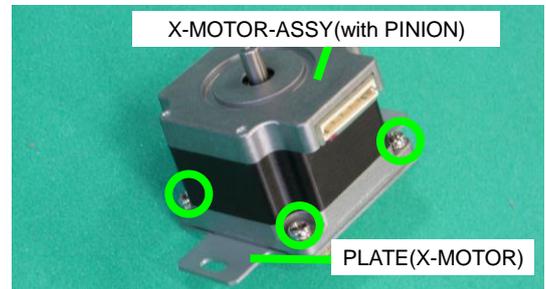
5. Disconnect the X-MOTOR-ASSY cable connector.
6. Remove the two screws (refer to the photo at the bottom in step 4) securing the PLATE(X-MOTOR), and remove the PLATE(X-MOTOR) and the X-MOTOR-ASSY (with PINION) (refer to the photo in step 7).



**Note for installation**

Install the X-MOTOR-ASSY with the cable connector facing down.

7. From the PLATE(X-MOTOR) removed in step 6, remove the X-MOTOR-ASSY(with PINION) with fixing four screws.



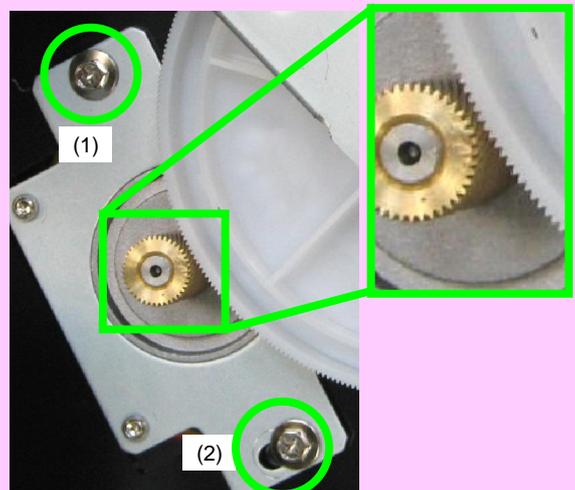
**Notes for installation**

Required tools:

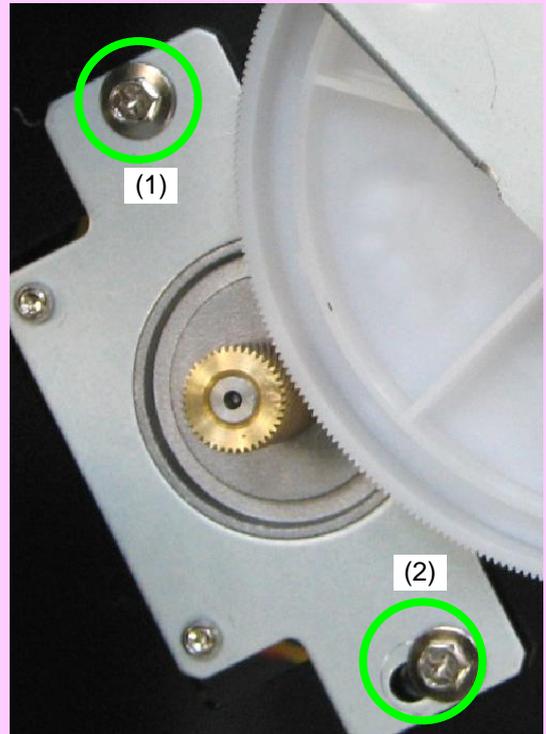
- Torque driver
  - Fan-shaped tension gauge (0.1 to 20N), double-side type
- Manufacturer: Oba Keiki Seisakusho



Tighten the screws (1) and (2) to the torque of 1.5 N·m (153kg·cm). At this time, the gear teeth do not contact yet.



Loosen the screw (1) by 90 degrees.

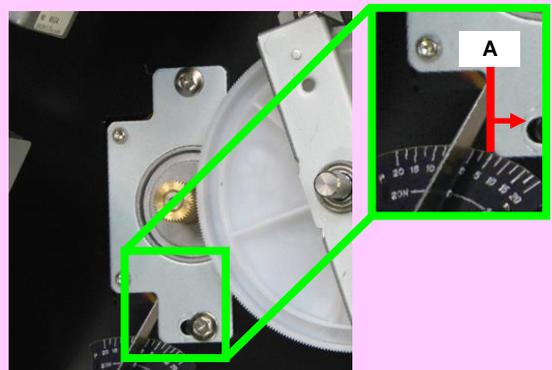


Loosen the screw (2) by 180 degrees.

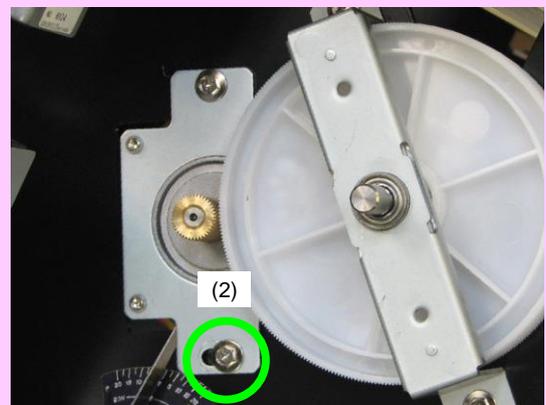
Push the part **A** to the arrow direction with the fan-shaped tension gauge indicating 5 N to engage the X-MOTOR-ASSY(with PINION) and GEAR(GR) teeth.

**Note**

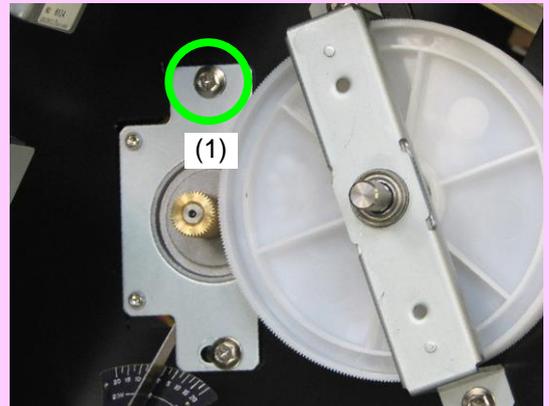
Do not hit the GEAR(GR) with the fan-shaped tension gauge.  
Scratch on the GEAR(GR) may cause banding.



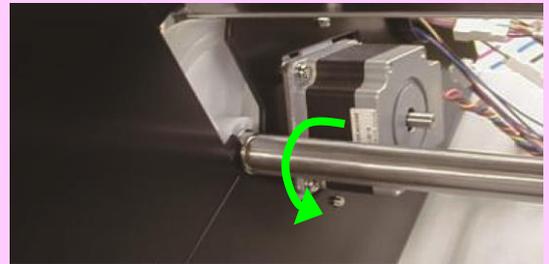
Tighten the screw (2) to the torque of 1.5 N·m (153kg·cm).



Tighten the screw (1) to the torque of 1.5 N·m (153kg·cm).



Rotate the grit roller's shaft, and visually check that PINION(X-MOTOR) and GEAR(GR) engage smoothly.

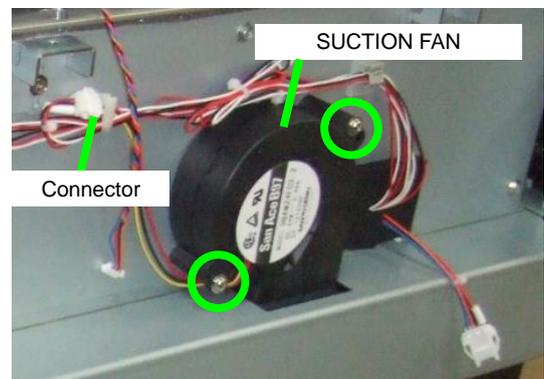


## 6.5.2 SUCTION FAN

The printer contains four SUCTION FANS, any of which can be removed with the procedure below.

<Removal>

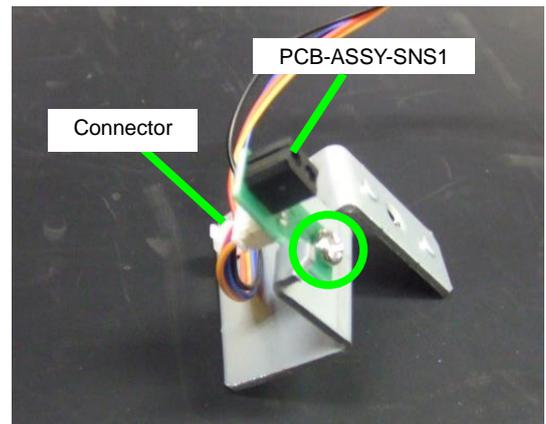
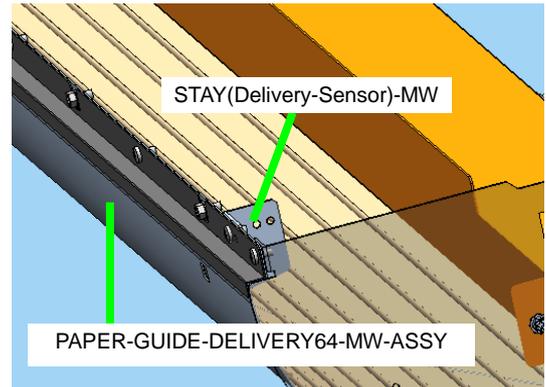
1. Open the COVER(FRONT)ASSY-MW (see **6.3.1**) and remove the PAPER-GUIDE-DELIVERY64-MW-ASSY (see **6.14.1**).
2. Remove the two screws securing each SUCTION FAN, disconnect the connector, and remove the SUCTION FAN.



### 6.5.3 PCB-ASSY-SNS1 (Front side)

<Removal>

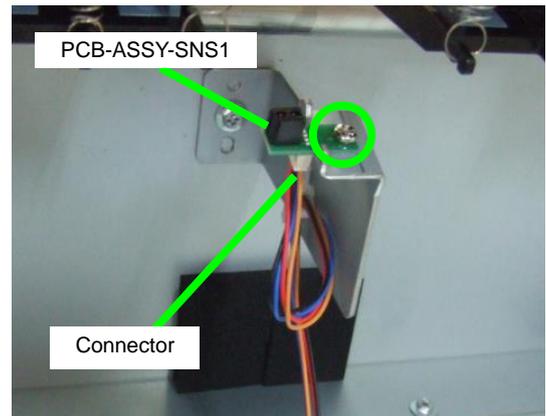
1. Open the COVER(FRONT)ASSY-MW (see 6.3.1) and remove the PAPER-GUIDE-DELIVERY64-MW-ASSY (see 6.14.1).
2. Remove the screw and then remove the STAY(Delivery-Sensor)-MW fixed to the PAPER-GUIDE-DELIVERY64-MW-ASSY.
3. Remove the screw securing the PCB-ASSY-SNS1, disconnect the connector, and then remove the PCB-ASSY-SNS1.



### 6.5.4 PCB-ASSY-SNS1 (Rear side)

<Removal>

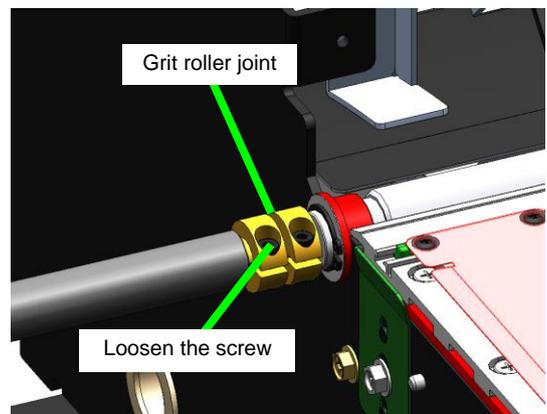
1. Remove:
  - COVER(FRONT)ASSY-MW (see **6.3.1**); and
  - PAPER-GUIDE-FEEDING64-MW-ASSY (see **6.14.2**)
2. Remove the screw securing the PCB-ASSY-SNS1, disconnect the connector, and then remove the PCB-ASSY-SNS1.



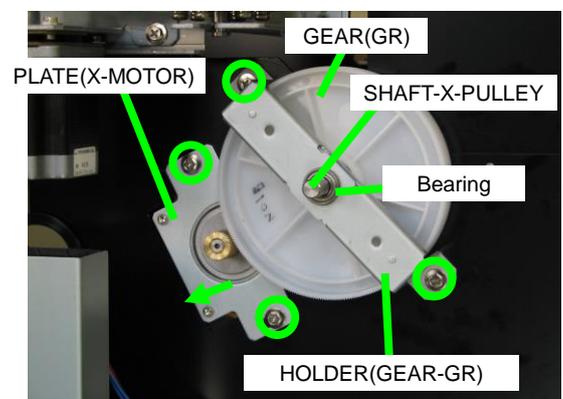
## 6.5.5 GRIT-UNIT

<Removal>

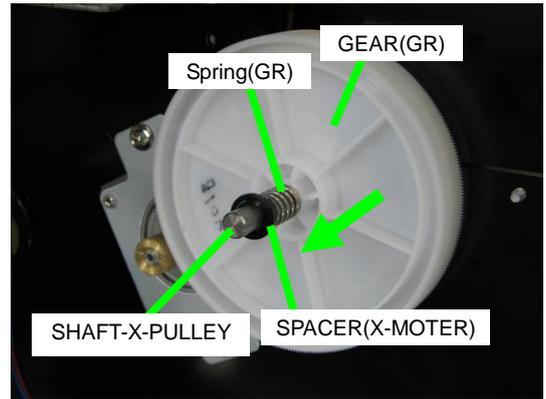
1. Remove:
  - COVER(SIDE-L)-MW (see 6.3.5);
  - and
  - PAPER-GUIDE-FEEDING64-MW-ASSY (see 6.14.2)
  
2. Open:
  - COVER(FRONT)ASSY-MW;
  - COVER(L)ASSY-MW; and
  - COVER(R)ASSY-MW.
 For the procedure, see 6.3.
  
3. Remove (see 6.4.4):
  - ARM(PINCH);
  - ROLLER(PINCH)MW;
  - LEFTER(PINCH),
  - 19 SPRING(PINCH-CENTER)1; and
  - 38 SPRING(PINCH-SIDE)2.
  
4. Loosen the screw at the grit roller joint.



5. Loosen the two screws securing the PLATE(X-MOTOR) and remove it from the GEAR(GR).
  
6. Remove the two screws securing the HOLDER(GEAR-GR), and then remove the HOLDER(GEAR-GR) and the bearing.

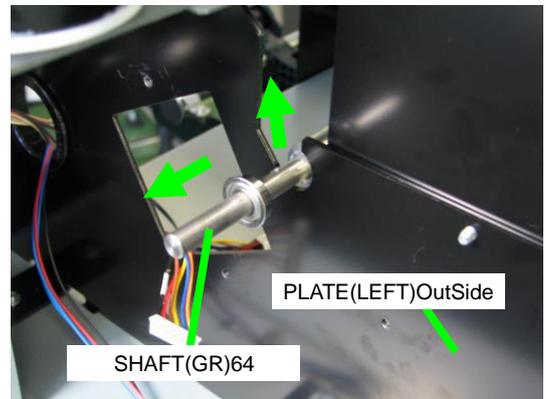


7. Remove:  
 - SPACER(X-MOTOR); and  
 - Spring(GR)  
 from the SHAFT-X-PULLEY.



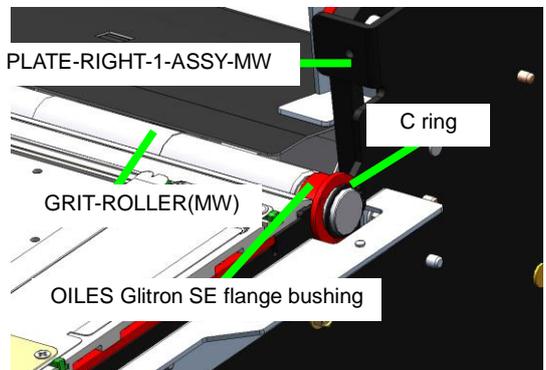
8. Slide a little the SHAFT-X-PULLEY to the left.

→ The SHAFT-X-PULLEY can be removed from the grit roller.



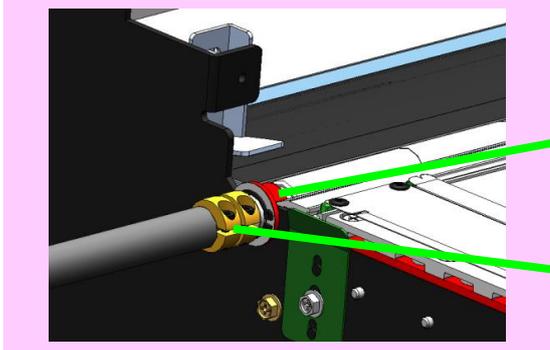
9. Open the C ring at the right extremity of the GRIT-ROLLER(MW) and slide it to the left, then slide the OILES Glitron SE flange bushing to the left (the picture shows the printer after moving the parts).

→ The unit is not secured to the PLATE-RIGHT-1-ASSY-MW anymore.



**Note for installation**

After installing the C ring to the grit roller, slide the roller to the right. Then push the grit roller joint to the right and secure with the screw.

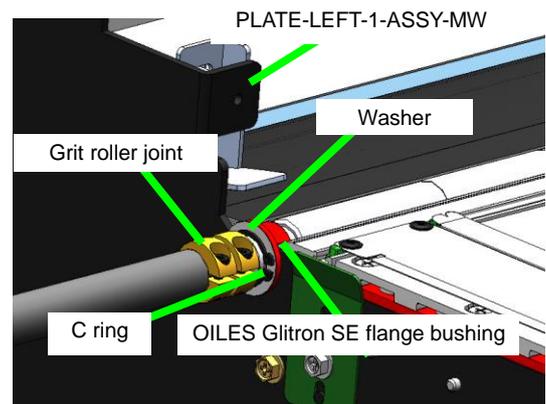


After securing the C ring on both sides, push the grit roller to the right.

Push the grit roller joint to the right, then secure it with the screw.

- 10.** Do the same for the left side of the grit roller. Loosen the screw on the grit roller joint, and then slide:
- joint;
  - retaining ring;
  - washer; and
  - OILES Glitron SE Flange Bushing to the outside (the picture shows the printer after moving the parts).

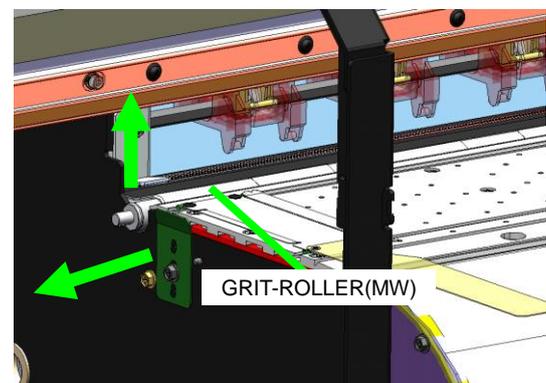
→ The unit is not secured to the PLATE-LEFT-1-ASSY-MW anymore.



- 11.** Move the GRIT-ROLLER(MW) upward to remove it.

**Note**

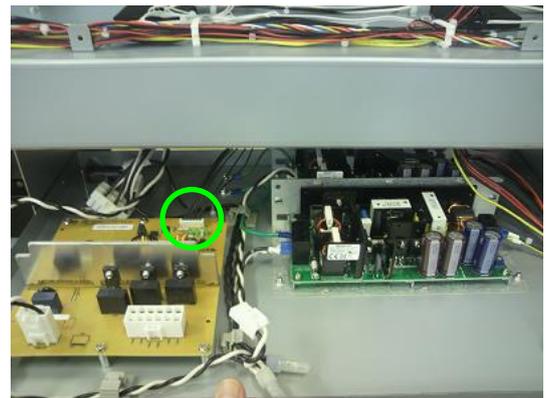
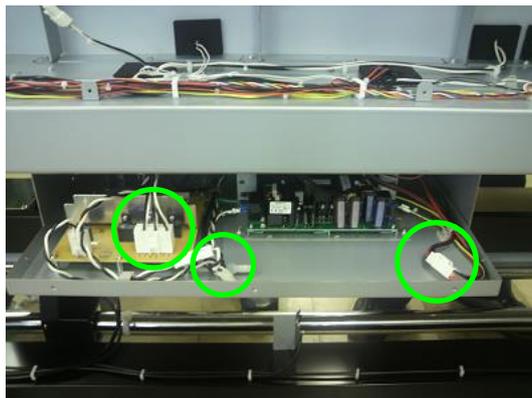
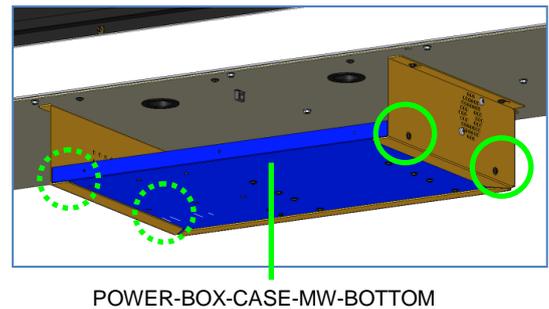
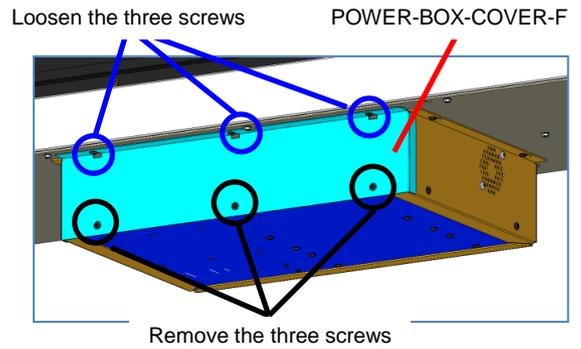
Be careful so that the GRIT-ROLLER(MW) does not get in contact with the platen.



## 6.6 Disassembling and Reassembling the POWER BOX

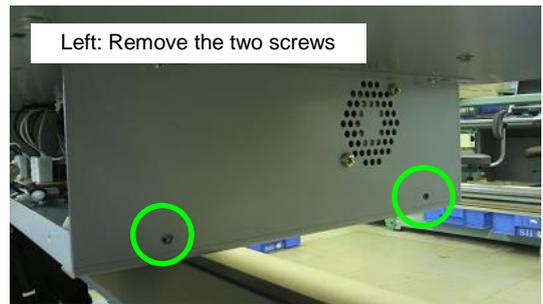
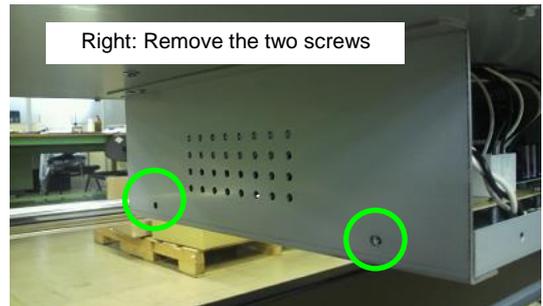
<How to open the POWER BOX>

1. Be sure to disconnect the power cord from the outlet before starting the procedure.
2. Of the six screws securing the POWER-BOX-COVER-F, loosen the three screws on the upper side.
3. Out of the six screws, remove the three screws securing the POWER-BOX-COVER-F on the lower side, and then remove the POWER-BOX-COVER-F.
4. Remove the four screws securing the POWER-BOX-CASE-MW-BOTTOM (two screws on each side), and pull the POWER-BOX-CASE-MW-BOTTOM toward you approximately 10 cm.
5. Disconnect the four connectors.

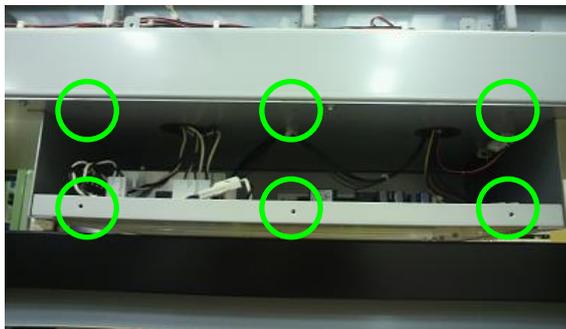


### 6.6.1 FUSE

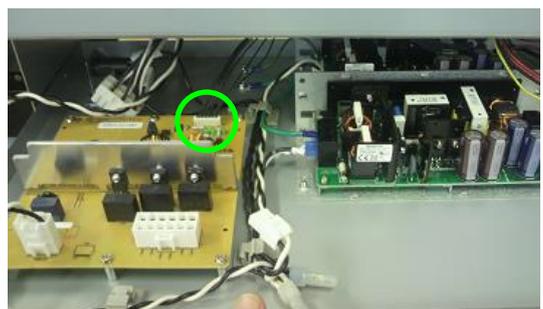
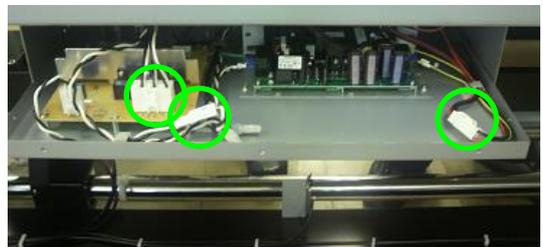
1. Be sure to disconnect the power cord from the outlet before starting the procedure.  
Even if the fuse is blown, the current passes through the printer from the AC inlet to the PSU, so always disconnect the power cord from the outlet.
  
2. Remove the 10 screws below on the power box:
  - two on the right side;
  - two on the left side;
  - three on the upper front; and
  - three on the lower front.
 The three screws on the upper side may be only loosened.



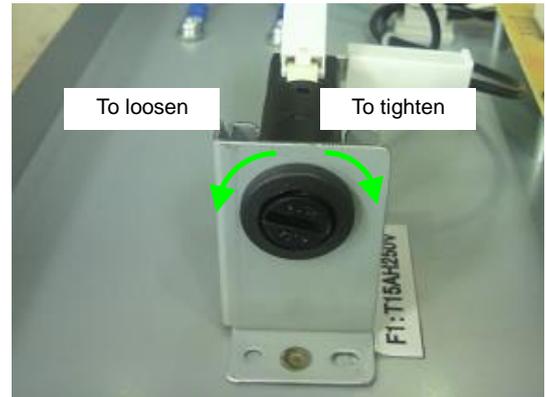
Front side: Loosen the three screw at the top, and remove the three screws at the bottom.



3. Pull the POWER-BOX-CASE-MW-BOTTOM 10 cm toward you, and disconnect the four connectors.



4. Pull the POWER-BOX-CASE-MW-BOTTOM completely toward you, rotate the fuse holder counter-clockwise, and remove the fuse.



5. Replace the fuse with the one with the specification below.
  - Rated specifications: 15 A, 250 V AC
  - Speed characteristic: Time delay
  - Fuse size:  $\varnothing$ 6.35 mm x 31.8 mm

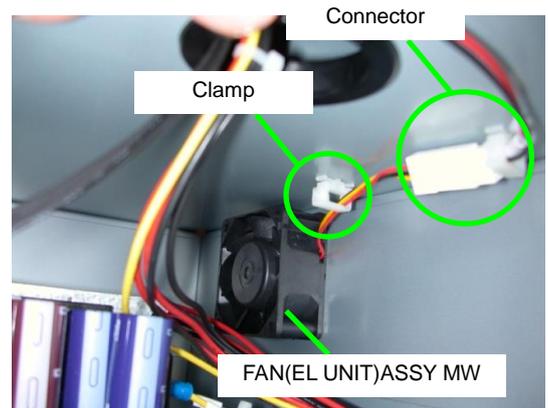
**Note**

Use only fuses specified by OKI Data Infotech.  
If a fuse outside the specified specification is installed, it may blow immediately or cause an accident like a fire or electrical shock.

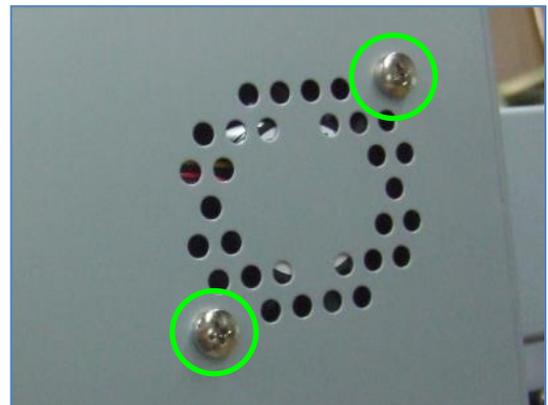
## 6.6.2 FAN(EL UNIT) ASSY MW (POWER-BOX)

<Removal>

1. Before starting the procedure, be sure to disconnect the power cord from the outlet.
2. Open the POWER-BOX (see 6.6).
3. Remove the harness from the clamp and disconnect the connector.



4. Remove the FAN(EL UNIT)ASSY MW with two fixing screws.



### Notes for installation

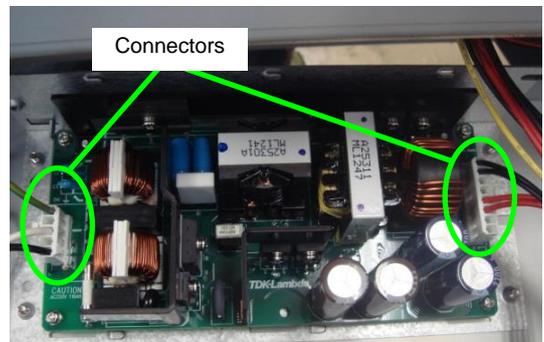
- Orient the fans so that:
  - The air flows from the inside to the outside of the printer; and
  - The nameplate faces the outside of the printer.
- Be careful not to catch the wires between the metal plates and the boards when closing the POWER-BOX-COVER-F (see 6.6 for details on the position).

### 6.6.3 POWER SUPPLY

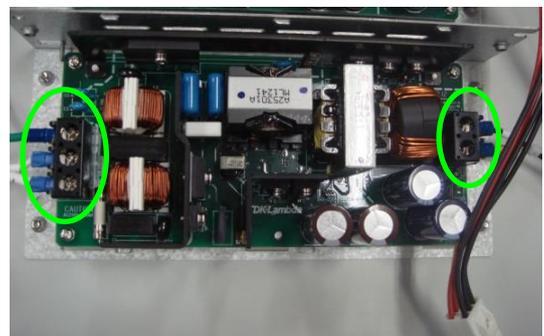
<Removal>

1. Before starting the procedure, be sure to disconnect the power cord from the outlet.
2. Open the POWER-BOX (see 6.6).
3. Remove the harness from the clamp and disconnect the connector.
4. For the POWER SUPPLY(24V):  
Disconnect the two connectors.

POWER SUPPLY(24V)



POWER SUPPLY(36V)

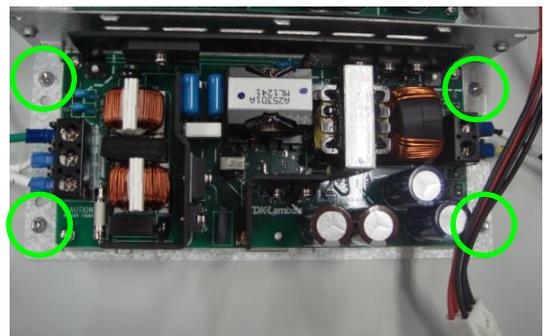


For the POWER SUPPLY(36V):  
Loosen the five screws and disconnect the wires.

5. Remove:
  - POWERSUPPLY:  
POWER SUPPLY(24V) or the  
POWER SUPPLY(36V); and
  - Four fixing screws.



POWER SUPPLY(24V)

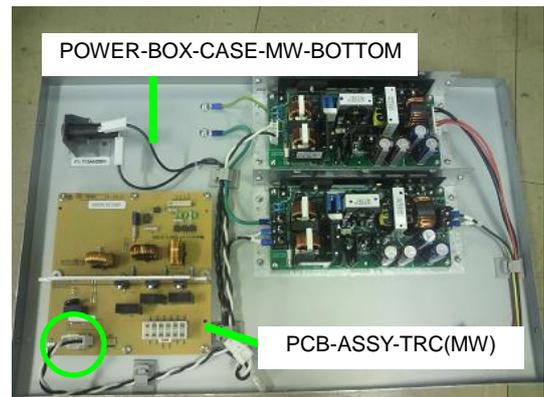


POWER SUPPLY(36V)

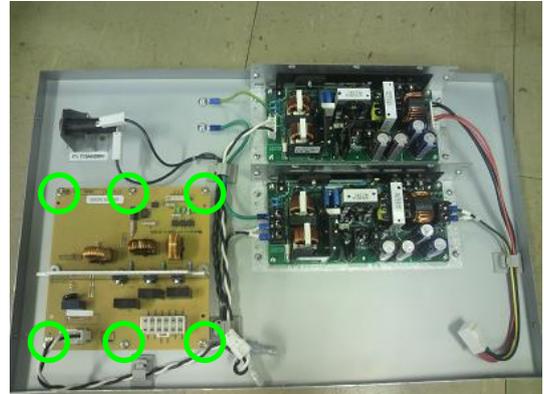
### 6.6.4 PCB-ASSY-TRC(MW)

<Removal>

1. Before starting the procedure, be sure to disconnect the power cord from the outlet.
2. Open the POWER-BOX (see 6.6).
3. Remove the POWER-BOX-CASE-MW-BOTTOM and disconnect the PCB-ASSY-TRC(MW) harness.



4. Remove the six screws securing the PCB-ASSY-TRC(MW).

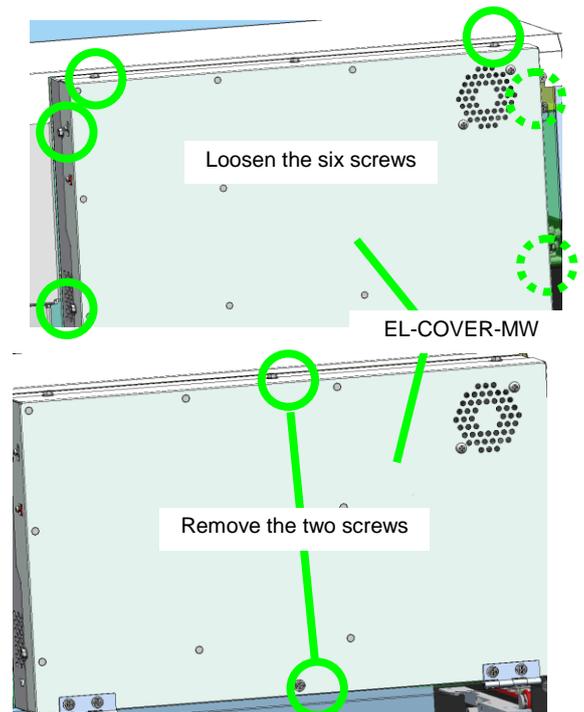


## 6.7 Disassembling and Reassembling the Controller Box

### 6.7.1 PCB-ASSY-IPB5-100 and PCB-ASSY-ACT3 boards

<Removal>

1. Before starting the procedure, be sure to turn off the main power switch at the back of the printer.
2. Loosen the six screws located in the U-shaped groove on the top and both sides of the EL-COVER-MW. Remove the two screws located in the round holes on the EL-COVER-MW, then slowly open the EL-COVER-MW.



#### Note

Always open or close the EL-COVER-MW slowly, as rough handling may damage the parts.

3. Remove the cables connected to the boards from their clamps.

#### Warning

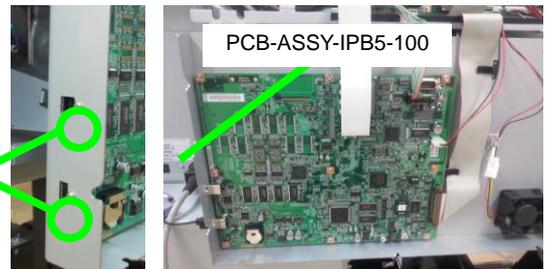
Before performing step 3, wait until the lamp goes off for your safety. Note that electricity remains in the board as long as the PCB-ASSY-ACT3 lamp is lit.



4. Remove the boards.
  - PCB-ASSY-IPB5-100 located on the cover side and 11 fixing screws; and
  - PCB-ASSY-ACT3 located on the printer side and 9 fixing screws.

**Note**  
Do not forget to remove the two screws of the USB connectors located on the side face of the PCB-ASSY-IPB5-100.

**Note for installation**  
Be careful not to catch the wires and the metal plates between the boards when closing the EL-COVER-MW.



5. Remove the EEPROM from the PCB-ASSY-IPB5-100 board.  
See **5.9.2 IC(EEPROM)** for the detailed procedure.



<Assembly>

Before installing the new PCB-ASSY-IPB5-100 board to the printer, set the EEPROM removed from the old board to the new one.

**Note**  
The new PCB-ASSY-IPB5-100 does not include an EEPROM. Carefully handle the EEPROM removed from the old board and be sure to set it to the new board.

## 6.7.2 FAN(EL UNIT)ASSY MW Controller box

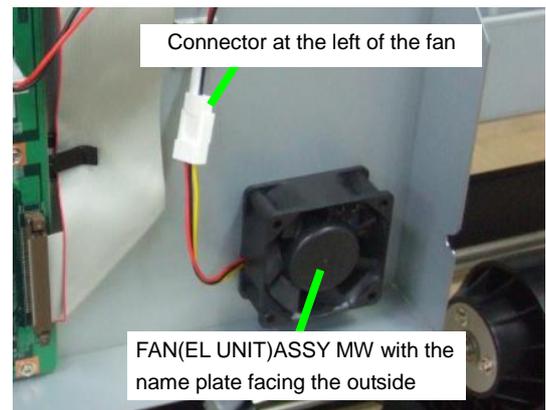
<Removal>

1. Before starting the procedure, be sure to turn off the main power switch at the back of the printer.
2. Loosen the six screws located in the U-shaped groove on the top and both sides of the EL-COVER-MW. Remove the two screws located in the round holes on the EL-COVER-MW, then slowly open the EL-COVER-MW (see 6.7).

### Note

Always open or close the EL-COVER-MW slowly, as rough handling may damage the parts.

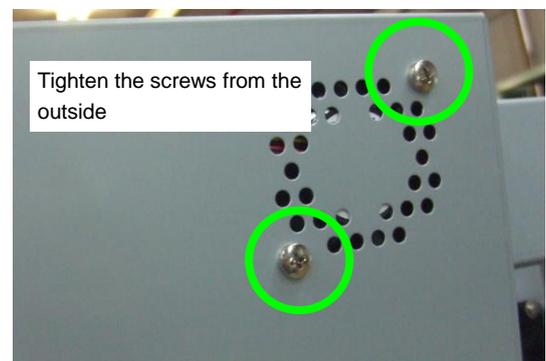
3. Disconnect the FAN(EL UNIT)ASSY MW connector.



4. Remove the two screws securing the FAN(EL UNIT)ASSY MW.

### Notes for installation

- (1) Orient the fans so that:
  - The air flows from the inside to the outside of the printer; and
  - The nameplate faces the outside of the printer.
- (2) Be careful not to catch the wires and the metal plates between the boards when closing the EL-COVER-MW.



## 6.8 Disassembling and Reassembling the Print Head and the Carriage

### Note

With the 7-color printer, no print head is installed in one print head position to the right. This position is covered by a plate.

### 6.8.1 Print head replacement

<Print head>

### Notes

These precautions are given to avoid ink leakage and damage to the printer.

- (1) Open the print head's aluminum bag only just before the print head replacement.
- (2) Be careful not to drop or hit the print head. Do not touch the nozzle surface and the connector.
- (3) Replace the print head following the procedure described below.
- (4) Wear glove to avoid smearing your hands. If ink gets into your eyes, rinse with clean water and consult a doctor immediately. If swallowed, do not try to induce vomiting. Consult a doctor immediately.
- (5) Store the used print head with the procedure below.
  - (a) Cover the print head nozzle surface with the head protection cap;
  - (b) Cover the print head ink needle with the tube;
  - (c) Wrap the print head with a polyethylene sheet; and
  - (d) Put it in an aluminum bag.

1. Press **ONLINE** button to set the printer offline.
2. Press the following buttons in the given order: **CANCEL**, **Right**, **CANCEL**, **CANCEL** and then input the password (see **3.2 Maintenance Mode Operations**) to enter the maintenance mode.
3. Press the **MAINTENANCE** button, select **PH MAINTENANCE** with the **Up** and **Down** buttons, and press the **OK** button.
4. Select **REPLACE PRINT HEAD** with the **Up** and **Down** buttons, and press the **OK** button.

MAINTENANCE

⇅ PH MAINTENANCE

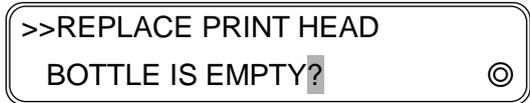


>PH MAINTENANCE

⇅ REPLACE PRINT HEAD



5. Check that a waste ink bottle is installed and press the **OK** button.



6. Press the **OK** button to move the carriage to the maintenance area.



**Note**  
The warning buzzer sounds while the print heads are uncapped. (The warning may be disabled in the settings.)

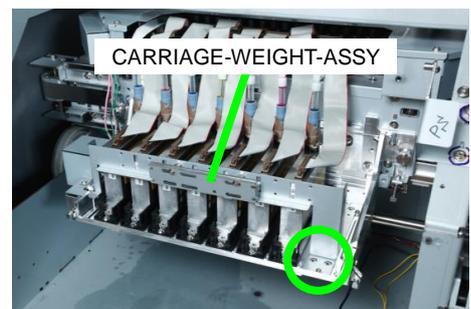
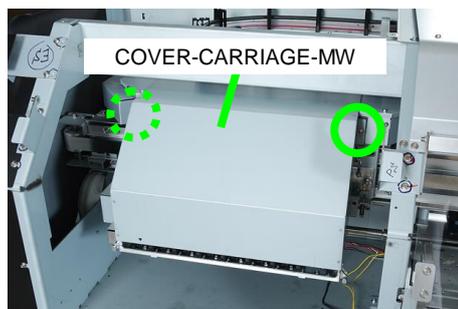


7. Press the **Power** switch to turn the printer off.

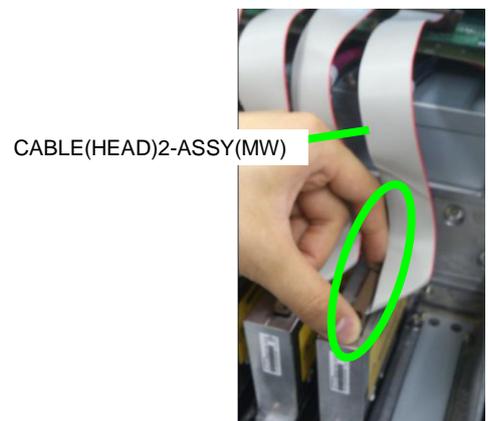


8. Open the COVER(CENTER)-F, and remove:
  - COVER(Y-RAIL)-SL-MW
  - COVER(Y-RAIL)-SR-MW
  - COVER(L)ASSY-MW
  - COVER(R)ASSY-MW
 For the procedure, see 6.3.

9. Remove the following parts.
  - COVER-CARRIAGE-MW
  - CARRIAGE-WEIGHT-ASSY.

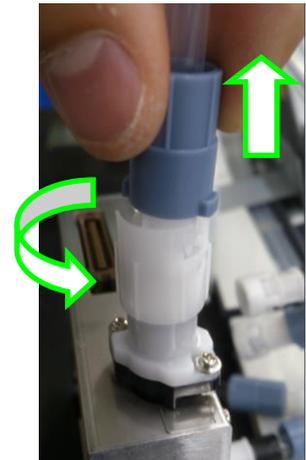


10. Disconnect the CABLE(HEAD)2-ASSY(MW) of the print head you want to replace.



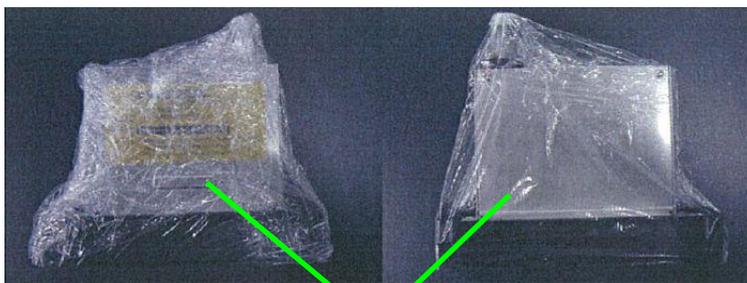
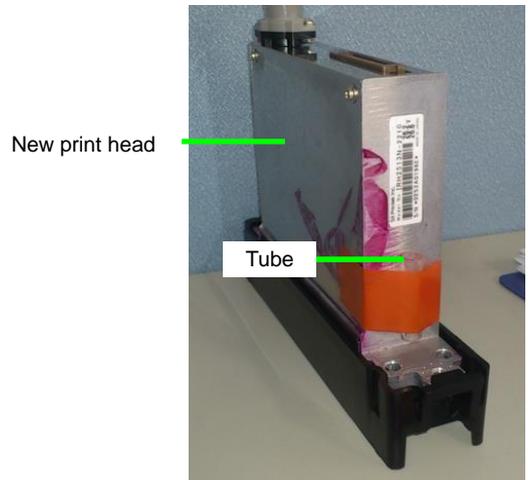
- 11. Turn the tube joint counter-clockwise, and pull the ink tube upward to disconnect it.

**Note**  
Before removing the ink tube, place a KIM towel or equivalent wipes under the print head, as ink may drop from the tube.

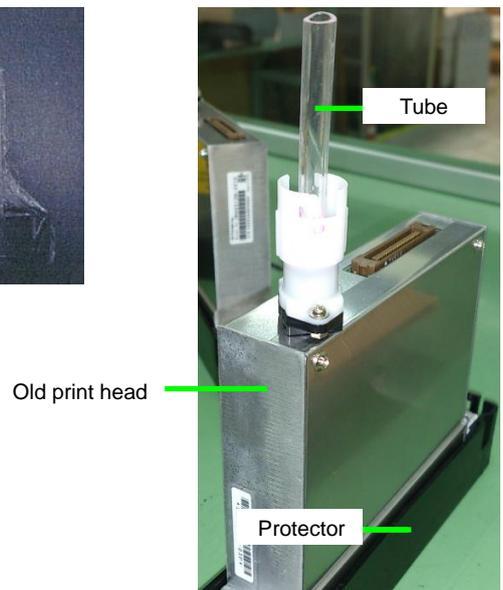


- 12. Install the tube supplied with the new print head to the old print head.
- 13. Remove the four screws securing the print head.
- 14. Remove the old print head.

**Note**  
Set the cap as soon as possible after disconnecting the joint of the old print head. The ink may leak if the print head stays uncapped for a long time. When returning a defective print head to OKI Data Infotech, to prevent the nozzles from drying set the protector to the nozzle surface, and wrap the print head with a polyethylene sheet.



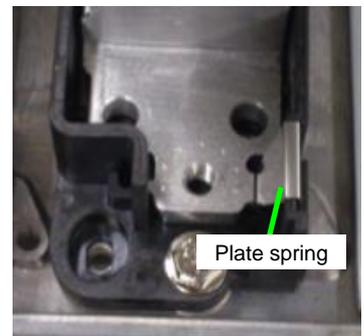
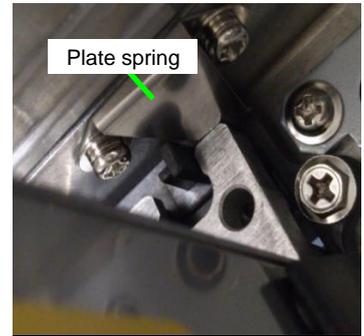
Polyethylene sheet



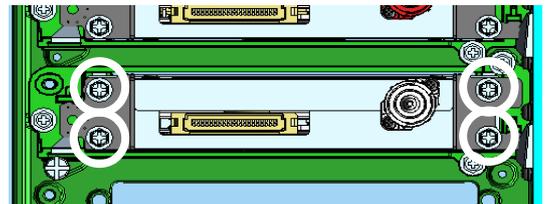
**15.** Install the new print head.

**Notes**

- (1) Check that the right rear corner of the print head contacts the plate spring as shown in the picture.
- (2) Check that the print head front part contacts the other plate spring as shown in the picture.
- (3) Be careful not to damage the nozzle plate when installing the print head.



**16.** Secure the print head with four screws.



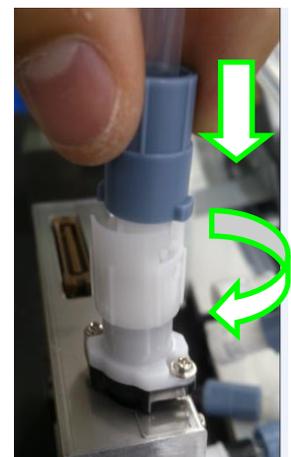
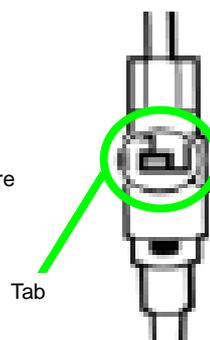
**17.** Connect the CABLE(HEAD)2-ASSY(MW) to the print head.

**18.** After replacement, press the **Power** button to turn the printer on.

INITIALIZING...  
PLEASE WAIT

**19.** After the print heads have been covered by the caps, connect the ink tube joint to the print head.

Check that the two tabs are fully engaged.



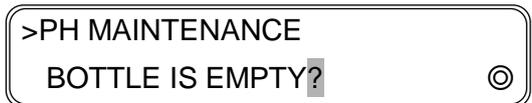
20. Select the print heads that have been replaced.  
Only the print head numbers are displayed.



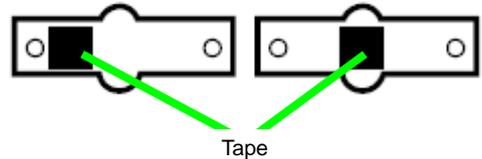
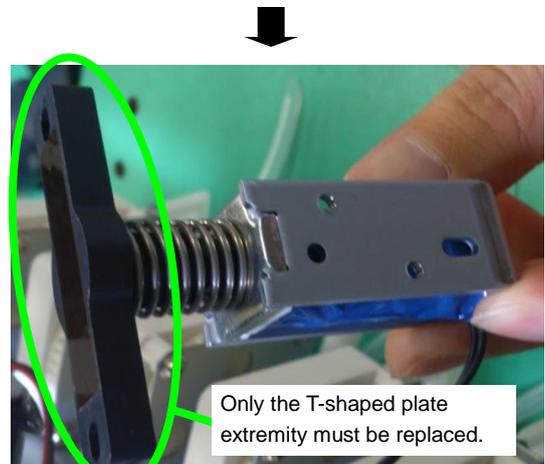
**Note**

Do not select print heads that have not been replaced as it may lead to print head malfunction.

21. Check that a waste ink bottle is installed and press the **OK** button.



22. Replace one SOLENOID ASSY(MV) of the CAPPING-UNIT-MW to supply ink only to the print head that has been replaced (see 6.10.7).

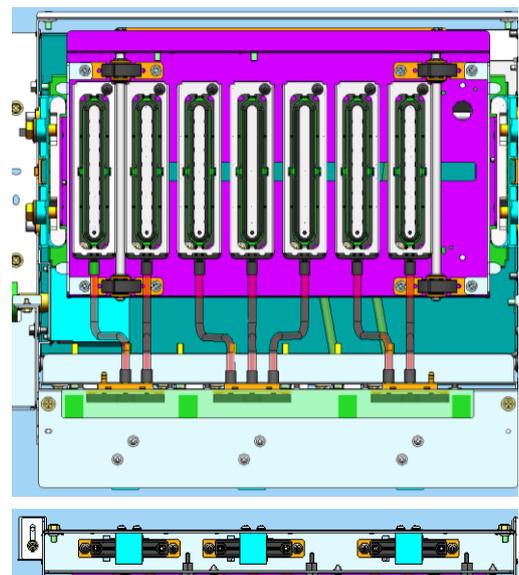


Prepare the SINGLE COLOR FILLING TOOL(MV) to prime the print head. SINGLE COLOR FILLING TOOL(MV) is classified into two, one of which is used depending on the location of the print head to prime. Only the position corresponding to the tape on the solenoid is primed.

<When you have replaced only one print head>  
When you have replaced one print head, replace the solenoid while referring to the table below.

 Turn this solenoid to match the table below.

Solenoid number	(1)	(2)	(3)
To prime the Lc head		Do not replace	Do not replace
To prime the Lm head		Do not replace	Do not replace
To prime the C head	Do not replace		Do not replace
To prime the Y head	Do not replace		Do not replace
To prime the K head	Do not replace		Do not replace
To prime the M head	Do not replace	Do not replace	
To prime the Gy head	Do not replace	Do not replace	



<When you replace multiple print heads>

Multiple print heads can be replaced at the same time, but depending on the head combination, you may have to install several SINGLE COLOR FILLING TOOL(MV).

Example:

Solenoid number	(1)	(2)	(3)	Remark
To prime the Lc and K heads			Do not replace	
To prime the Lm and Gy heads		Do not replace		
To prime the C and M heads	Do not replace			Two SINGLE COLOR FILLING TOOL(MV) need to be installed.
To prime the Y and Gy heads	Do not replace			
To prime the Lm, Y, and M heads				

However, it is not possible to replace two print heads that use the solenoid (2) (C, Y, and K) at the same time.

Solenoid number	(1)	(2)	(3)
The C and Y heads cannot be primed at the same time.			
The C and K heads cannot be primed at the same time.			
The Y and K heads cannot be primed at the same time.			
The C, Y, and K heads can be primed at the same time.		Do not replace	

23. Press the **OK** button.

START PRIMING PH?  
OK?

24. Open the ink box cover so that the printer checks the ink cartridges. Follow the panel messages to install the ink cartridges.

OPEN INK BOX COVER

25. Close the ink box cover.

CLOSE INK BOX COVER

26. Check that a waste ink bottle is installed and press the **OK** button.

START FILLING  
BOTTLE IS EMPTY?

FILLING WITH LIQUID  
TIME REQUIRED Y:YY

27. Remove the tool and press the **OK** button.

REMOVE XXXXXX  
INK SUCTION TOOL

28. The cleaning process starts as shown on the panel.

START PH RECOVERY  
BOTTLE IS EMPTY? 

29. After the priming has finished, re-install the parts removed in step 9.

PH RECOVERING                   XXXXXXXX  
REQUIRED TIME                   Y:YY

30. Perform the check and adjustment required after replacing a print head.

### Notes

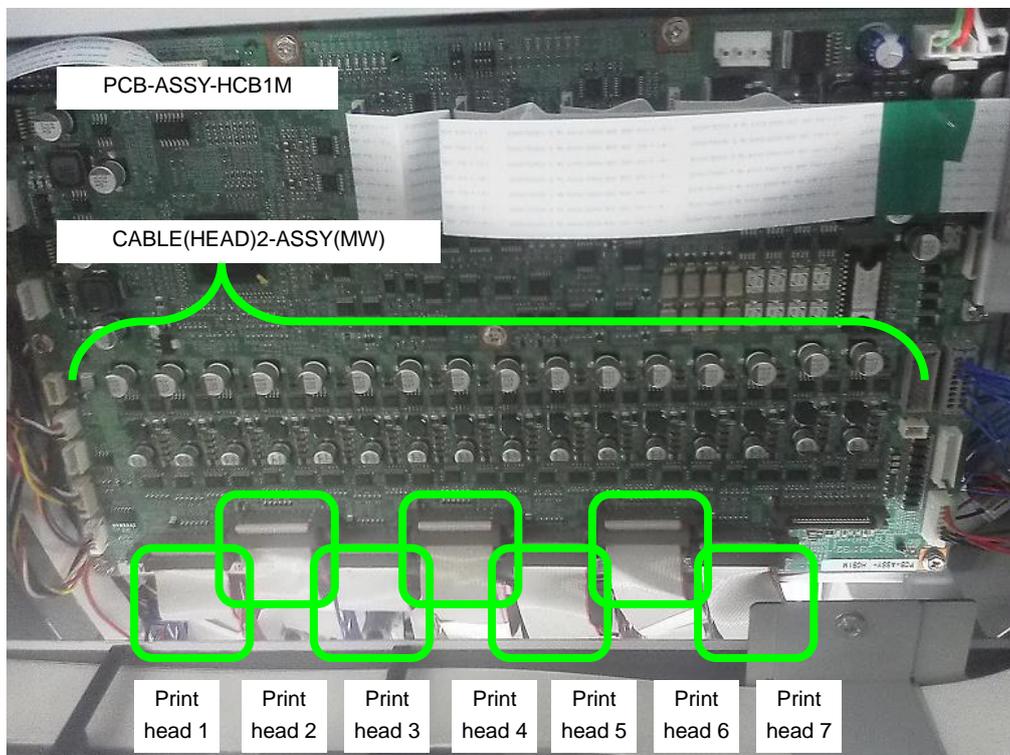
After the print head replacement, be sure to perform the following check and adjustment.

- (1) Nozzle print pattern: **NOZZLE PRINT**  
Confirm that there is no clogged nozzle on the new print head.  
If a missing dot is found, perform **NORMAL** cleaning.
- (2) Nozzle position adjustment: **NOZZLE POS ADJ**  
See **3.4.2.2 MECHANICAL ADJUST (2) NOZZLE POS ADJ.**
- (3) Head position adjustment: **PH POSITION ADJUST**  
See **3.4.2.2 MECHANICAL ADJUST (1) (c) ENTER PH ADJ VAL.**
- (4) Head right/left adjustment: **R/L ADJ** (only for the newly-installed print head)  
See **3.4.2.2 MECHANICAL ADJUST (1) (d) ENTER RL ADJ VAL.**

## 6.8.2 CABLE(HEAD)2-ASSY(MW)

<Removal>

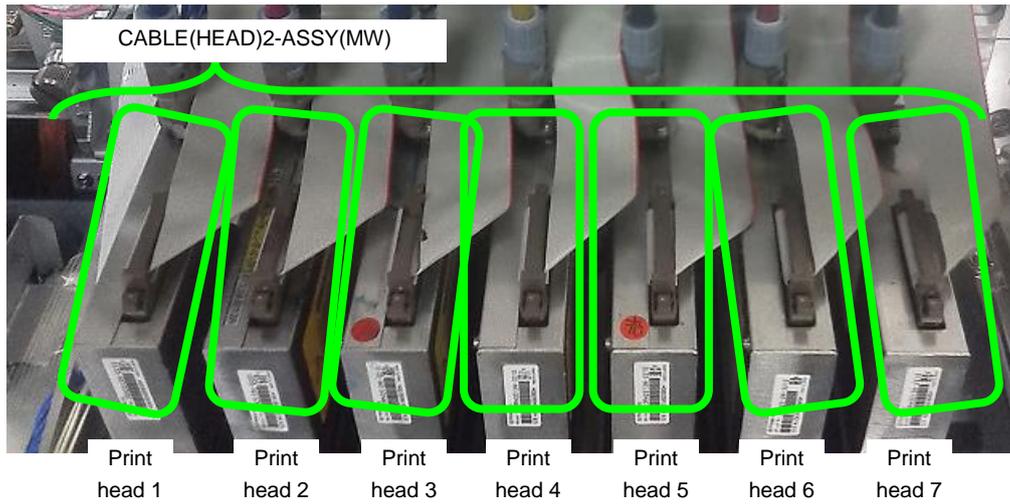
1. Press the **CANCEL** button and the **POWER** button on the operation panel at the same time to turn the printer off. Turn off the main power switch at the back of the printer.
2. Lower the CAPPING-UNIT-MW to move the carriage to the left.
3. Remove:
  - COVER(L)ASSY-MW
  - COVER(Y-RAIL)-SL-MW.For the procedure, see **6.3**.
4. Remove the COVER-CARRIAGE-MW (see **6.7.1**).
5. Remove the CABLE(HEAD)2-ASSY(MW) from the PCB-ASSY-HCB1M.



**Note**

Pay attention to connect the print head correctly when installing the cable.

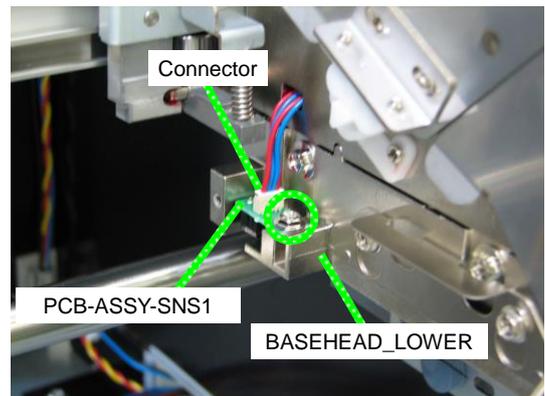
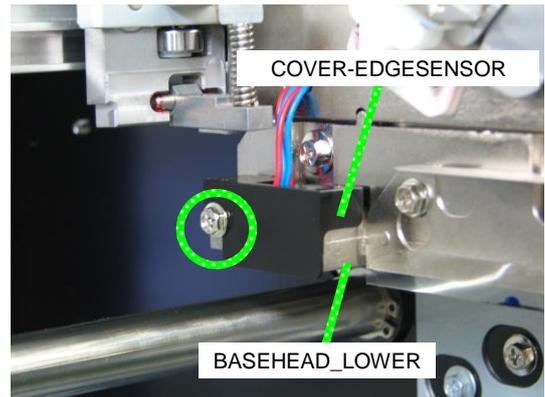
6. Remove the CABLE(HEAD)2-ASSY(MW) from the print head.



### 6.8.3 PCB-ASSY-SNS1

<Removal>

1. Open:
  - COVER(FRONT)ASSY-MW,
  - COVER(COVER-FU)-MW; and
  - COVER(COVER-FB)-MW.
2. Remove:
  - One screw securing the COVER-EDGESENSOR to the BASEHEAD\_LOWER; and
  - COVER-EDGESENSOR.
3. Disconnect the PCB-ASSY-SNS1 connector.
4. Remove:
  - One screw securing the PCB-ASSY-SNS1 to the BASEHEAD\_LOWER; and
  - PCB-ASSY-SNS1.



#### Note for installation

Install the PCB-ASSY-SNS1 so that it is parallel to the BASEHEAD\_LOWER.

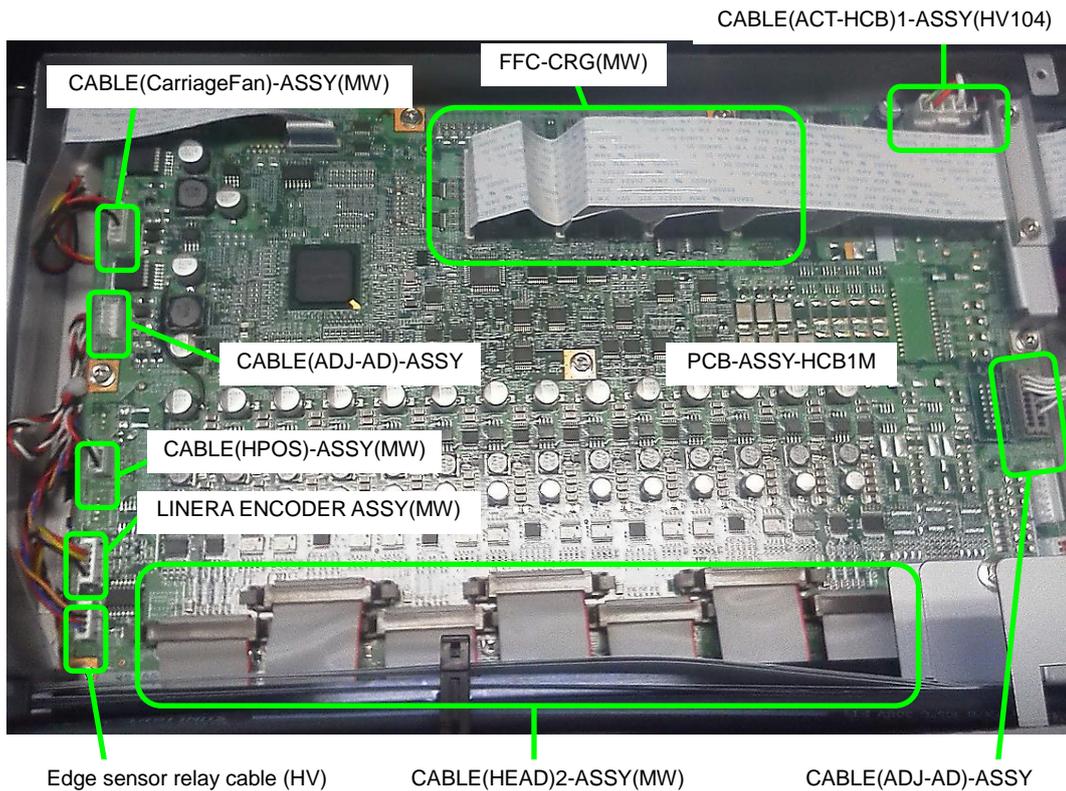
## 6.8.4 PCB-ASSY-HCB1M

<Removal>

1. Press the **CANCEL** button and the **POWER** button on the operation panel at the same time to turn the printer off. Turn off the main power switch at the back of the printer.
2. Lower the CAPPING-UNIT-MW to move the carriage to the left.
3. Remove:
  - COVER(L)ASSY-MW; and
  - COVER(Y-RAIL)-SL-MW.For the procedure, see **6.3**.
4. Remove the COVER-CARRIAGE-MW (see **6.7.1**).
5. Remove the COVER(HCB1) with five fixing screws.

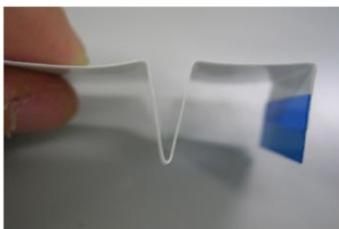


6. From the PCB-ASSY-HCB1M, remove:
- CABLE(HEAD)2-ASSY(MW);
  - FFC-ADJ, the FFC-CRG(MW);
  - LINEAR ENCODER ASSY(MW);
  - Edge sensor relay cable (HV);
  - CABLE(HPOS)-ASSY(MW);
  - CABLE(CarriageFan)-ASSY(MW);
  - and
  - CABLE(ACT-HCB)1-ASSY(HV104).

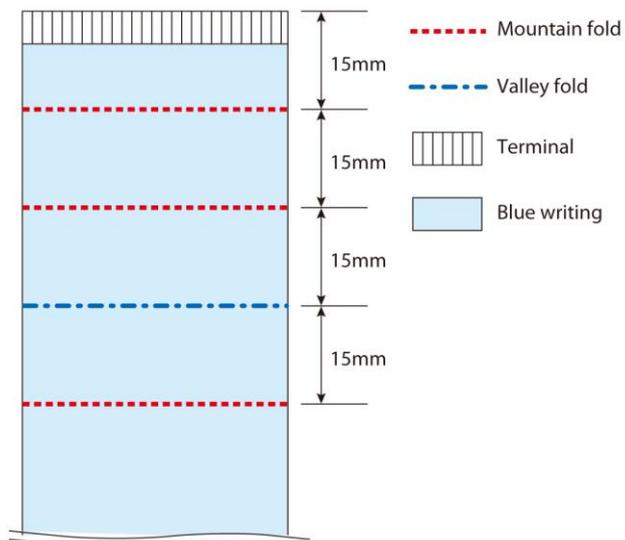


When installing the FFC-CRG(MW) cable, check that it is correctly folded.

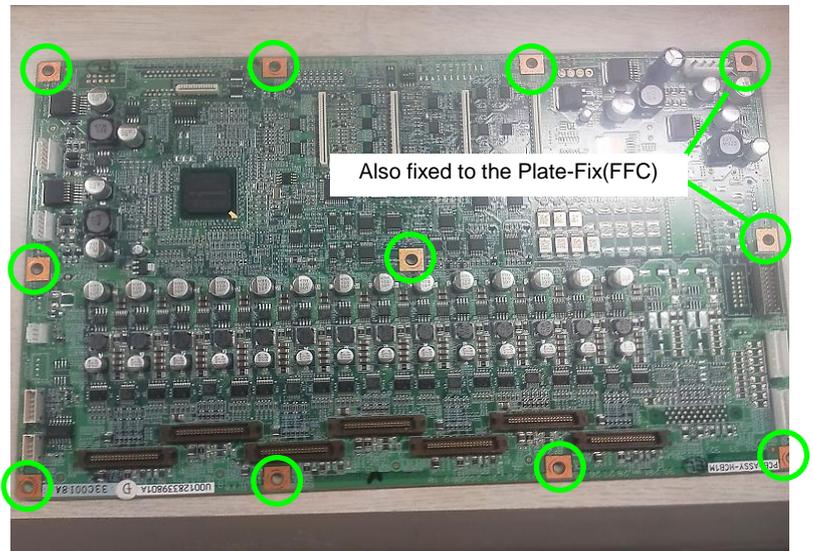
[Picture of the cable]



[Detailed view of the cable surface]



7. Remove the PCB-ASSY-HCB1M and 11 fixing screws.



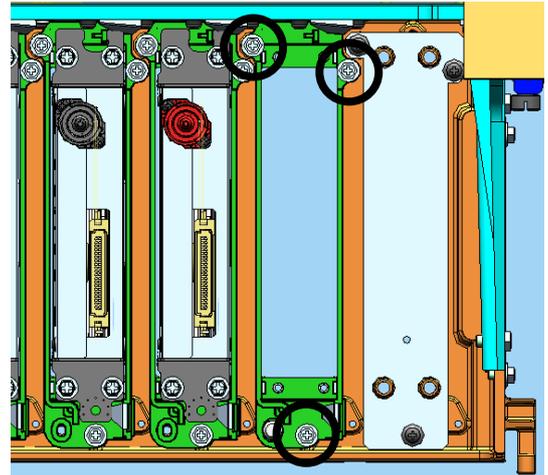
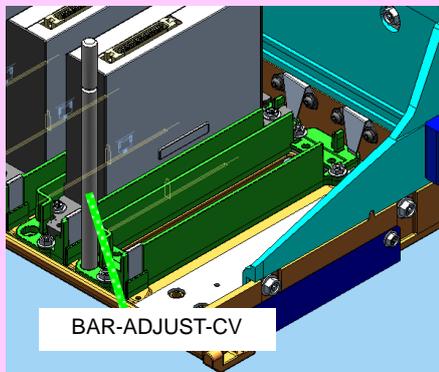
### 6.8.5 CASE-HEAD-MW-ASSY

<Removal>

1. Remove a PRINT-HEAD.
2. Remove the CASE-HEAD-MW-ASSY and three fixing screws.

**Note for installation**

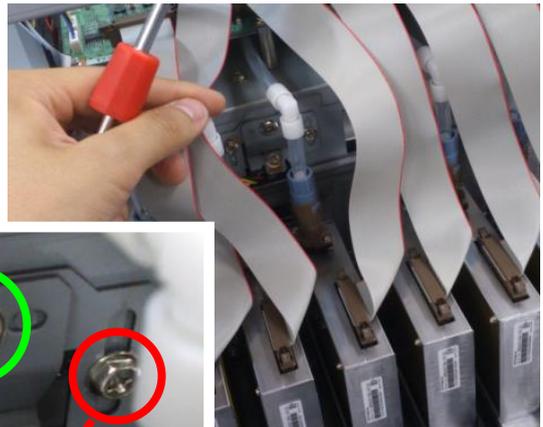
When installing the CASE-HEAD-MW-ASSY to the HEAD-BASE-LOWER, insert the BAR-ADJUST-CV to adjust the position.



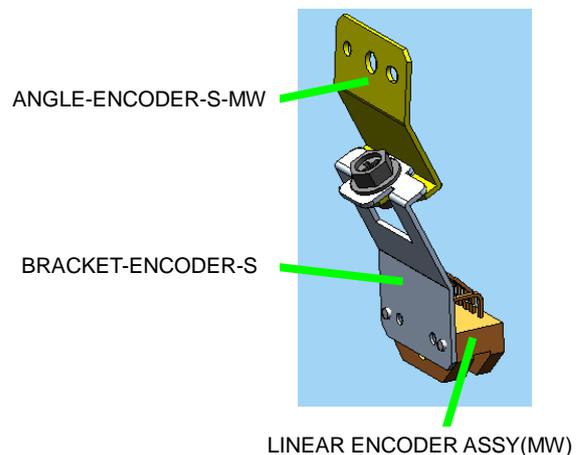
### 6.8.6 LINEAR ENCODER ASSY(MW)

<Removal>

1. Open the COVER(FRONT)ASSY-MW (see 6.3).
2. Lower the CAPPING-UNIT-MW to move the carriage to the maintenance area.
3. Open:
  - COVER-CARRIAGE-MW; and
  - COVER(HCB1).
4. Disconnect the LINEAR ENCODER ASSY(MW) connector from the PCB-ASSY-HCB1M (see 6.8.4).
5. Remove:
  - One screw securing the ANGLE-ENCODER-S-MW to the carriage;
  - LINEAR ENCODER ASSY(MW);
  - BRACKET-ENCODER-S; and
  - ANGLE-ENCODER-S-MW.



6. Remove the two screws securing the LINEAR ENCODER ASSY(MW). Then cut the insulok cable tie fixed to the BRACKET-ENCODER-S, and remove the LINEAR ENCODER ASSY(MW).

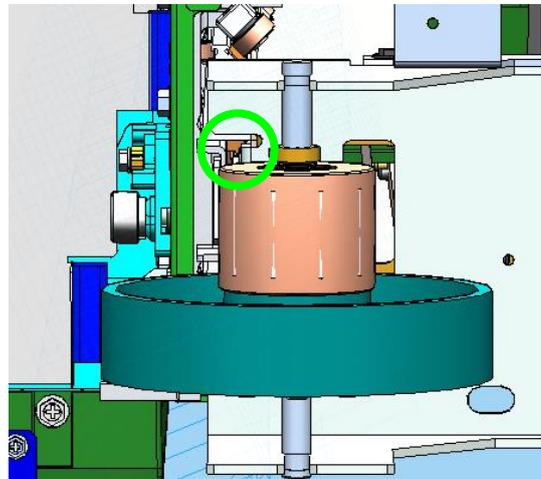
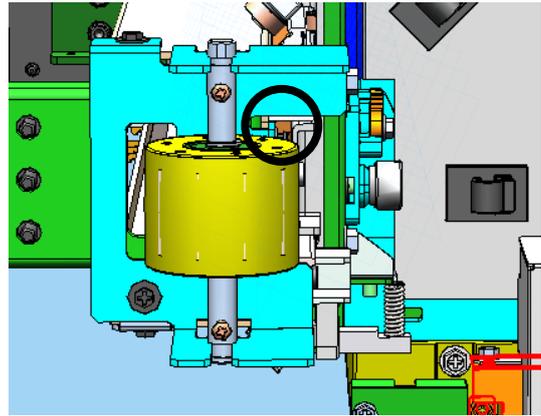


**Note for installation**

- (1) After removing the COVER(SIDE-R)-MW and the COVER(SIDE-L)-MW, move the carriage to check visually that the LINEAR ENCODER ASSY(MW) does not contact:
  - T-FENCE's side surface; and
  - T-FENCE's upper part.

It is checked easily if viewed from the angle shown in the figure to the right.

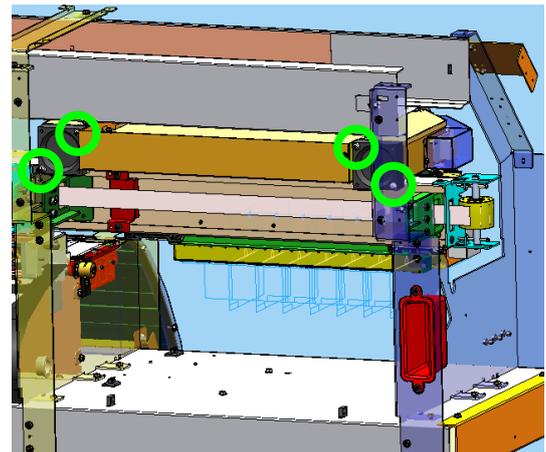
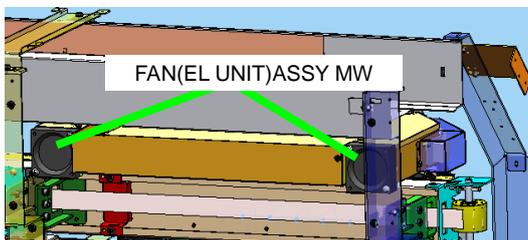
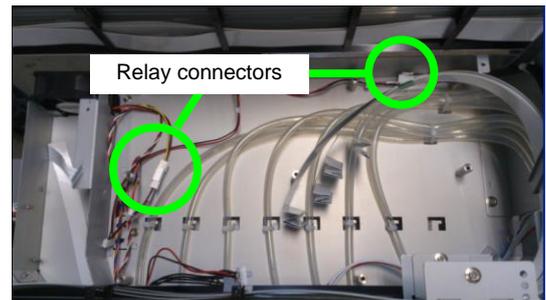
- (2) When installing the LINEAR ENCODER ASSY(MW) to the LINEAR-ENCODER-MW-ASSY, secure it with a cable tie. The cable may break if the part is not secured with a cable tie.



## 6.8.7 FAN(EL UNIT)ASSY MW

<Removal>

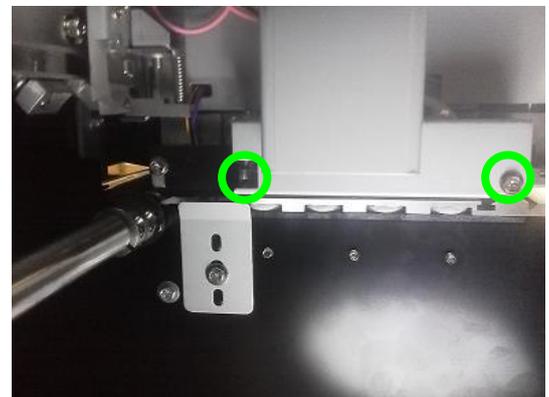
1. Remove the following parts (see 6.3).
  - COVER(FRONT)ASSY-MW;
  - COVER(L)ASSY-MW;
  - COVER(Y-RAIL)-SL-MW;
  - COVER(SIDE-L)-MW;
  - COVER(R-L)-MW; and
  - STAY(HANDLE-L)-MW
2. Lower the CAPPING-UNIT-MW to move the carriage to the left.
3. Remove the following parts.
  - COVER-CARRIAGE-MW
  - COVER(HCB1)
4. Disconnect the FAN(EL UNIT)ASSY MW relay connectors, and remove the two screws securing the FAN(EL UNIT)ASSY MW to the printer back.
5. Without pulling the connector, remove the FAN(EL UNIT)ASSY MW with four fixing screw.



### 6.8.8 PCB-ASSY-ADJ1

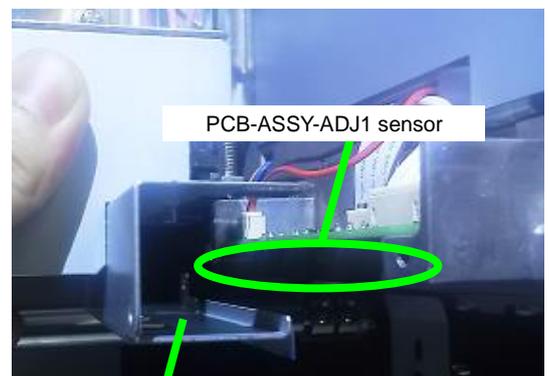
<Removal>

1. Press the **CANCEL** button and the **POWER** button on the operation panel at the same time to turn the printer off. Turn off the main power switch at the back of the printer.
2. Lower the CAPPING-UNIT-MW to move the carriage to the left.
3. Remove the ADJ1-COVER-ASSY with two fixing screws.



#### Note

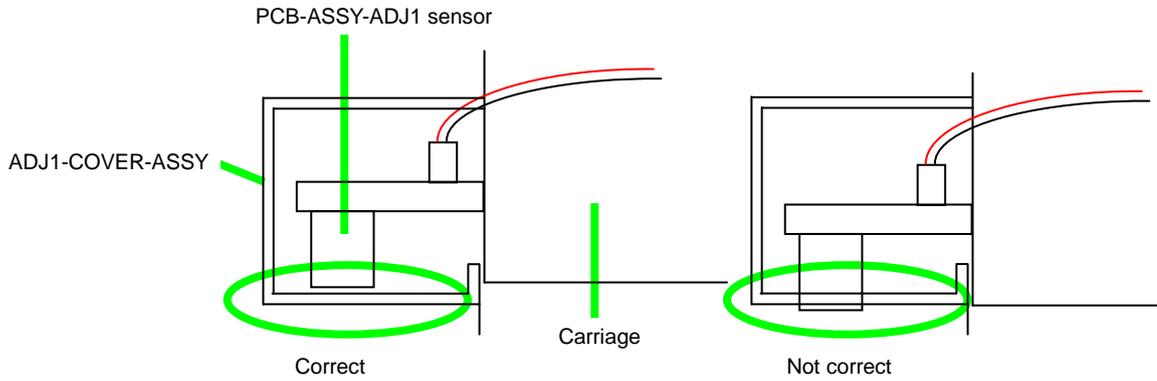
Pay attention not to damage the PCB-ASSY-ADJ1 sensor when removing or installing the ADJ1-COVER-ASSY.



ADJ1-COVER-ASSY

**Note**

The figure below shows the correct ADJ1-COVER-ASSY installation. When installing the ADJ1-COVER-ASSY, check that the bottom surface of the ADJ1-COVER-ASSY is lower than the PCB-ASSY-ADJ1's sensor.



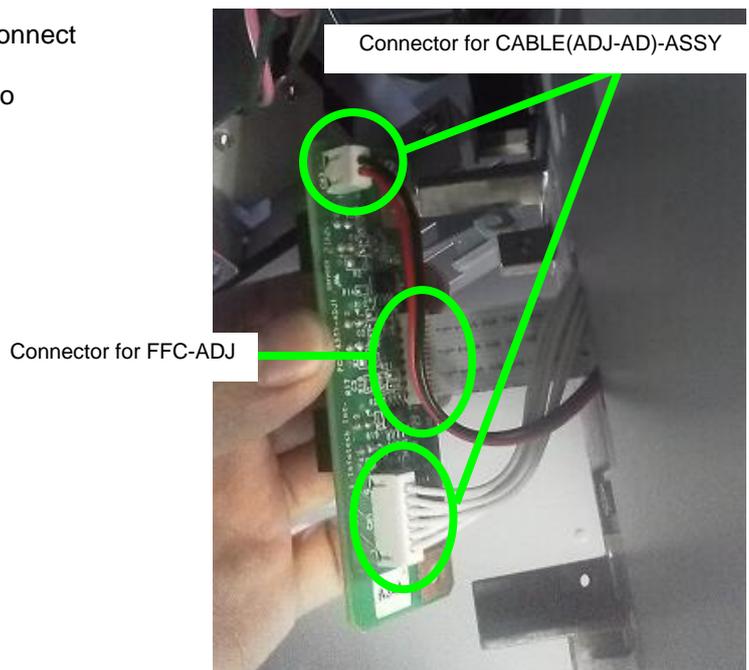
- 4. Remove the PCB-ASSY-ADJ1 and two fixing screws.

**Note**

With the PCB-ASSY-ADJ1, do not disconnect or connect the connector. Connecting or disconnecting the connector may apply too much stress to the PCB-ASSY-ADJ1 and damage it.



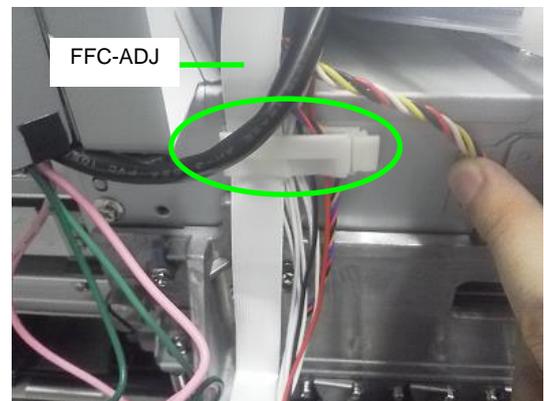
- 5. From the PCB-ASSY-ADJ1, disconnect the following.
  - CABLE(ADJ-AD)-ASSY's two connectors
  - FFC-ADJ's connector.



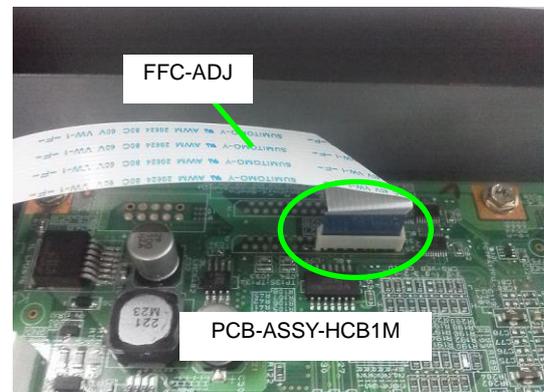
### 6.8.9 FFC-ADJ

<Removal>

1. Remove the PCB-ASSY-ADJ1 (see 6.8.8).
2. Remove the COVER(L)ASSY-MW and the COVER(Y-RAIL)-SL-MW (see 6.3).
3. Remove the COVER-CARRIAGE-MW (see 6.7.1).
4. Remove the FFC-ADJ from the clamp securing it.



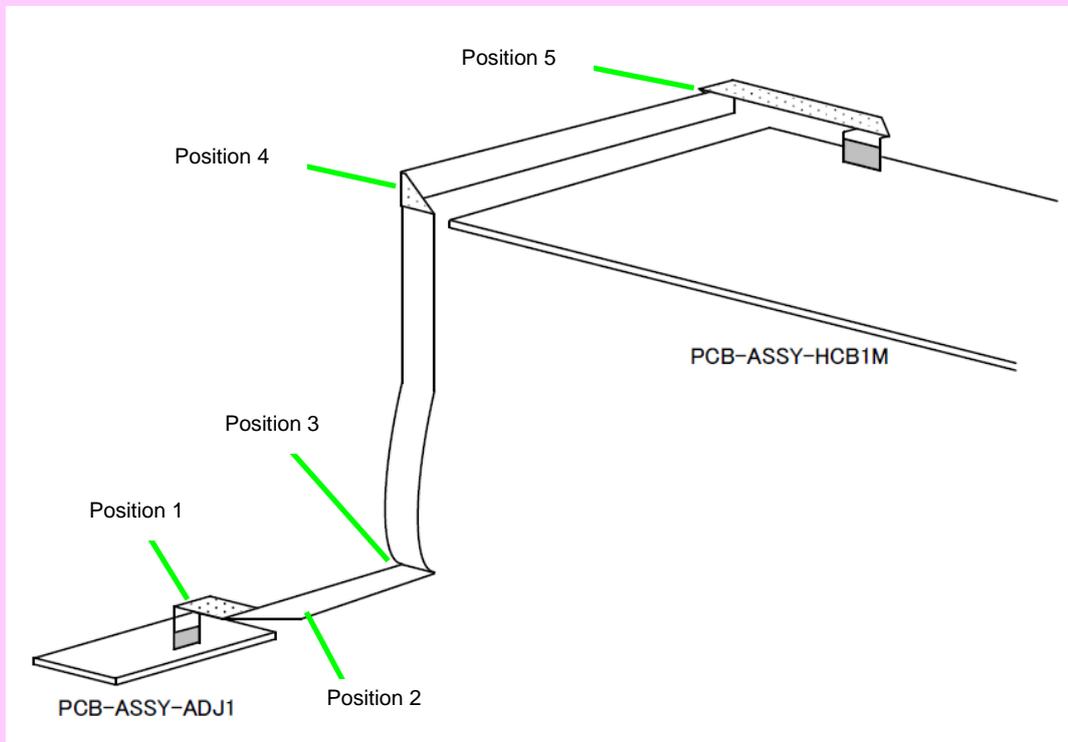
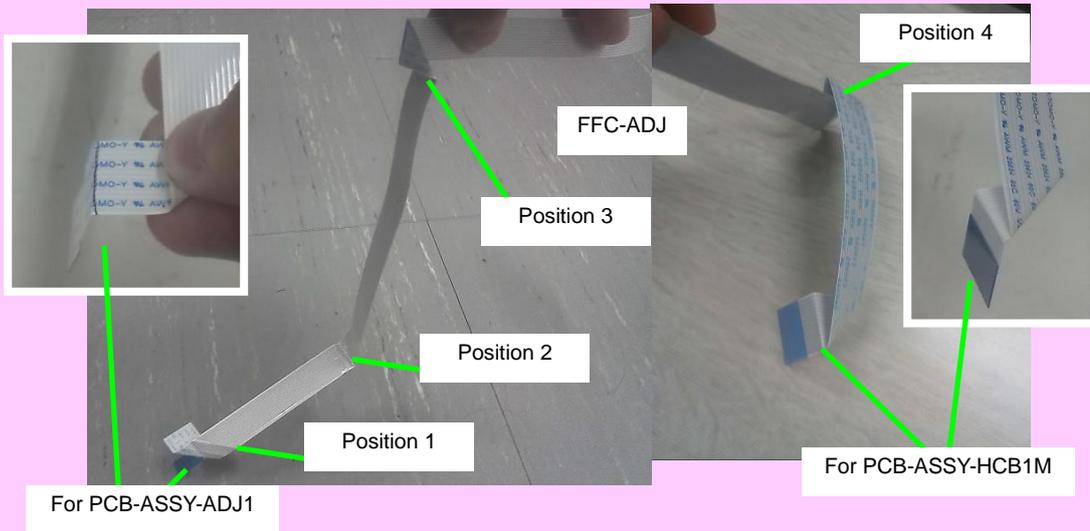
5. Remove the FFC-ADJ from the PCB-ASSY-HCB1M.

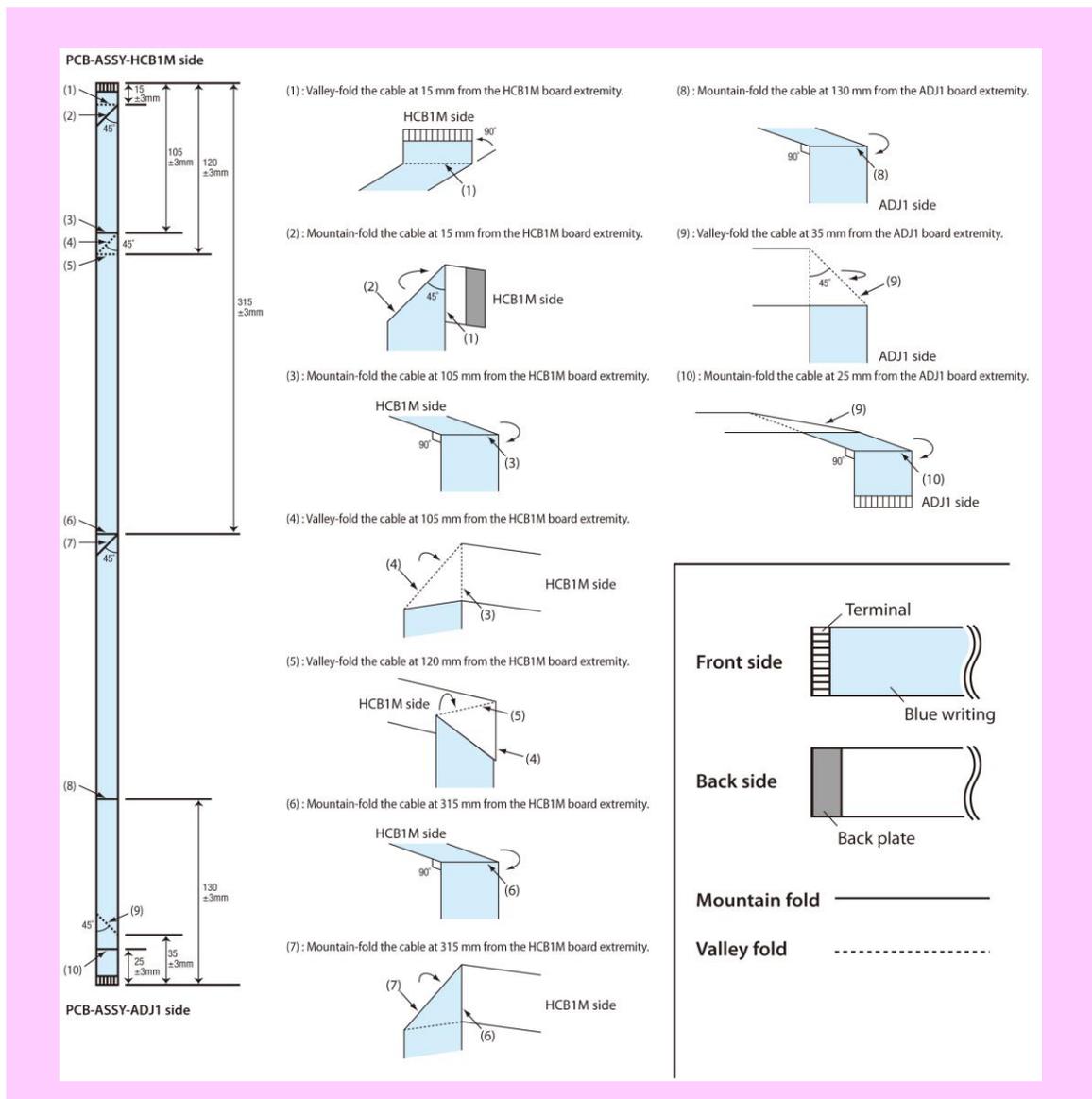


<Assembly>

**Note**

The two extremities of the FFC-ADJ are different, one is for the PCB-ASSY-ADJ1 and the other for the PCB-ASSY-HCB1M.

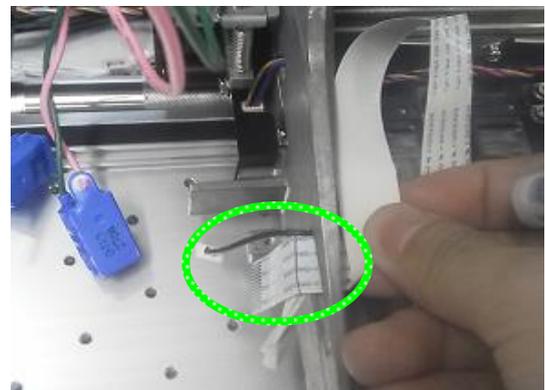




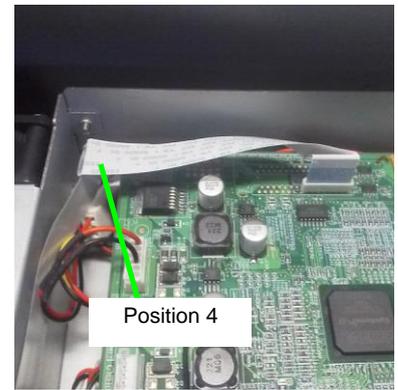
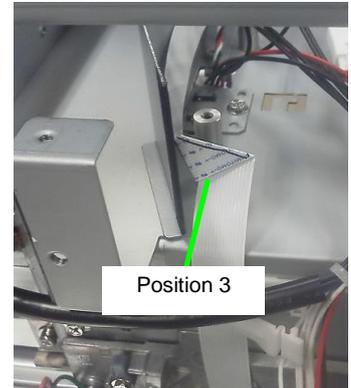
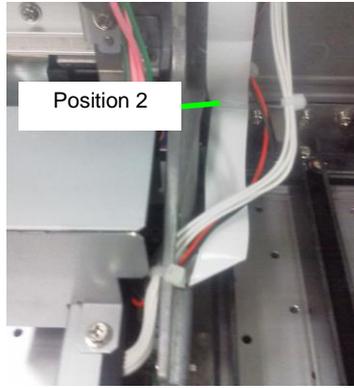
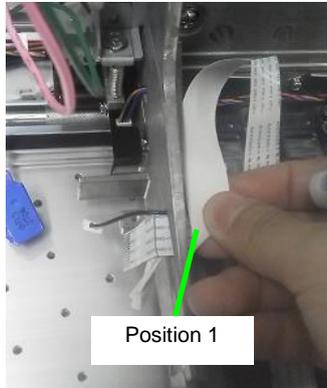
1. Pass the FFC-ADJ (extremity for ADJ1) through the carriage hole.

**Note**

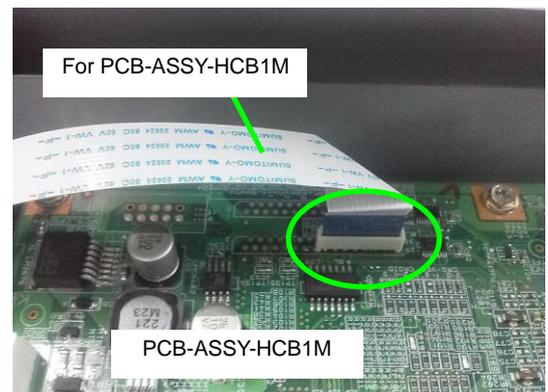
Pay attention to the front and reverse sides of the FFC-ADJ. The connectors will not connect if the sides are reversed.



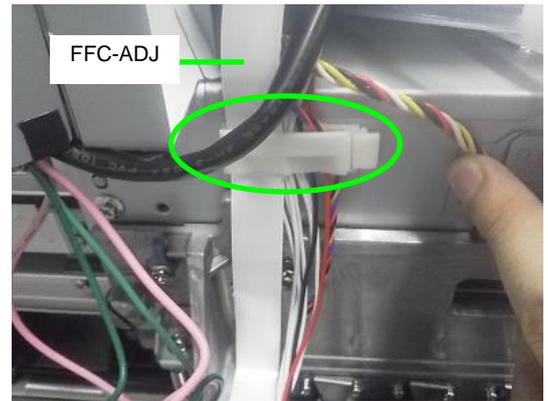
2. Put the FFC-ADJ in position (extremity for HCB1M) to the CN27 connector on the PCB-ASSY-HCB1M.



3. Connect the extremity for HCB1M of the FFC-ADJ to the CN27 connector on the PCB-ASSY-HCB1M.



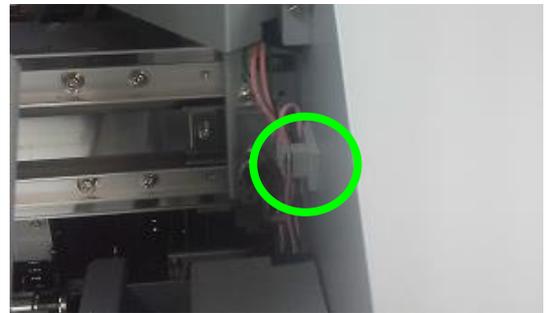
4. Fix the FFC-ADJ, the CABLE(ADJ-AD)-ASSY, and the edge sensor relay cable (HV) with clamps. Place the surplus of FFC-ADJ cable (tolerance) between the position 1 and the clamp.
5. Install the PCB-ASSY-ADJ1 (see 6.8.8).



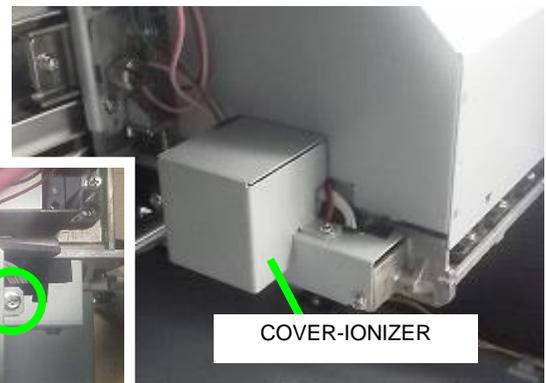
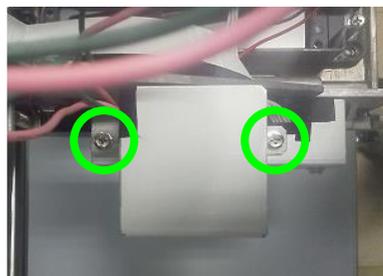
### 6.8.10 Ionizer

<Removal>

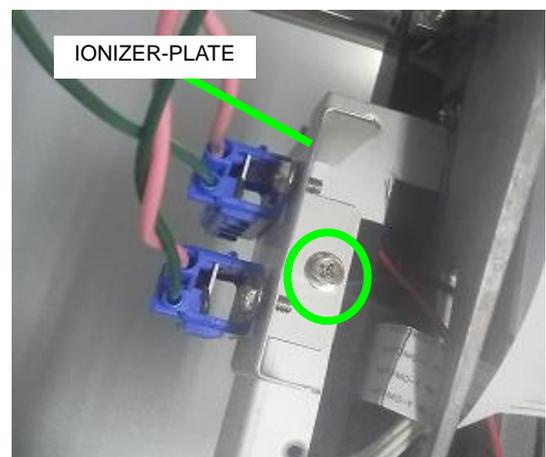
1. Press the **CANCEL** button and the **POWER** buttons on the operation panel at the same time to turn the printer off. Then turn off the main power switch at the back of the printer.
2. Lower the CAPPING-UNIT-MW to move the carriage to the left.
3. Remove the IONIZER MODULE (+) and IONIZER MODULE (-) harnesses from the clamp securing them.



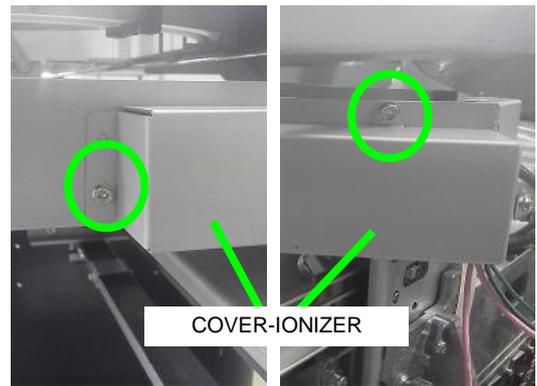
4. Remove the COVER-IONIZER with two fixing screws.



5. Remove the IONIZER-PLATE and the fixing screw.



- 6. Remove the COVER-IONIZER and two fixing screws.



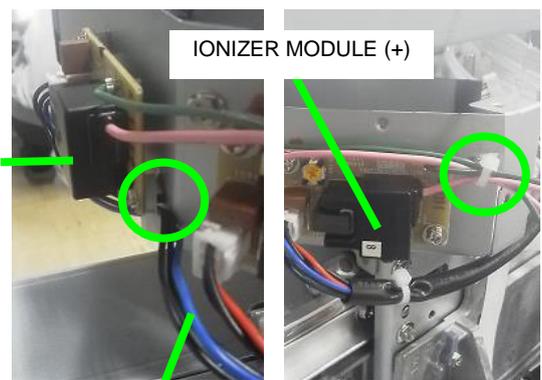
**Notes for installation**

Do not catch the IONIZER MODULE (+) and IONIZER MODULE (-) harnesses in the COVER-IONIZER when installing them.  
Pass the IONIZER MODULE (+) and IONIZER MODULE (-) harnesses through the COVER-IONIZER notch.



- 7. Cut the two cable ties fixing the IONIZER MODULE (+) and IONIZER MODULE (-) harnesses.

IONIZER MODULE (-)



CABLE (ADJ-AD)-ASSY on the IONIZER MODULE (-) side

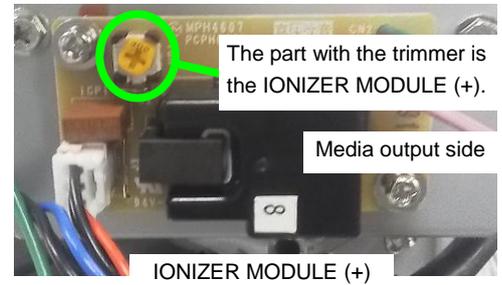
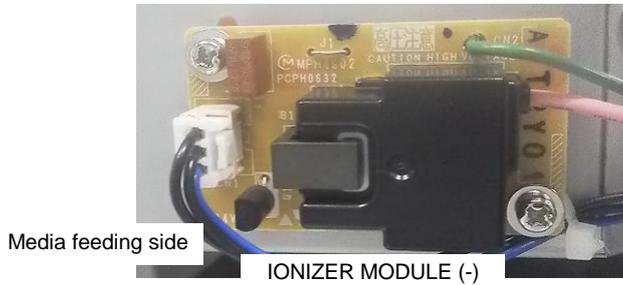
**Notes for installation**

When installing the IONIZER MODULE (+) and IONIZER MODULE (-) harnesses, secure them with cable ties as shown in the picture to the right. Then cut the surplus of the cable ties.  
Fix the CABLE(ADJ-AD)-ASSY harness to the IONIZER MODULE (-) spacer with a cable tie. Then cut the surplus of the cable ties.

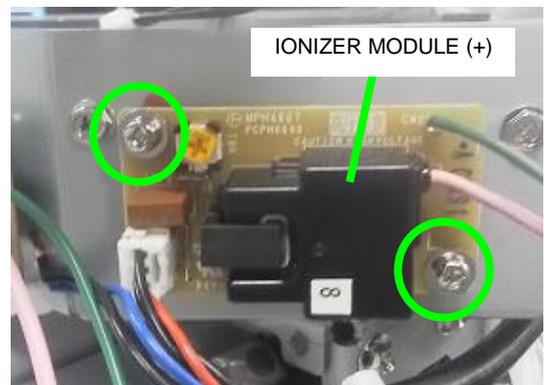
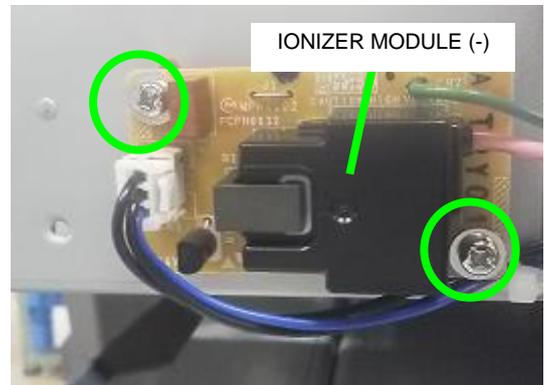


Cut the surplus of the cable ties

8. Disconnect the two CABLE(ADJ-AD)-ASSY connectors from the IONIZER MODULE (+) and IONIZER MODULE (-).



9. Remove the IONIZER MODULE (+) and the IONIZER MODULE (-) boards with two fixing screws each (total of four).

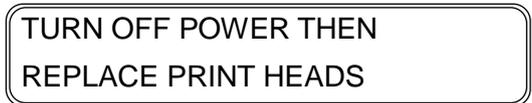
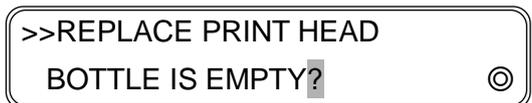


### 6.8.11 CAM-UD

**Notes**

- The print heads are removed during this procedure. Therefore, the procedure must be performed as fast as possible to prevent the print heads from drying or being damaged.
- The carriage is removed during this procedure. Prepare a stand to place the carriage in advance before starting the procedure.

1. Press **ONLINE** button to set the printer offline.
2. Press the following buttons in the given order: **CANCEL**, **Right**, **CANCEL**, **CANCEL** and then input the password (see **3.2 Maintenance Mode Operations**) to enter the maintenance mode.
3. Press the **MAINTENANCE** button, select **PH MAINTENANCE** with the **Up** and **Down** buttons, and press the **OK** button.
4. Select **REPLACE PRINT HEAD** with the **Up** and **Down** buttons, and press the **OK** button.
5. Check that a waste ink bottle is installed and press the **OK** button.
6. Press the **OK** button to move the carriage to the maintenance area.



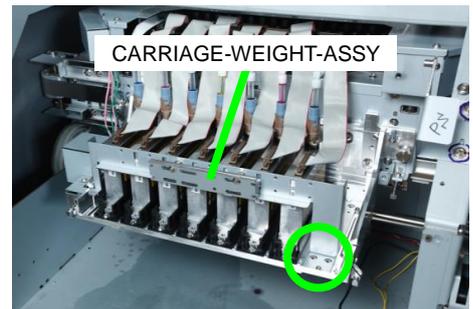
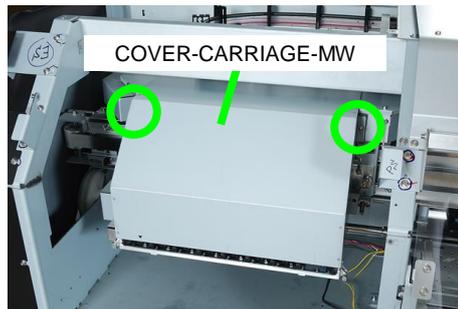
**Note**

The warning buzzer sounds while the print heads are uncapped. (The warning may be disabled in the settings.)

7. Press the **Power** switch to turn the printer off.

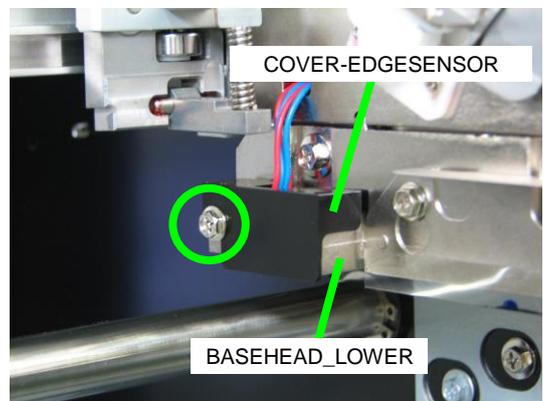
- 8.** Open the COVER(CENTER)-F, and remove:
- COVER(Y-RAIL)-SL-MW
  - COVER(Y-RAIL)-SR-MW
  - COVER(L)ASSY-MW
  - COVER(R)ASSY-MW
- For the procedure, see 6.3.

- 9.** Remove the following parts.
- COVER-CARRIAGE-MW
  - CARRIAGE-WEIGHT-ASSY

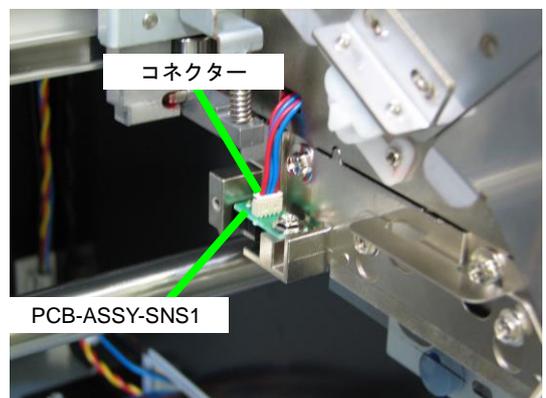


- 10.** Remove the PCB-ASSY-ADJ1 (see 6.8.8).

- 11.** Remove the screw securing the COVER-EDGESENSOR to the BASEHEAD\_LOWER, and remove the COVER-EDGESENSOR.



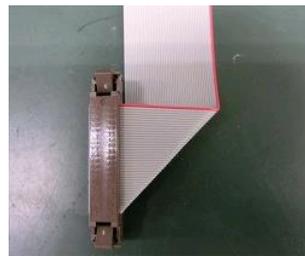
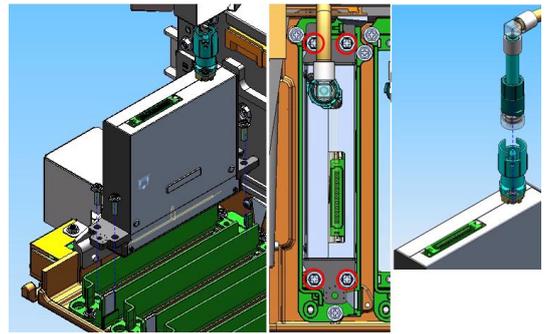
- 12.** Disconnect the PCB-ASSY-SNS1 connector.



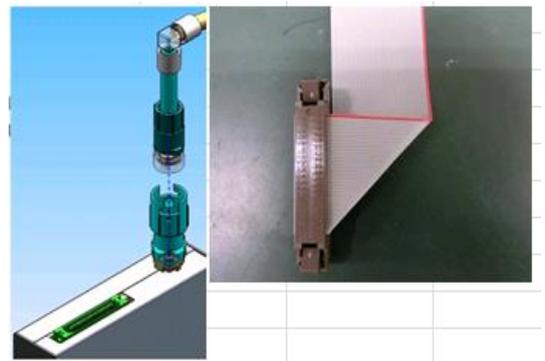
13. Remove the four screws, and disconnect the joints and the print head cables for the BK head and the Y head, and remove the BK head and the Y head.

**Note**

Pay attention as ink may leak from the head nozzle surface if this surface is damaged or dried.



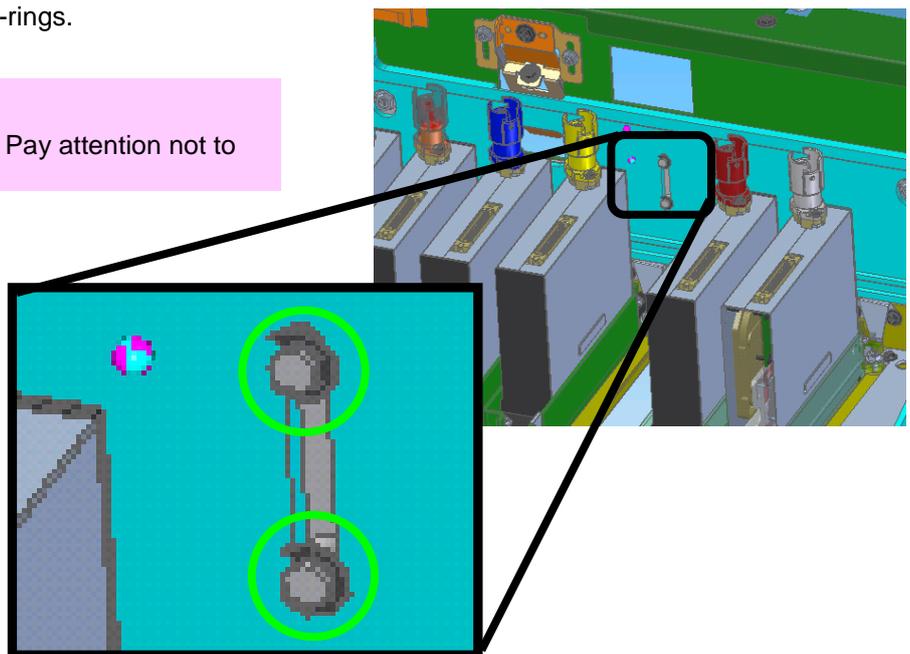
14. Disconnect the joints and the print head cables for the other print heads.



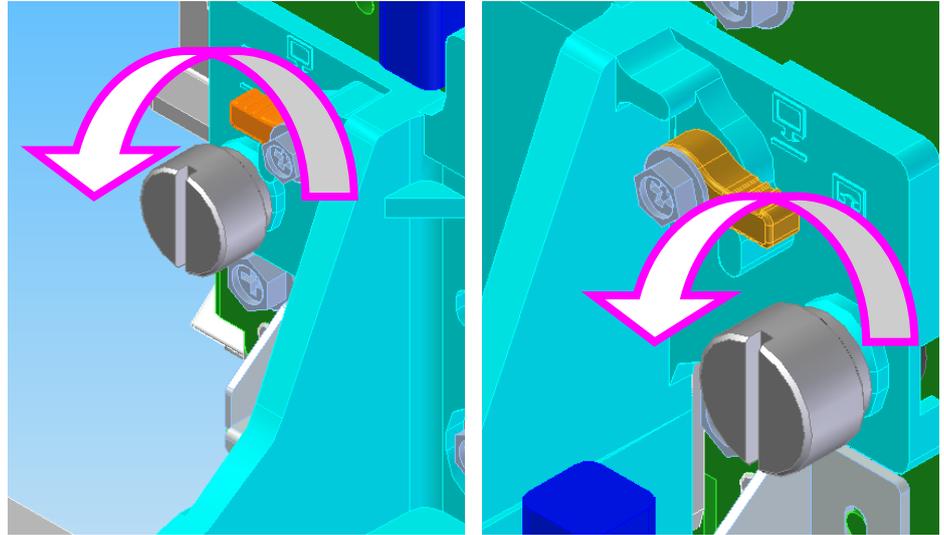
15. Remove the two E-rings.

**Note**

The E-rings are small. Pay attention not to lose them.



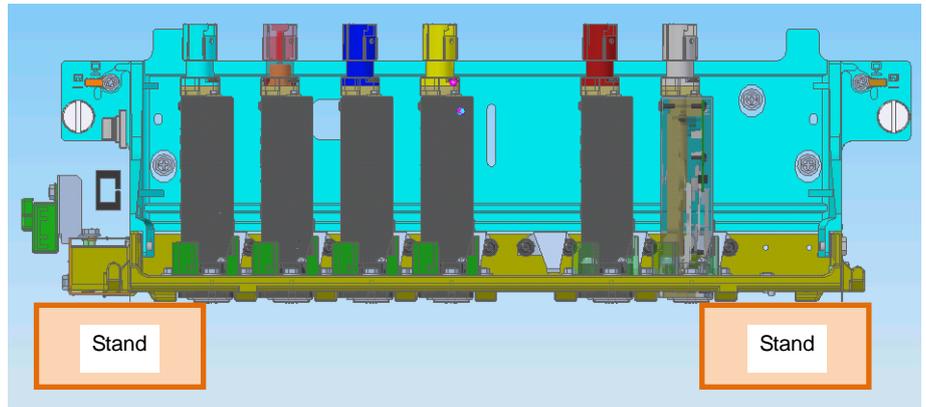
16. Loosen the two thumb screws.



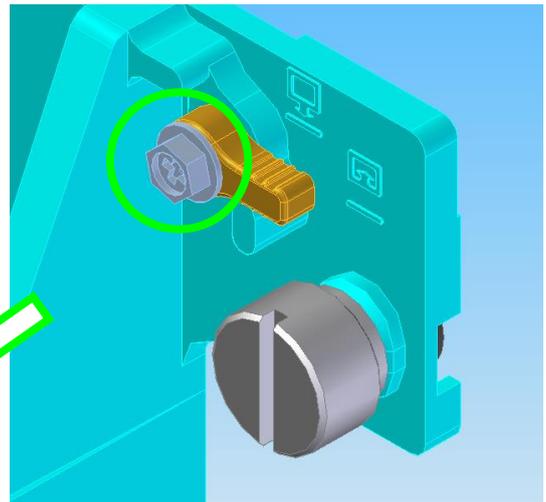
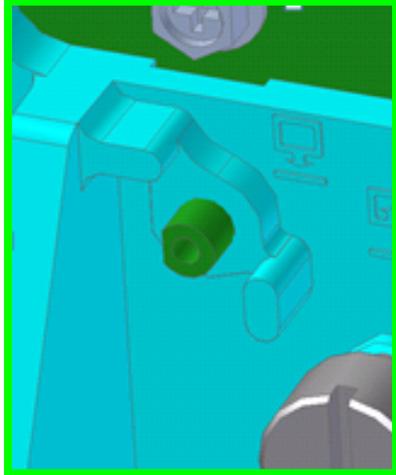
17. Place the removed head bases on the stands prepared in advance.

**Notes**

- Do not touch the print heads or the stands.
- Pay attention as ink may leak from the head nozzle surface if this surface is damaged or dried.



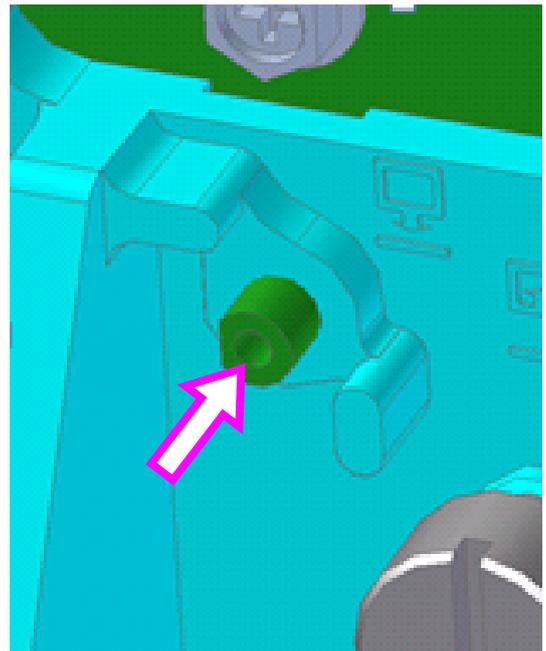
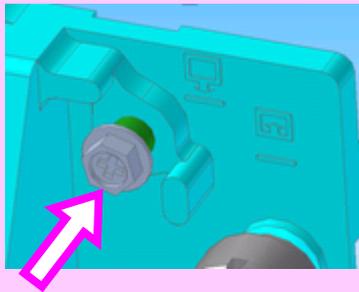
18. Remove the two screws securing the LEVER-UD (on the right and left), and remove the LEVER-UD.



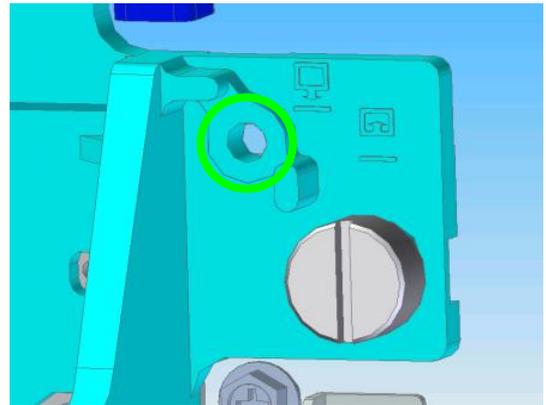
19. Push the CAM-UD from the front, and remove it from the head base.

**Note**

If the CAM-UD is strongly secured and cannot be removed, insert a screw inside the CAM-UD and push it inside while rotating the screw with a screwdriver.



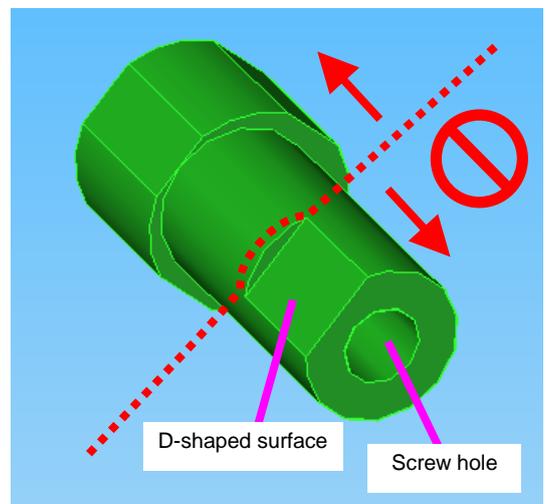
20. Clean the hole (remove metal dust) left by the CAM-UD removed from the head base.



21. Apply the supplied grease (EM-60L GREASE) onto the new CAM-UD.

**Note**

Do not apply grease on the whole circumference of the D-shaped surface on the extremity with the screw hole. The LEVER-UD will be installed to that side.

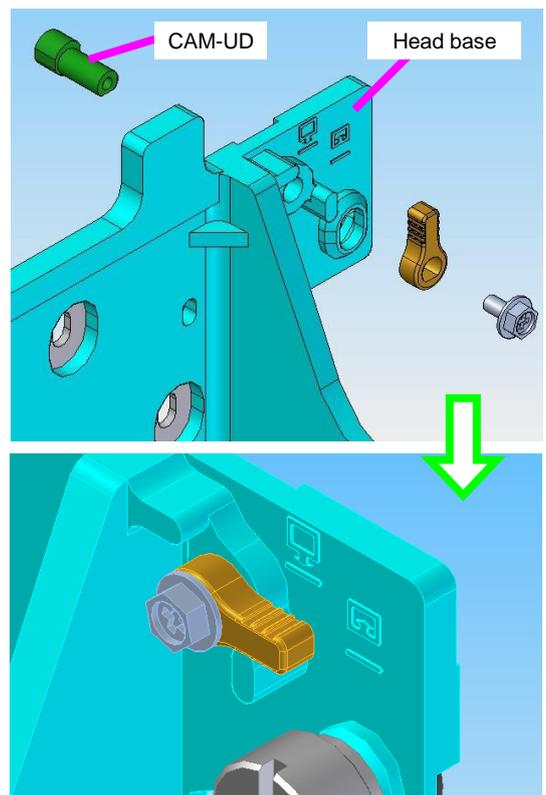
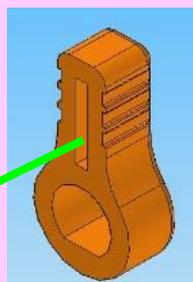


22. Insert the CAM-UD from the rear side of the head base, and tighten the two screws (on the right and left) to install the LEVER-UD.

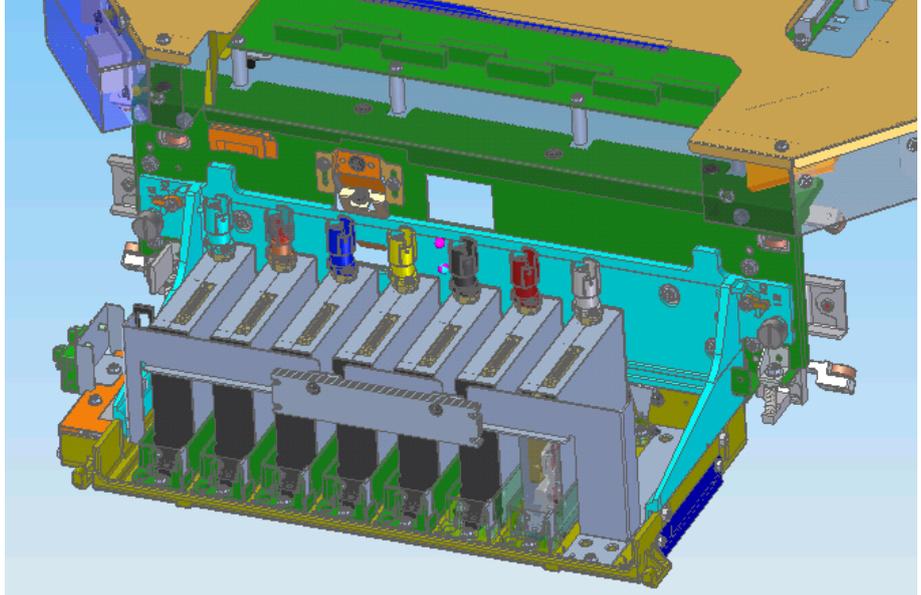
**Notes**

- Match the D-shaped surfaces of the CAM-UD and the LEVER-UD.
- The side of the LEVER-UD with the groove must be placed on the head base side.

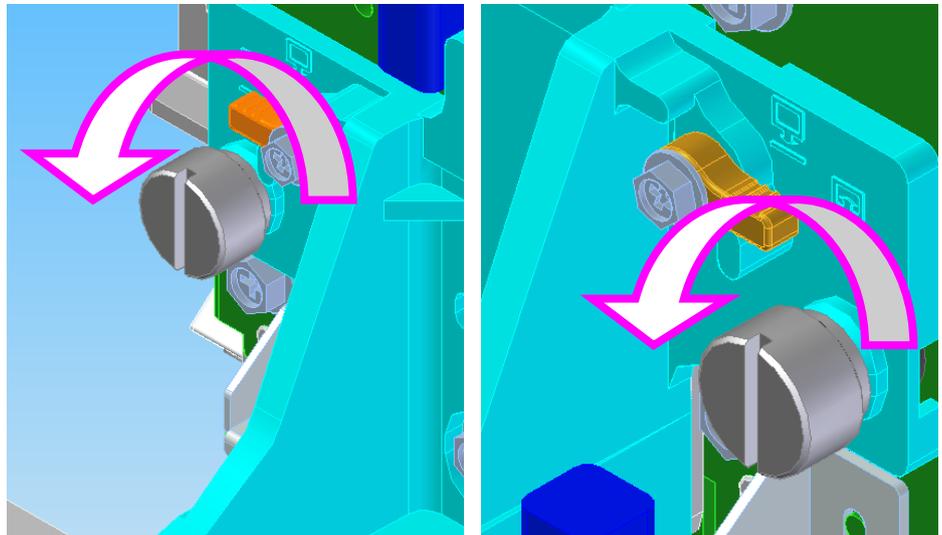
LEVER-UD groove-UD



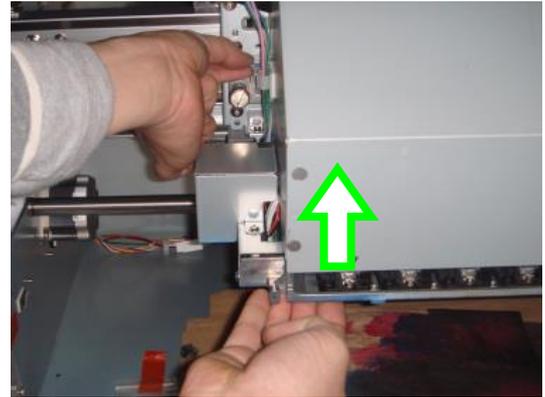
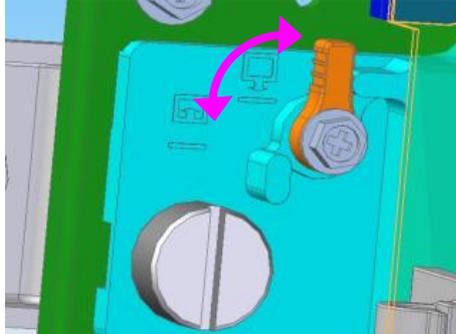
- 23.** Reinstall the head base, the print heads, and all other carriage parts in the reverse order of the removal procedure.



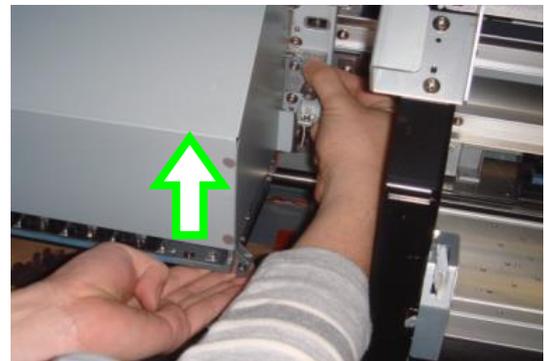
- 24.** Loosen the two thumb screws (on the right and left).



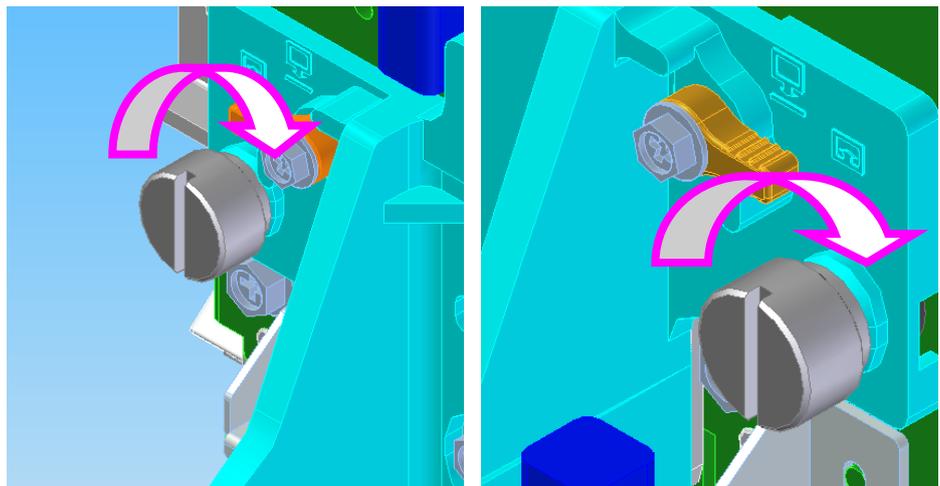
25. First, lift the left carriage extremity and operate the left LEVER-UD to check its operation.



26. Next, lift the right carriage extremity and operate the right LEVER-UD to check its operation.



27. Tighten the thumb screws.



28. Reinstall the exterior parts and all remaining parts of the printer in the reverse order of the removal procedure.

## 6.9 Disassembling and Reassembling the WIPING-UNIT-MW

The WIPING-UNIT-MW operates together with the MOTOR(PW)-MW-ASSY in the CAPPING-UNIT-MW.

### 6.9.1 WIPING-UNIT-MW

#### Note

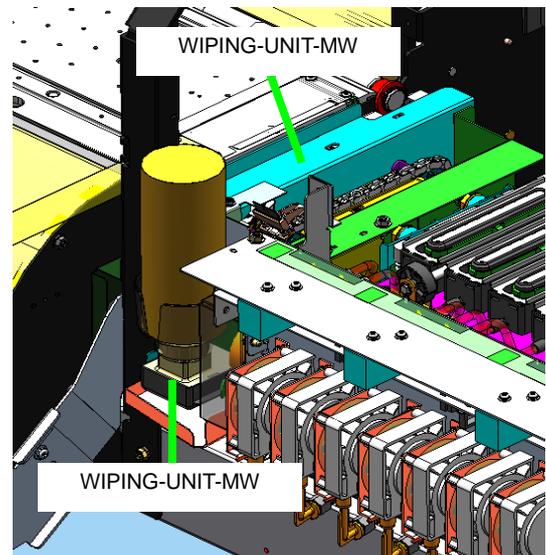
Always adjust the wiping position after replacing the wiping unit (see 7.5). If the position is not adjusted, wiping may not be performed correctly and print defects may appear.

<Removal>

1. Open the COVER(R)ASSY-MW (see 6.3).
2. Lower the CAPPING-UNIT-MW to move the carriage to the left.
3. Pull the CASE(WIPE)-ASSY to remove it from the WIPING-UNIT-MW.

#### Notes

- Be careful not to spill the wiper cleaning liquid out of the CASE(WIPE)-ASSY.
- When the wiper cleaning liquid bottle is on the CASE(WIPE)-ASSY, do not pull it out to prevent the liquid from coming out.



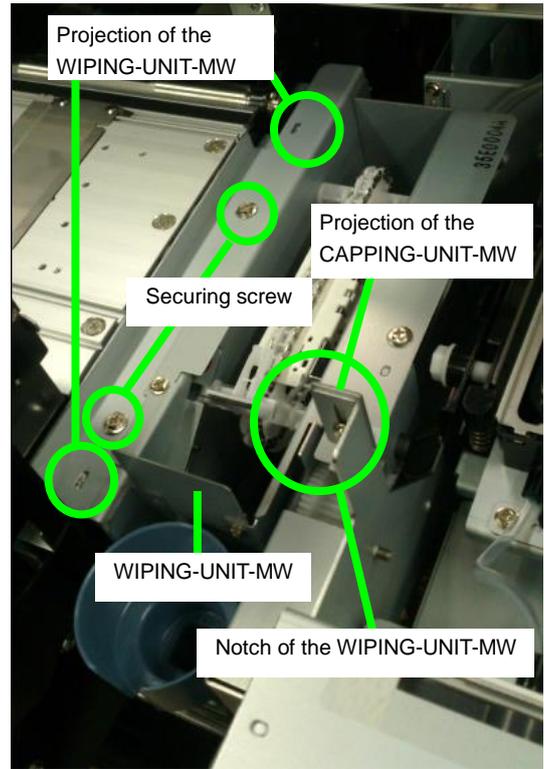
4. Remove the two screws securing the WIPING-UNIT-MW.

**Notes for installation**

Install the WIPING-UNIT-MW temporarily to the printer frame, adjust the position, and then tighten the screws to secure the WIPING-UNIT-MW.

**POSITIONING CHECK**

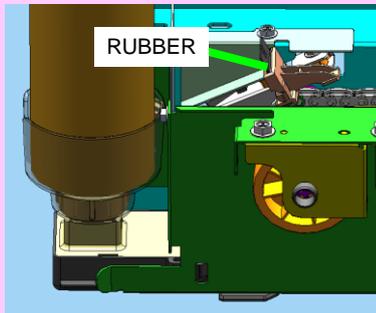
1. Check that the projections of the printer are fitted into the holes next to the WIPING-UNIT-MW screw holes.
2. Pull the WIPING-UNIT-MW (to the media feeding direction) and check that the projection (metal plate) of the CAPPING-UNIT-MW is in contact with the end of WIPING-UNIT-CV notch.



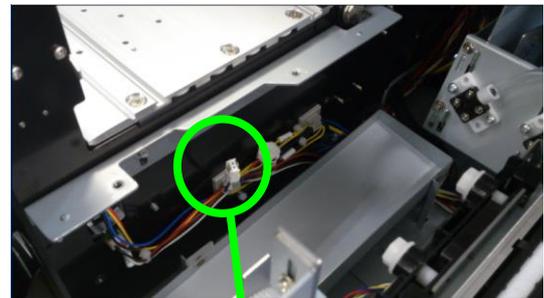
5. Lift the WIPING-UNIT-MW, disconnect the SWITCH(WIPE)-ASSY cable connector, and remove the WIPING-UNIT-MW.

**Notes for installation**

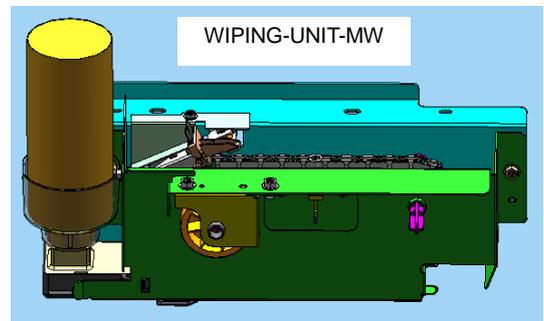
- Adjust the position of the third RUBBER by turning the chain so that they come to the position shown below, and then install WIPING-UNIT-MW.



- Do not put the SWITCH (WIPE)-ASSY cable between the mainframe and the WIPING-UNIT-MW or in the bushing under WIPING-UNIT-MW.



SWITCH(WIPE)-ASSY cable connector



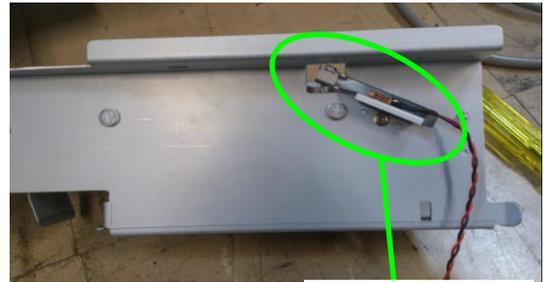
### 6.9.2 WIPE-SW-ASSY-MW and SWITCH(HVSENSOR)ASSY

<Removal>

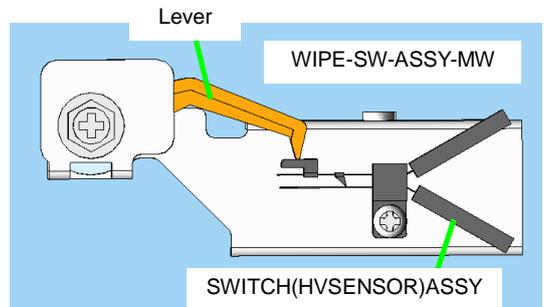
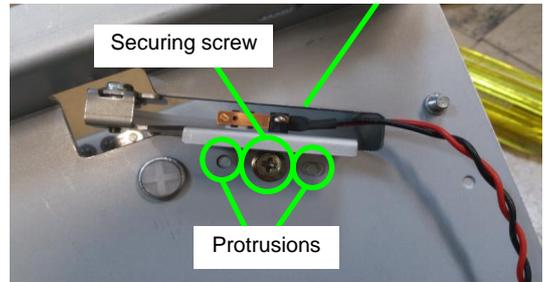
1. Remove the WIPING-UNIT-MW (see 6.9.1).
2. Remove the WIPE-SW-ASSY-MW and one securing screw.
3. From the WIPE-SW-ASSY-MW, remove the SWITCH(HVSENSOR)ASSY and one securing screw.

**Notes for installation**

- Check that the terminal comes in contact only when the HOLDER(BLADE-HV) turns and presses the lever. If the switch does not work like this, adjust the SWITCH(HVSENSOR)ASSY angle.
- When installing the WIPE-SW-ASSY-MW, check that the two protrusions enter the holes next to the screw before securing the part.
- Check that the extremity of the SWITCH(HVSENSOR)ASSY is not open.
- When installing the SWITCH(HVSENSOR)ASSY, adjust the position so that its terminal extremity gets close to the lever.



WIPE-SW-ASSY-MW



## 6.10 Disassembling and Reassembling the CAPPING-UNIT-MW

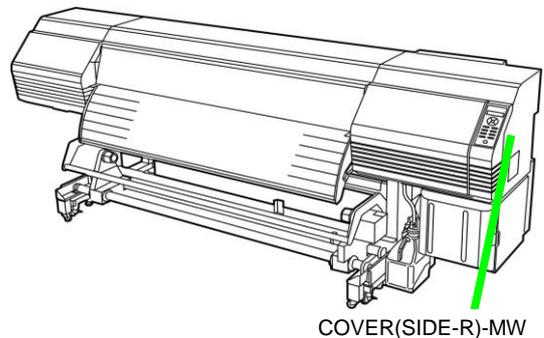
### 6.10.1 Opening and closing the caps manually

The caps can be opened and closed manually when the printer is turned off.

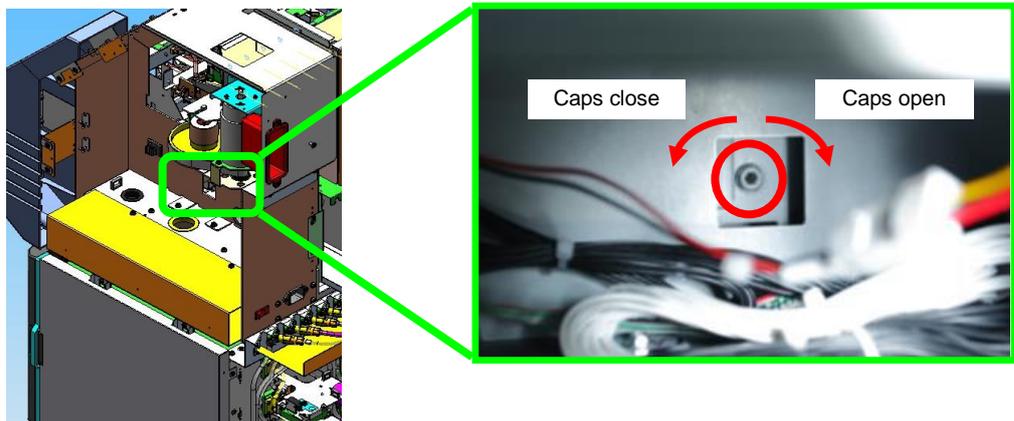
#### Note

Manual operation should be performed only when the printer is turned off. Otherwise, the printer parts may start to move during the operation, which may damage the parts or injure the operator.

1. Remove the COVER(SIDE-R)-MW (see 6.3.7).



2. Insert a 4 mm hexagonal wrench into the capping unit side from the opening on the right side, and rotate it clockwise to open the caps or counterclockwise to close the caps.



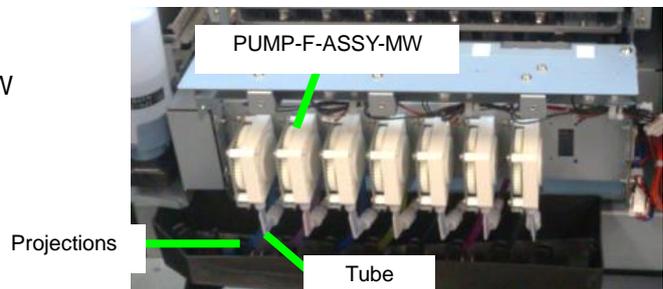
#### Notes

- Half-closed or full-closed positions cannot be chosen with manual operation. The caps are positioned as they were just before.
- To switch between half-closed and full-closed positions, turn the printer on and perform the operation on the panel.

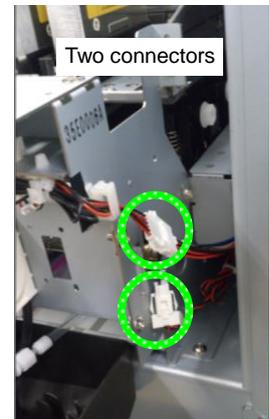
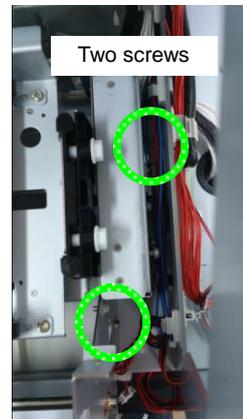
## 6.10.2 CAPPING-UNIT-MW

<Removal>

1. Open the COVER(FRONT)ASSY-MW (see 6.3).
2. Remove the COVER(R)ASSY-MW (see 6.3).
3. Remove the WIPING-UNIT-MW (see 6.9.1).
4. Remove the seven tubes caught between the projections inside the TRAY(WI) under the PUMP-F-ASSY-MW to make them free to move.

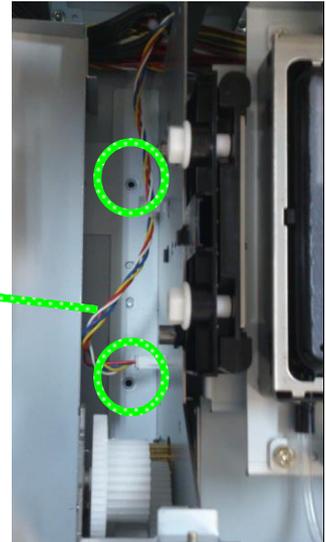


5. Disconnect the two connectors at the right of the CAPPING-UNIT, and remove the two screws on the right securing the CAPPING-UNIT-MW.

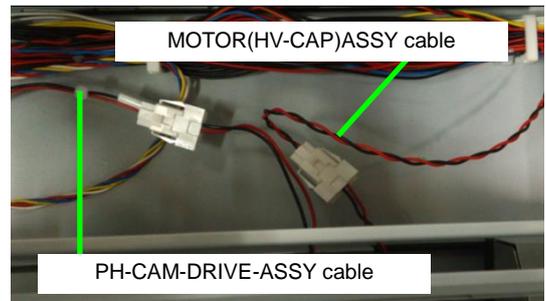


6. Disconnect the MOTOR(PW)-ASSY-MW connector and remove the two screws on the left securing the CAPPING-UNIT-MW.

MOTOR(PW)-ASSY-MW cable



7. Disconnect the two connectors of the MOTOR(HV-CAP)ASSY and the PH-CAM-DRIVE-ASSY located at the back of the CAPPING-UNIT-MW right rear corner, and then remove the CAPPING-UNIT-MW.



**Note**

Connect the cable attached to the printer that indicates **CHAM** to the PH-CAM-DRIVE-ASSY.



**Notes for installation**

- When setting the pump tubes between the projections of TRAY(WI), be sure to make the tube ends touch the bottom of TRAY(WI) that receives the waste ink, in order to remove the remaining ink inside the tube.
- When installing the CAPPING-UNIT-MW, adjust the CAPPING-UNIT-MW's holes in the right and left sides with the projection before fixing it.
- Adjust the PLATE(CARRIAGE-CAP)-MW (see 7.8).
- After the replacement, check that leak tightness is maintained on the capped status (see the next page).

<How to check leak tightness of the capping unit>

Jig: CAPPING-SEAL-TOOL (HV)

1. Remove the COVER(R)ASSY-MW.
2. Move the carriage to the maintenance area (see 3.4.3.2 (4)).
3. Place and press the glass surface of the jig onto the cap as shown in the picture to the right, and turn the suction pump on (see 3.4.1.2 (3) (c) (i)).



CAPPING-SEAL-TOOL (HV)

4. When the negative pressure gauge indicates -70 Kpa, turn the suction pump off.  
Remove the glass surface from the cap and check the two following points.
  - The pressure decreases to -70 Kpa or less in 10 seconds after the suction has been turned off.
  - The pressure does not increase by 2 Kpa or more in 30 seconds after the suction has been turned off.
5. Turn the air release solenoid on to release the pressure.

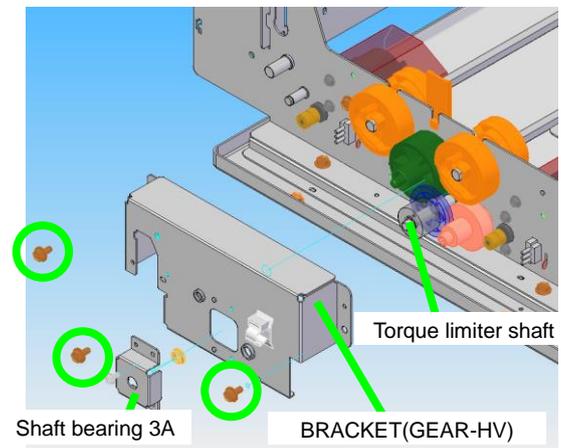
### 6.10.3 TORQUE-LIMITER

<Removal>

1. Move the carriage to the maintenance area.
2. Remove the CAPPING-UNIT-MW (see 6.10.1).
3. While paying attention not to remove the GEAR(IDLER), remove the BRACKET(GEAR-HV) with three securing screws.
4. Remove the torque limiter shaft.

**Note**

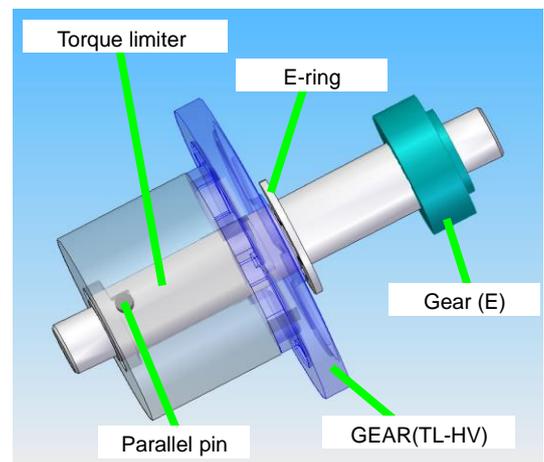
Pay attention not to lose the shaft bearing 3A, as the torque limiter shaft must enter in the shaft bearing 3A.



5. Remove the gear (E).
6. Remove the E-ring.
7. Remove the GEAR(TL-HV)
8. Remove the torque limiter.

**Note**

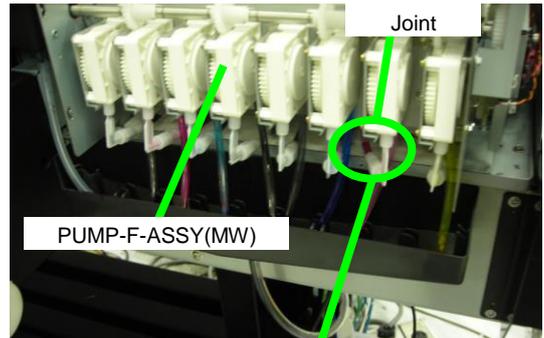
Pay attention not to lose the parallel pin, as the torque limiter is fixed with the parallel pin.



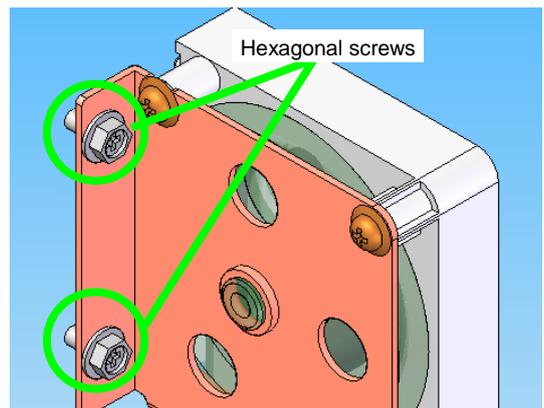
### 6.10.4 PUMP-F-ASSY (MW) and Damper O-ring

<Removal>

1. Move the carriage to the maintenance area.
2. Remove the ink tubes connected to the PUMP-F-ASSY(MW) from their joints. See 6.12.9 O-RING to replace the damper O-rings.

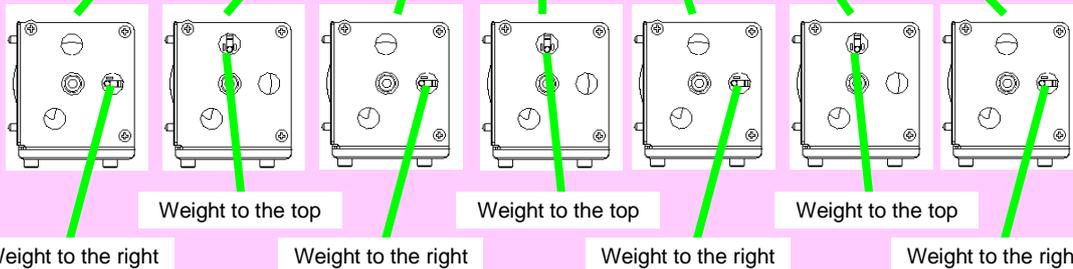
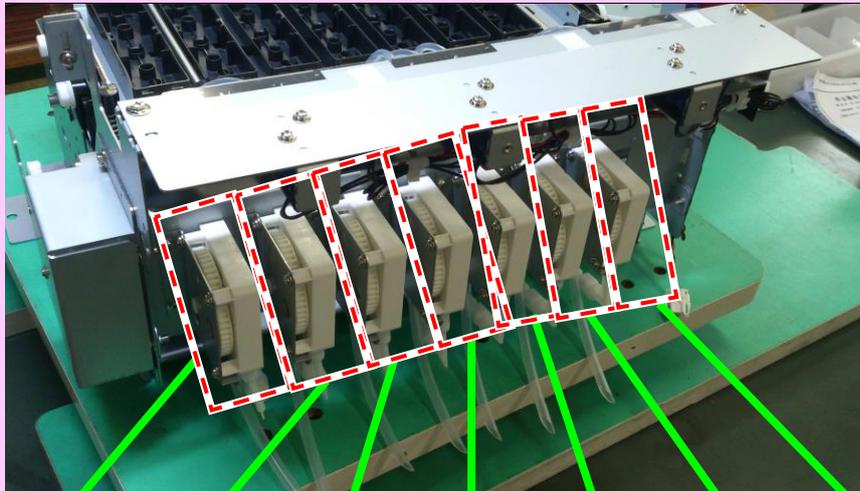


3. Unscrew the two hexagonal screws securing each PUMP-F-ASSY(MW) (four screws in total), and remove the PUMP-F-ASSY(MW) from the frame.



**Notes for installation**

- When setting the ink tubes between the projections of TRAY(WI), be sure to make the tube ends touch the bottom of TRAY(WI).
- Install the PUMP-F-ASSY(MW) so that their roller positions roller differ by 90° between them (see the figures below).



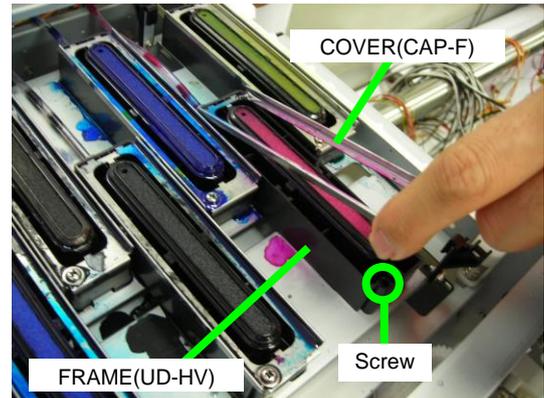
With rotating the roller, change the position of the weight visible from the window on the HOLDER(PUMP-F).

- After the replacement, check that leak tightness is maintained on the capped status (see **6.10.1**).

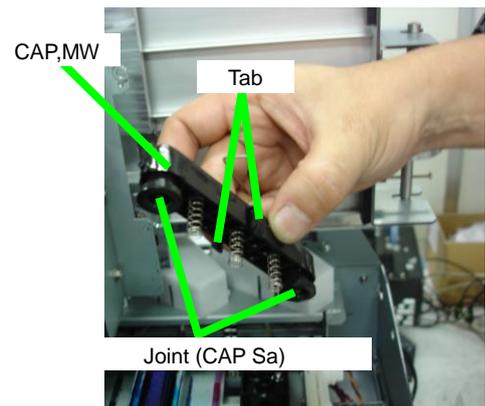
### 6.10.5 CAP-ASSY(MW)

<Removal>

1. Move the carriage to the maintenance area.
2. From the FRAME(UD-HV), remove the COVER(CAP-F) and securing screw.



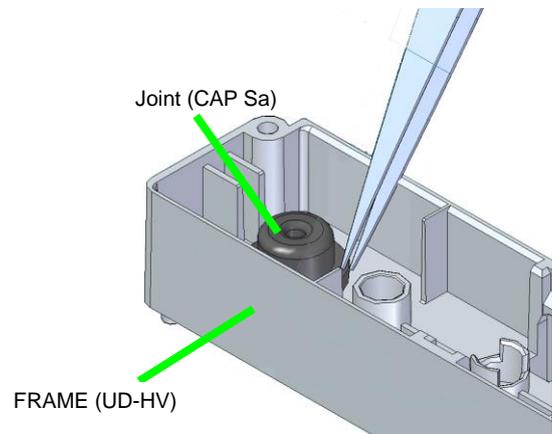
3. Softly press the CAP,MW tabs to remove the CAP,MW.



4. Remove the joints (CAP Sa) from the CAP,MW (there are two joints per cap). If a joint (CAP Sa) stays on the FRAME(UD-HV), use a pair of tweezers or a screwdriver to remove the joint (CAP Sa) from its seating surface.

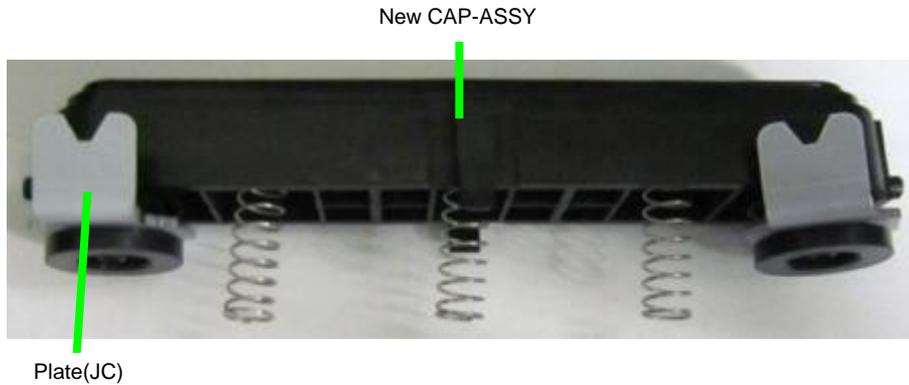
**Note**

Pay attention not to damage the joint (CAP Sa) or FRAME(UD-HV) surface with the tweezers and the screwdriver.

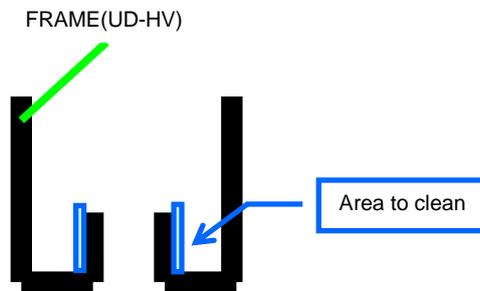


<Assembly>

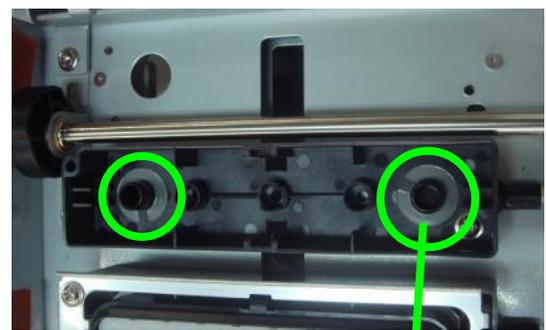
New CAP-ASSY: CAP-ASSY with the Plate(JC) attached.



1. Clean all the ink by wiping the entire circumference of the two tubes, used to set the joints (CAP Sa) of the FRAME(UD-HV), with sheet mount cleaning liquid.

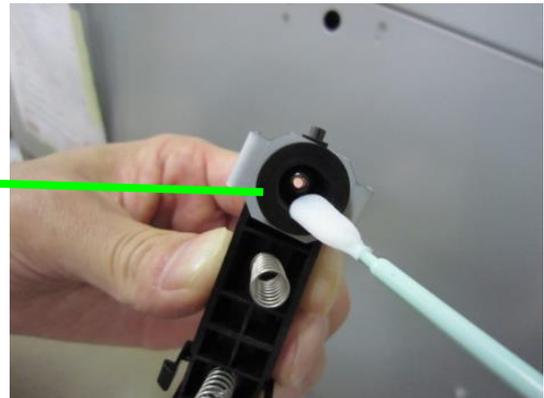
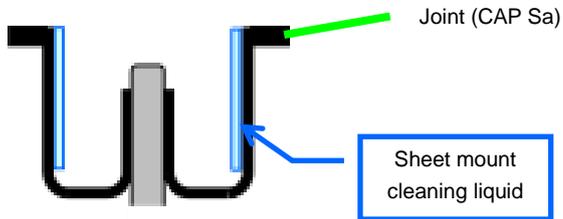


3. Install the spacers (JC) around the two tubes used to set the joints (CAP Sa). You do not have to pay attention to the spacer (JC) sides or the position of the notch.

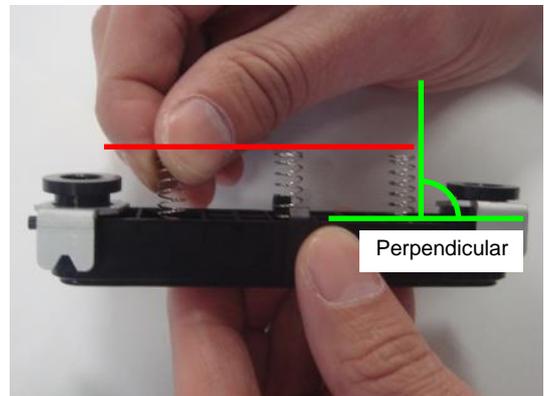


Spacer (JC)

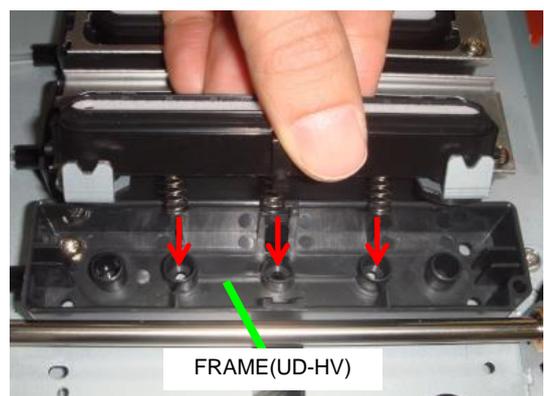
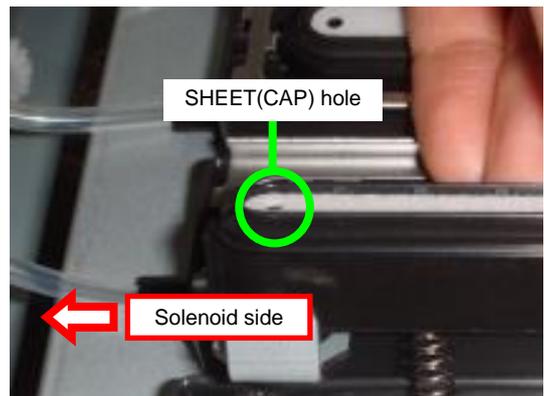
4. Apply sheet mount cleaning liquid onto the entire inside surface of the outside edge of the joints (CAP Sa). (There is no problem if the liquid also adheres to the inside edge.)



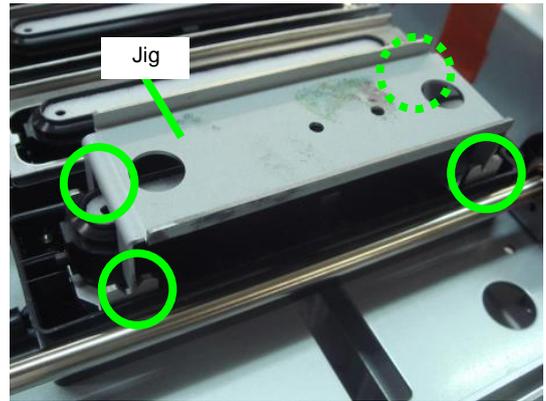
5. Adjust the springs so that they are placed perpendicular to the cap, and rotate them clockwise two turns or more to insert them. Check that the surfaces of all the springs are at the same height.



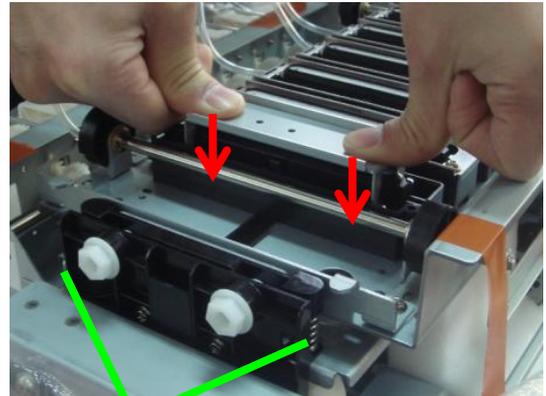
6. Place the cap so that the side with the SHEET(CAP) hole comes to the solenoid side. Make sure that the springs enter the three tubes on the FRAME(UD-HV), and then set the cap carefully.



7. Set the installation jig.  
Check that the jig's four corners are on the PLATE(JC).

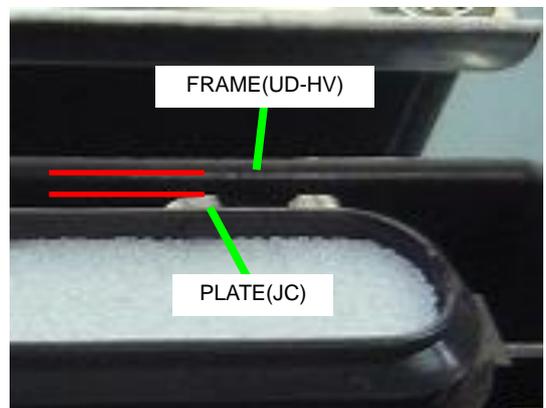


8. Push the jig inside with both hands as shown in the picture.  
Next, push the jig three more times just strong enough to feel the SPRING(FLORT-HV).

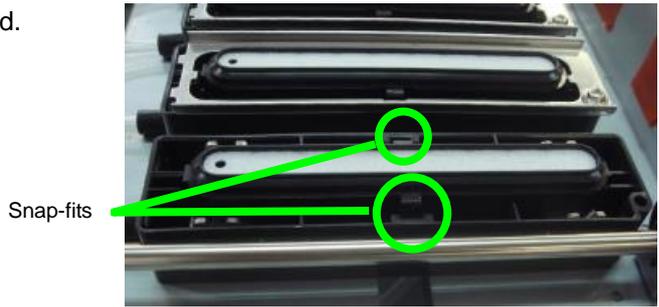


SPRING(FLORT-HV)

9. Check that the four PLATE(JC) are inside the FRAME(UD-HV). Push the jig again if they are not all inside.



10. Check that the two snap-fits are engaged. If not, push them with your finger until they engage.



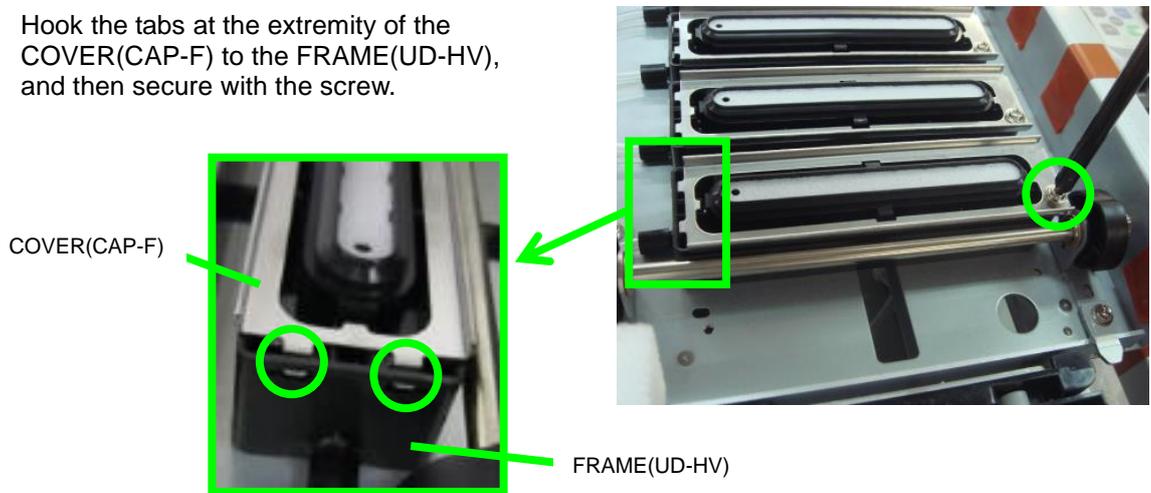
Correct position: The snap-fit is engaged.



Wrong position: The snap-fit is not engaged.



11. Hook the tabs at the extremity of the COVER(CAP-F) to the FRAME(UD-HV), and then secure with the screw.



**Note**

After you have finished replacing the cap, check that there is not leakage when the cap is closed (see 6.10.1).

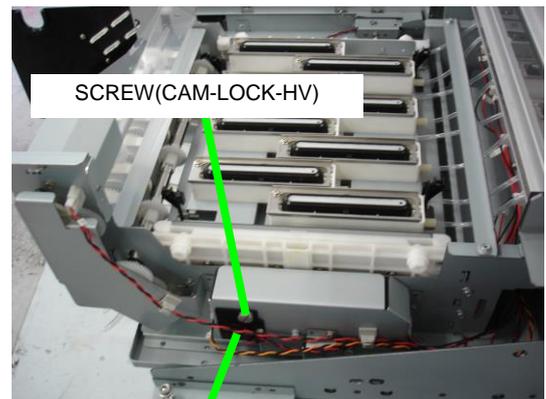
### 6.10.6 SWITCH(CAP)-ASSY and LEVER(CAP)-ASSY

<Removal>

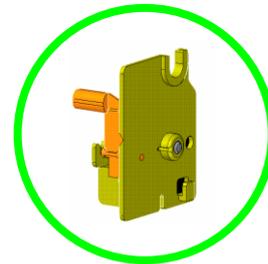
1. Move the carriage to the maintenance area.
2. Remove the CAPPING-UNIT-MW.
3. Remove the screw securing the LEVER(CAP)-HV-ASSY, remove the SCREW(CAM-LOCK-HV), disconnect the connector of the connected cable, and then remove the LEVER(CAP)-HV-ASSY (with the MICRO SWITCH 4 inside).

#### Note

When installing the LEVER(CAP)-HV-ASSY and the SCREW(CAM-LOCK-HV), place the cap at the middle height. Avoid the highest and the lowest position for the cap.



LEVER(CAP)-HV-ASSY



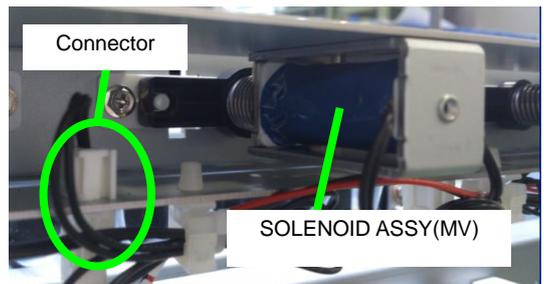
### 6.10.7 SOLENOID ASSY(MV)

<Removal>

1. Open the COVER(FRONT)ASSY-MW (see 6.3).
2. Remove the two screws securing the SOLENOID ASSY(MV).

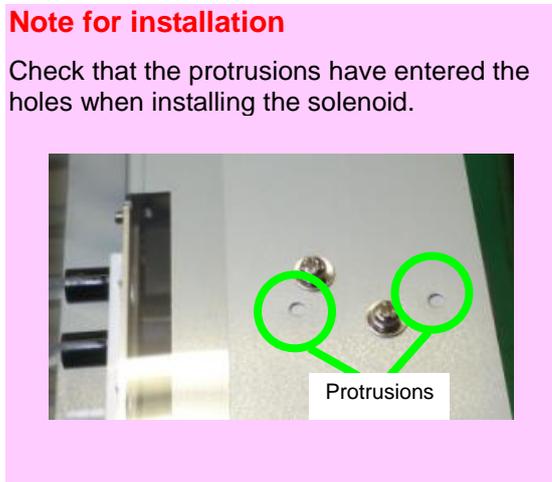


3. Disconnect the SOLENOID ASSY(MV) connector, and remove the SOLENOID ASSY(MV).



**Note for installation**

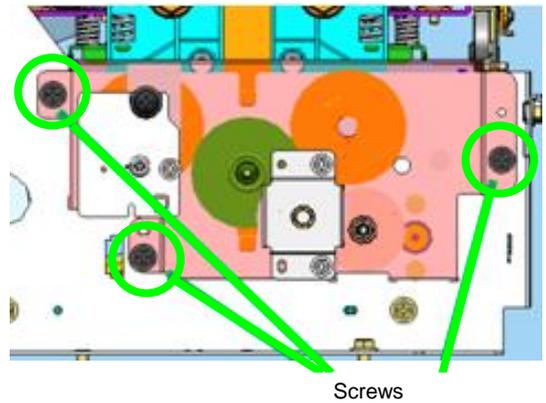
Check that the protrusions have entered the holes when installing the solenoid.



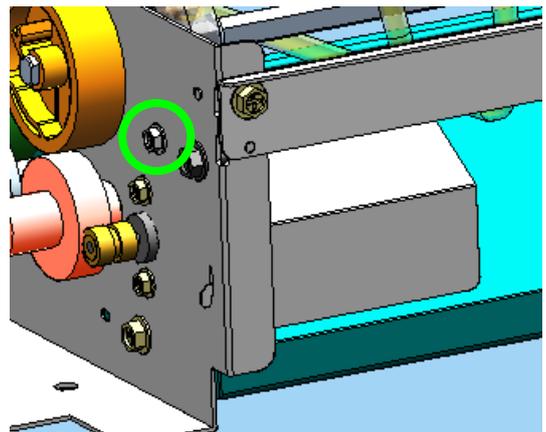
### 6.10.8 MOTOR(CAPPING)-ASSY

<Removal>

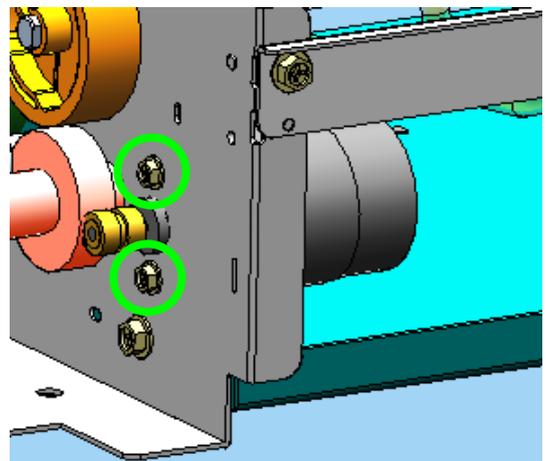
1. Remove the CAPPING-UNIT-MW (see 6.10.1).
2. Remove the BRACKET(GEAR)-HV with three securing screws.



3. Remove the COVER(MOTOR-HV) with one securing screw.



4. Remove the MOTOR(CAPPING)-ASSY with two securing screws.



## 6.11 Disassembling and Reassembling the WASTE-BOTTLE-UNIT

### 6.11.1 WASTE INK BOTTLE TRAY AND TUBE, MW

<Removal>

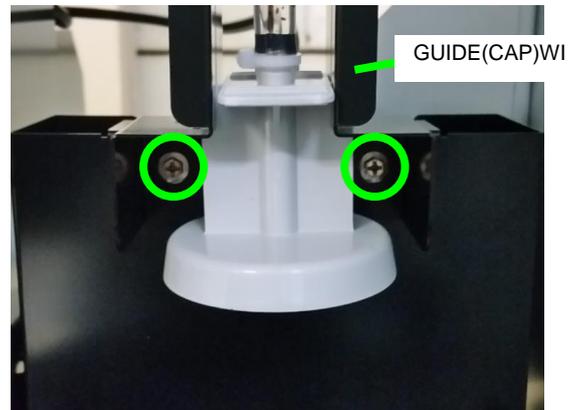
1. Remove the waste ink bottle.

**Note**

Pay attention when removing the bottle because ink may spill out of the waste ink bottle or the COVER(WI-BOTTLE).



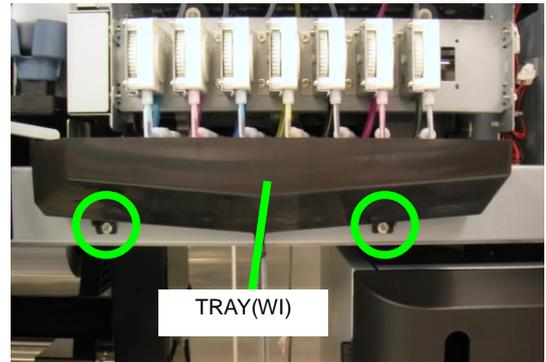
2. Remove the two screws securing the GUIDE(CAP)WI.



3. Slide the GUIDE(CAP)WI to the top, and remove it from the COVER(WI-BOTTLE).

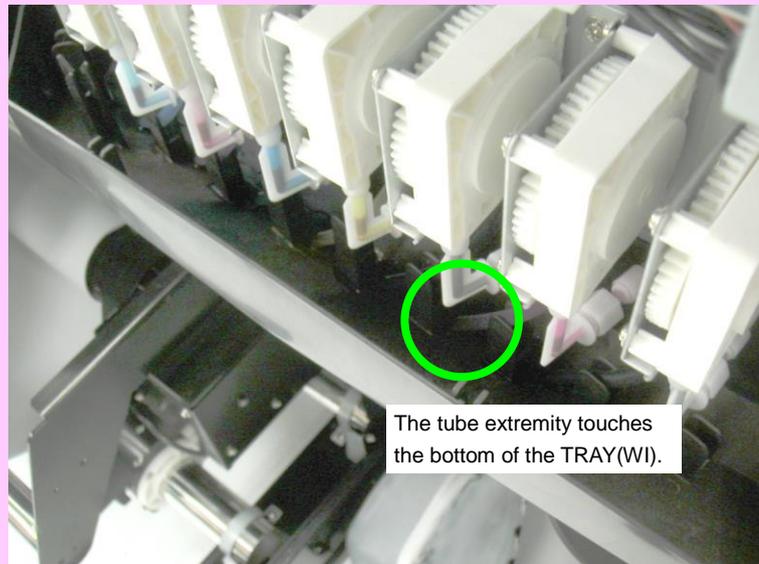


4. Remove the TRAY(WI) with two securing screws.



**Note**

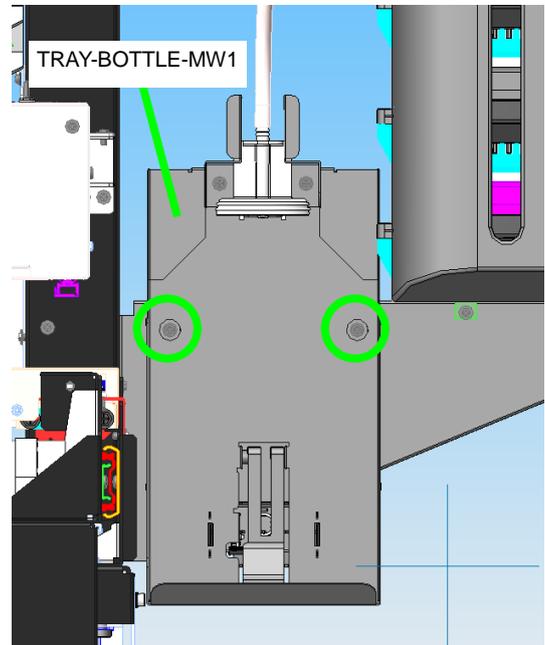
When assembling the TRAY(WI), always insert the tubes between the TRAY(WI) protrusions with their extremities touching the bottom surface of the tray.



### 6.11.2 MICRO SWITCH 4(WASTE INK BOTTLE ASSY)

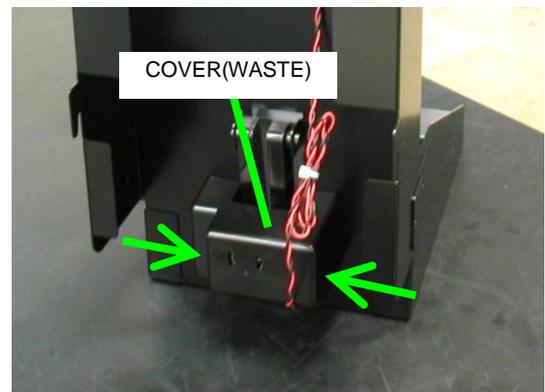
<Removal>

1. Remove the TRAY-BOTTLE-MW1 with two securing screws.

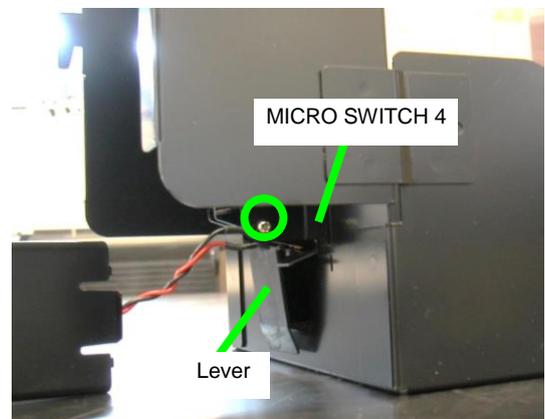


2. Remove the TRAY(WI) (see 6.11.1).

3. Disconnect the connector of the harness connecting the TRAY-BOTTLE-MW1 to the printer, and remove the TRAY-BOTTLE-MW1 from the printer. Press the both sides of the COVER(WASTE) located at the back of the TRAY-BOTTLE-MW1, and remove the COVER(WASTE).

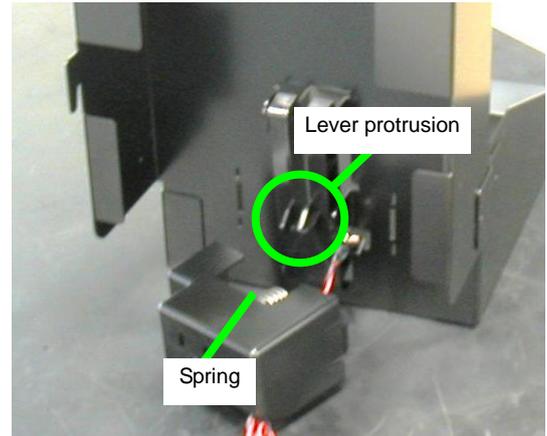


4. Remove the MICRO SWITCH 4 with one securing screw.



**Notes for installation**

- Check that the MICRO-SWITCH 4 touches the contact point only when the lever is pressed. If the position is not correct, use the MICRO-SWITCH 4 leeway to adjust the angle.
- Insert the spring extremity into the two protrusions on the lever.



## 6.12 Disassembling and Reassembling the INKBOX-UNIT

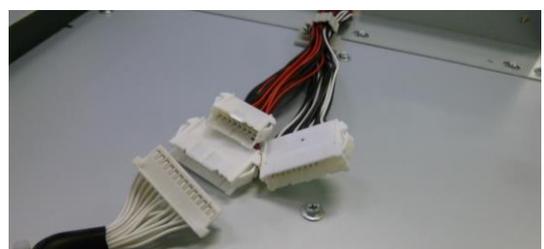
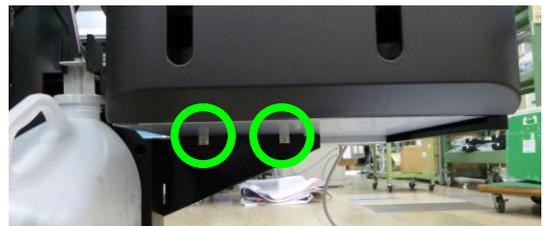
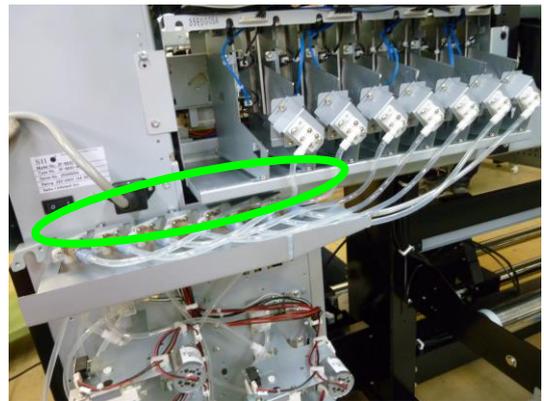
### 6.12.1 INKBOX-UNIT-MW

<Removal>

1. Drain the ink (see **Chapter 3**).  
When all ink has been drained, turn off the printer.
2. Remove the COVER(INKBOX-REAR)-MW (see **6.12.4**).
3. Remove the COVER(SUBTANK)-MW (see **6.3.11**).
4. Disconnect the seven tubes connected to the INKBOX-UNIT-MW.
5. Out of the four screws securing the INKBOX-UNIT-MW, remove the two on the front and loosen the two on the side.
6. While paying attention not to touch the two screws on the side, pull the INKBOX-UNIT-MW in the direction of the arrow, disconnect the four cables, and then remove the INKBOX-UNIT-MW.

#### Note

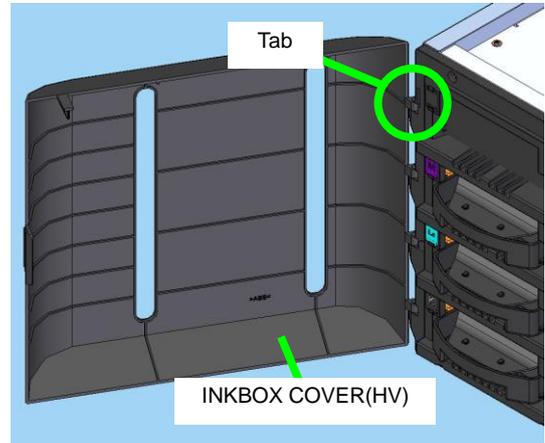
The ink box is heavy. Pay attention not to drop it or injure yourself.



### 6.12.2 INKBOX COVER(HV)

<Removal>

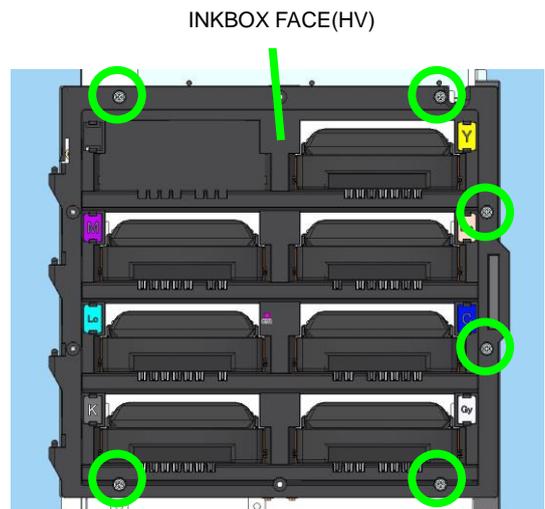
1. Push the tab on the hinge to remove the INKBOX COVER(HV) in the upward direction.



### 6.12.3 INKBOX FACE(HV)

<Removal>

1. Remove the INKBOX FACE(HV) and six securing screws.



### 6.12.4 COVER(INKBOX-REAR)-MW

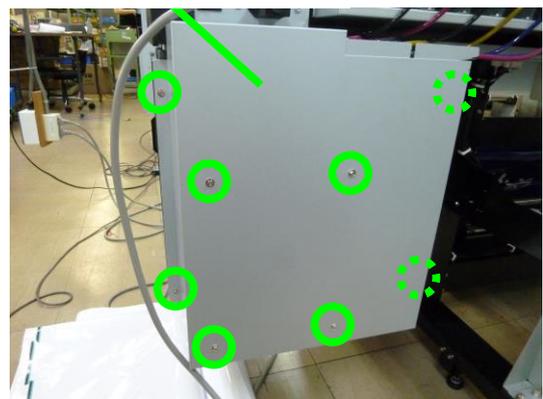
<Removal>

1. Remove the COVER(INKBOX-REAR)-MW with eight securing screws.

**Note**

When removing the COVER(INKBOX-REAR)-MW, hold it with your hands to prevent it from falling.

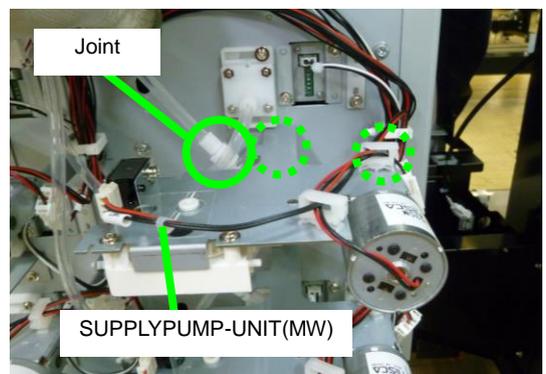
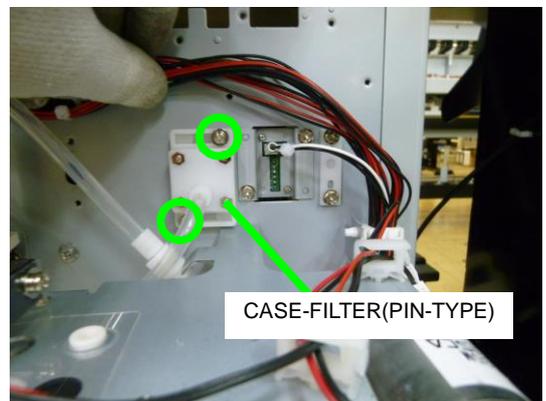
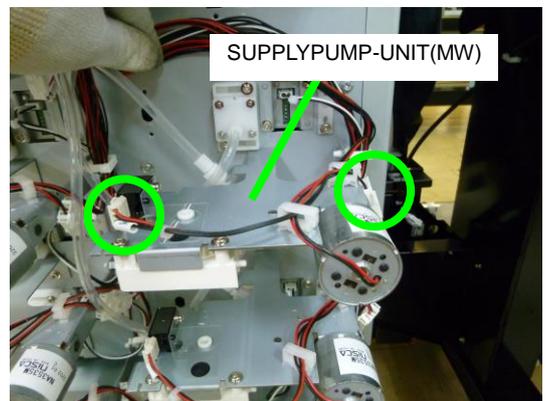
COVER(INKBOX-REAR)-MW



### 6.12.5 SUPPLYPUMP-UNIT(MW)

<Removal>

1. Drain the ink (see **Chapter 3**).  
When all the ink has been drained, turn off the printer.
2. Remove the COVER(INKBOX-REAR)-MW (see **6.12.4**).
3. Disconnect the two cables connected to the motor and to the sensor of the unit to replace.
4. Remove the CASE-FILTER(PIN-TYPE) with two securing screw.
5. Remove the two screws securing the SUPPLYPUMP-UNIT(MW).
6. Disconnect the joint of the tube connected to the SUPPLYPUMP-UNIT(MW), and remove the SUPPLYPUMP-UNIT(MW).



**Note**  
Pay attention not to spill ink when removing the tube, and place cloths around to prevent soiling the surroundings.

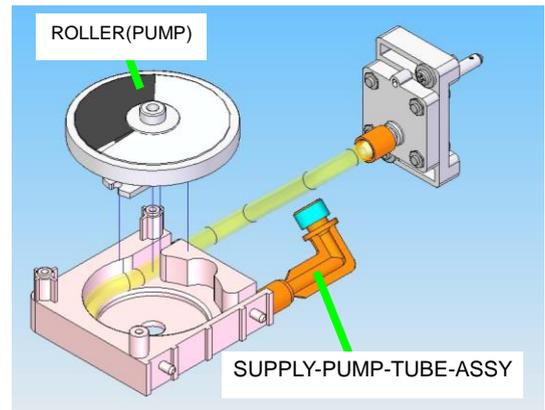
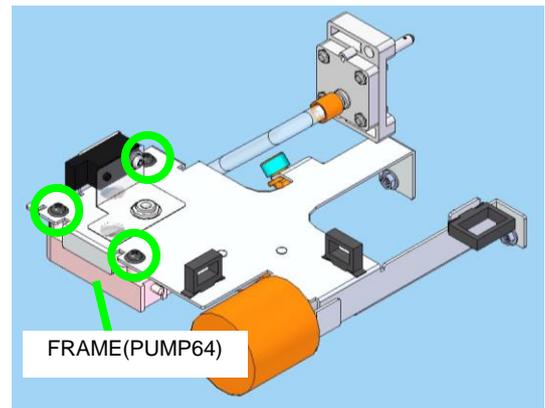
## 6.12.6 SUPPLY-PUMP-TUBE-ASSY

<Removal>

1. Remove the SUPPLYPUMP-UNIT(MW) (see 6.12.5).
2. Remove the three screws securing the FRAME(PUMP64) from the SUPPLYPUMP-UNIT(MW), and remove the SUPPLY-PUMP-TUBE-ASSY and the other parts.
3. Remove the ROLLER(PUMP), and remove the SUPPLY-PUMP-TUBE-ASSY.

### Notes

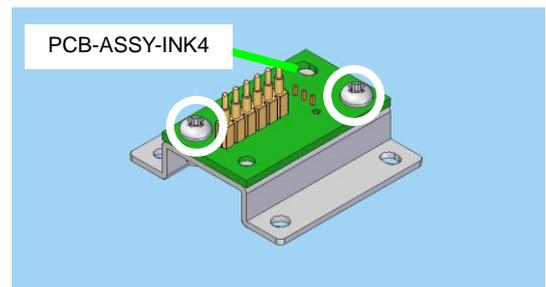
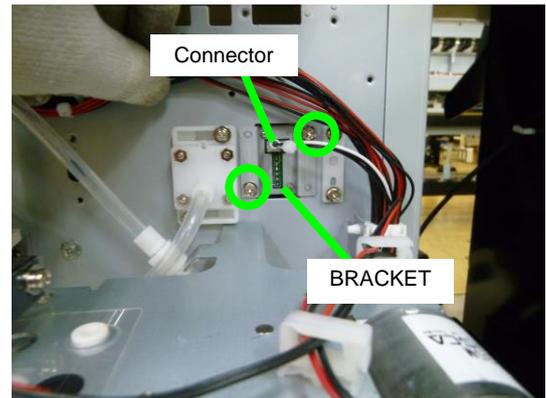
- Do not remove the grease from the tubes.
- Reset the operating time counter of the supply pump when you have replaced it.
- When installing the pump, place the tube around the FRAME(PUMP64) without changing the natural bending of the tube or twisting it.
- Pay attention to the orientation of the joint.



### 6.12.7 PCB-ASSY-INK4

<Removal>

1. Remove the COVER(INKBOX-REAR)-MW (see 6.12.4).
2. Disconnect the connector connected to the PCB-ASSY-INK4.
3. Remove the two screws securing the BRACKET attached to the PCB-ASSY-INK4, and remove the BRACKET.
4. From the BRACKET, remove the PCB-ASSY-INK4 with two securing screws.



### 6.12.8 PHOTO SENSOR 5

<Removal>

1. Open the ink box cover.
2. Remove the ink tray Y.



3. Place your hand inside the ink tray Y slot, grab the PHOTO SENSOR 5 (cover sensor) tab, and remove it by pulling it in the upward direction.

**Note**

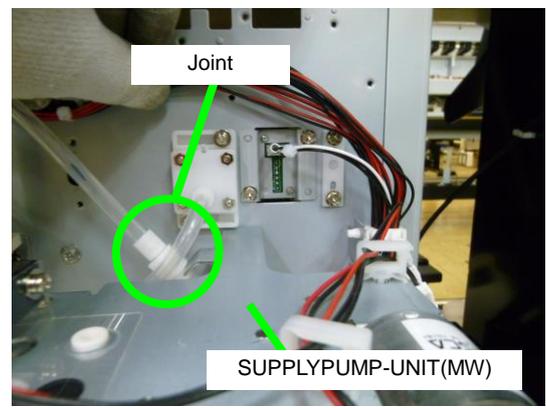
Pay attention not to disconnect the switch when removing it.



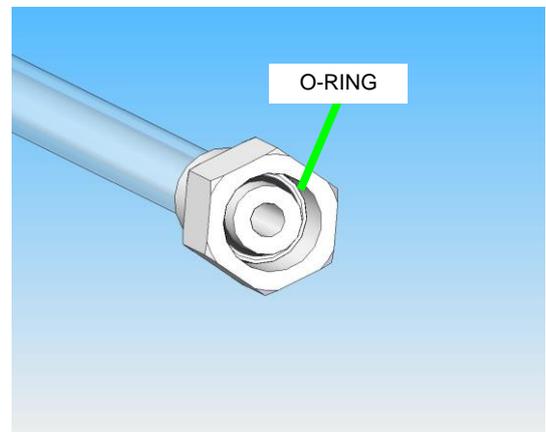
### 6.12.9 O-RING

<Removal>

1. Drain the ink (see **Chapter 3**).  
When all the ink has been drained, turn off the printer.
2. Remove the COVER(INKBOX-REAR)-MW (see **6.12.4**).
3. Disconnect the joint of the tube connected to the SUPPLYPUMP-UNIT(MW).



4. Remove the O-RING attached to the tube.



## 6.13 Disassembling and Reassembling the SUBTANK-UNIT

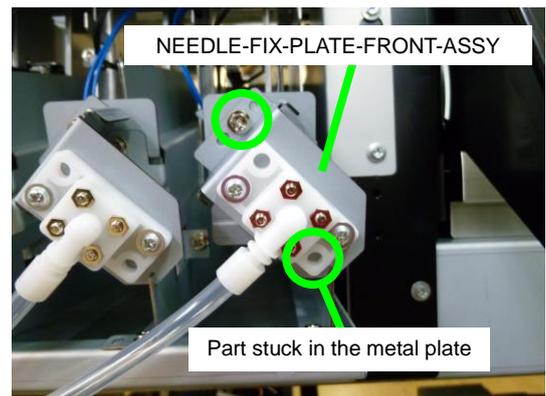
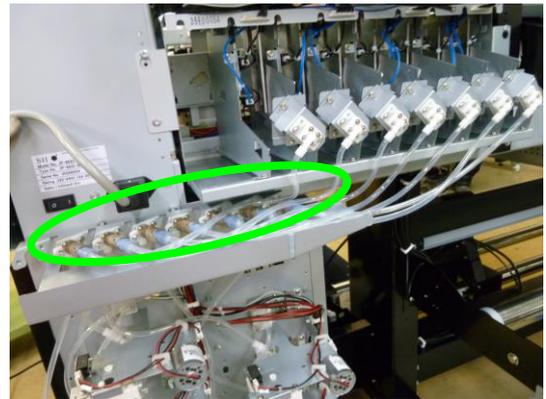
### 6.13.1 NEEDLE-FIX-PLATE-FRONT-ASSY

<Removal>

1. Drain the ink (see **Chapter 3**).  
When all the ink has been drained, turn off the printer.
2. Remove the COVER(INKBOX-REAR)-MW (see **6.12.4**).
3. Remove the COVER(SUBTANK)-MW (see **6.3.11**).
4. Disconnect the tube connected to the INKBOX-UNIT-MW of the NEEDLE-FIX-PLATE-FRONT-ASSY to replace.
5. Remove the NEEDLE-FIX-PLATE-FRONT-ASSY with one securing screw.

#### Note

To remove the part that gets stuck with the metal plate at the right of the NEEDLE-FIX-PLATE-FRONT-ASSY, move it slightly counter-clockwise around the needle.

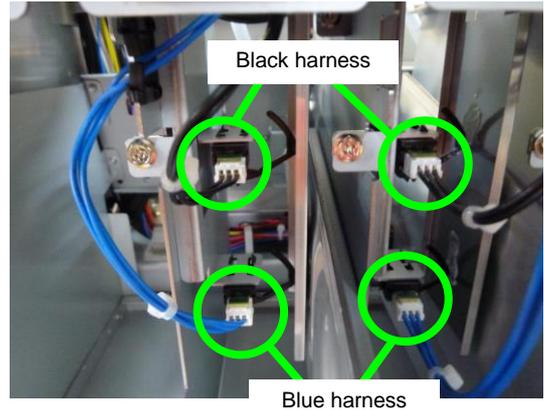


### 6.13.2 SubtankSensors(OKI Data Infotech) and Actuator Photo Interrupter

Three FULL sensors and three EMPTY sensors are supplied in the SubtankSensors(OKI Data Infotech). If an error occurs, replace both the FULL and EMPTY sensors of the defective subtank.

<Removal>

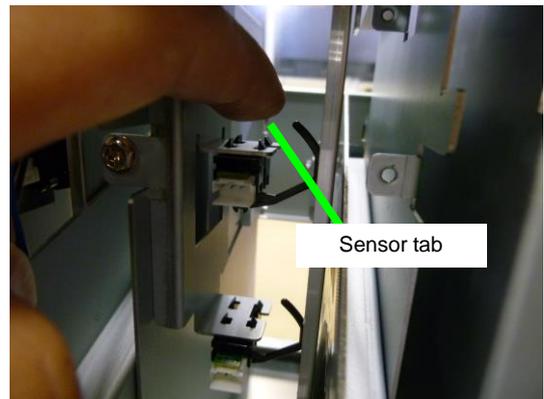
1. Disconnect the connector connected to the sensor.



2. Grab the sensor tab, and remove it from the hole by pulling in the upward direction.

**Note**

If you cannot reach the sensor with your fingers, use a tool such as a pair of tweezers.



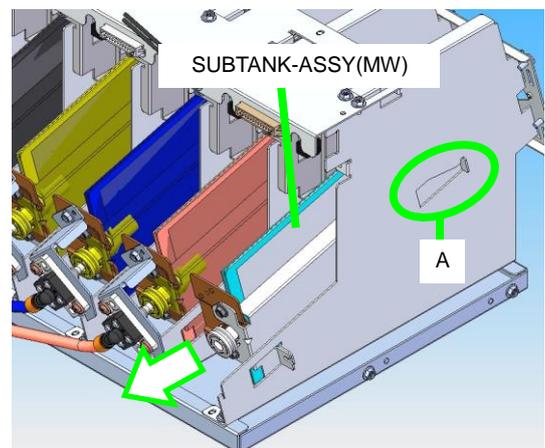
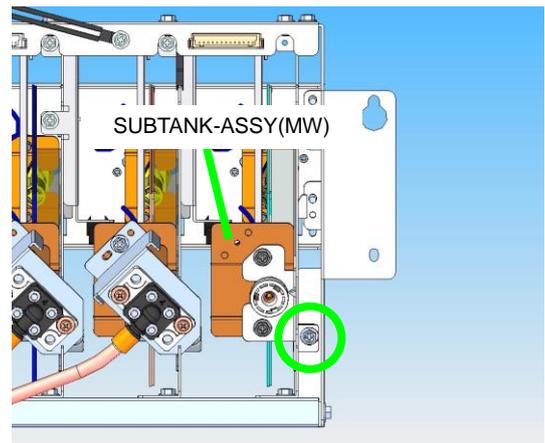
### 6.13.3 SUBTANK-ASSY(MW)

<Removal>

1. Drain the ink (see **Chapter 3**).  
When all the ink has been drained, turn off the printer.
2. Remove the COVER(INKBOX-REAR)-MW (see **6.12.4**).
3. Remove the COVER(SUBTANK)-MW (see **6.3.11**).
4. Remove the NEEDLE-FIX-PLATE-FRONT-ASSY (see **6.13.1**).
5. Remove the screw securing the SUBTANK-ASSY(MW), and remove the SUBTANK-ASSY(MW) by sliding it to the arrow direction.

#### Note

Note that the SUBTANK-ASSY(MW) is stuck at the position A shown in the second picture. So before removing the SUBTANK-ASSY(MW), at the position A, slide the SUBTANK-ASSY(MW) slightly to the arrow direction.



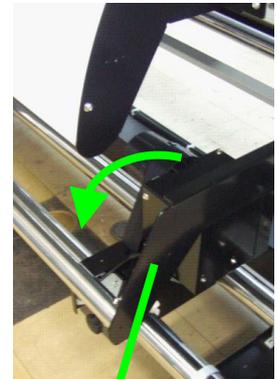
## 6.14 Disassembling and Reassembling the Heater Section

### 6.14.1 PAPER-GUIDE-DELIVERY64-MW-ASSY (with heater)

<Removal>

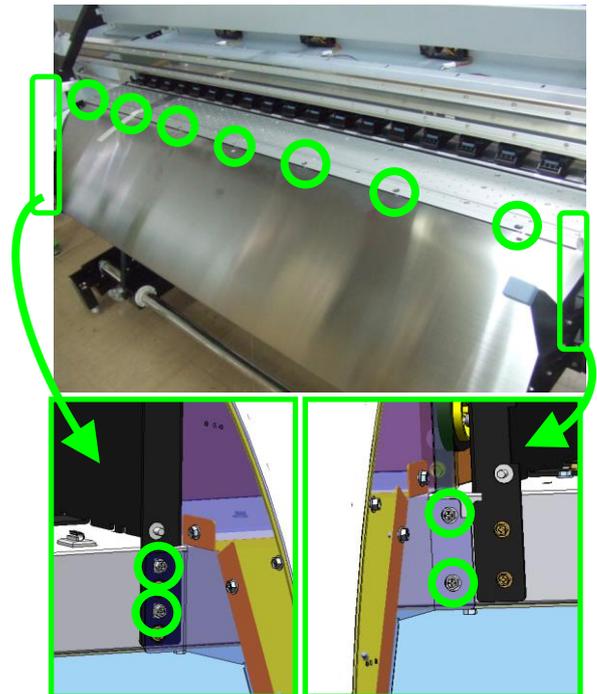
1. Open the COVER(FRONT)ASSY-MW (see 6.3.1).
2. Remove the following parts (see 6.14.4).
  - EDGE-GUARD-SET(L)-MW
  - EDGE-GUARD-SET(R)-MW
3. Lift the LEVER-PINCH-FRONT-ASSY-MW and lower the GUIDE(BAR)-ASSY-MW.

LEVER-PINCH-FRONT-ASSY-MW

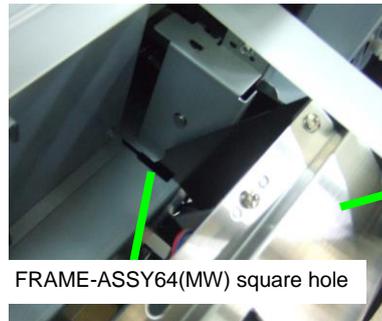


GUIDE(BAR)-ASSY-MW

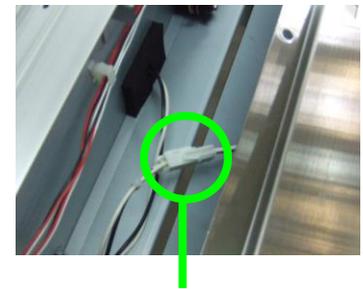
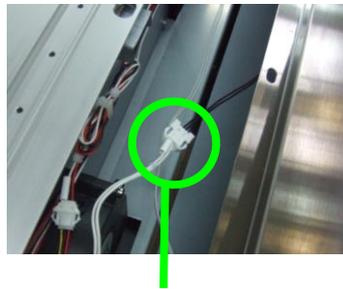
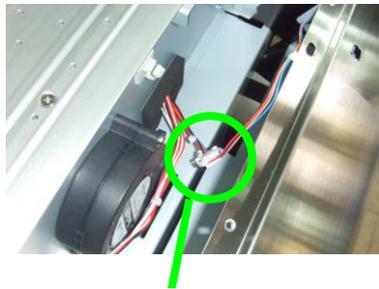
4. Remove the 11 screws securing the PAPER-GUIDE-DELIVERY64-MW-ASSY.



5. Hook the PAPER-GUIDE-DELIVERY64-MW-ASSY attachment part to the FRAME-ASSY64(MW) square hole, and keep it at a slant.



6. Disconnect the following parts:  
- One heater cable connector;  
- One thermistor connector; and  
- One PCB-ASSY-SNS1 connector,  
and remove the PAPER-GUIDE-DELIVERY64-MW-ASSY from the attachment part.



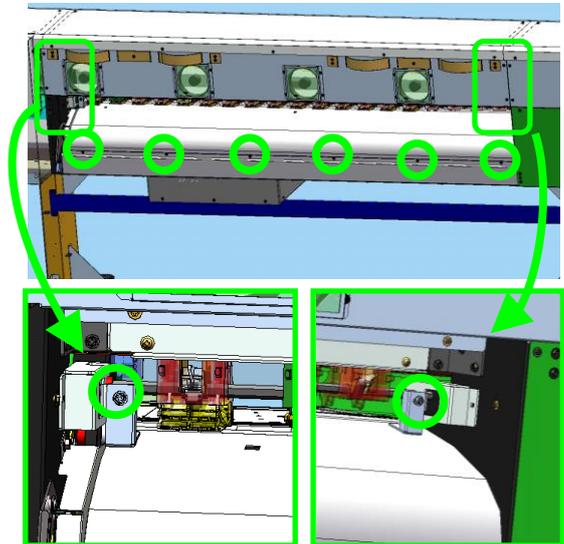
**Note for installation**  
Install the PAPER-GUIDE-DELIVERY64-MW-ASSY tightly in contact with the PLATEN64-CV-ASSY.



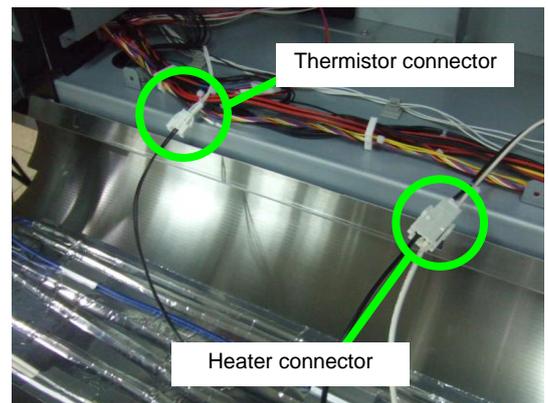
### 6.14.2 PAPER-GUIDE-FEEDING64-MW-ASSY (with heater)

<Removal>

1. Remove the COVER(PINCH-D)64-MW (see 6.3.10).



2. Remove the eight screws securing the PAPER-GUIDE-FEEDING64-MW-ASSY, open the PAPER-GUIDE-FEEDING64-MW-ASSY toward you, and disconnect the following connectors.
  - One heater cable connector
  - One thermistor connector
 And then remove the PAPER-GUIDE-FEEDING64-MW-ASSY.



**Notes for installation**

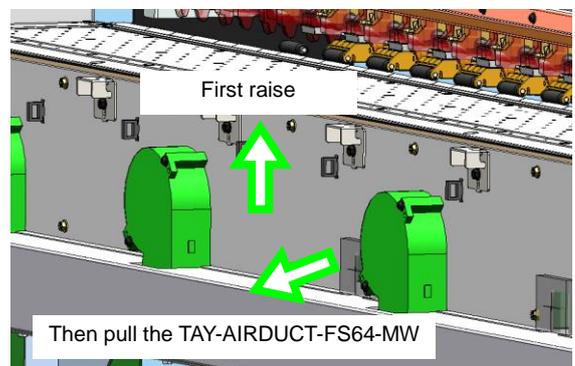
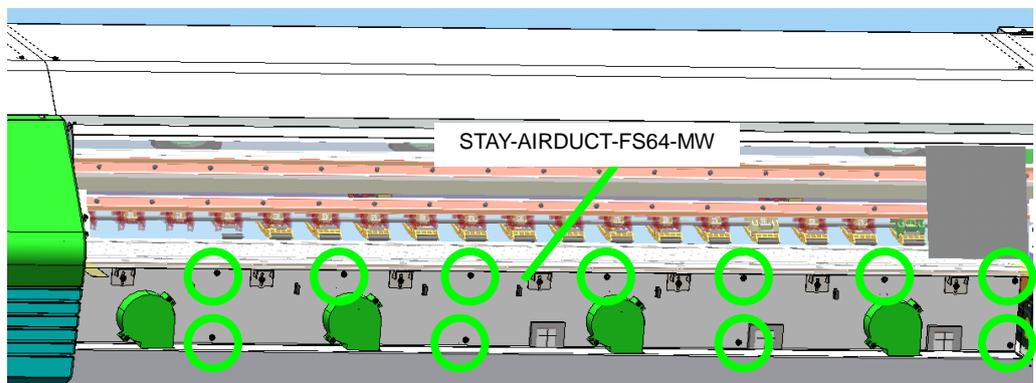
- Be careful not to hit the PCB-ASSY-SNS1 (see 6.5.4).
- Check that the PAPER-GUIDE-FEEDING64-MW-ASSY is correctly installed to the HOLDER(PGF-SIDE)-MW.



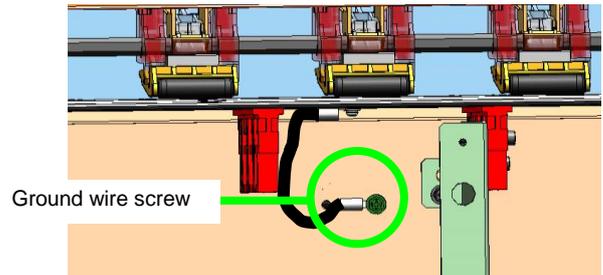
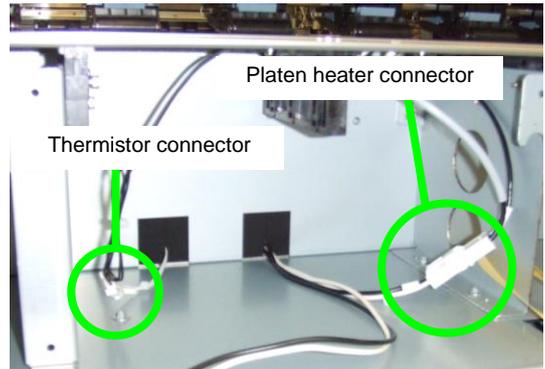
### 6.14.3 PLATEN64-MW-ASSY

<Removal>

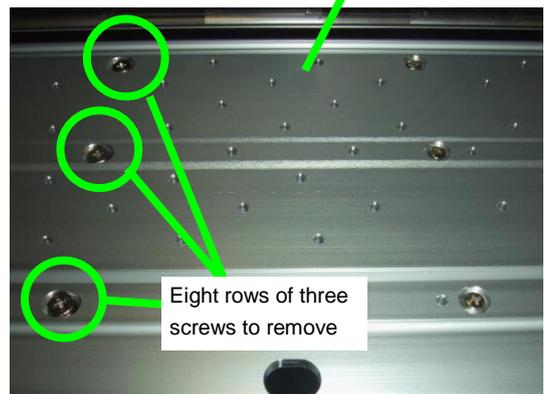
1. Remove the following parts (see 6.14.4).
  - EDGE-GUARD-SET(L)-MW
  - EDGE-GUARD-SET(R)-MW
  
2. Remove the PAPER-GUIDE-DELIVERY64-MW-ASSY (see 6.14.1).
  
3. Disconnect the four SUCTION FAN connectors, and then remove the 11 screws securing the STAY-AIRDUCT-FS64-MW in order to remove it.  
 Hold the SUCTION FAN, then raise the STAY-AIRDUCT-FS64-MW and pull it toward you to remove it.



3. Remove the screw to disconnect the ground wire under the PLATEN64-MW-ASSY, and disconnect the following connectors.
- One heater connector
  - One thermistor connector.
- Remove the following cables:
- One ground wire;
  - One heater cable; and
  - One thermistor cable.

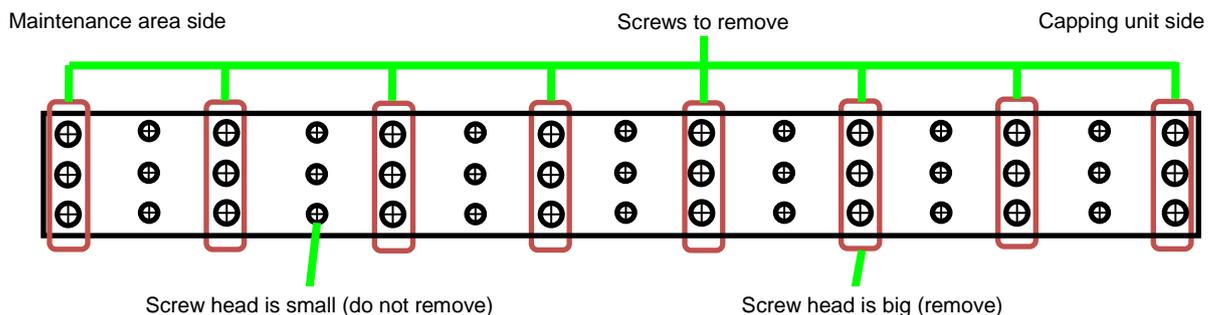


4. Remove the PLATEN64-MW with:
- 24 securing screws (eight rows of three screws)
  - 24 washers (eight rows of three washers).



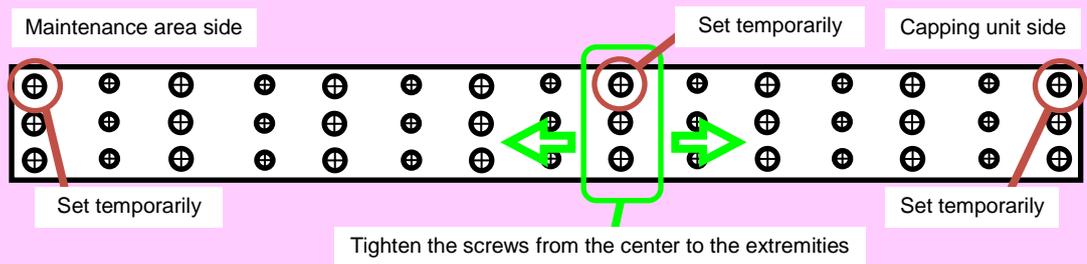
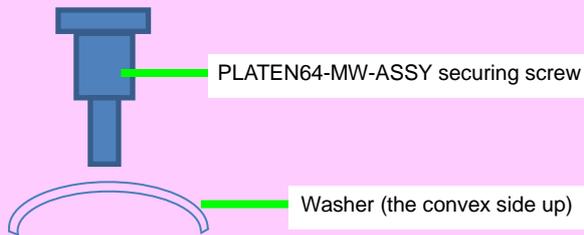
**Note**

Some of the rows of three screws in the eight rows do not need to be removed depending on the screw head size. The screws with the big heads need to be removed, while those with the small heads do not.



**Notes for installation**

- Pay attention to the washer orientation.
- Be sure to connect the ground wire when installing the PLATEN64-MW-ASSY.
- Pay attention not to catch the cables when installing the platen.
- Tighten the screws to a torque of 0.8 N·m (8.2kgf·cm).
- Install the screws in the following orders:
  - (a) Tighten temporarily the rear screw of the center row.
  - (b) Tighten temporarily the two rear screws at each platen extremity.
  - (c) Set and tighten all the screws from the rear to the front, and then from the center rows to the extremities.



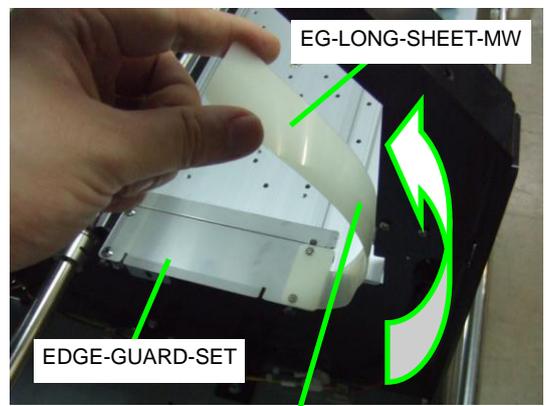
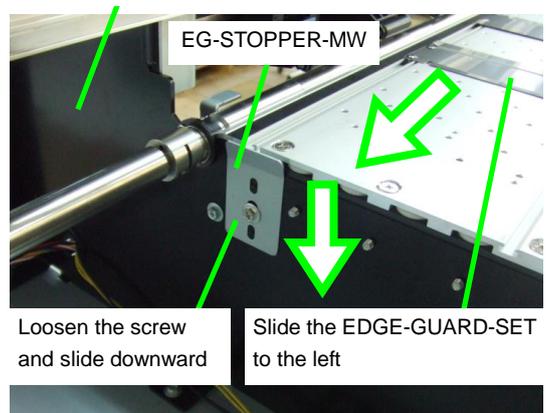
### 6.14.4 EDGE-GUARD-SET(L)-MW and EDGE-GUARD-SET(R)-MW

<Removal>

1. Open the following parts (see 6.3).
  - COVER(FRONT)ASSY-MW;
  - COVER(L)ASSY-MW.
  
2. Loosen the screw securing the EG-STOPPER-MW, and slide the EG-STOPPER-MW downward.
  
3. From the PLATEN64-MW-ASS remove the EDGE-GUARD-SET(L)-MW and EDGE-GUARD-SET(R)-MW with the procedure below.
  - (1) Slide the both of the two below to the left:
    - EDGE-GUARD-SET(L)-MW
    - EDGE-GUARD-SET(R)-MW.
  - (2) Slightly bend the EG-LONG-SHEET-MW to the printer rear.
  - (3) Make the two edge guards pass the PLATE-LEFT-1-ASSY-MW, then remove them.

**Note**  
When installing or removing the EG-LONG-SHEET-MW, do not bend it strongly as you may deform it.

PLATE-LEFT-1-ASSY-MW



Bend the sheet gently.

**Note for installation**  
When installing the EG-STOPPER-MW, check that the protrusion is inside the long hole.

## 6.15 Disassembling and Reassembling the TAKE UP REEL UNIT and FEEDING-UNIT

### 6.15.1 FLANGE(2-INCH)

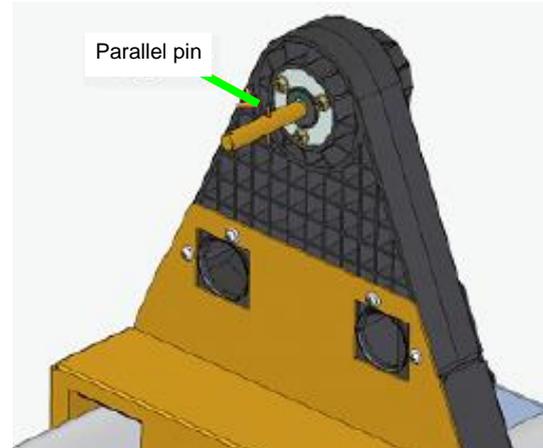
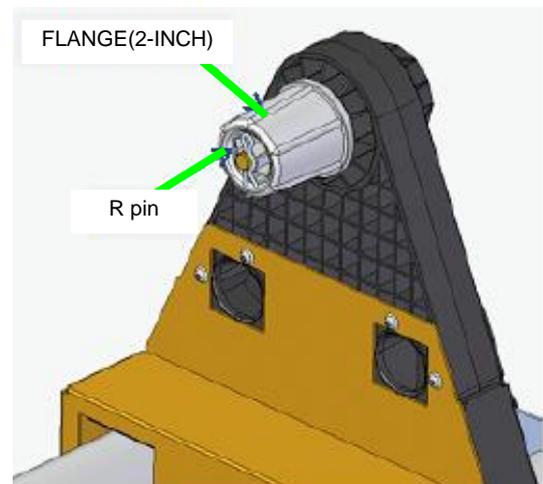
<Removal>

Remove the flange on the other side with the same procedure.

1. Pull the R pin and remove it.

#### Note

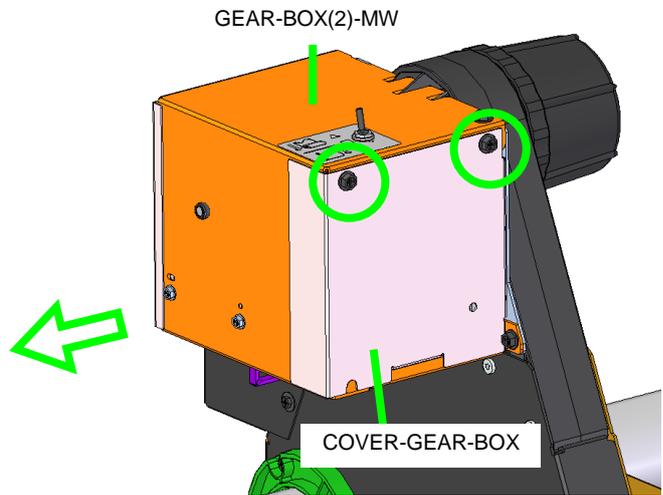
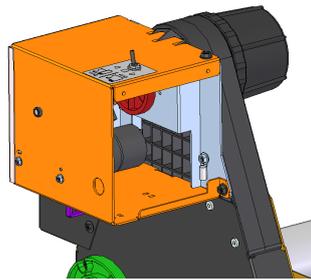
Pay attention not to lose the R pin and the parallel pin.



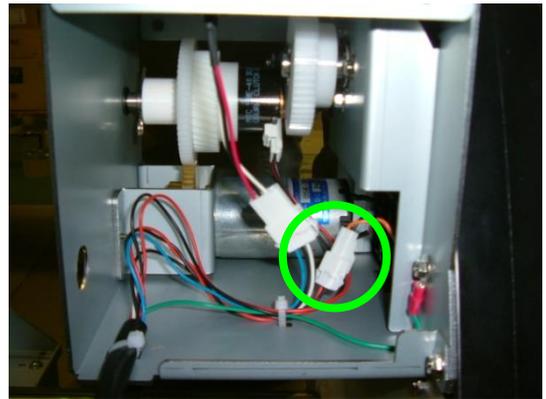
### 6.15.2 MOTOR-UNIT

<Removal>

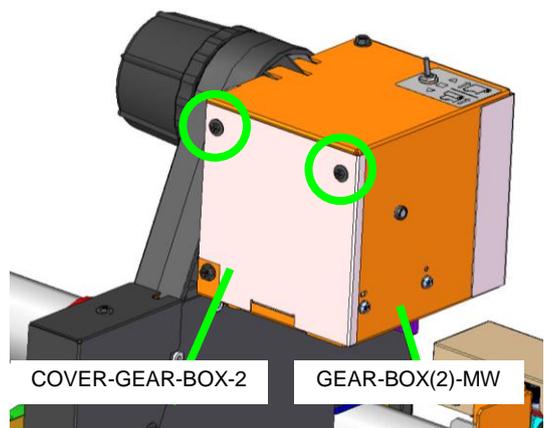
1. From the GEAR-BOX(2)-MW, remove the COVER-GEAR-BOX with two securing screws.



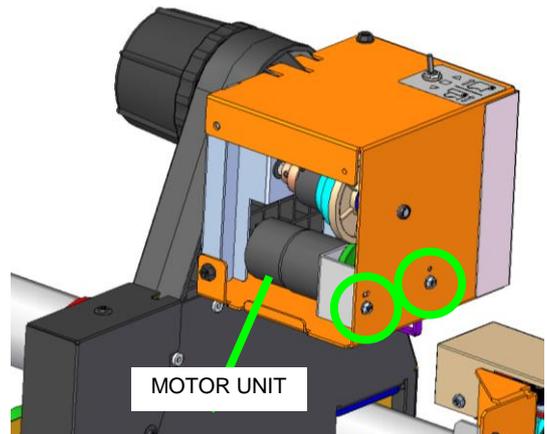
2. Disconnect the MOTOR-UNIT connector.



3. From the GEAR-BOX(2)-MW, remove the COVER-GEAR-BOX-2 with two securing screws.



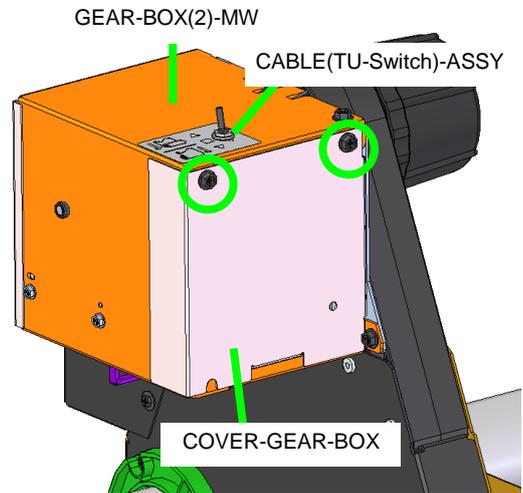
4. From the GEAR-BOX(2)-MW, remove the MOTOR-UNIT with two securing screws.



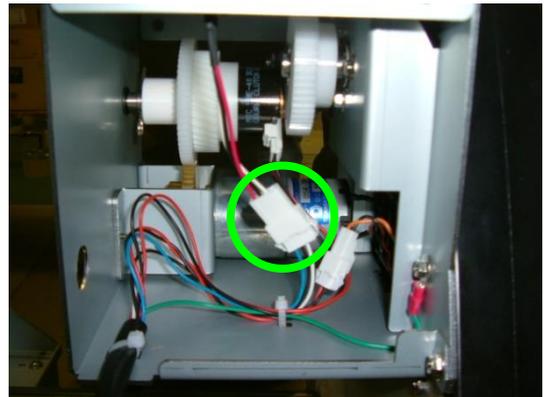
### 6.15.3 CABLE(TU-Switch)-ASSY

<Removal>

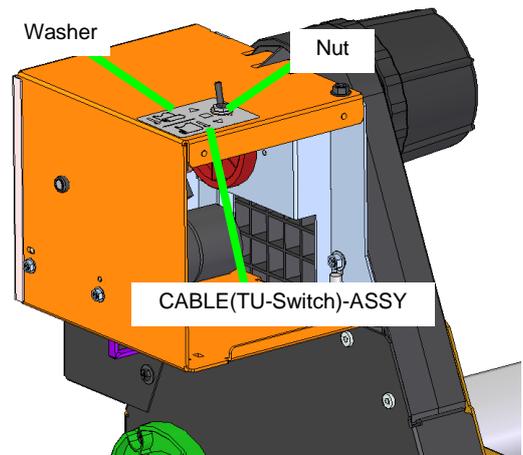
1. From the GEAR-BOX(2)-MW, remove the COVER-GEAR-BOX with two securing screws (see 6.15.2).



2. Disconnect the CABLE(TU-Switch)-ASSY connector.



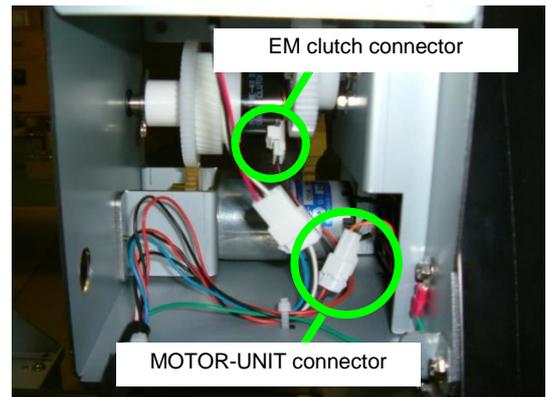
3. From the GEAR-BOX(2)-MW, remove the CABLE(TU-Switch)-ASSY with two securing parts below:
  - One nut
  - One tooth lock washer.



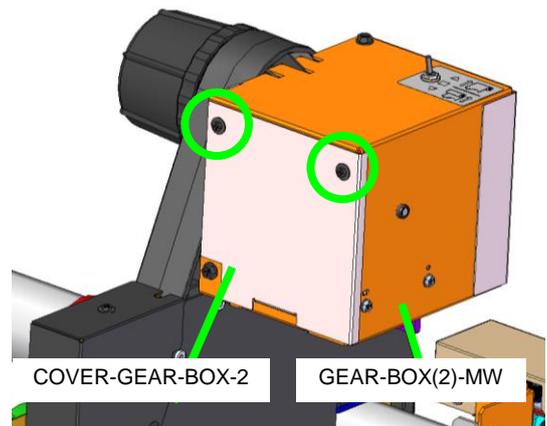
### 6.15.4 Torque limiter and TUR EM clutch

<Removal>

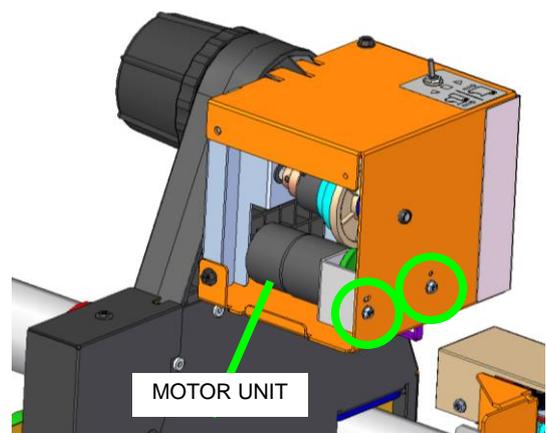
1. From the GEAR-BOX(2)-MW remove the COVER-GEAR-BOX with two securing screws (see 6.15.2).
2. Disconnect the MOTOR-UNIT connector and the TUR EM clutch connector.



3. From the GEAR-BOX(2)-MW, remove the COVER-GEAR-BOX-2 with two securing screws.



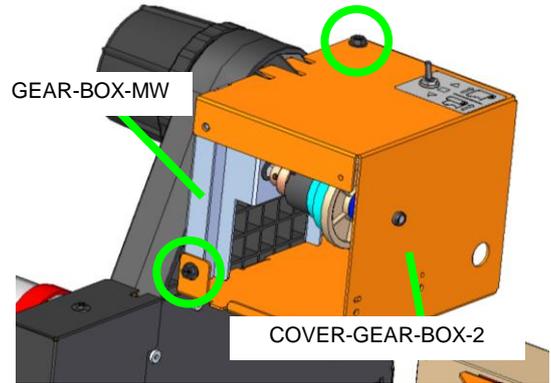
4. From the GEAR-BOX(2)-MW, remove the MOTOR-UNIT with two securing screws.



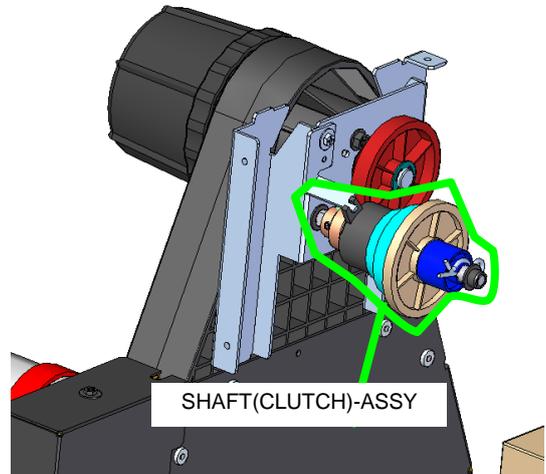
- 5. From the GEAR-BOX-MW, remove the COVER-GEAR-BOX-2 with four securing screws.

**Note:**

Only two screws are shown in the figure.

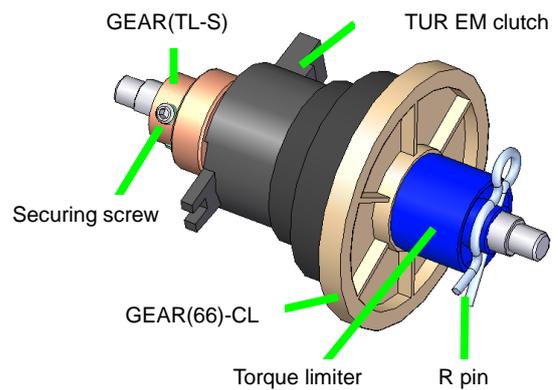


- 6. Remove the SHAFT(CLUTCH)-ASSY.



- 7. To remove the torque limiter:  
Remove the R pin, and remove the torque limiter.

- 8. To remove the TUR EM clutch:  
Remove the two securing screws, and remove the TUR EM clutch.

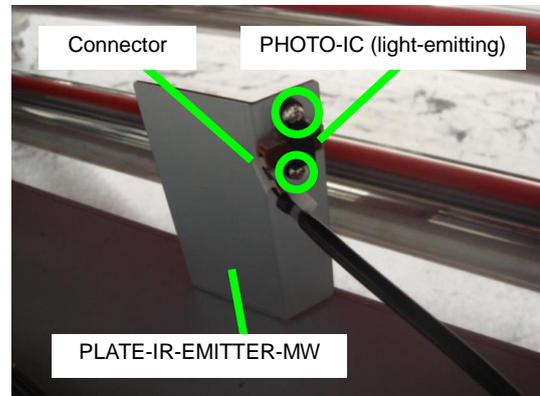


### 6.15.5 PHOTO-IC-ASSY

One light-emitting sensor module and two light-receiving sensor modules are included in the TAKE UP SENSOR, MW maintenance parts for the TAKE UP REEL UNIT sensors. If an error occurs, replace all three modules at the same time. A sticker is stuck on the light-emitting module to help you recognize it.

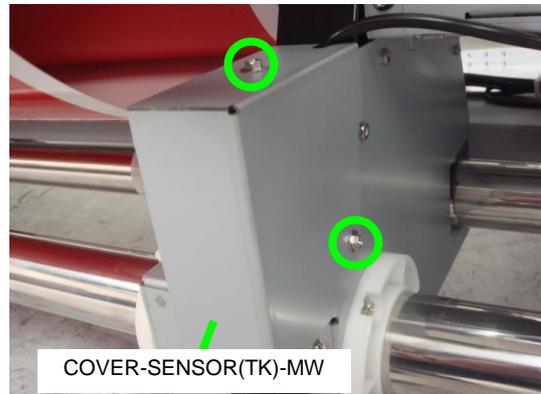
<To remove the PHOTO-IC (light-emitting sensor)>

1. Disconnect the PHOTO-IC (light-emitting sensor) connector.
2. From the PLATE-IR-EMITTER-MW, remove the PHOTO-IC (light-emitting sensor) with two securing screws.

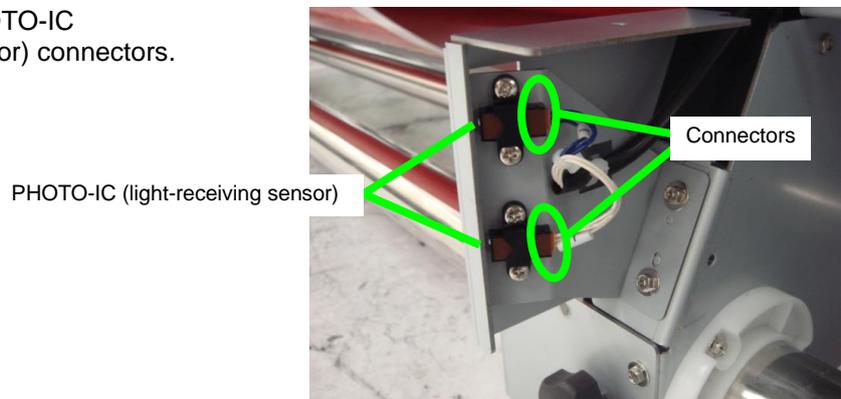


<To remove the PHOTO-IC (light-receiving sensor)>

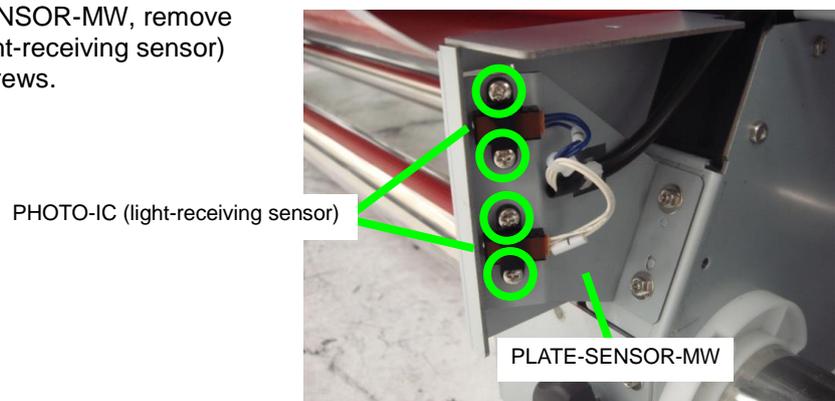
1. Remove the COVER-SENSOR(TK)-MW with two securing screws.



2. Disconnect the PHOTO-IC (light-receiving sensor) connectors.



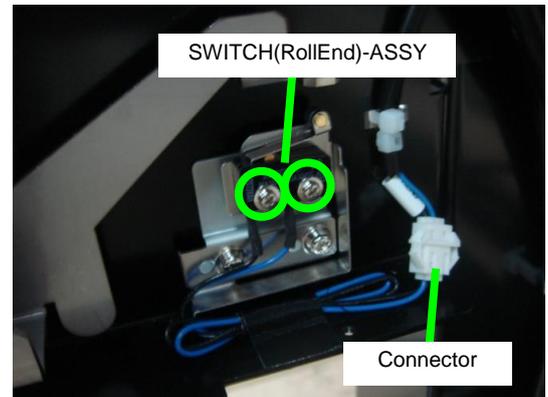
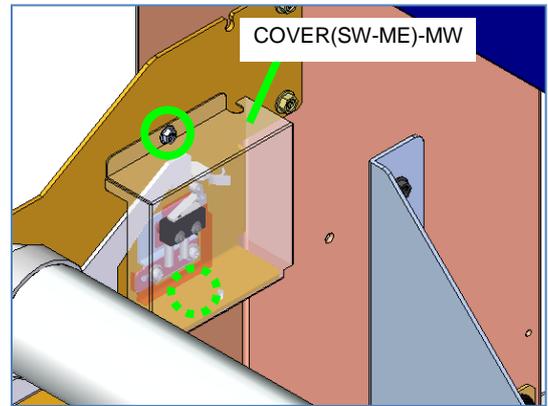
3. From the PLATE-SENSOR-MW, remove the PHOTO-IC (light-receiving sensor) with two securing screws.



### 6.15.6 SWITCH(RollEnd)-ASSY

<Removal>

1. Remove the COVER(SW-ME)-MW with two securing screws.
2. Disconnect the SWITCH(RollEnd)-ASSY connector.
3. Remove the SWITCH(RollEnd)-ASSY with two securing screw.



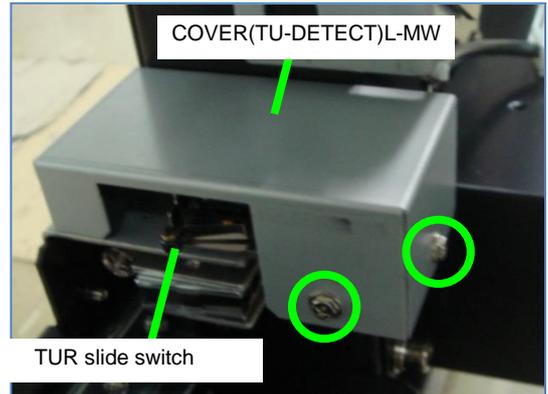
### 6.15.7 TUR slide switch

One TUR slide switch is installed at both sides. The procedure below explains how to remove the left TUR slide switch. The procedure to remove the right TUR slide switch is the same.

<Removal>

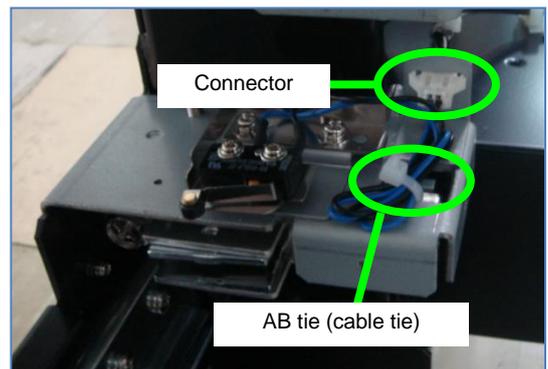
1. Remove the COVER(TU-DETECT)L-MW with two securing screws.

\* Remove the COVER(TU-DETECT)R-MW for the right side TUR slide switch.

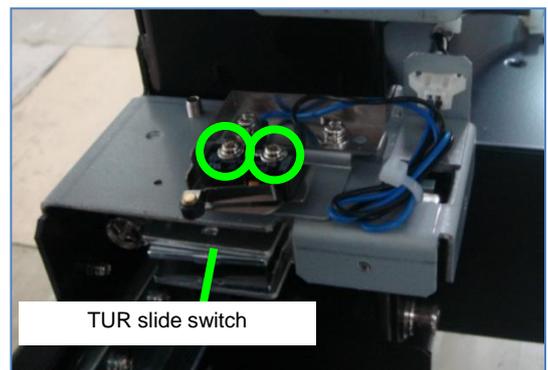


2. Disconnect the TUR slide switch connector.

3. Cut the AB tie (cable tie).



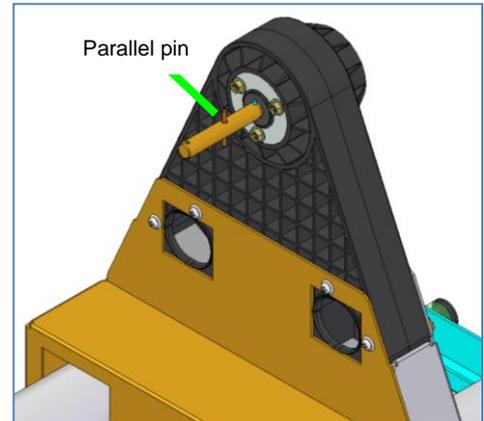
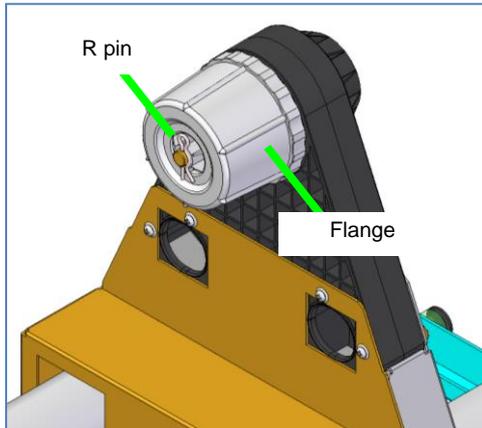
4. Remove the TUR slide switch with two securing screws.



### 6.15.8 TORQUE LIMITER 1500C

<Removal>

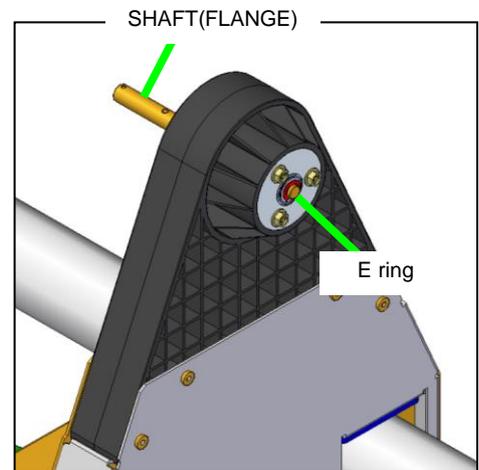
1. Remove the R pin and flange.



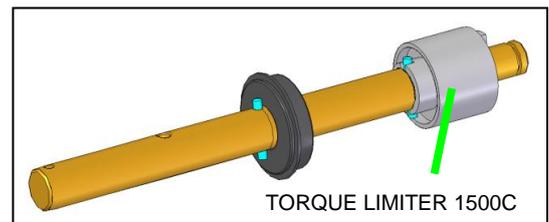
**Note**

Pay attention not to lose the R pin and the parallel pin.

2. Remove the E ring and remove the SHAFT (FLANGE).



3. Remove the TORQUE LIMITER 1500C.

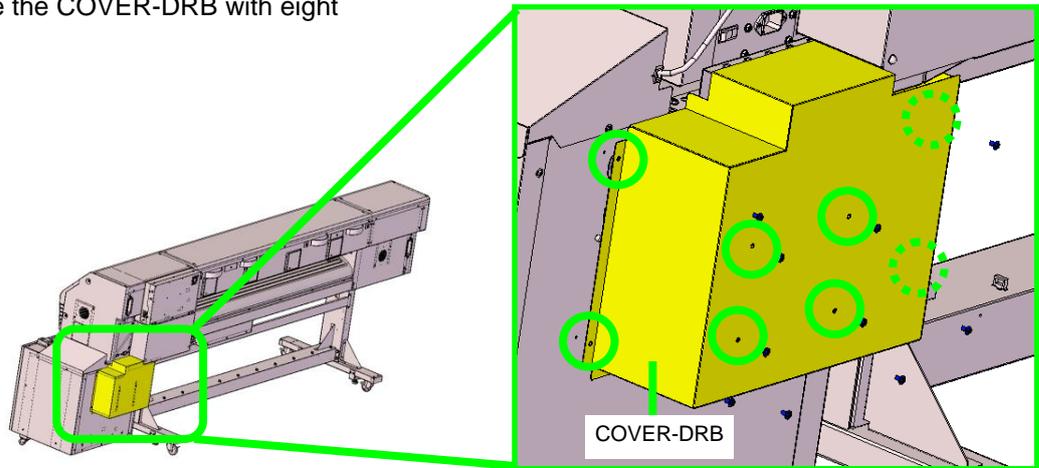


## 6.16 Disassembling and Reassembling the LCIS-UNIT

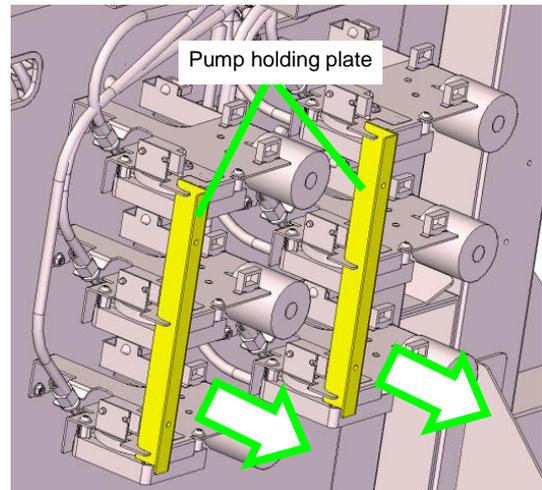
### 6.16.1 SUPPLY PUMP, MW, LCIS

<Removal>

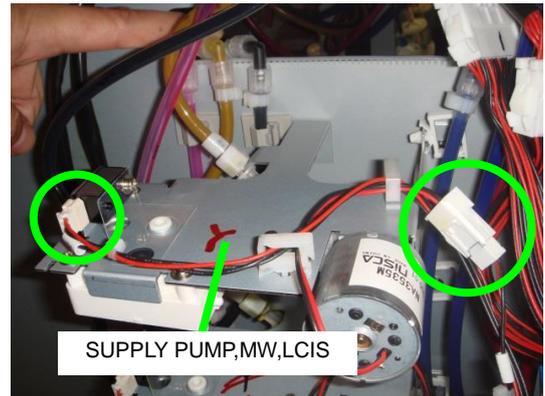
1. Drain the ink (see **Chapter 3**). After the ink has been drained, turn the printer off.
2. Remove the COVER-DRB with eight screws.



3. Remove the two pump holding plates.



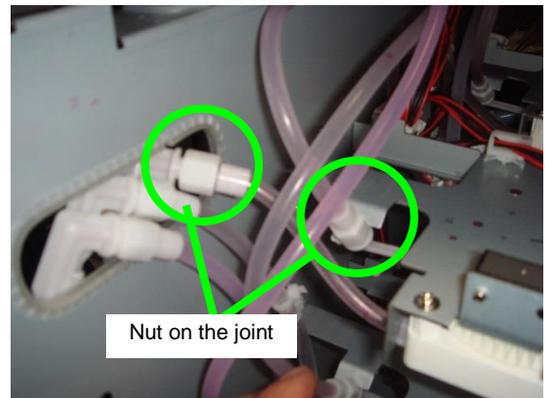
4. Disconnect the two cables connected to the motor and sensor of the SUPPLY PUMP,MW,LCIS to replace.



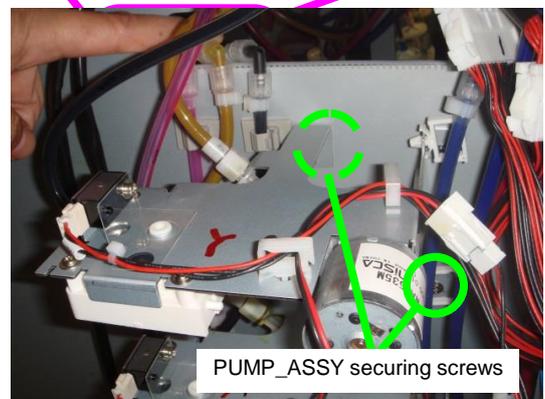
5. Rotate the two nuts on the joints of the tubes connected to the SUPPLY PUMP,MW,LCIS, and remove the tubes.

**Note**

When removing the tubes, pay attention not to soil the surroundings with ink, for example by covering the other parts with a cloth.



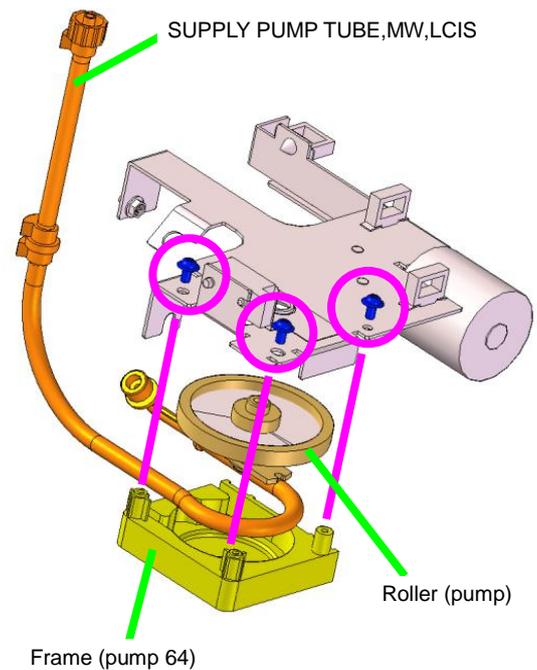
6. Remove the SUPPLY PUMP,MW,LCIS with two screws.



## 6.16.2 SUPPLY PUMP TUBE, MW, LCIS

<Removal>

1. Remove the SUPPLY PUMP,MW,LCIS (see 6.16.1).
2. Remove the frame (pump 64) with three screws from the SUPPLY PUMP,MW,LCIS.
3. Remove the roller (pump), and then remove the SUPPLY PUMP TUBE,MW,LCIS.



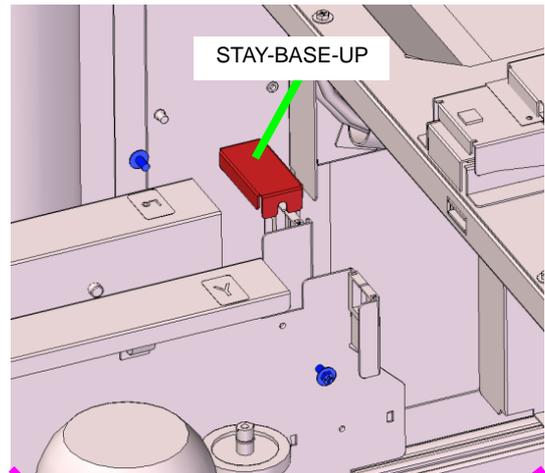
### Notes

- Do not remove the grease applied on the tube.
- If you replace the tube, do not forget to reset the counter for the supply pump operating time.
- When reinstalling the tube, place it along the frame (pump) and pay attention that it is not twisted or bent.
- Pay attention to the joint orientation.

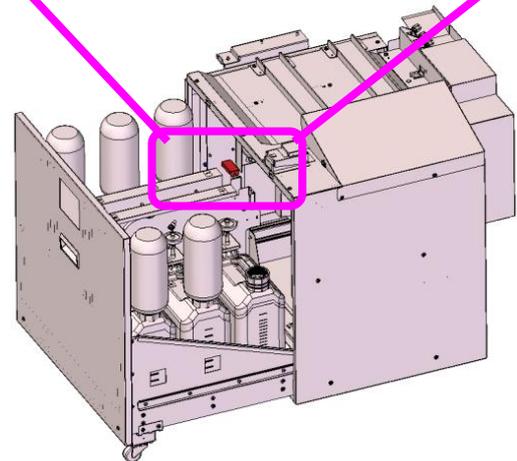
### 6.16.3 REMAINING INK SENSOR, MW, LCIS

<Removal>

1. Drain the ink (see **Chapter 3**). After the ink has been drained, turn the printer off.
2. Open the LCIS unit drawer, and remove the STAY-BASE-UP with two screws.



3. Remove the three screws securing the BASE-BOTTLE-BU.

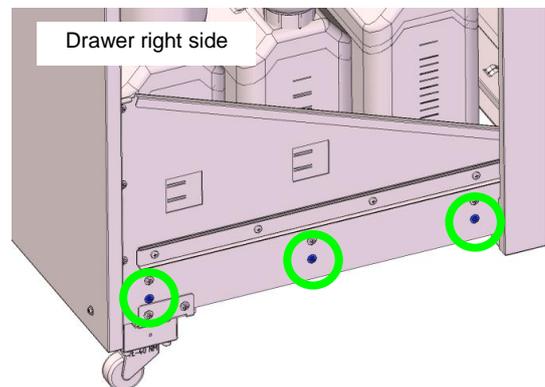


**Notes**

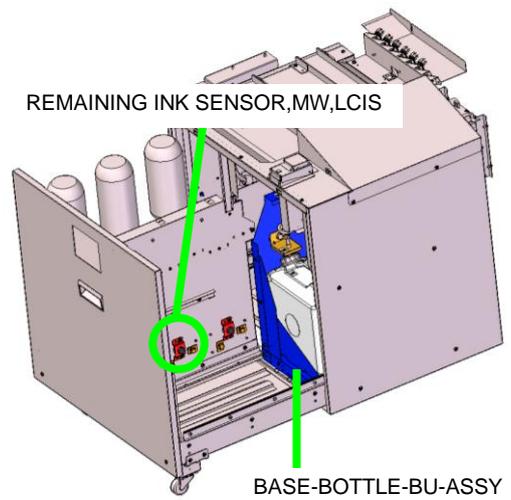
The location of the three screws to remove depends on the position of the sensor to replace.

When replacing the sensor for Lc, Lm, or C  
 -> Remove the three screws on the right side of the drawer (see the figure).

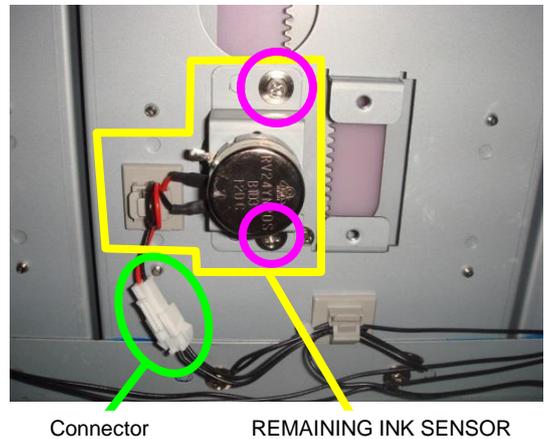
When replacing the sensor for Y, K, or M  
 > Remove the three screws on the right side of the drawer (no figure)



4. Slide the BASE-BOTTLE-BU-ASSY to the rear of the drawer to have access to the REMAINING INK SENSOR on the other side.  
(The figure to the right shows the position to replace the C sensor on the left side of the unit.)



5. Disconnect the REMAINING INK SENSOR connector.
6. Remove the REMAINING INK SENSOR with two screws.



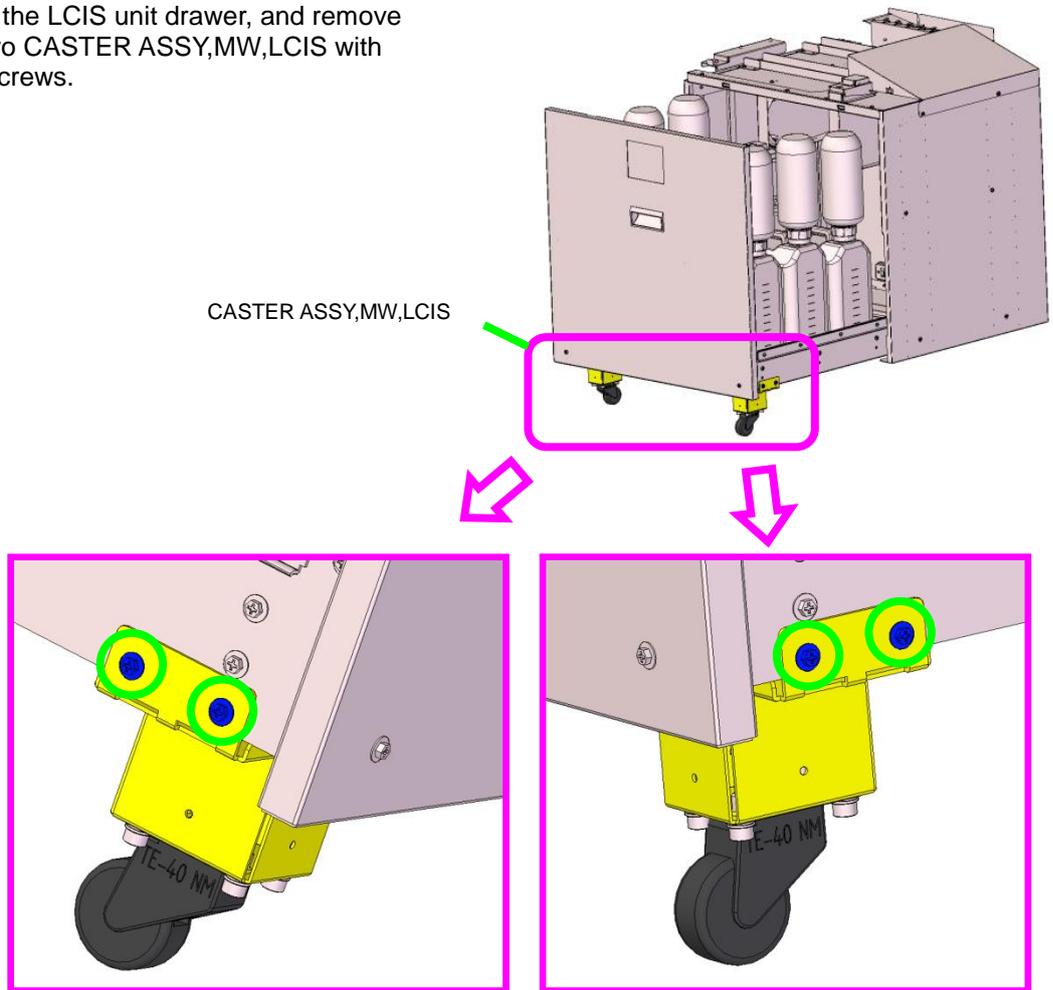
**Note**

When you have replaced the REMAINING INK SENSOR, adjustment is required during the installation.  
See **7.9 REMAINING INK SENSOR, MW, LCIS Adjustment** for the adjustment procedure.

### 6.16.4 CASTER ASSY, MW , LCIS

<Removal>

1. Open the LCIS unit drawer, and remove the two CASTER ASSY,MW,LCIS with four screws.

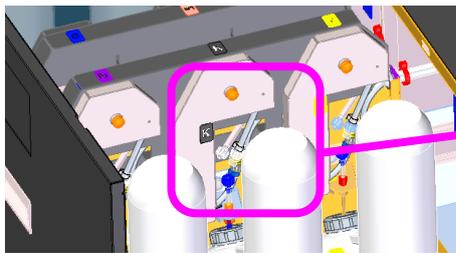


### 6.16.5 FILTER ASSY, MW, LCIS

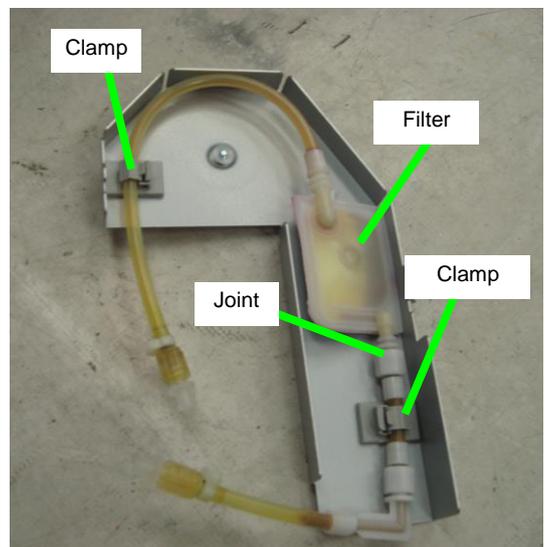
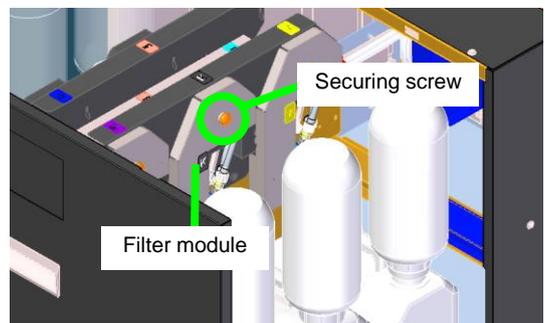
#### Note

Before replacing the filter, put the printer in the idle state (state with no errors).

1. Open and close the LCIS unit drawer to fill the sub tanks with ink.  
\* Ink is supplied automatically to the sub tanks when the drawer is opened and closed.
2. Open the LCIS unit drawer and disconnect the two joints of the filter module to replace.



3. Loosen the screw securing the filter module, and remove the filter module obliquely upward.
4. Reverse the filter module and remove the filter assy from the two clamps securing it. Then disconnect the tube joint and remove the filter.



5. Connect the new filter to the joint and secure the tube with the two clamps.

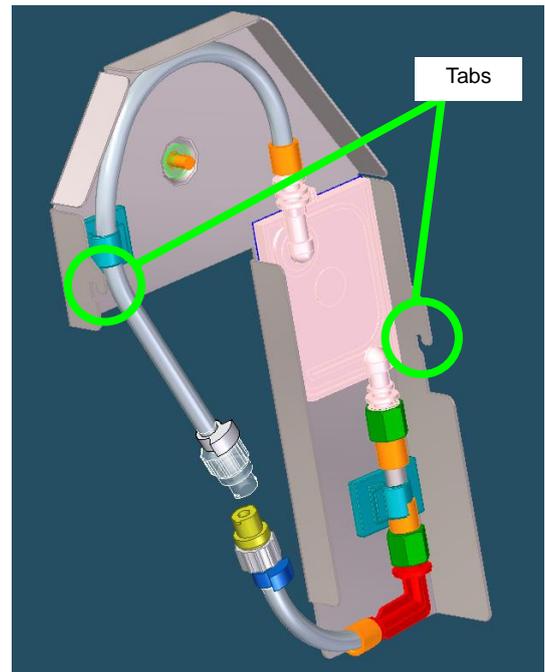
#### Notes

- Place the front and reverse flat sides of the filter (silver and white) with the same orientation as the filter you removed.
- The orientation of the filter sides changes between the right and left sides of the drawer.

6. Secure the filter module to the drawer.

#### Notes

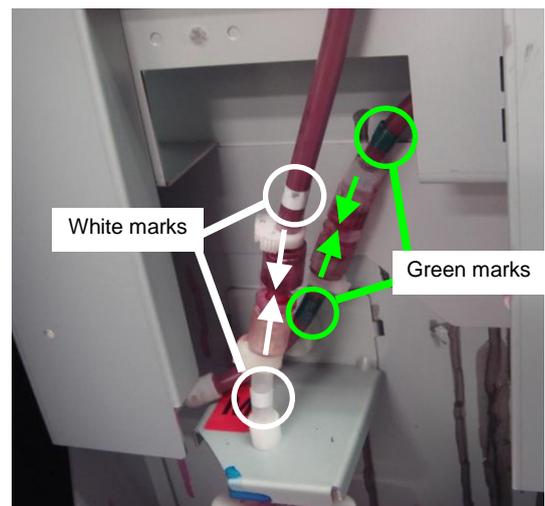
- Always reinstall the filter module to the same color position.
- Check that the two tabs on the module right and left are correctly inserted.



7. Connect the two joints of the filter module.

#### Note

Connect the green marks together and the white marks together when connecting the joints. Improper connection may cause damage to the printer.



8. Close the LCIS unit drawer.

**9.** Enter the maintenance mode (see **3.2 Maintenance Mode Operations**)

Press the **MAINTENANCE** button.



Select **PH MAINTENANCE** with the **Down** button, and press the **OK** button.



Select **PRIME FILTERS** with the **Down** button, and press the **OK** button.



Press the **OK** button.



(The operation starts)



(The operation is complete)



# Chapter 7 Adjustment

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This chapter describes adjustments carried out during on-site parts replacement or maintenance work.

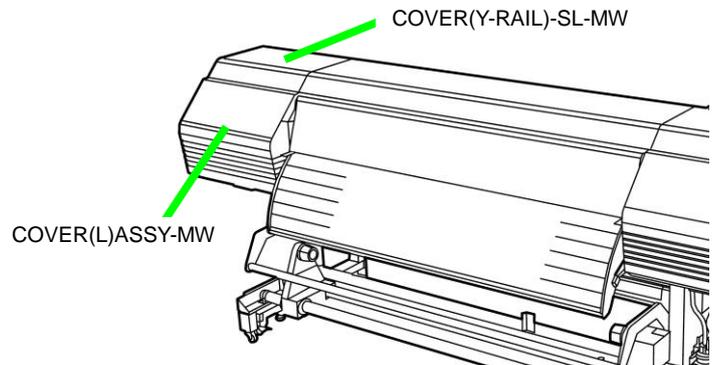
## 7.1 Adjustment of CARRIAGE-UNIT-MW Height

Tools: PLATE-ADJUST-CR (1 set of 4)

M3x8 screws (x2)

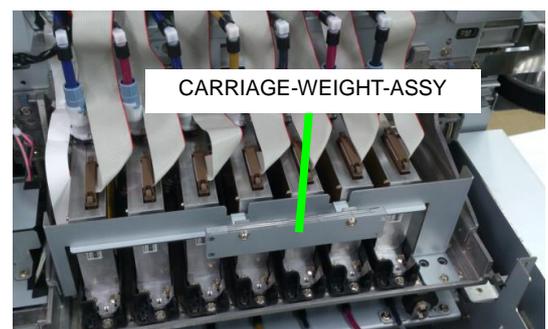
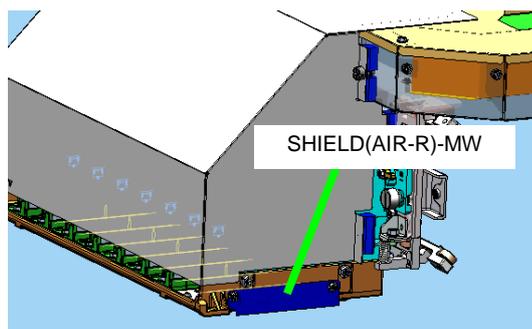


1. Turn the printer off by pressing **CANCEL** button and **POWER** button.  
Turn the main power switch OFF.
2. Remove the following parts.
  - COVER(L)ASSY-MW
  - COVER(Y-RAIL)-SL-MW.



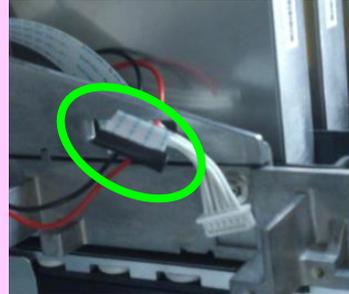
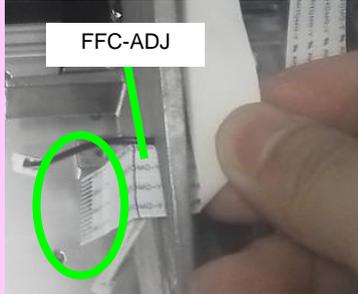
3. Lower the capping unit CAPPING-UNIT-MW, and move the carriage to the maintenance area.

- Remove the following parts.
- COVER-CARRIAGE-MW with two securing screws
  - CARRIAGE-WEIGHT-ASSY with one securing screw
  - PCB-ASSY-ADJ1 (see 6.8.8)
  - SHIELD(AIR-R)-MW with two securing screws



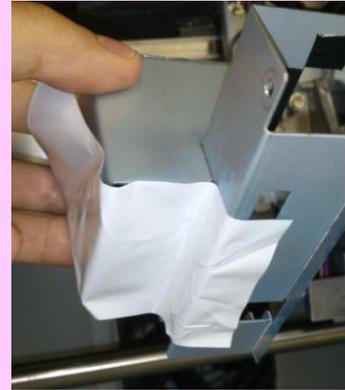
**Note**

After removing the PCB-ASSY-ADJ1, insulate the FFC-ADJ terminals with tape. Note that the terminals without insulation may cause a board malfunction.

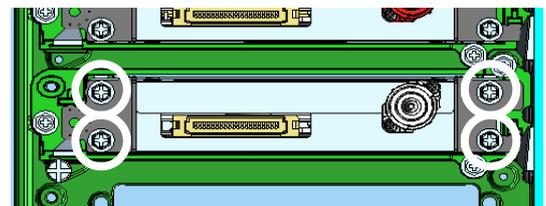
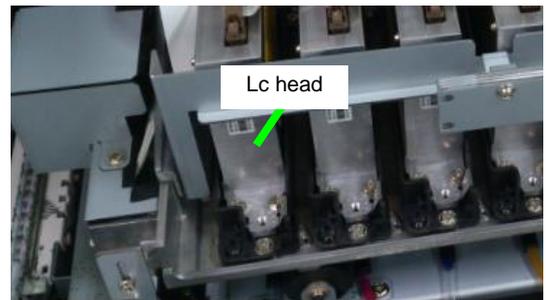


**Note**

Protect the ionizer metal plate with tape. If the plate is not protected, this may cause a board malfunction.



4. Remove the screw securing the Lc print head (the head closest to the maintenance area).



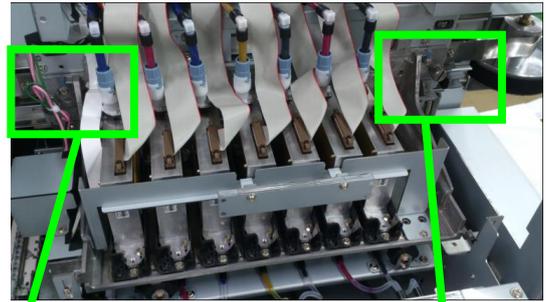
5. Check that the two levers LEVER-UD used by the user for adjusting the height (2 levels) are facing upward, that is, set to Low side.

When they are set to Low side, go to the next step.

If they are oriented horizontally, that is, set to High side, change the setting to Low side with the procedure below.

- (1) Loosen the two thumb screws.  
If they cannot be turned with your fingers, use a coin or the like.
- (2) Place the two levers in the vertical direction (Low side).
- (3) Tighten the two thumb screws.
- (4) Check that the LEVER-UD are not loose.

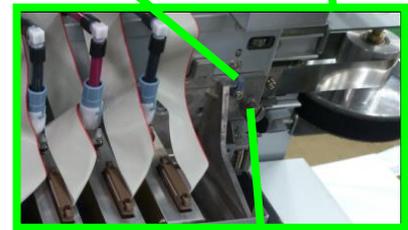
If they are loose, loosen the thumb screws, push the head base downward to adjust the lever, and then tighten the thumb screws.



LEVER-UD

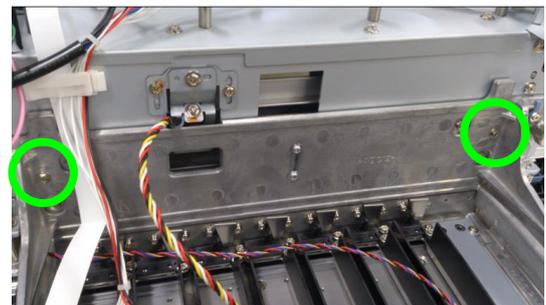


Thumb screw



Thumb screw

6. Secure the HEAD-BASE and the PLATE-UD with two M3 screws.



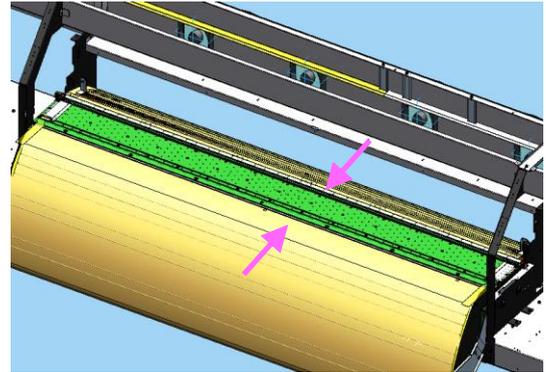
7. Turn the printer on with the COVER(FRONT)ASSY-MW open.

**Note**

- Make sure the COVER(FRONT)ASSY-MW is open before turning the printer on, or it may cause a board malfunction.
- The carriage may move, so pay attention that it does not contact the cables, the ionizer plate, or other parts.
- Remove the media as it may cause an error.

8. Set the heaters on and set the print heater to 40°C (see 3.4.1.2 (3) (a) (i) ). No particular temperature is needed for the preheater and afterheater. Set the pressure roller up/down lever to the normal pressure.

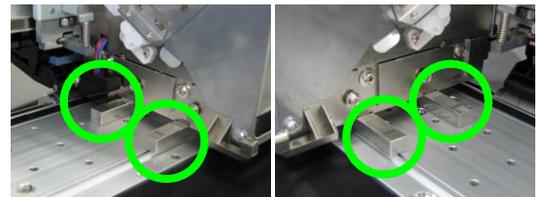
9. Move the carriage manually to place its right side to the position on the platen shown in the figure. (The position of the securing screw of the seventh post from the capping unit side.)



10. Place the PLATE-AD-JUST-CR in the four corners under the carriage.

**Note**

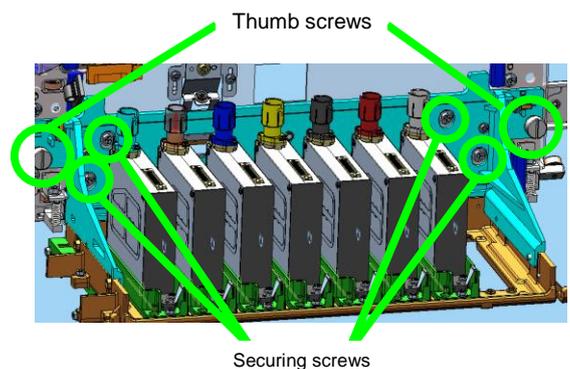
Be sure to perform this step as the print heads may be damaged if the carriage falls.



11. Loosen the four screws securing the carriage, and then loosen the two thumb screws.

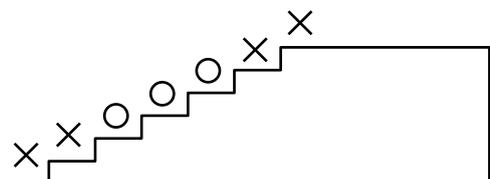
**Note**

The Lc print head must be put aside to access the left securing screws. Pay attention not to bend the tube when moving the print head.



12. Place the four PLATE-ADJUST-CR to the desired height, tighten the two thumb screws, and tighten the four carriage securing screws.

13. Remove the two M3 screws installed in step 6, and check that the four PLATE-ADJUST-CR are all placed in the first, second, or third level. If any plate is not within that range, start the procedure again from step 5.



- 14.** Remove the four PLATE-ADJUST-CR, turn the printer off, and then return all the parts to their original position.
  
- 15.** Adjust the height of the following parts (see **7.7** and **7.8**).
  - PLATE(CARRIAGE-CAP)-MW on the capping unit
  - WIPING-UNIT-MW

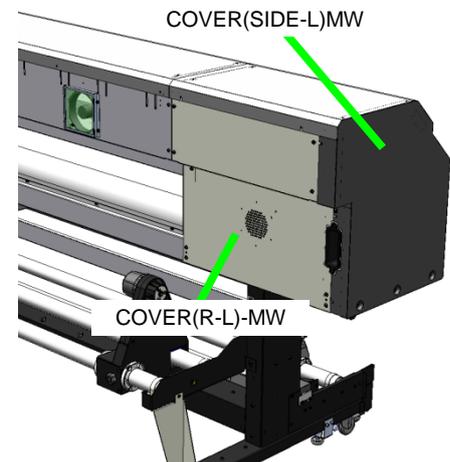
## 7.2 SUS-BELT Tension Adjustment

Always adjust the SUS-BELT tension after replacing the Y driving unit SUS belt, the Y-DRIVING-PULLEY-ASSY, TENSION-PULLEY-ASSY or the carriage.

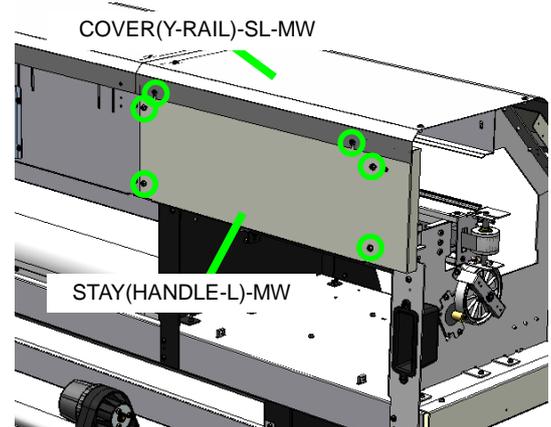
### Note

Set the SUS-BELT at the center (centered horizontally) of the Y-DRIVING-PULLEY-ASSY. Adjust the SUS-BELT position so that it does not move up and down above the Y-DRIVING-PULLEY-ASSY when the carriage moves to the right or left. After adjusting the SUS-BELT tension by turning the tension adjustment screws on the Y-DRIVING-PULLEY-ASSY, move the carriage right and left few times manually to make the belt move, then measure the SUS-BELT tension.

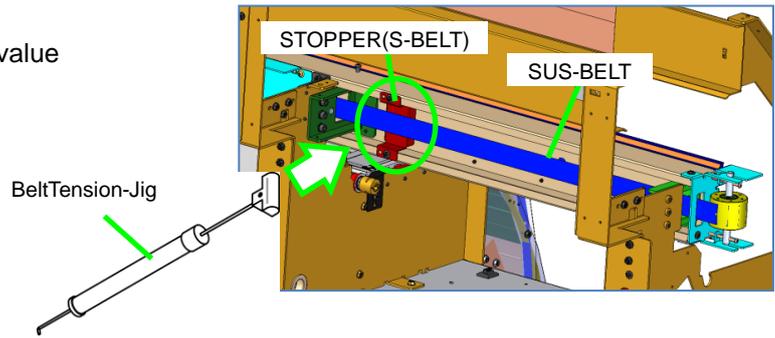
1. Remove the following parts.
  - COVER(R-L)-MW (see 6.3.5)
  - COVER(SIDE-L)MW (see 6.3.6)



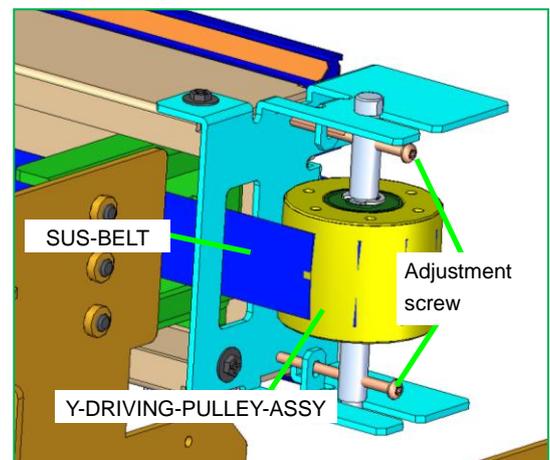
2. After removing the two screws securing the COVER(Y-RAIL)-SL-MW on the back, remove the STAY(HANDLE-L)-MW with four securing screws.



3. Push the SUS-BELT with the BeltTension-Jig, and read the value when the belt contacts the STOPPER(S-BELT).



4. Turn the tension adjustment screws on the Y-DRIVING-PULLEY-ASSY until the tension value matches the value indicated below.



<Adjustment value>

Tension: 1.9 N  $\pm$ 0.1 N (0.2 kgf)

**Note**

When loosening the tension, write down how many times you rotated the tension adjustment screw. Then, rotate the screw the same number of times to tighten the belt to the original tension.

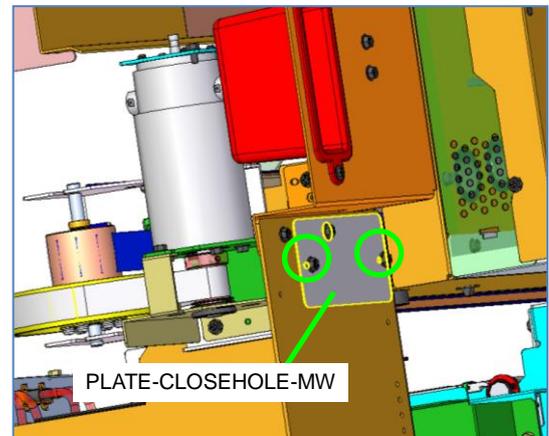
## 7.3 TIMING-BELT-Y Tension Adjustment

Always adjust the TIMING-BELT-Y tension after replacing the Y driving unit  
Y-DRIVE-MOTOR-ASSY, or the Y-DRIVING-PULLEY-ASSY.

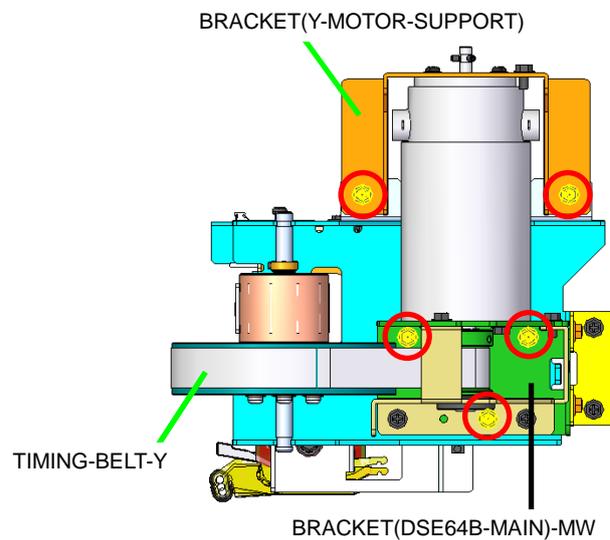
### Note

Adjust the TIMING-BELT-Y tension after adjusting the SUS-BELT tension. The TIMING-BELT-Y will be too high if the adjustment order is reversed.

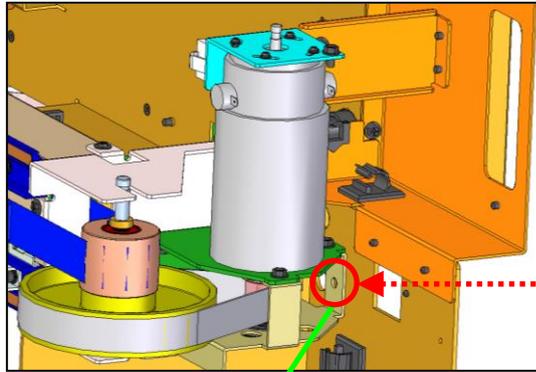
1. Remove the PLATE-CLOSEHOLE-MW with two securing screws.



2. Loosen the five screws securing the BRACKET(Y-MOTOR-SUPPORT) and the BRACKET(DSE64B-MAIN)-MW.



- Hook the 98 N (10 kgf) tension gauge to the BRACKET(DSE64B-SUB)-MW hole (see the figure below).



BRACKET(DSE64B-SUB)-MW

- Pull the gauge to display the tension value indicated below.

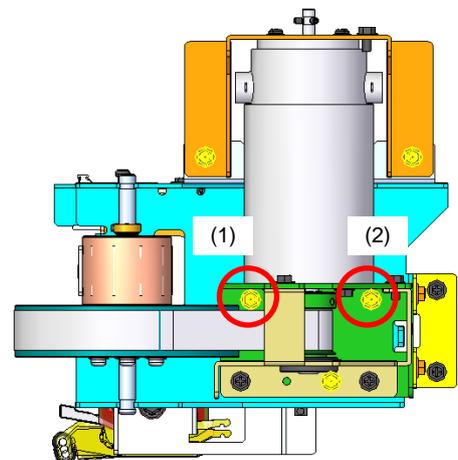
<Adjustment value>

Tension: 34.3 N  $\pm$ 2 N (3.5 kgf)

- While maintaining the indicated tension value, first secure the screw (1), then secure the screw (2).

<Torque value>

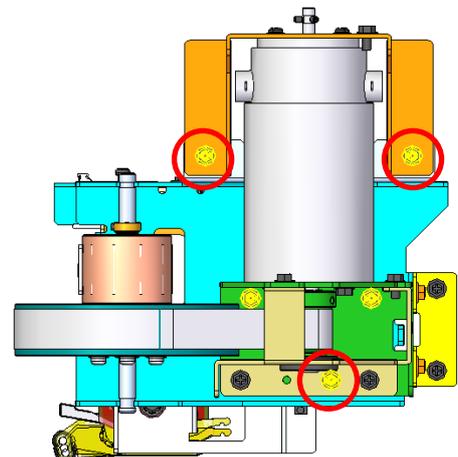
Screw tightening torque: 1.5 N·m (15Kgf·cm)



- Secure the three screws shown in the figure.

<Torque value>

Screw tightening torque: 1.5 N·m (15Kgf·cm)



**Note**

After replacing the motor, loosen the four M2.6 screws securing the BRACKET(Y-MOTOR-SUPPORT) to the motor, and adjust the BRACKET(Y-MOTOR-SUPPORT) position to avoid stress to the motor. Then secure the screws.

7. Remove the tension gauge.

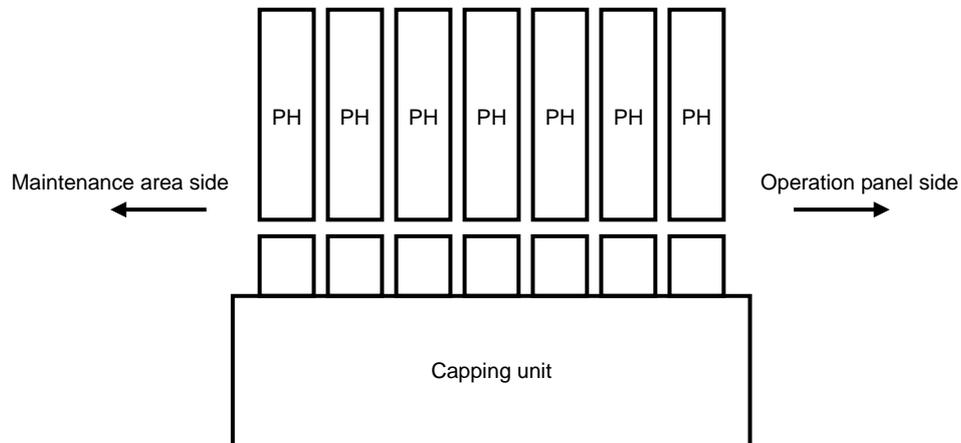
## 7.4 Correcting the Cap Position

This section explains how to correct the cap position to the print heads when they are in the capping unit position (home position).

1. Enter the maintenance mode (see **3.2 Maintenance mode operations**).
2. Press the **ADJUST** button.
3. Enter the **MECHANICAL ADJUST** menu with the **Up** and **Down** buttons.
4. Press the **OK** button to display **CAP POS ADJ VALUE**, then press the **OK** button again.
5. Open the front cover, and check visually that the caps are positioned at the center of the print heads.

ADJUST  
⇅ MECHANICAL ADJUST

>MECHANICAL ADJUST  
⇅ CAP POS ADJ VALUE



Enter an adjustment value with the **Up**, **Down**, **Left**, and **Right** buttons.

(-): Move to the capping unit side  
(+): Move to the wiping unit side

**Note**

The print heads are not capped if the value is set to **0**.

<Adjustment value>  
Unit: mm  
Range: -5.0 to +5.0

>>CAP POS ADJ VALUE

↕ ±X.X → ±Y.Ymm



6. Close the front cover and the printer adjusts the cap position based on the adjustment value entered above.
7. Repeat the steps 4 to 6 until the caps are positioned at the center of the print heads.

## 7.5 Wiping Position Adjustment

Wiping position adjustment consists of two operations: wiping unit adjustment and single color adjustment.

During wiping unit adjustment, you will align the carriage standard position and the wiper unit position. Then you will enter an adjustment value to adjust the wiping position for all print heads.

During single color adjustment, the wiping position of only the selected print head is checked and adjusted. To adjust the wiping position, always perform the wiping unit adjustment before the single color adjustment. The wiping position may shift if the adjustment order is reversed.

### Note

Wiping position adjustment is required after the following operation.

- (1) Wiping unit replacement or printer relocation  
Perform the wiping unit adjustment only.
- (2) Print head inclination adjustment  
Perform the wiping unit adjustment and the single color adjustment.

\* If these adjustments are not performed, the wiping operation will not be executed properly which may cause print defects.

### 7.5.1 Wiping unit adjustment

<Preparation>

1. Move the carriage to the maintenance area, remove the COVER(R)ASSY-MW and the carriage cover, then return the carriage to the home position.

- (1) Move the carriage to the maintenance area.

Press the **MAINTENANCE** button.



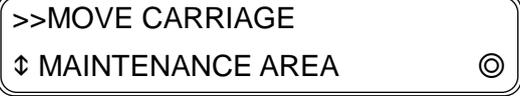
Select **OTHER MAINTENANCE** with the **Down** button, and press the **OK** button.



Select **MOVE CARRIAGE** with the **Down** button, and press the **OK** button.

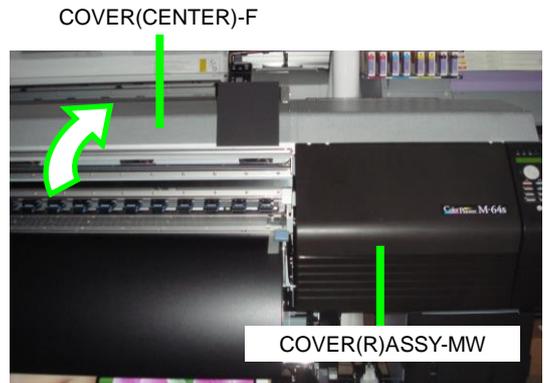


Select **MAINTENANCE AREA** with the **Down** button, and press the **OK** button.

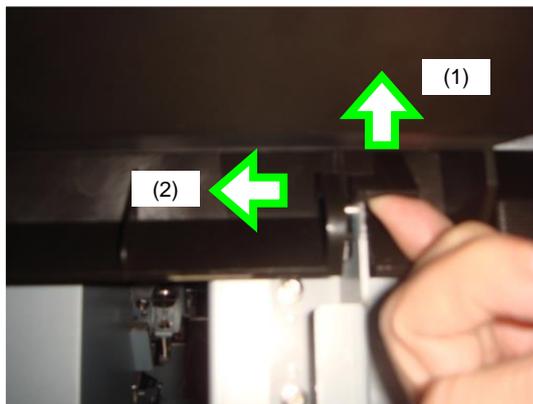


- (2) When the carriage has moved to the maintenance area, open the COVER(CENTER)-F and remove the COVER(R)ASSY-MW.

Open the COVER(CENTER)-F.



Then remove the COVER(R)ASSY-MW.



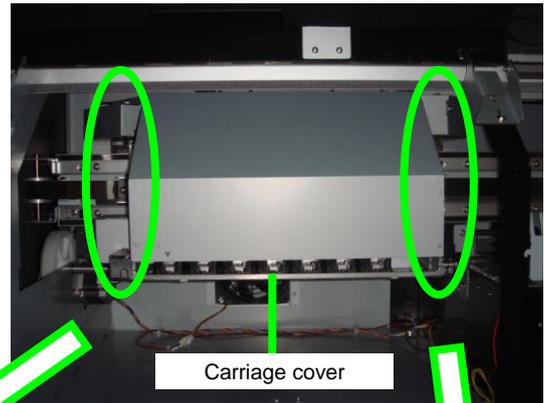
With the COVER(R)ASSY-MW open, push the lever on the top right upward as shown in the picture, and while keeping the pressure move the COVER(R)ASSY-MW to the left.



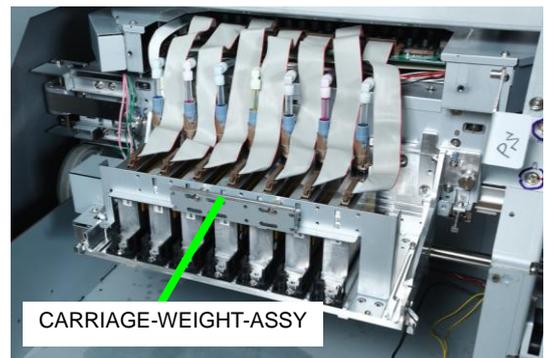
- (3) Open the COVER(L)ASSY-MW and remove the carriage cover.

Loosen the screw located on both sides (shown in the red circles in the picture below) and pull the carriage cover.

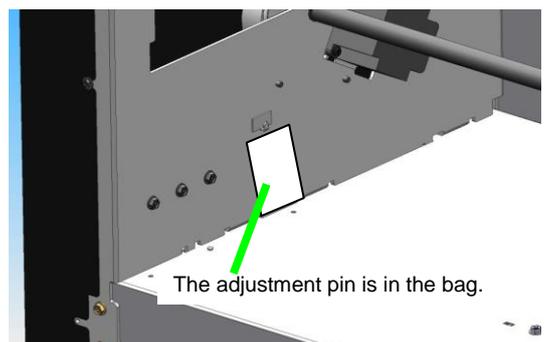
\*The screws cannot be removed.



- (4) Remove the CARRIAGE-WEIGHT-ASSY.



Remove the wiping position adjustment pin from the bag hooked to the side plate of the maintenance area.

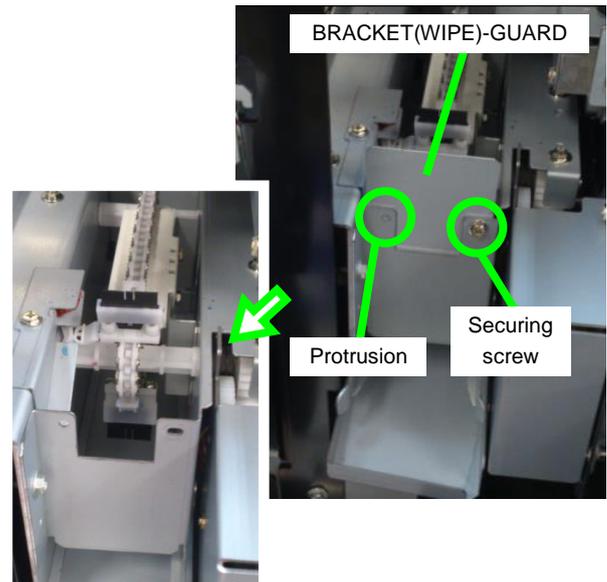


- (5) Remove the wiper cleaning liquid bottle and the wiper sponge.  
Remove the BRACKET(WIPE)-GUARD.

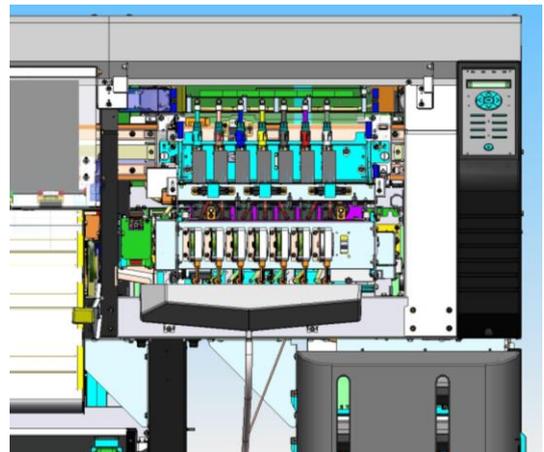
Remove the wiper sponge then the BRACKET(WIPE)-GUARD.

#### Notes

- Do not spill the liquid inside the wiper sponge.
- Be sure to insert the protrusion when installing the BRACKET(WIPE)-GUARD.



- (6) Close the COVER(CENTER)-F. The carriage returns to the home position.  
(The figure to the right shows the configuration.)



<Procedure>

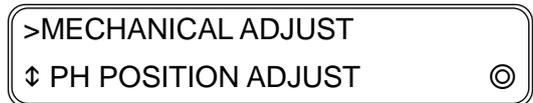
1. Press the **ADJUST** button.



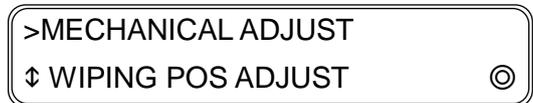
2. With the **Up** and **Down** buttons, select **MECHANICAL ADJUST**.



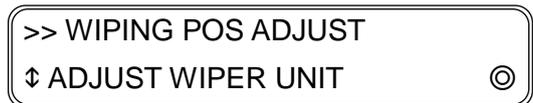
3. Press the **OK** button.



4. With the **Up** and **Down** buttons, select **WIPING POS ADJUST**, then press the **OK** button.

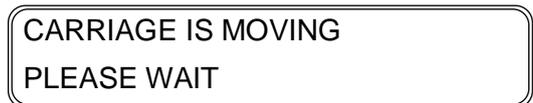


5. With the **Up** and **Down** buttons, select **ADJUST WIPER UNIT**, then press the **OK** button.



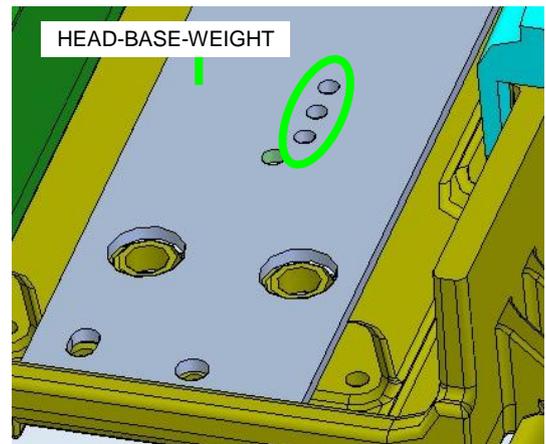
6. Press the **OK** button.

The carriage moves to the wiping position and stops with the third wiper blade turned upward.

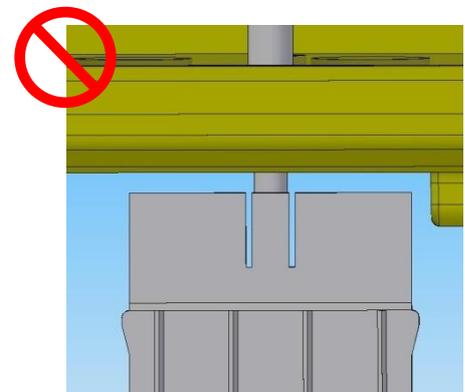


**7.** Insert the wiping position adjustment pin into the HEAD-BASE-WEIGHT of the head base.

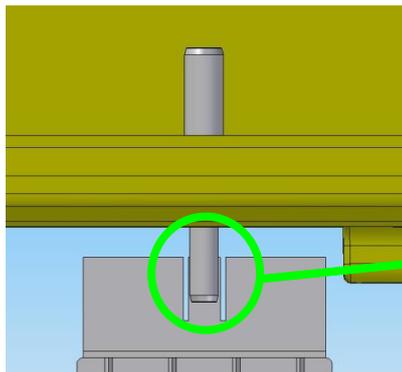
Insert the wiping position adjustment pin in one of the three holes indicated with a circle in the figure to the right. Select the hole where to insert the pin with the procedure below.



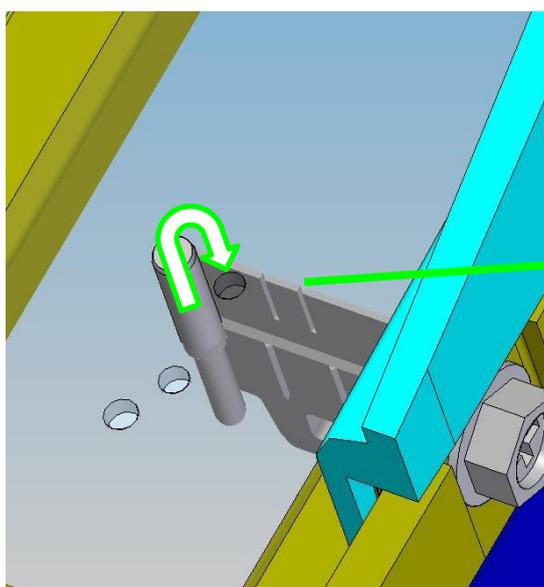
- (1) From the wiping unit's front side, check the relationship between the wiper blade and the wiping position adjustment pin.
- (2) Select the holes where:
  - The inserted pin comes first in front of the blade.
- (3) If two or three holes are appropriate, select one hole where:
  - The pin and the wiper blade are the closest.



Insert in a different hole if the pin comes behind the wiper blade.



When looking from the wiping unit's front, the pin comes in front of the wiper



Insert in the hole where the pin and the wiper blade are the closest.

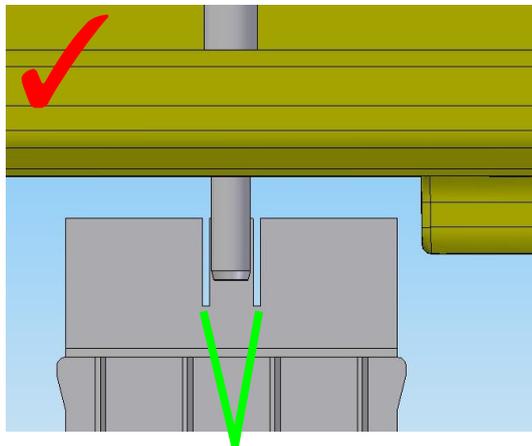
8. Press the **OK** button.



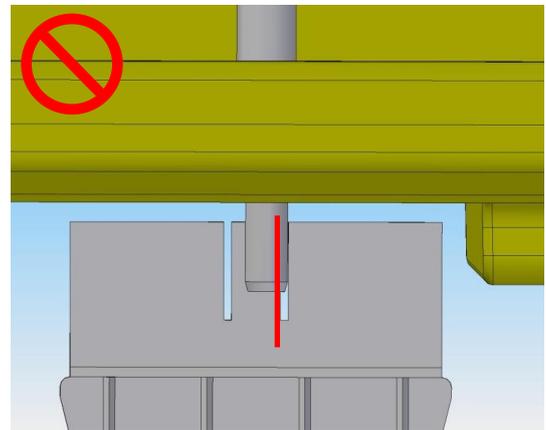
Then use the **Left** and **Right** buttons to adjust the wiping position.

You may press the **CANCEL** button to display the message in step 9 **REMOVE THE WIPING POS ADJUST PIN** and terminate the adjustment operation (see step 9 below).

Adjust the wiping position using the **Left** and **Right** buttons.



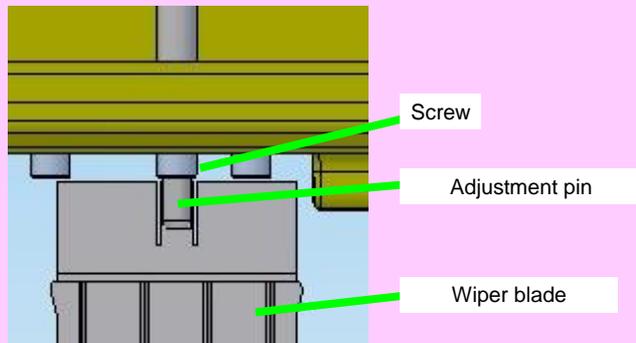
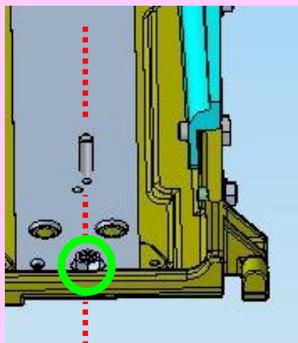
Adjust the position so that both edges of the wiper central part can be seen on the right and left of the adjustment pin.



The edge of the wiper central part cannot be seen on one side of the pin.

**Note**

Check the position of the wiper blade and wiping position adjustment pin with standing at the position where the wiping position adjustment pin is aligned with the extremity of the screw in the front.



When the edges of the wiper central part are not aligned with the wiping position adjustment pin, adjust their positions using the button as follows.

- Press the **Left** button once to move the carriage approximately 0.1 mm to the left.
- Press the **Right** button once to move the carriage approximately 0.1 mm to the right.

9. When the wiping position is correct, press the **OK** button.

CARRIAGE IS MOVING  
PLEASE WAIT

The wiping position adjustment value is changed.

REMOVE THE WIPING  
POS ADJUST PIN OK? 

\*Remove the wiping position adjustment pin and return it to its original location.

10. After moving the wiper blade to its home position, move the carriage to its home position.

>>WIPING POS ADJUST  
↓ ADJUST WIPER UNIT 

<Note>

Follow the procedure below to check or enter the wiping position adjustment value.

(Display at the end of the wiping unit position adjustment.)

>>WIPING POS ADJUST  
↓ ADJUST WIPER UNIT 

1. With the **Up** and **Down** buttons, select **WIPER U ADJUST VAL**, then press the **OK** button.

>>WIPING POS ADJUST  
↓ WIPER U ADJUST VAL 

2. The current wiper unit adjustment value is displayed.

>>>WIPER U ADJUST VAL  
↓ ±X.X → ±Y.Ymm 

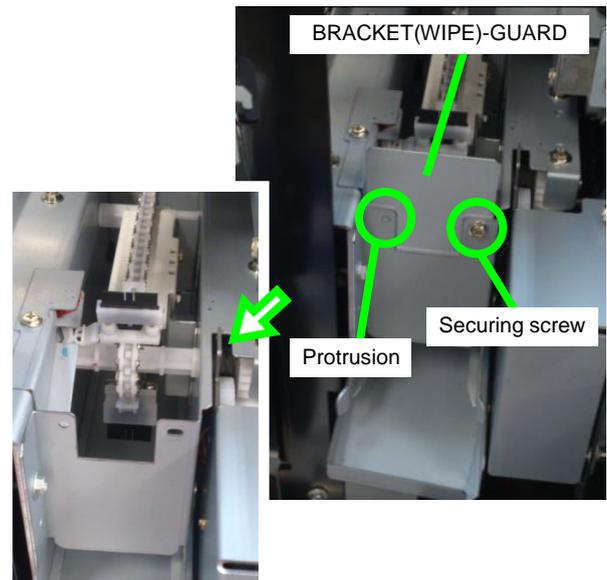
## 7.5.2 Single color adjustment

<Preparation>

1. Remove the cap cover (see 7.5.1 **Wiping unit adjustment**).  
  
Open the COVER(CENTER)-F, remove the COVER(R)ASSY-MW, and then close the COVER(CENTER)-F.
2. Remove the wiper cleaning bottle and the wiper sponge.  
Remove the BRACKET(WIPE)-GUARD.

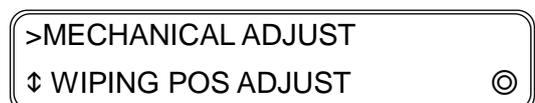
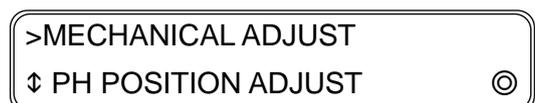
### Notes

- Do not spill the liquid inside the wiper sponge.
- Be sure to insert the protrusion when installing the BRACKET(WIPE)-GUARD.

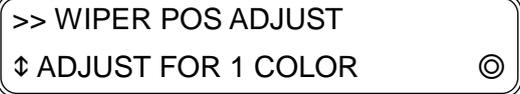


<Procedure>

1. Press the **ADJUST** button.
2. With the **Up** and **Down** buttons, select **MECHANICAL ADJUST**.
3. Press the **OK** button.
4. With the **Up** and **Down** buttons, select **WIPING POS ADJUST**, then press the **OK** button.



5. With the **Up** and **Down** buttons, select **ADJUST FOR 1 COLOR**, then press the **OK** button.



6. With the **Up** and **Down** buttons, select the color of the print head to adjust, then press the **OK** button.



**Note**

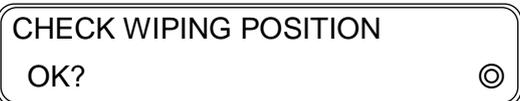
Only one print head can be adjusted at a time during single color adjustment.



7. Press the **OK** button.



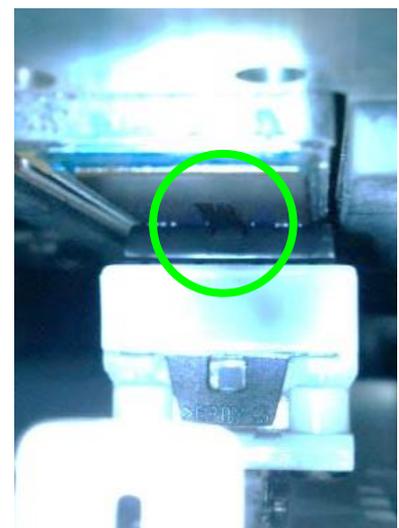
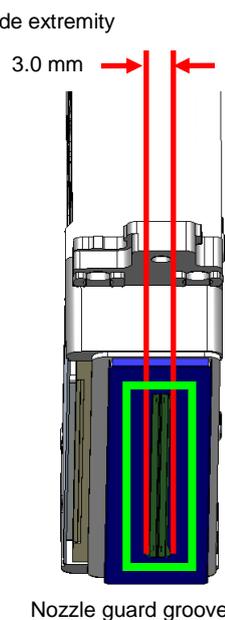
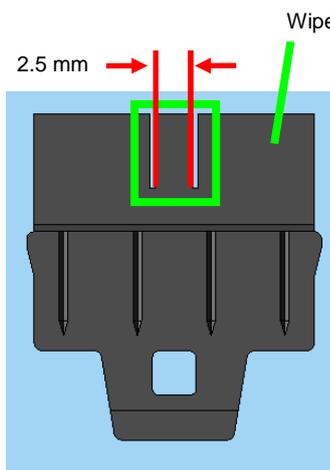
8. The carriage moves to the wiping position for the selected print head and stops with the third wiper blade turned upward.

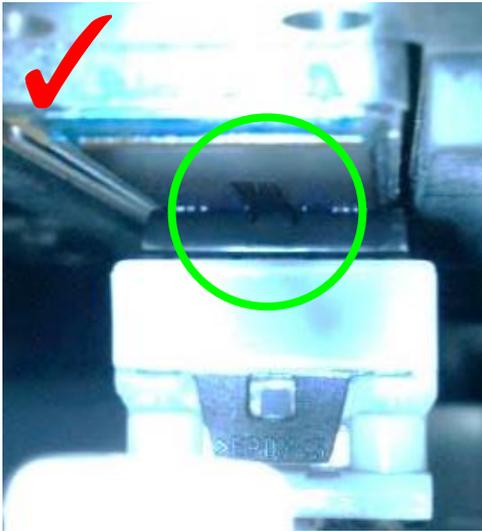


9. Check the position of the wiper blade to the nozzle guard.

How to check the position

- Check visually that the wiper blade extremity enters the groove on the nozzle guard, as shown in the pictures below.





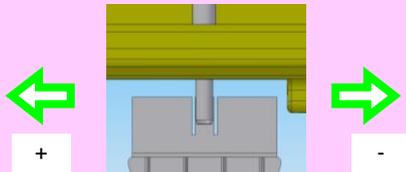
The wiper blade extremity should enter in the nozzle guard groove.



The wiper blade extremity is above the nozzle guard (in the black circle).

**Note**

To move the carriage to the maintenance side: enter a positive value  
 To move the carriage to the cap side: enter a negative value



If the wiper blade extremity is not in the nozzle guard groove, write down the size of the gap in unit of 0.1 mm, and press the **OK** button.

If the wiper blade extremity enters the nozzle guard groove, press the **OK** button.

10. The wiper blade returns to its home position, then the carriage moves to the home position.

CARRIAGE IS MOVING  
PLEASE WAIT

The wiping position of the selected print head is displayed.

- 11.** With the **Up**, **Down**, **Left**, and **Right** buttons, add or remove the size of the gap written down before to/from the current adjustment value.

Example: If the current value is +1.1 mm and the gap is +0.2 mm, then enter +1.3 mm as the new value.

### Note

Do not change the value if the position was correct.

- (1) If the value has been changed in step 11, check the wiping position with the procedure below.

Example: If +1.1 has been changed to +1.3.

If the value has not been changed, go to the step (2).

- (a) Enter the new value and press the **OK** key. Then the carriage moves to the wiping position for the print head that has been adjusted, and stops with the third wiper blade turned upward (configuration of step 8).
- (b) When the adjustment value is correct, press the **OK** key.
- (c) Press the **OK** key to finish the procedure.
- (d) Press the **CANCEL** key to perform the procedure again from step 8.

- (2) If the value has not been changed in step 11, the message to the right appears.

- (3) Press the **OK** key to finish the procedure.

ADJUST ONE COLOR

↓ Lc:+ X.X → +Y.Y



ADJUST ONE COLOR

↓ Lc:+1.1 → +1.3



CHECK WIPING POS

OK?



ADJUST ONE COLOR

↓ Lc:+1.3 → +1.3



WIPING POS CORRECT?

OK/CANCEL



>>>ADJUST FOR 1 COLOR

↓ Lc



CHECK WIPING POS

OK?



END ADJ OPERATION?

OK/CANCEL



>>>ADJUST FOR 1 COLOR

↓ Lc



<Post procedure operation>

1. Install the cap cover.  
Clean the wiper sponge, the metal plates,  
and other parts.

<Note>

Follow the procedure below to check or enter a single color adjustment value.

(Display at the end of the single color adjustment.)

>>>ADJUST FOR 1 COLOR  
 ↓ Lc ⊙

1. Press the **CANCEL** button.

>>WIPING POS ADJUST  
 ↓ ADJUST FOR 1 COLOR ⊙

2. With the **Up** and **Down** buttons, select **1 COLOR ADJ VAL**, then press the **OK** button.

>>WIPER POS ADJUST  
 ↓ 1 COLOR ADJ VAL ⊙

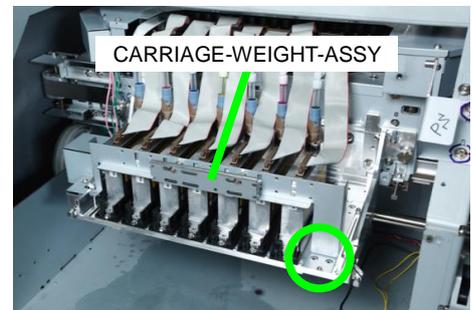
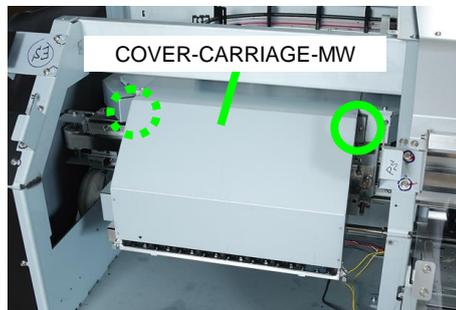
3. With the **Up** and **Down** buttons, select a single color adjustment value.

>>>1 COLOR ADJ VAL  
 ↓ CC:±XX ⊙

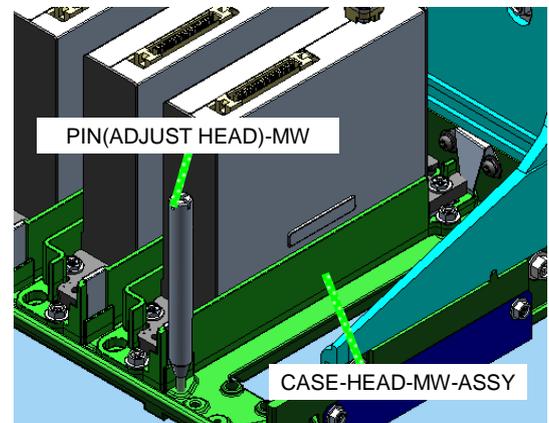
## 7.6 Print Head Inclination Adjustment

Follow the procedure below to adjust the print head inclination.

1. Open the COVER(CENTER)-F, and remove the COVER(Y-RAIL)-SR-MW and the COVER(R)ASSY-MW (see 6.3).
2. Remove the following parts.
  - COVER-CARRIAGE-MW with two securing screws
  - CARRIAGE-WEIGHT-ASSY with one securing screw.



3. Install the PIN(ADJUST HEAD)-MW. Tighten it gently by hand until it touches the CASE-HEAD-MW-ASSY.



- Loosen the three screws securing the CASE-HEAD-MW-ASSY.  
To turn the print head in the clockwise direction, rotate the PIN ADJUST (HEAD)-MW inserted in the hole for inclination adjustment in the clockwise direction.  
To turn the head in the counter clockwise direction, rotate the pin in the counter clockwise direction.

**Note**

PIN ADJUST (HEAD)-MW's one turn corresponds approximately to the print head's inclination by one dot.

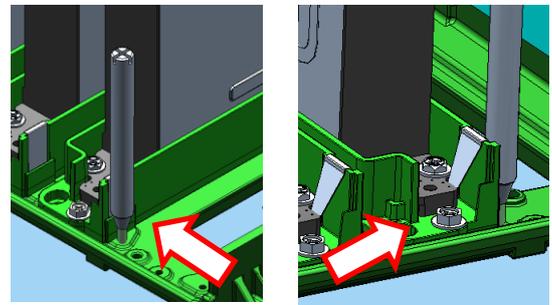
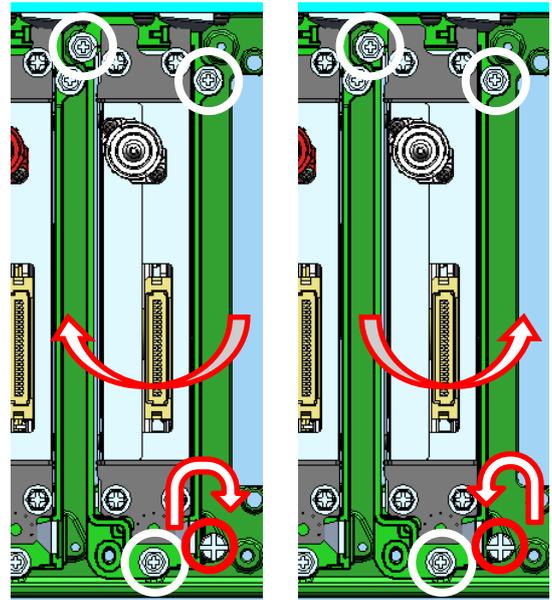
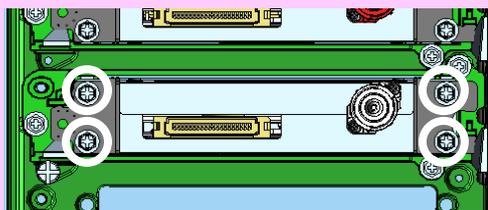
When doing so, push the HEAD-CASE-ASSY with your hands in the direction you want to incline it.

Print a print head slant check pattern to check the position and repeat the procedure until no problem is found.



**Note**

Do not loosen the four screws fixing the print head.



- Tighten the three screws securing the CASE-HEAD-MW-ASSY.
- Remove the PIN(ADJUST HEAD)-MW installed in step 3.  
Install the parts removed in steps 1 and 2.

**Note**

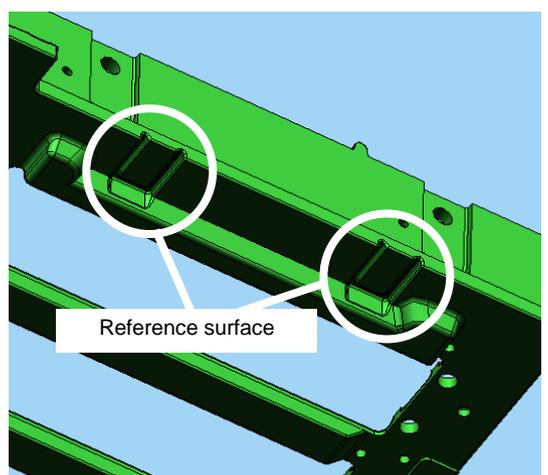
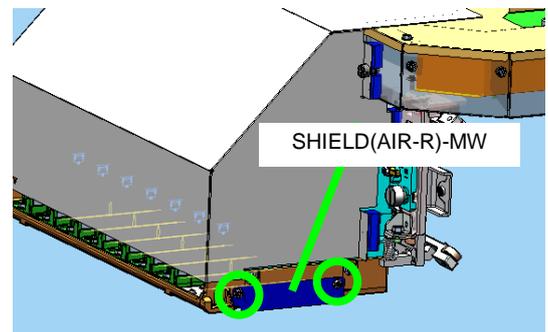
Always adjust the wiping position after adjusting the print head inclination.

## 7.7 Wiping Height Adjustment

Tool: WIPING HEIGHT TOOL, MW

Perform the wiping height adjustment after adjusting the print head height.

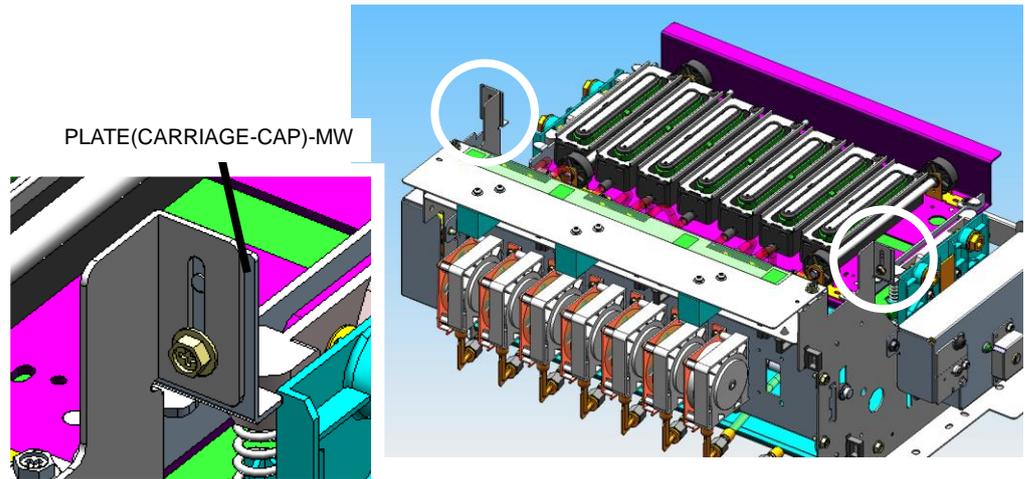
1. Remove the WIPING-UNIT-MW (see 6.9.1).
2. Remove the SHIELD(AIR-R)-MW with two securing screws.
3. Move the carriage to the position shown in the picture.
4. Loosen the WIP-BRACKET-MW securing screw. Between the WIP-BRACKET-MW and the carriage, insert the WIPING HEIGHT TOOL, MW.
5. Secure the WIP-BRACKET-MW so that the WIPING HEIGHT TOOL, MW touches the carriage's reference surface.



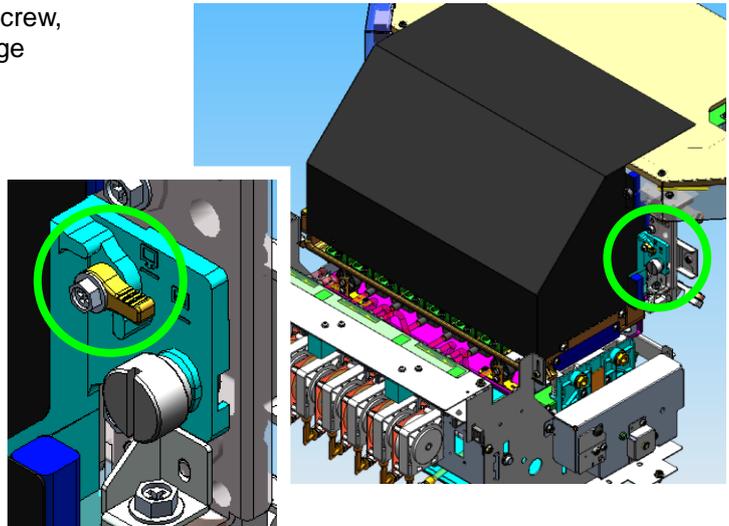
## 7.8 PLATE(CARRIAGE-CAP)-MW Adjustment

Adjust the PLATE(CARRIAGE-CAP)-MW after:

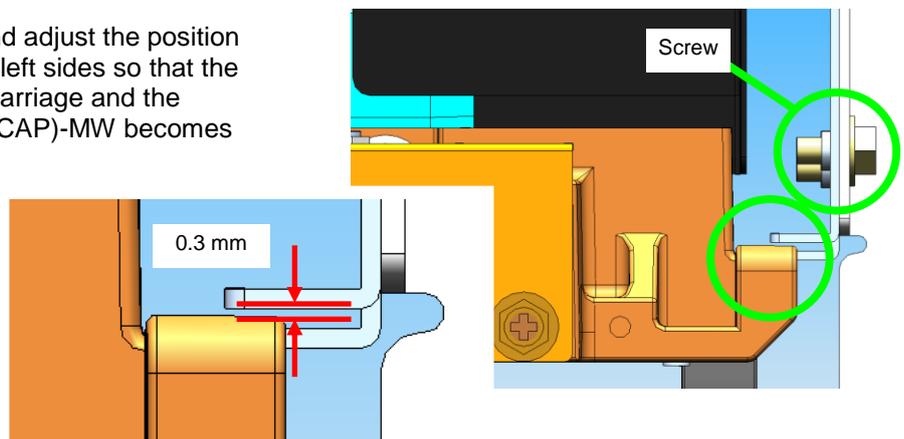
- adjusting the print head height (the height of the CARRIAGE-UNIT-MW); or
- replacing the CAPPING-UNIT-MW.



1. Open the cap, loosen the thumb screw, and use the lever to set the carriage height to **HIGH**.



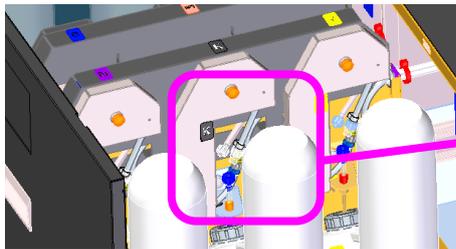
2. Loosen the screw and adjust the position at both the right and left sides so that the space between the carriage and the PLATE(CARRIAGE-CAP)-MW becomes 0.3 mm.



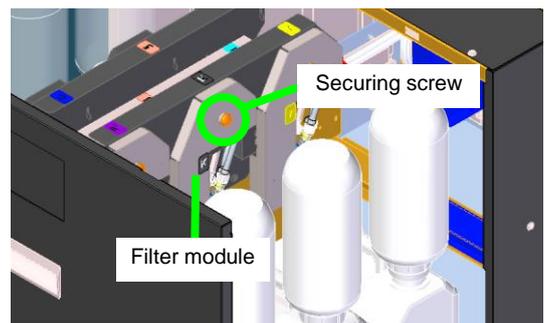
## 7.9 REMAINING INK SENSOR, MW, LCIS Adjustment

The REMAINING INK SENSOR, MW, LCIS must be calibrated again during installation when you have replaced it.

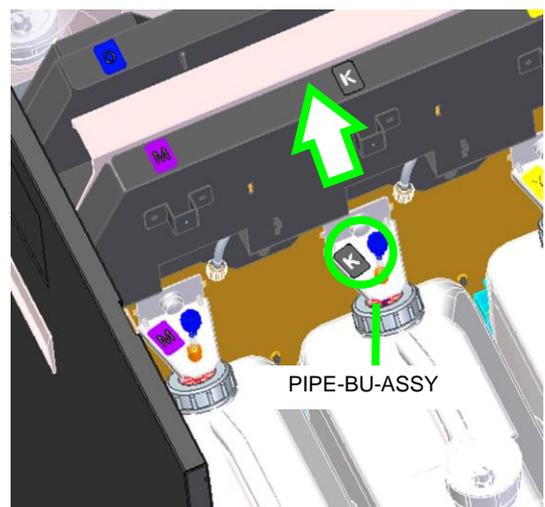
1. Open the LCIS unit drawer and disconnect the two filter module joints for the same color as the remaining ink sensor you have replaced.



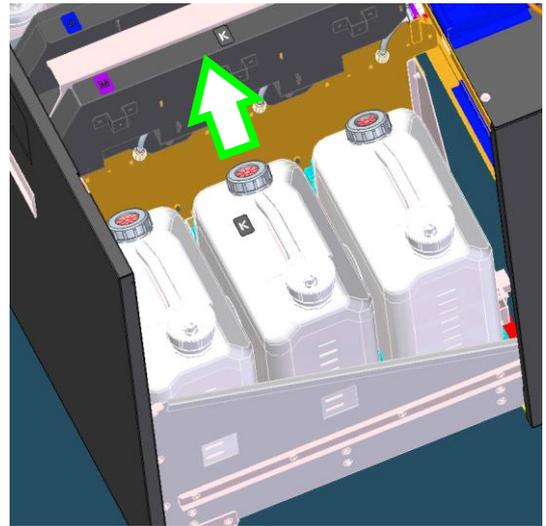
2. Loosen the screw securing the filter module, and remove the filter module obliquely upward.



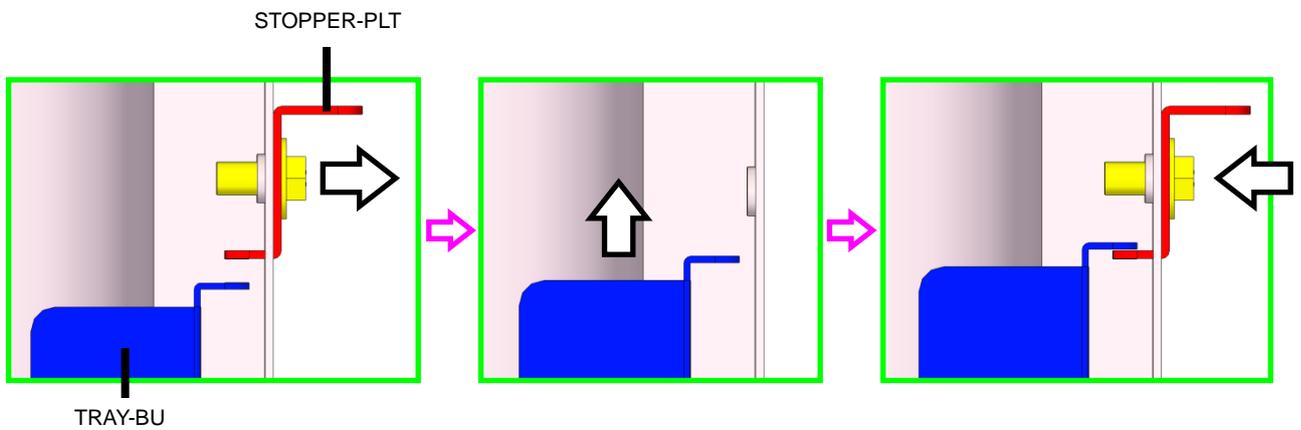
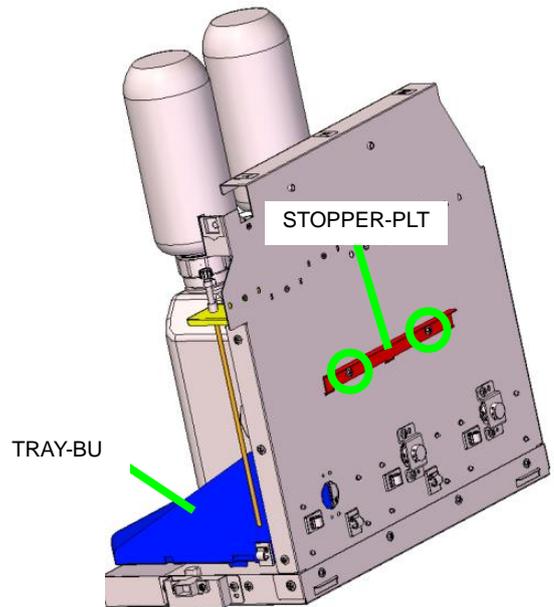
3. Loosen the screw securing the PIPE-BU-ASSY, and remove the PIPE-BU-ASSY.



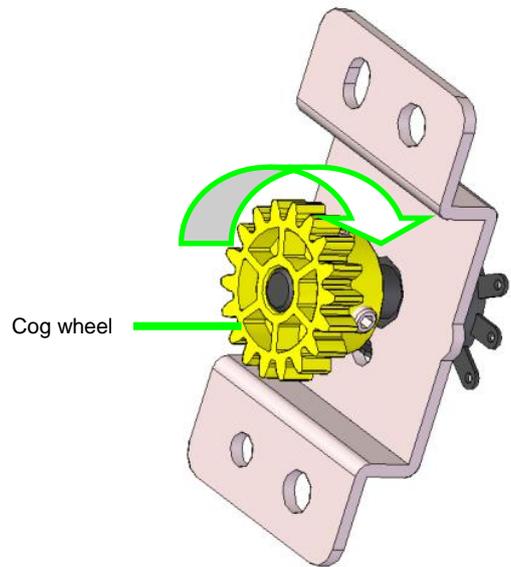
- 4. Remove the reservoir.



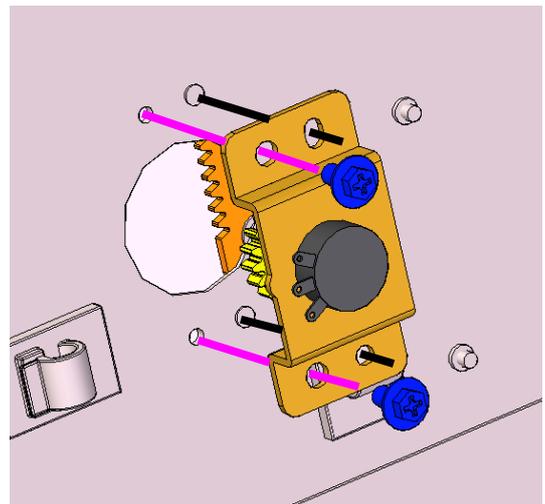
- 5. Remove the STOPPER-PLT with two screws.
- 6. Install the STOPPER-PLT so that the bent part of the TRAY-BU comes above the bent part on the STOPPER-PLT.



7. Rotate the cog wheel of the REMAINING INK SENSOR to the clockwise direction until it stops.

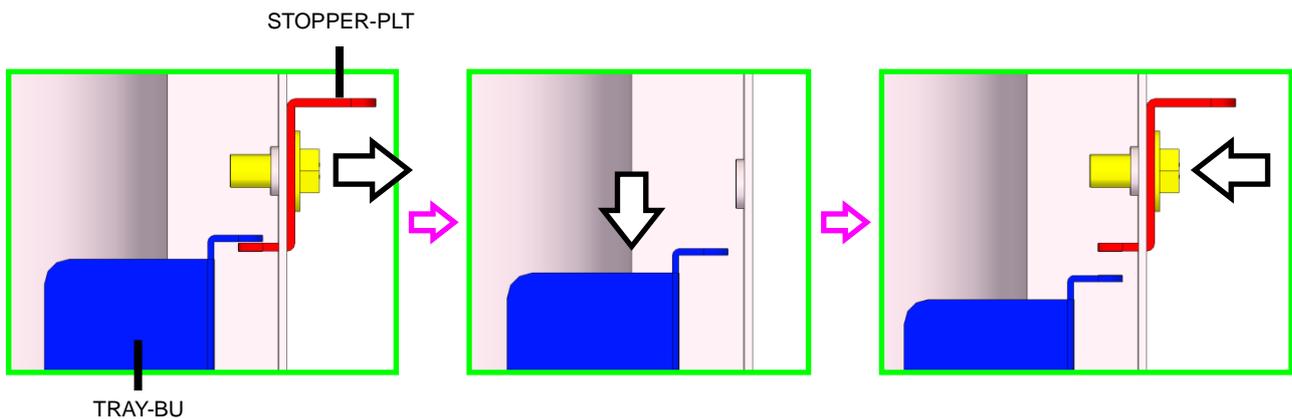


8. Install the REMAINING INK SENSOR with two screws.

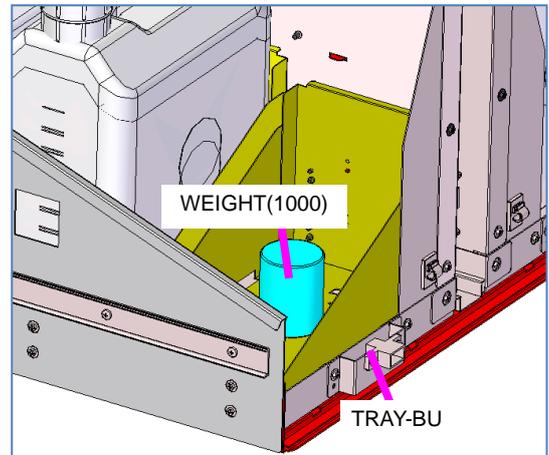


9. Remove the STOPPER-PLT with two screws.

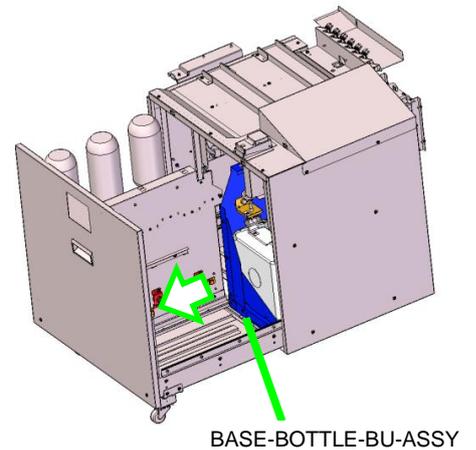
10. Install the STOPPER-PLT so that the bent part of the TRAY-BU comes below the bent part on the STOPPER-PLT (normal configuration).



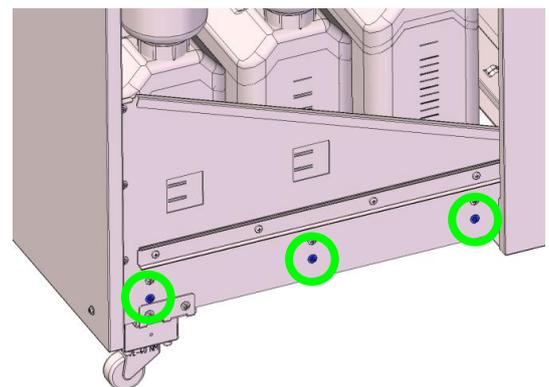
11. Place the WEIGHT(1000) on the TRAY-BU, and push the TRAY-BU downward with still the weight on it.



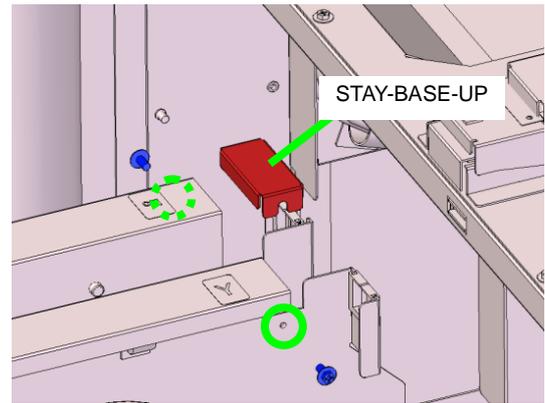
12. When you have pushed the TRAY-BU down to the stopper position, release the pressure in one go.
13. Slide the BASE-BOTTLE-BU-ASSY to the front to place it in its normal position.



14. Secure the BASE-BOTTLE-BU with three screws.



15. Close the drawer after installing the STAY-BASE-UP.



16. Turn the printer on.
17. Perform the following adjustment after the printer has started.

<Adjustment procedure>

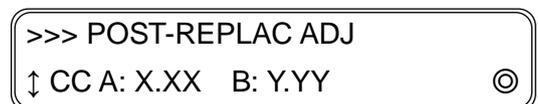
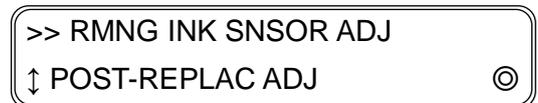
- (1) Press the **ADJUST** button.



- (2) With the **Up** and **Down** buttons, select **RMNG INK SNSOR ADJ**, then press the **OK** button.



- (3) With the **Up** and **Down** buttons, select **POST-REPLAC ADJ**, then press the **OK** button.



CC: Ink color

- (4) Select the color of the remaining ink sensor you have replaced, and press the **OK** button.



(5) Press the **OK** button to adjust the sensor, or the **CANCEL** button to interrupt the operation.

(When you have pressed the OK button)

EXECUTING..  
PLEASE WAIT

(When the procedure finishes normally)  
The buzzer sounds once and the following message is displayed.

ADJUST COMPLETE  
CC A: X.XX B: Y.YY

CC: Ink color

X.XX: Adjustment value A (after adjustment)

Y.YY: Adjustment value B (after adjustment)

**Note**

Write the adjustment values A and B on the label for remaining ink sensor replacement (small), and paste the label to the corresponding color on the large label.

(6) After writing the adjustment values, press the **OK** button.

>>> POST-REPLAC ADJ  
↓ CC A: X.XX B: Y.YY

(When the procedure finishes with an error)  
The buzzer sounds three times and one of the following messages is displayed.

When the drawer is open

CLOSE THE DRAWER AND  
ADJUST SENSOR AGAIN

When an error has been detected in the adjustment results

\* An error occurs if the remaining ink sensor has not been replaced correctly.

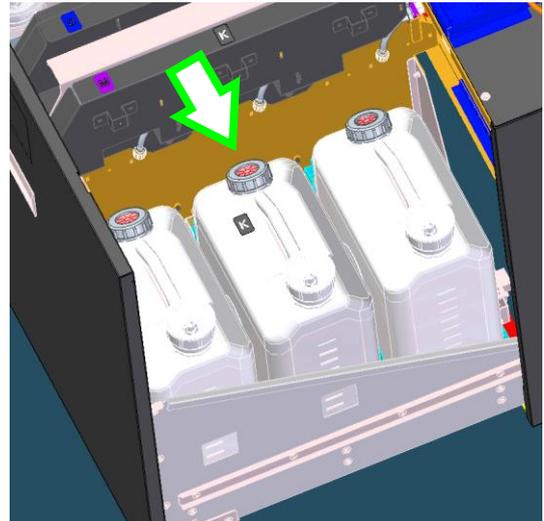
ABNORMALITY OCCURRED  
CHECK NEW SENSOR

After the error occurrence, press the **OK** button to return to the first panel display of the adjustment procedure.

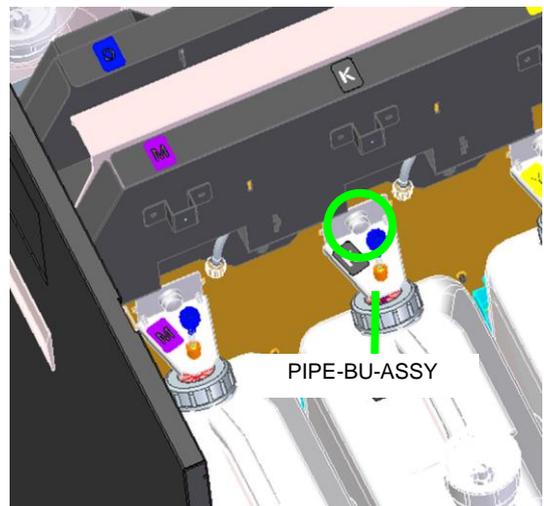
>>> POST-REPLAC ADJ  
↓ CC A: X.XX B: Y.YY

After the adjustment is complete, open the drawer and remove the WEIGHT(1000) placed in step 11 .

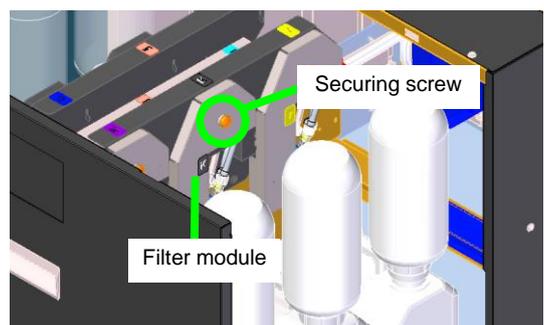
**18.** Open the drawer and install the reservoir.



**19.** Install the PIPE-BU-ASSY and secure it with one screw.



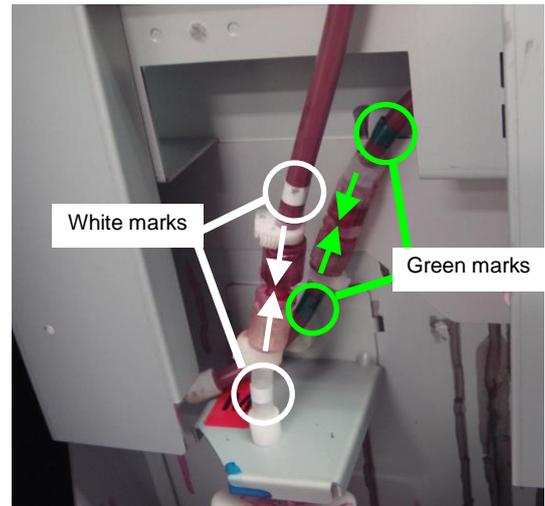
**20.** Install the filter module and secure it with one screw.



21. Connect the two filter module joints.

**Note**

Connect the green marks together and the white marks together when connecting the joints. Improper connection may cause damage to the printer.

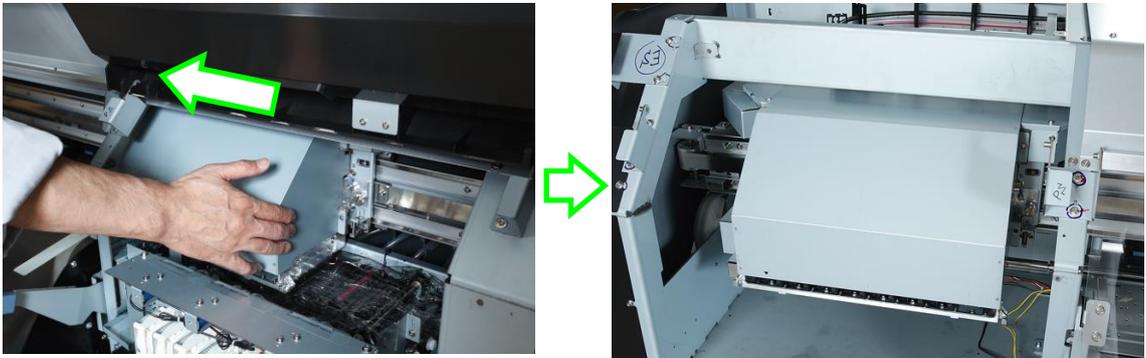


22. Close the drawer and prime the ink system.

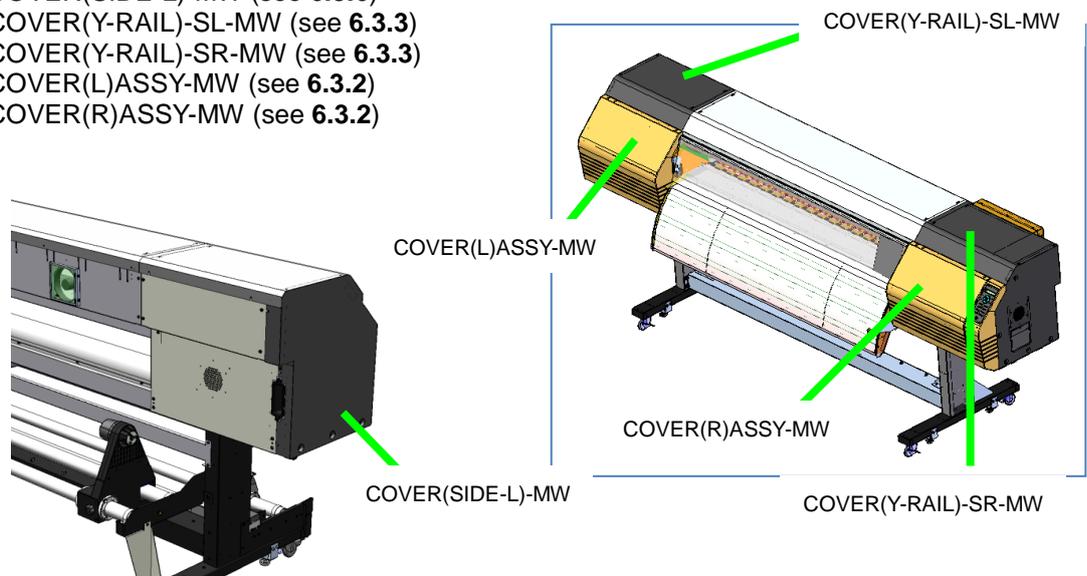
## 7.10 Linear encoder position adjustment

< Verification procedure >

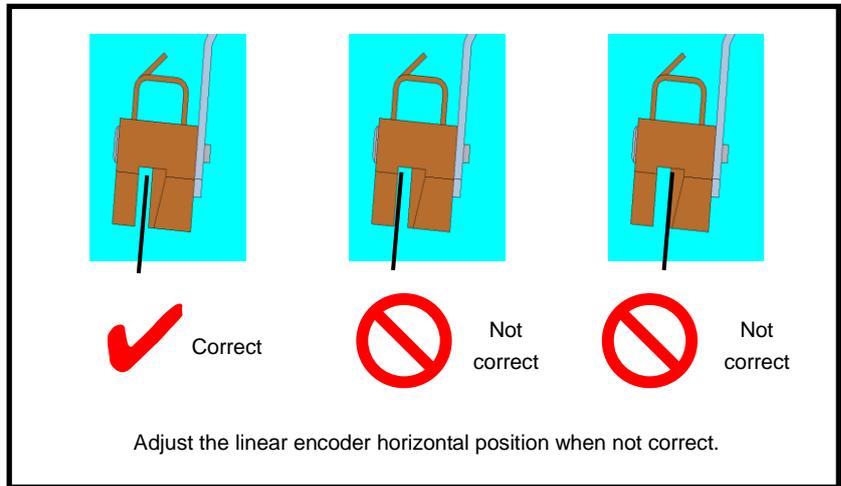
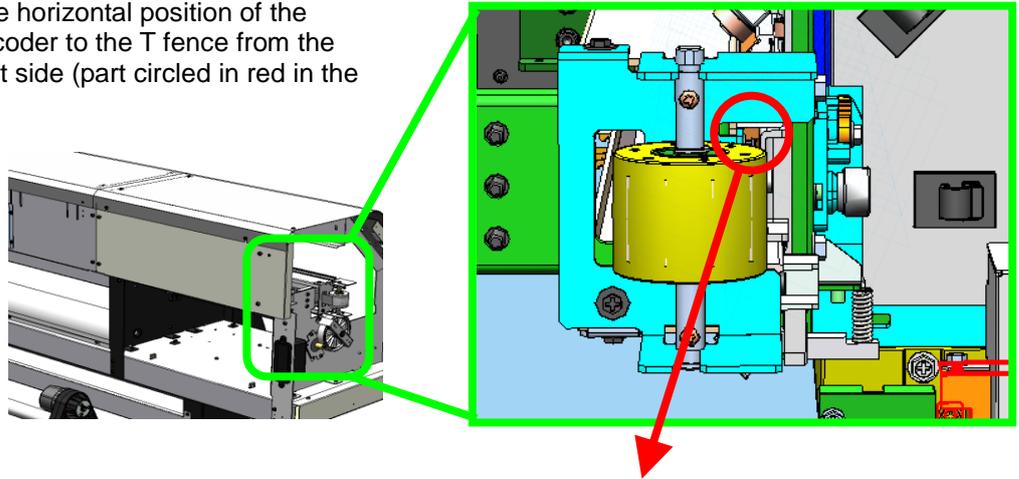
1. Remove the COVER(SIDE-R)-MW (see 6.3.7).
2. Open the caps manually (see 6.10.1).
3. Move the carriage manually to the maintenance area.



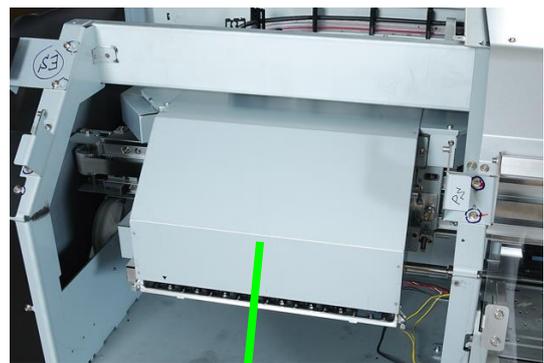
4. Remove the following parts.
  - COVER(SIDE-L)-MW (see 6.3.6)
  - COVER(Y-RAIL)-SL-MW (see 6.3.3)
  - COVER(Y-RAIL)-SR-MW (see 6.3.3)
  - COVER(L)ASSY-MW (see 6.3.2)
  - COVER(R)ASSY-MW (see 6.3.2)



5. Check the horizontal position of the linear encoder to the T fence from the printer left side (part circled in red in the figure).

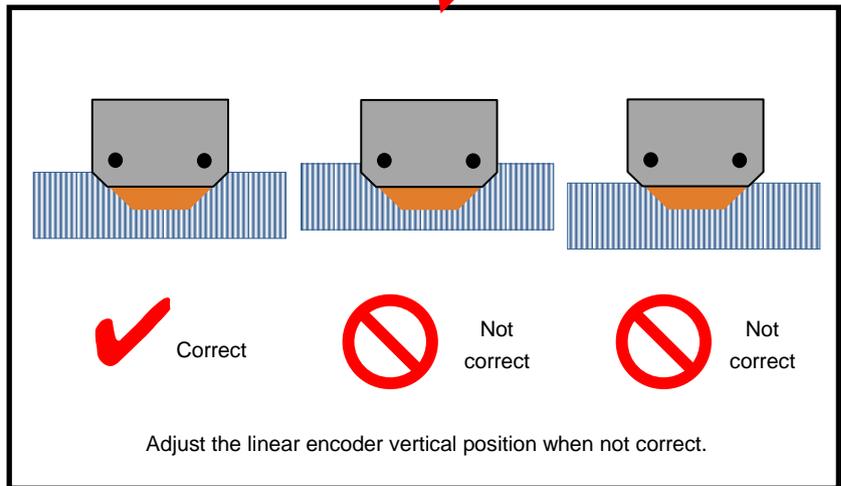
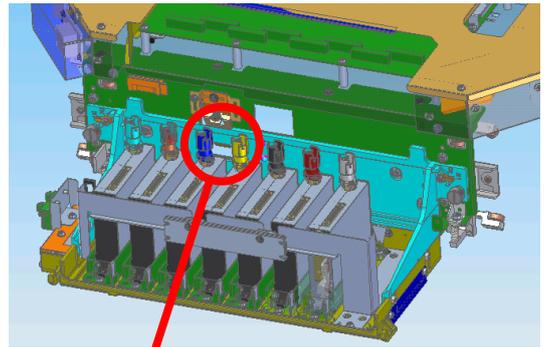


6. Remove the COVER-CARRIAGE-MW.

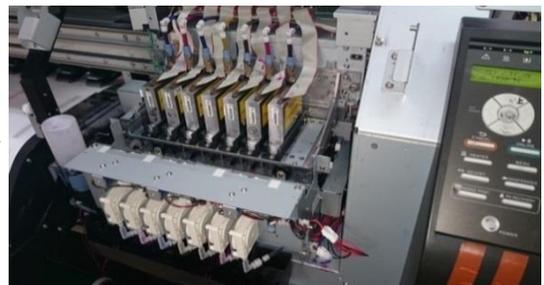


COVER-CARRIAGE-MW

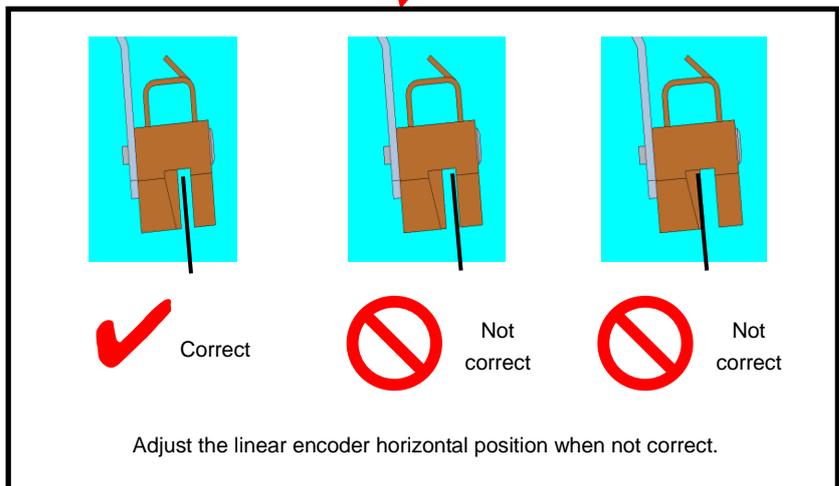
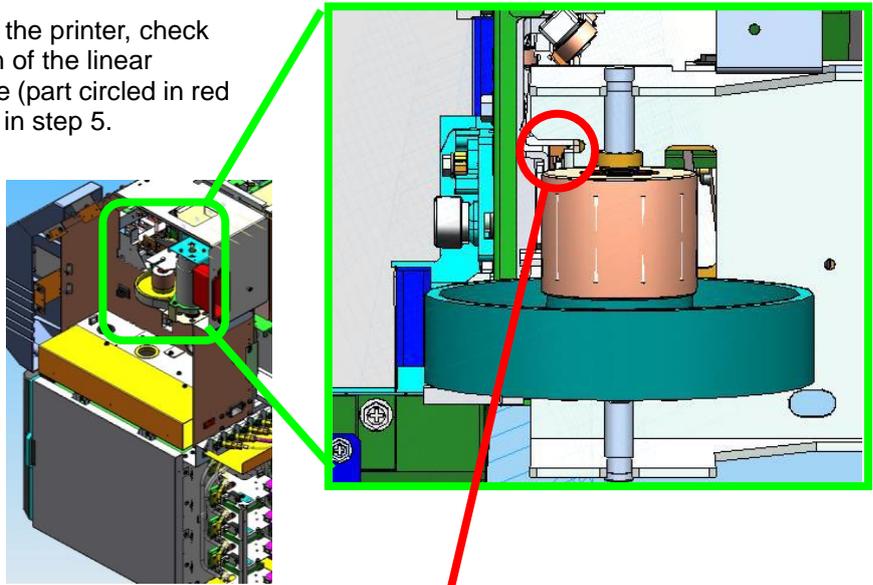
- 7. Check the vertical position of the linear encoder to the T fence.



- 8. Move the carriage to the home position.



9. From the right side of the printer, check the horizontal position of the linear encoder to the T fence (part circled in red in the figure) as done in step 5.



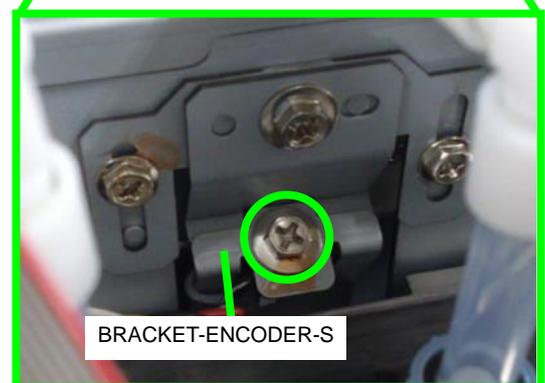
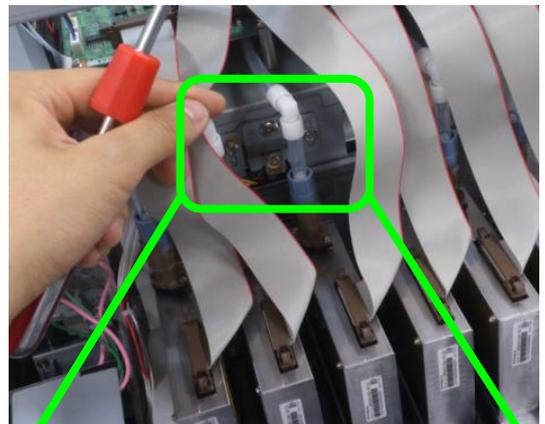
< Verification procedure >

### Notes

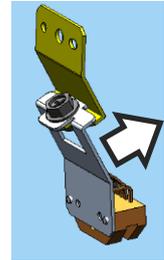
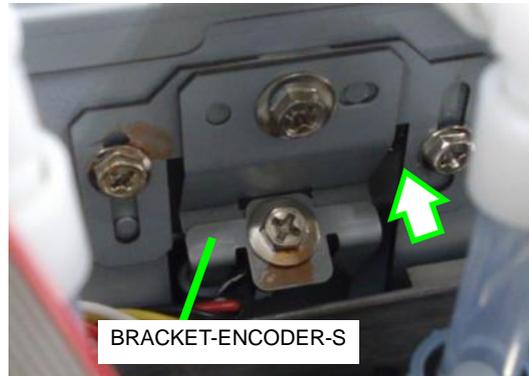
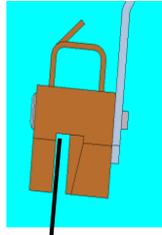
- The adjustment explained here is not necessary when replacing the **LINEAR ENCODER ASSY(MW)** as shown in **6.8.6** .
- Both the horizontal and vertical positions must be checked after adjustment even if only one of the horizontal or vertical positions has been adjusted.
- The linear encoder positions (horizontal and vertical) should be adjusted only once at a time.

[Horizontal adjustment]

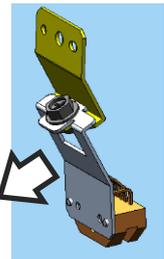
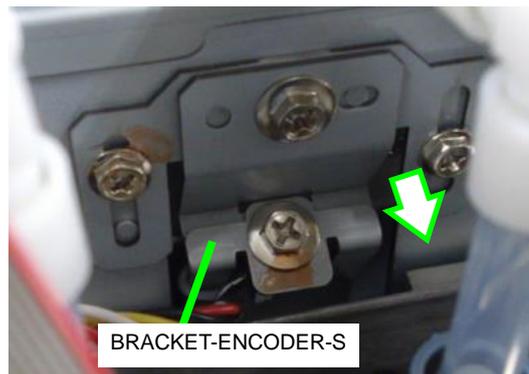
1. Move the carriage manually to the maintenance area.
2. Loosen the screw securing the BRACKET-ENCODER-S, and adjust the position by moving the BRACKET-ENCODER-S forward and backward.  
Adjust the linear encoder position so that the T fence comes at the center of the linear encoder space.



- (1) If the linear encoder is too much to the front side, move the BRACKET-ENCODER-S to the back.



- (2) If the linear encoder is too much to the back side, move the BRACKET-ENCODER-S to the front.

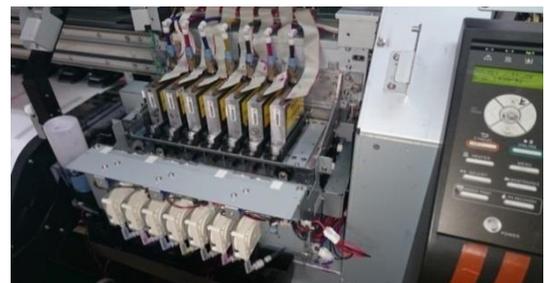


3. When the adjustment is finished, tighten the screw securing the BRACKET-ENCODER-S.

**Note**

Hold the BRACKET-ENCODER-S while tightening the screw so that it does not rotate.

4. Move the carriage manually to the home position, and check that the linear encoder horizontal position is correct. If not correct, adjust the position again so that it is correct in both maintenance area and home positions.



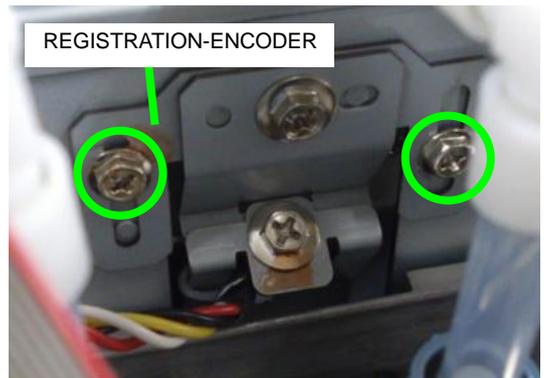
5. Check the linear encoder vertical position in both home and maintenance area positions. Adjust the vertical position if not correct.

[Vertical adjustment]

1. Move the carriage manually to the maintenance area.

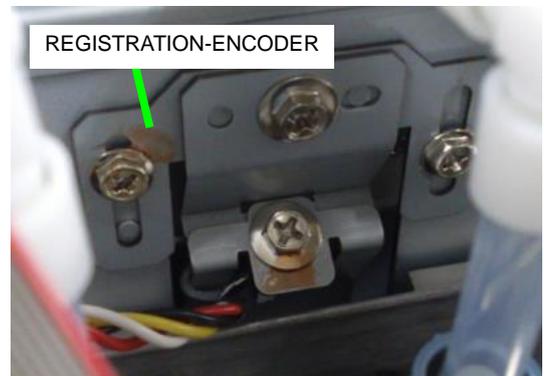
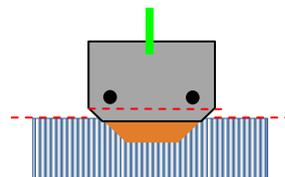


2. Loosen the two screws securing the REGISTRATION-ENCODER, and adjust the position by moving the REGISTRATION-ENCODER up and down. Adjust the linear encoder position so that the T fence upper edge matches the linear encoder corner.



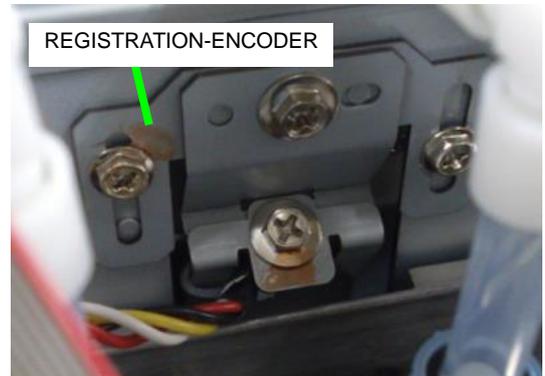
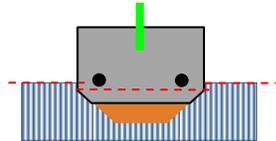
- (1) If the linear encoder is too high, lower the REGISTRATION-ENCODER.

LINEAR ENCODER ASSY(MW)

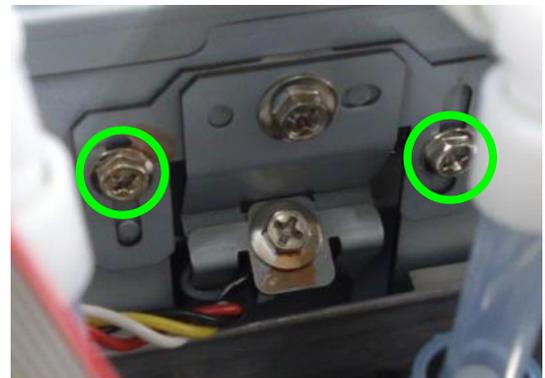


- (2) If the linear encoder is too low, raise the REGISTRATION-ENCODER.

LINEAR ENCODER ASSY(MW)



3. When the adjustment is finished, tighten the two screws securing the REGISTRATION-ENCODER.



4. Move the carriage manually to the home position, and check that the linear encoder vertical position is correct. If not correct, adjust the position again so that it is correct in both maintenance area and home positions.



5. Check the linear encoder horizontal position in both home and maintenance area positions. Adjust the horizontal position if not correct.

# Chapter 8 Operation Mechanism

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This chapter describes the operation mechanisms and operations below:

- (1) Operation mechanisms
  - media feeding system
  - carriage system
  - ink system
- (2) Operations
  - electrical control system
  - engine controller firmware

## 8.1 Overview of System Operation Mechanism

### (1) From media setting to print completion

The media roll set in the printer is fed by the grit roller and passes through the platen in x direction. Then inks of various colors are injected from the piezo-type print heads which pass through the platen block in y direction so that the printing is performed. The ink fed to the print heads is supplied directly from ink cartridges via tubes. On the platen, suction fans suck the media to keep an appropriate distance between the media and the print heads.

The print heads are mounted on the carriage, are operated by the carriage motor via a steel belt, and move back and forth horizontally on the printer.

The print head position is detected using a linear scale, a linear encoder, and a home position sensor.

When the print operation completes, capping unit performs the capping operation automatically.

### (2) Service station

Service station is equipped to prevent:

- damages by staining of the head surfaces; and
- drying by leaving the print heads not used for a long period.

The operations at the service station are:

- Cleaning the print head surfaces with a wiper; and
- Print head surfaces protection by aspiration and capping using the capping unit.

### (3) Heaters and sensors

To improve performance, the printer is equipped with the three heaters on the positions below.

Media feeding side: Preheater for pre-heating media

Below the platen: Printheater for ink penetration and fixing

Media output side: Afterheater for drying

Besides, the two sensors below operates to detect trouble such as media jam.

Media feed unit: Media feed sensor

Media output unit: Media output sensor

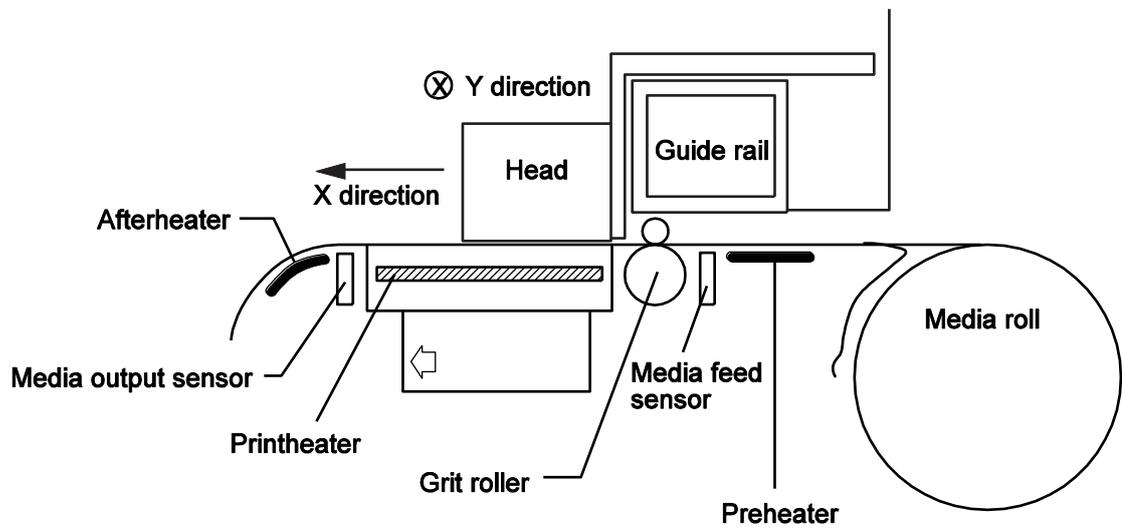
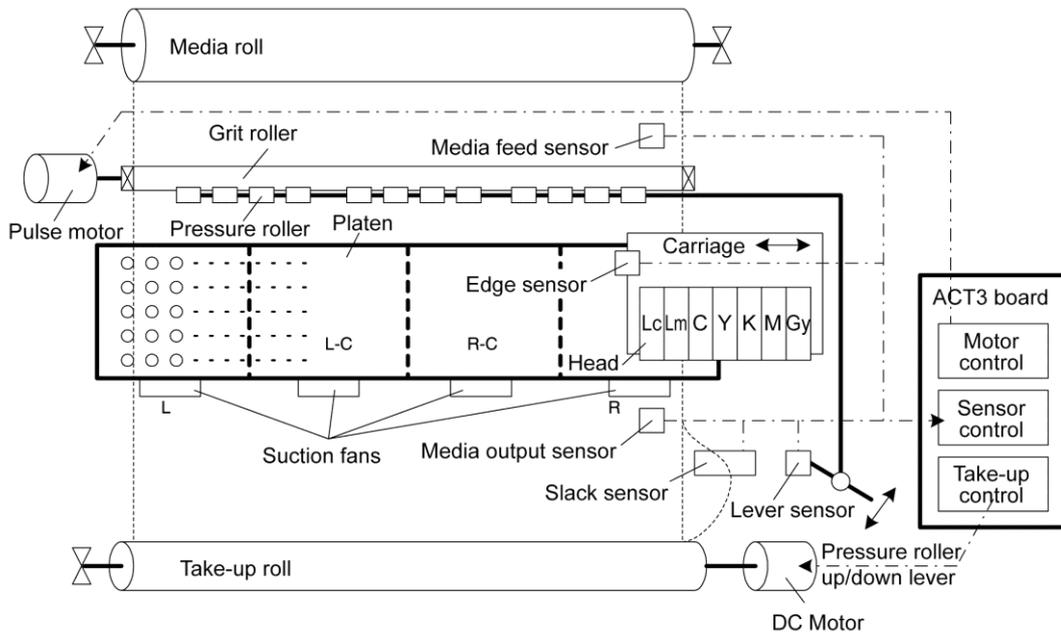


Figure 8.1 Overview of system operation mechanism

**(b) Media Feeding System**

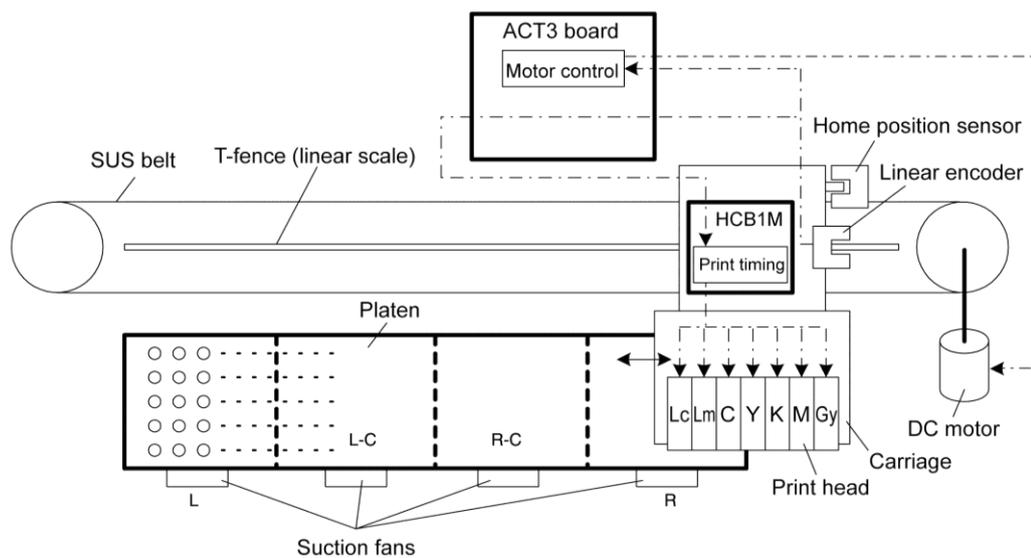
The media feeding system comprises the following units from (1) to (6) as shown in figures 8.2 and 8.3.

**< X axis feeding system mechanism> (sub-scanning)**



**Figure 8.2 X axis feeding system mechanism**

**< Y axis feeding system mechanism> (main scanning)**



**Figure 8.3 Y axis feeding system mechanism**

(1) Media feed unit

The media feed unit can feed roll media and can be operated from the rear.

- The pressure roller lever is a mechanism used to remove the pressure from the roller when setting a media roll. The lever sensor is a photo sensor installed near the pressure roller lever on the right side of the frame. It detects the position of the lever. When the grip is removed, the media cannot be fed. Thus the printer operations are stopped when the lever sensor detects that no grip is applied to the media. In addition, when the grip is detected again, the media may have been reinstalled. In such a case the lever sensor detection is as a signal for executing the media detection.
- The media type is specified on the operation panel.
- The media feeding sensor is a reflection-type photo sensor installed in the media feed unit that lets the engine controller firmware recognizes the media status via detecting the media existence by reflection on the media back surface.

(2) Driving block

The driving block comprises an x motor (media feed motor), grit roller, pressure roller, and lever. The media feed motor is a stepping motor for feeding the media, which is controlled by the engine controller firmware. When this motor is operated, the grit roller rotates, and feeds the media that is gripped by the pressure roller. The pressure roller is set to grip or canceled by the lever.

(3) Platen and suction fan

When the media is fed to the platen, air is sucked through the holes on the platen to stick the media onto the platen and prevent it from floating and coming in contact with the print heads. Four suction fans are installed. These four fans can be operated independently to match the media width. The air that has been sucked is released from the lower parts on the capping unit side and maintenance area side of the printer.

(4) Paper guide and media output sensor

The paper guide is a guiding plate with a curb used for media output to prevent folding of the media printed on the platen unit. The media output sensor is a reflection-type photo sensor installed in the media outlet that lets the engine controller firmware recognize the media status via detecting the media presence by reflection on the media back surface.

(5) Cover switch and Interlock switch

These four switches installed on the front cover are the cover switches and interlock switches used for detecting the cover open/close status. A set of one cover switch and one interlock switch is provided on each end of the cover. When the cover is opened, the engine controller firmware detects that the cover switch is OFF and processes it as an error. As a result the interlock switch turns off, and the following three power supplies generated on the ACT3 board are turned off forcibly.

- P36VAR\_HCB power supply
- P36VAR power supply
- P24VAR power supply

Thus the carriage and other driving parts are forced to stop.

(6) Take-up reel unit

The take-up reel unit comprises a fixed side unit, a sliding side unit, a TUR upper limit sensor and a TUR lower limit sensor. The media is fixed to the paper tube of the flange with a tape to set the media so that the media passes over the TUR upper limit sensor and TUR lower limit sensor in the right side take-up unit. The engine controller firmware performs the take-up operation so that the media is positioned between the TUR upper limit sensor and TUR lower limit sensor.

(a) Tension winding

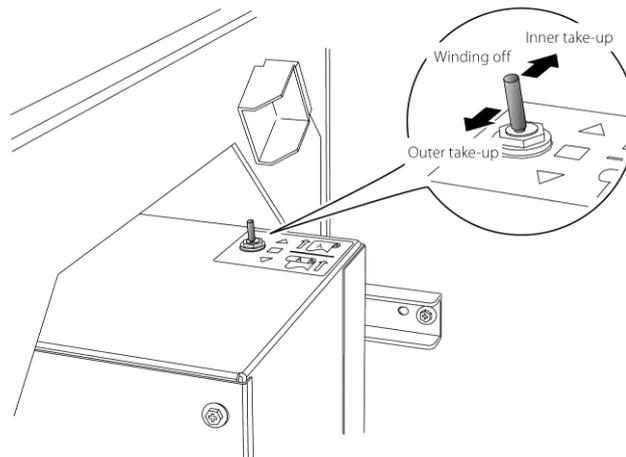
In addition to loose winding mode, the printer also supports a tension winding mode in which the media is taken up under a certain tension. The winding mode is switched only from the operation panel.

(b) Inner/outer take-up directions

Both inner and outer take-up directions are supported. The take-up direction can be selected regardless of the take-up mode. The take-up direction is changed using the switch installed on the take-up unit. However, the loose mode is available only with the outer take-up direction.

(c) ON/OFF

The take-up reel unit is turned OFF by setting the take-up direction switch lever to the center.



## 8.2 Carriage System

The carriage system comprises the following units (1) to (6):

(1) Carriage motor

Carriage motor is a DC motor installed within the right cover of the printer. This motor, used for moving the carriage back and forth horizontally, supports speed control from the minimum to the maximum speed.

The motor position is detected by a linear encoder installed on the printer's Y-rail (ink ejection timing is controlled by the linear encoder signals).

(2) Carriage

Carriage is the printing unit installed on the printer's Y rail via the bearings and is driven by the carriage motor via the steel belt. The printer is equipped with a carriage board, six (or seven) print heads, edge sensors, a linear encoder, a head cooling fans, ionizers, and a board for automatic print adjustment.

(3) Carriage board

Carriage board is the board mounted on the carriage, and executes the following functions:

- Assigns the print data transmitted from the engine control board to each print head.
- Performs output of the thermistor installed on the carriage (head temperature) and detection of the media edges, and at the same time, outputs the signal of the linear encoder to the engine control board.
- Controls the head discharge timing based on the linear encoder signals.

(4) Edge sensor

Edge sensors are installed on the side of the carriage, and detects the presence of media on the platen and the media edges on both sides. The CPU of the engine control board controls the overall printing by using data as the media standard for print start position, detection of skew, etc. The signal from the edge sensor is transmitted from the carriage board to the engine control board and detected by the CPU.

(5) Home position sensor

Home position sensor is a photo sensor installed on the carriage. The engine controller cannot recognize the carriage position immediately after turning on the printer, so the carriage is first moved to the position where the home position sensor turns on (home position), detected as the initial position of the carriage.

(6) T-fence (linear scale) and linear encoder

T-fence and linear encoder are the sensor (photo interrupter) attached on the top of the carriage. Since the absolute position of the carriage must always be recognized for printing, T-fence (linear scale) covers the range of the carriage movement. The linear scale is read by the linear encoder sensor, and the linear encoder sensor generates a 2-phase clock with different phases. The engine controller firmware always recognizes the carriage's absolute position by counting the pulses from this sensor. In addition, the signals detected by the linear encoder are also used for checking the carriage motor position. Ink is ejected from the print head nozzles with matching the output signals from this sensor.

### 8.3 Ink Delivery System

As shown in the following figure, the ink system consists of the ink cartridges, ink box, ink supply pumps, ink supply tubes, capping unit, wiping unit, carriage board (HCB1M), IPB5 board, and ink system control firmware.

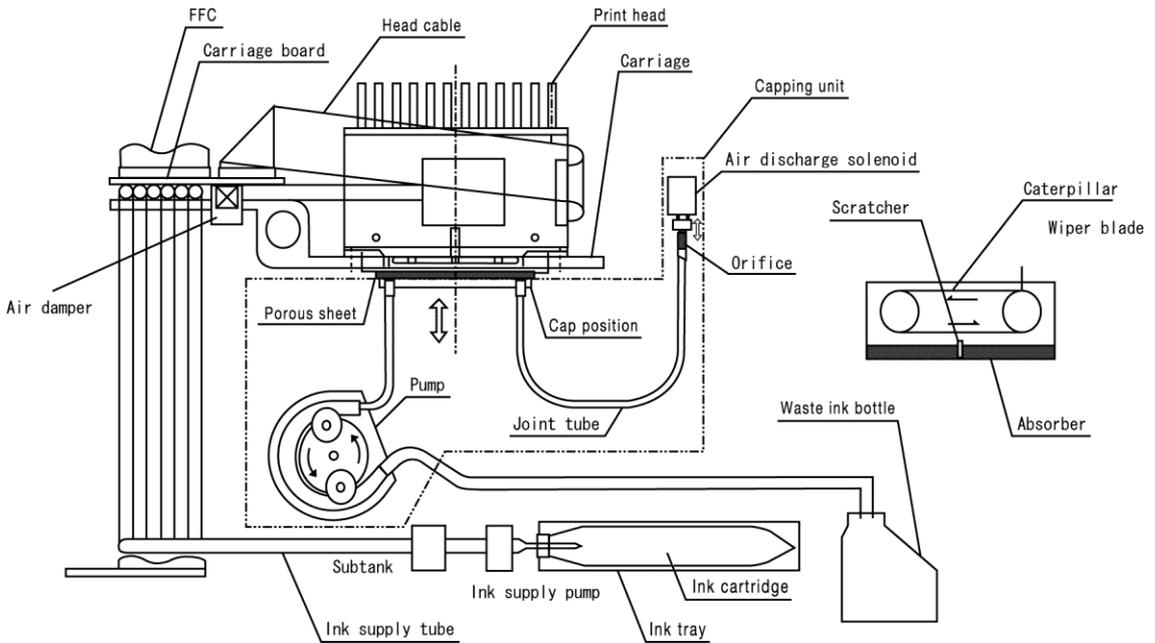


Figure 8.4 Ink system outline block diagram

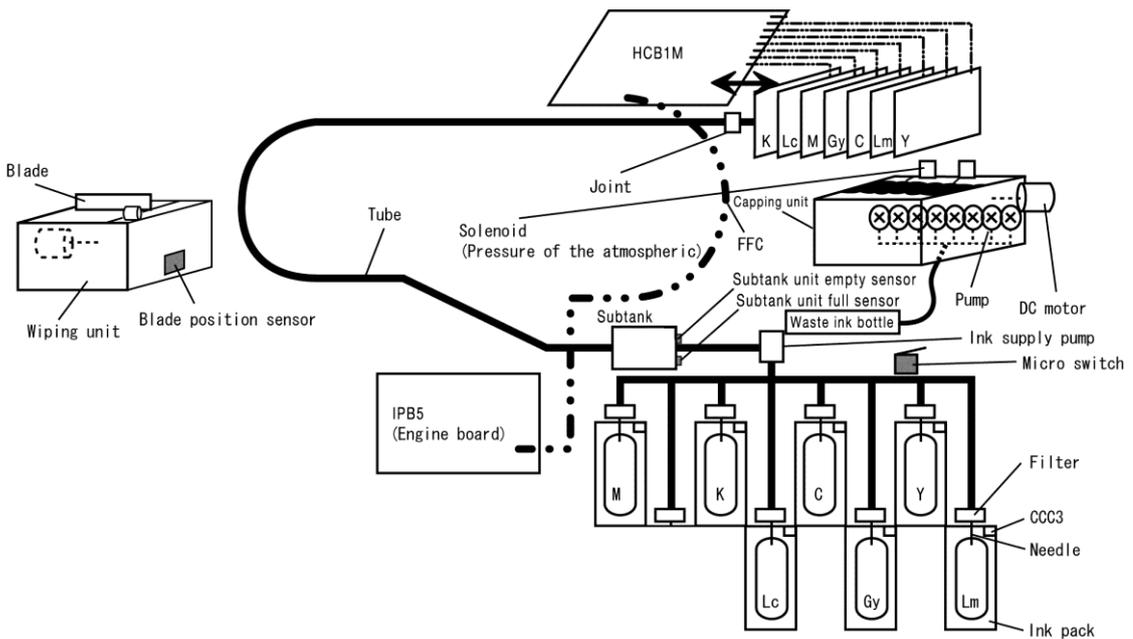


Figure 8.5 Conceptual diagram of ink system

### (1) Print head

The print heads used in this printer are driven by an electrostriction transducer, and the ink is ejected by applying signal voltage pulse on the piezo elements to distort these elements and change the volume of the ink pressure room.

The printer is equipped with six or seven print heads (six or seven colors). Each print head uses 508 nozzles to support high-speed printing.

- Drive frequency

Drive frequency is 17.7 kHz per nozzle for standard mode.

- Temperature control

Drive voltage is controlled depending on the temperature since the ink viscosity changes with the temperature.

- Air damper

To prevent the printer head meniscus damage by movement of the ink inside the ink tube due to the carriage acceleration, a damper is provided to mitigate the pressure fluctuations.

- Head heater

The heaters mounted on the print heads increase the print head temperature to the specified one during printing. They are controlled by the engine firmware that uses temperature data detected by the head thermistor.

### (2) Ink cartridge

Ink is contained in a laminated film pack. The ink capacity is 1500 ml for each color, and the pack is set into the plastic ink tray. A board with an IC chip is mounted at the surface near the edge of the cartridge. Varied information is stored in the memory of this chip during production, and various logs are stored from the printer while in use.

- Memory ID: Ink type ID (color)

- Date of manufacture

- Printer record log: Ink consumption

### (3) Ink box

Ink box is equipped on the left side of the printer, and contains the slots where to install the six or seven ink cartridges. This box is equipped with a mechanism to prevent incorrect installation of the ink cartridges, ink needles, and an ink relay board.

- Mechanism against incorrect installation

Each ink cartridge includes a button specific to its color, and the ink box front part is equipped with slits corresponding to these specific buttons to make it possible to enter only the correct cartridge to its corresponding slot.

- Ink needle

By inserting the needle into the spout of the ink cartridge pack, the ink is supplied to the ink tube.

- Ink relay board (PCB-ASSY-INK4)

A relay board for reading/writing the memory in the ink cartridge.

- Ink box cover switch

Ink box cover switch is a micro switch installed inside the ink box cover, and detects the ink box cover status (open/closed). When the ink box cover switch detects that the cover is closed after the ink cartridge replacement, the printer starts the operation.

### (4) Ink supply tube

The ink from the ink cartridge set into the printer is supplied by the supply pump to the head unit from the ink tube via the ink needle and filter. The 20  $\mu$  filter installed immediately after the ink needle traps the rubber residue that is generated when the ink passes through the spout in the ink cartridge. When ink cartridges are set, ink from each ink cartridge is sent to each ink pump with the ink system priming.

#### (5) Capping unit

##### - Structure

The capping unit is located on the right side of the printer. It comprises suction pump motors, a capping unit up/down motor, three air release solenoids, and a capping unit sensor. The suction pump motors drive the suction pumps. The capping unit up/down motor moves the capping unit up and down.

##### - Function

When the carriage is at its home position, the capping unit interlocks with the pump motor to perform capping and suck the ink. The capping unit also protects the print head surface by capping in the carriage home position. A porous sheet is attached inside the cap rubber and prevents ink from bubbling inside the cap when ink is sucked so that the ink inside the cap is sucked completely during suction.

##### - Ink pump

The ink pump employs a rotary tube pump mechanism in which the tube is squeezed by rotation. The ink pump squeezes the tube and sucks the ink by rotating the cam roller via the pump motor that also operates the pump.

The pump tube is continuously squeezed by the cam roller and there is no back run of the ink. Through the activation or deactivation of the air release solenoids (see below), from one to six or seven colors can be sucked at the same time. The waste ink that was sucked in the pump block is ejected into the waste ink bottle.

##### - Air release solenoid

This DC type air release solenoid is activated or deactivated to open or close the opening of the tube with a rubber cap equipped at its extremity. A spring near the rubber cap apply a strong pressure to close hermetically the tube opening. Three DC solenoids are equipped and controlled independently. When ink is sucked and the pressure is controlled, the cap rubber is filled with ink. When the ink removed (sucked) a meniscus is formed inside the head nozzles. Conversely, if this operation is not performed, the meniscus is destroyed when the cap filled with ink is opened. The air release solenoid is activated to suck together the ink and air inside the cap in order to remove the ink inside cap and form the meniscus.

(6) Wiping unit

- Structure

The wiping unit is located on the left side of the printer (opposite of the capping unit).

Urethane rubber wiper blades are attached to a chain driven by the wiping unit. The edges wiper blades wipe the print head surfaces. The wiper rotates driven by the wiping motor (stepping motor) inside the unit. The motor can operate only in a single direction.

- Function

The wiper blades clean the head surfaces and prevent shift of ink jet. The sponge cleans the wiper blades that cleaned the head surfaces. The wiper blades are driven by a motor.

(7) Waste ink bottle

The waste ink bottle is a HDPE (high density polyethylene) bottle for collecting the waste ink sucked by the pump, and its maximum capacity is approximately 3.0 liters.

## 8.4 Various Functions for Printing

### (1) Cleaning sequence

The following cleaning sequences are included in the printer for optimal printing. Cleaning is mainly executed by the capping unit, wiping unit, and ink system control firmware. Flushing is executed by the head unit and control firmware.

- Manual cleaning (Normal / Strong)

To execute this sequence, operate the menu displayed on the operation panel. Use this sequence when clogged nozzles are not cleared after performing automatic cleaning included in the printer.

- Automatic cleaning

This sequence is automatically performed when printing.

- Cleaning during idle period (fillcap)

This sequence is automatically performed during idle period of the printer in order to provide optimal printing condition for the next printing job.

- Automatic air removal from ink tubes

The LCIS model uses non-degassed ink. Therefore, air enters the ink tubes while the ink is consumed, which may lead to ink ejection problems.

To prevent such problems, an operation to remove air is automatically performed after 3 liters of ink are consumed.

(Up to system firmware Ver. 2.03)

- Interval, time required, and ink consumption

Function	Interval			Time required	Ink consumption
Manual cleaning (Normal)	For every job			Approx. 7.6 min	Approx. 2.9 ml/color
Manual cleaning (Strong)	For every job			Approx. 7.9 min	Approx. 5.6 ml/color
Automatic cleaning (Before & after printing) (Before & during printing)	Print mode	Before printing	After or during printing	Approx. 7.9 min	Approx. 5.6 ml/color
	Draft, fast production, production, standard	9.0 m	10.0 m		
	Quality	6.0 m	6.7 m		
	High quality	4.5 m	5.0 m		
	Max quality	3.6 m	4.0 m		
Automatic cleaning (Ink save)	Print mode	Before printing	After printing	Approx. 7.9 min	Approx. 5.6 ml/color
	Draft, fast production, production, standard	29.0 m	30.0 m		
	Quality	19.3 m	20.0 m		
	High quality	14.5 m	15.0 m		
	Max quality	11.7 m	12.1 m		
Cleaning during idle period	When the printer is in standby, the caps are filled every 72 hours.			Approx. 0.1 min	Approx. 6.7 ml/color

(System firmware Ver. 2.05 and later)

- Interval, time required, and ink consumption

Function	Interval			Time required	Ink consumption
Manual cleaning (Normal)	For every job			Approx. 9.6 min	Approx. 3.6 ml/color
Manual cleaning (Strong)	For every job			Approx. 9.9 min	Approx. 6.3 ml/color
Automatic cleaning (Before & after printing) (Before & during printing)	Print mode	Before printing	After or during printing	Approx. 9.9 min	Approx. 6.3 ml/color
	Draft, fast production, production, standard	14.0 m	15.0 m		
	Quality	9.3 m	10.0 m		
	High quality	7.0 m	7.5 m		
	Max quality	5.6 m	6.0 m		
Automatic cleaning (Ink save)	Print mode	Before printing	After printing	Approx. 9.9 min	Approx. 6.3 ml/color
	Draft, fast production, production, standard	29.0 m	30.0 m		
	Quality	19.3 m	20.0 m		
	High quality	14.5 m	15.0 m		
	Max quality	11.7 m	12.1 m		
Cleaning during idle period	When the printer is in standby, the caps are filled every 72 hours.			Approx. 2.1 min	Approx. 7.4 ml/color

(2) Head drive voltage control

- Setting of the head drive voltage rank

The drive voltage for the print heads is set for each color to maintain the specified density and for stability of ink discharge. Since the drive voltage varies depending on manufacturing conditions of the head (lot, material properties, processing), the voltage is labeled on each head during production and stored in the non-volatile memory of the head. The voltage rank is set automatically when the head is installed to the printer.

- Temperature control

Ink viscosity increases as the temperature becomes lower, and decreases as the temperature becomes higher. The energy for ink discharge must be increased when viscosity increases, and conversely, the energy can be smaller as the viscosity decreases. To control this discharge energy, the voltage is changed. The control method is digital control. The temperature of the PZT element in the head is detected by the thermistor, and the head is operated with the specified drive voltage for the detected temperature with control of the engine controller firmware. The parameters for this temperature control have been provided in a table, and values in the table are corrected for each head voltage rank.

(3) Head position adjustment

A function in the control firmware to adjust the dot spotting position in the main scanning direction.

It corrects the shift in the dot spotting positions between the six or seven heads caused by fluctuation in head installation positions and ink discharge speed.

Correction is executed by using the dot spotting position for color K head as the reference and delaying (or advancing) the ink discharge timing for heads of other colors.

(4) Bidirectional adjustment

A function in the control firmware to correct the dot spotting position in the main scanning direction. In bidirectional printing, the dot spotting position is matched for the forward and backward directions for each head. Adjustment is performed by using the dot spotting position of the forward direction as reference and delaying (or advancing) the ink discharge timing for the backward direction.

(5) Nozzle position adjustment

A function in the control firmware to correct the dot spotting position in the subscanning direction. It corrects the shift in dot spotting positions between the six or seven heads caused by fluctuation in the head installation positions and the head sizes. Correction is performed by changing the nozzles to be used for printing.

(6) Print head R/L adjustment

A function in the control firmware to correct the dot spotting position in the main scanning direction. The dot spotting position is matched for the R line and the L line for each head.

Correction is performed by using the dot spotting position of the R line as reference and adjusting the ink discharge timing for the L line.

(7) Sensor (side) position adjustment

A function in the control firmware to correct the print start position in the width (side) direction of the media. Fluctuation in distance (installation position) between the edge sensor and head is corrected. Correction is performed by measuring the distance from the media edge to the print start position and adjusting the print start position so that it has a standard distance.

(8) Sensor (top) position adjustment

A function in the control firmware to correct the print start position in the feeding (top) direction of the media. Fluctuation in distance (installation position) between the edge sensor and head is corrected. Correction is performed by measuring the distance from the media edge to the print start position and adjusting the print start position so that it has a standard distance.

(9) Feeding adjustment

A function to adjust the media feeding length by the control firmware. It corrects the difference in feeding length due to media characteristics (such as thickness), printing mode, switching of pressure of the pressure roller, availability of the take-up reel unit, and FORWARD ONLY and BACK & FWD LOW advance modes, to reduce banding (joint of passes).

(10) Print head rest interval and print head rest time

A function used to execute scanning at the specified interval.

When the ink takes time to dry on some media, printing failures including blur can be prevented by scanning after the ink dries completely.

(11) Media advance mode

When using flexible media such as banner, the back of the media may stick to the paper guide or the platen, and the feeding operation may be interrupted.

In such cases, use one of the following advance modes that prevent the media from sticking:

BACK & FWD LOW, BACK & FWD HIGH, and BACK & FWD MAX.

In FORWARD ONLY mode, the media is advanced normally.

BACK & FWD LOW is an advance mode that prevents the media from sticking. In this mode, an operation to separate the media from the platen is performed when printing starts and after a pause.

BACK & FWD HIGH is an advance mode that prevents the media from sticking. In this mode, the operation to separate the media from the platen is performed during each scan.

BACK & FWD MAX is an advance mode that prevents the media from sticking. In this mode, in addition to the operation to separate the media from the platen that is performed when printing starts and after a pause, the suction fan power and the media advance speed are adjusted. This mode is recommended when printing on thin banner.

The printing speed in the BACK & FWD LOW, BACK & FWD HIGH, and BACK & FWD MAX modes is slower than in FORWARD ONLY mode.

The FWD LESS WRINKLES mode, used to advance media that has wrinkled before printing, is also available for media that wrinkles easily, such as solvent printing coated paper.

In this mode, the media is advanced 55 cm before the printing starts if 5 minutes or more has passed since the previous printing finishes.

## 8.5 Head Driving Principle

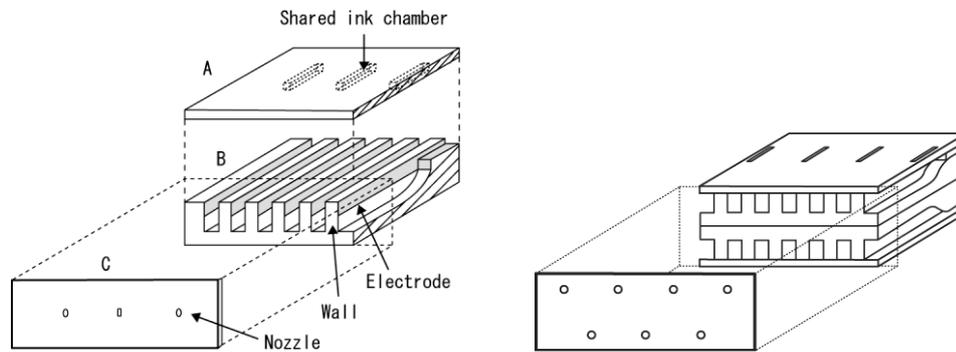
### (1) Head structure

The ink driving section in the head consists of three parts below.

- cover plate (see figure A below);
- actuator with comb-shaped grooves made of PZT (see figure B below); and
- nozzle plate (see figure C below).

Nozzle holes are made in every two grooves of the nozzle plate, and ink is supplied only to grooves with nozzle holes.

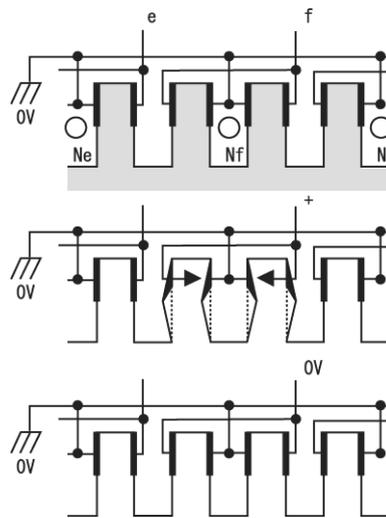
Two actuators having the configuration mentioned above are attached together so that the cover plates can be positioned to the outside.



Principle of operation

Electrodes are attached to both sides of the walls in the PZT groove. The electric potential of electrodes on both sides of the grooves with a nozzle is 0 V. Electrodes on the opposite side of the walls are connected in order for the voltage to be applied to eject the ink.

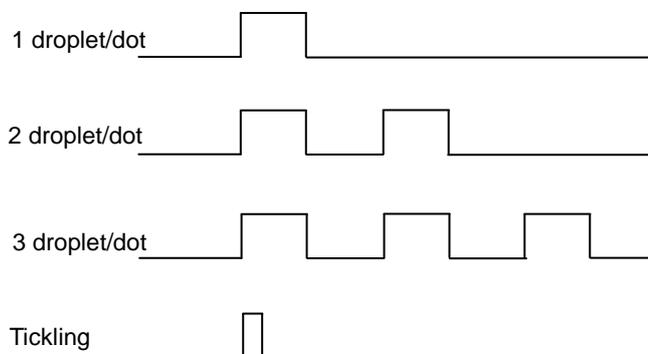
When the voltage is applied to the electrodes of nozzles from which you want ink to be ejected, the walls are distorted outward and the cubic capacity of the actuator is increased. When the voltage returns to 0 V, the distortion of the walls is recovered, as is the cubic capacity of the actuator. Ink is ejected due to this change in the cubic capacity of the actuator.



(2) Driving waveforms

The first waveform is used to eject one ink droplet, the second is used for two droplets, and the third for three droplets.

For the tickling operation, the waveform's time width is shorter than for the ejection operation.



## 8.6 Print Modes

The print modes supported by this printer are shown in the table below. \*1

With the CIS model

Print mode	Print resolution [dpi]		Carriage speed	
	Main scanning	Sub scanning	Normal	Slow
Draft	360	180	66.5 m <sup>2</sup> /h	40.6 m <sup>2</sup> /h
Fast production	360	360	49.7 m <sup>2</sup> /h	30.4 m <sup>2</sup> /h
Production	360	360	33.1 m <sup>2</sup> /h	20.2 m <sup>2</sup> /h
Production, high density				
Standard	540	360	23.9 m <sup>2</sup> /h	14.2 m <sup>2</sup> /h
Standard, high density				
Quality	540	540	16.0 m <sup>2</sup> /h	9.5 m <sup>2</sup> /h
Quality, high density				
High quality	720	720	9.2 m <sup>2</sup> /h	5.4 m <sup>2</sup> /h
High quality, high density				
Max quality	900	900	6.0 m <sup>2</sup> /h	3.5 m <sup>2</sup> /h
Max quality, high density				

\*1 The indicated print speed is when printing on the full-width of a roll of 1626 mm (64 inches) in width.

With the LCIS model

Print mode	Print resolution [dpi]		Carriage speed	
	Main scanning	Sub scanning	Normal	Slow
Fast production	360	360	49.7 m <sup>2</sup> /h	30.4 m <sup>2</sup> /h
Production	360	360	33.1 m <sup>2</sup> /h	20.2 m <sup>2</sup> /h
Standard	540	360	23.9 m <sup>2</sup> /h	14.2 m <sup>2</sup> /h
Quality	540	540	16.0 m <sup>2</sup> /h	9.5 m <sup>2</sup> /h
High quality	720	720	9.2 m <sup>2</sup> /h	5.4 m <sup>2</sup> /h
High quality, high density				
Max quality	900	900	6.0 m <sup>2</sup> /h	3.5 m <sup>2</sup> /h
Max quality, high density				

\*1 The indicated print speed is when printing on the full-width of a roll of 1626 mm (64 inches) in width.

## 8.7 Electrical Configuration

### 8.7.1 Overall configuration

The following block diagram shows the overall electrical configuration of the printer.

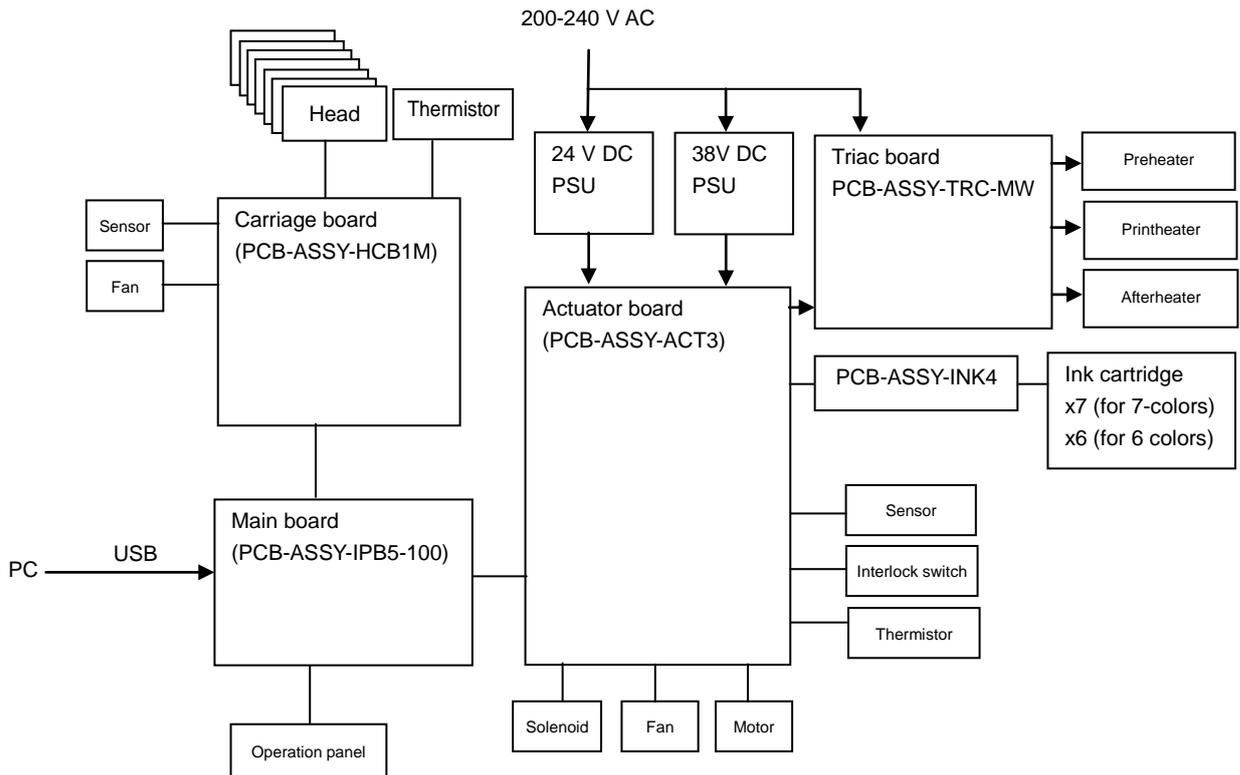


Figure 8.6 Overall electrical configuration

## 8.8 Description of the Electrical Section

- **Print heads**

Six or seven print heads are installed in the printer. They are equipped with PZT actuators for the 508 nozzles.

The heads are connected to the carriage board (HCB1M) via 40-core cables.

- **Controller board (PCB-ASSY-IPB5-100)**

The controller board controls the whole printer, and allows the following capabilities.

- CPU: Employs SH-3
- Memory: Main memory (SDRAM), flash memory (boot program, system program, test patterns, engine parameters backup, and FPGA configuration data)
- Host interface: Supports USB 2.0 Hi-Speed
- USB memory interface: Supports USB 2.0 Hi-Speed
- Print data processing: Uses FPGA-ATG and FPGA-RSM
- Operation panel control: Operation panel interface function
- FPGA-BTC: An FPGA with the capacity to control:
  - peripheral access on the IPB5 board; and
  - Y servo.

The configuration data cannot be overwritten using a USB drive. Only starting from the on-board configuration ROM is possible.

- FPGA-ATG: FPGA-ATG is a FPGA with functions to control the USB interface and the band memory. The configuration data can be rewritten using a USB drive.
- FPGA-RSM: FPGA-RSM is a FPGA with horizontal/vertical conversion and image data masking functions. The configuration data can be rewritten using a USB drive.

- **Carriage board (PCB-ASSY-HCB1M)**

The carriage board controls the print heads and the carriage, and allows the following functions.

- Receives image data from the IPB5 board, and transfers the data to the heads.
- Performs tickling and spitting to secure adequate head conditions.
- Controls the actuators and sensors on the carriage.
- FPGA-PTG as an FPGA with functions to:
  - transfer data to the heads; and
  - control actuators, sensors, and AD convertor on the carriage.

The configuration data can be rewritten using a USB drive.

- Generates the print head drive voltage (14 channels).
- Drives the print head heaters.

- **Actuator board (PCB-ASSY-ACT3)**

This board controls the actuators and the sensors in the printer, and allows the following functions.

- Controls the carriage scan motor and media feed motor.
- Controls the capping unit and wiping unit.
- Controls the suction fans, exhaust fan, rear fans and the other fans.
- Controls the motors and sensors in the ink delivery system.
- Interfaces with the ink cartridges.
- Interfaces with the TRC-MW board.
- Controls the media heaters (preheater, printhead, and afterheater).
- Controls the other motors and actuators.
- FPGA-ABC is an FPGA with functions to control devices on the ACT3 board. The configuration data can be rewritten using a USB drive.

- **Triac board (PCB-ASSY-TRC-MW)**

The triac board controls the AC power to be supplied to media heaters, and has the following functions.

- Controls ON/OFF of the AC power supplied to each heater.
- Generates a zero cross signal on AC power.

- **Ink board (PCB-ASSY-INK4)**

The ink boards connect the ink cartridges to the sub tanks. Each ink cartridge requires one ink board.

- **Ink cartridge (PCB-ASSY-CCC3)**

Includes a board equipped with memory chip containing the ink information with the CIS model.

- **Ink usage amount extension chip (PCB-ASSY-CCC4)**

Chip used to extend the amount of ink that can be used with the LCIS model

- **DC24V PSU**

24VDC PSU is a power unit to supply 24 V DC used to operate the actuators. It includes circuits that protect it against excessive current and excessive voltage.

- **DC38V PSU**

36VDC PSU is a power unit to supply DC power to operate logic circuits, and power to drive the heads, and the X and Y motors, as well as power used for logic circuits and actuators on the carriage. It includes circuits that protect it against excessive current and excessive voltage.

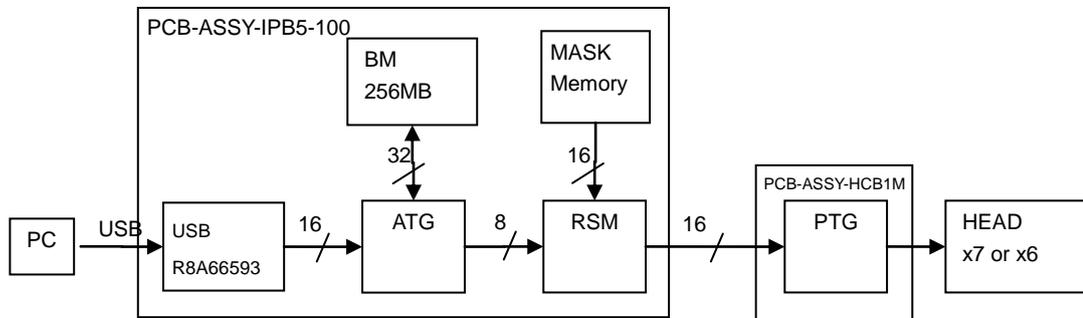
- **Operation panel**

The operation panel is a unique control panel provided to control the printer. The following describes the main specifications:

- LCD: 40 characters in 2 lines, with backlight
- Input buttons: Up, Down, Right, Left, OK, CANCEL, ONLINE, HEATER, MENU, ADJUST, MAINTENANCE, NOZZLE PRINT, and PH.RECOVERY
- LED: Error, Media heater, Ink, and ONLINE
- Interface: Serial type based on differential interface
- Buzzer: Separately-excited buzzer

- **Image data path**

The following diagram shows the image data path.



**Figure 8.7 Image data path**

(1) USB R8A66593

USB M66590 is a USB interface controller device. It transfers image data to ATG via the bus dedicated to DMA.

(2) ATG

FPGA-ATG is a FPGA that controls the band memory. It has functions to transfer the image data as shown below:

- from R8A66593 to BM
- from BM to RSM

Only linear order processing is supported for image data transfer from a computer.

(3) RSM

RSM is an FPGA responsible for horizontal/vertical conversion, masking, and adding white data. It processes image data transferred from the ATG, masks it using data read from the mask memory, and transfers the image data to PTG.

(4) PTG

PTG is an FPGA that receives image data sent from RSM, and transfers it to each head. It has 16 FIFO inputs for each row and each head. After reading data from FIFO, PTG shifts the data in each head via an independent circuit. The shift-in direction is different between the row A and the row B of each head.

(5) Head

The head drives the actuator of each nozzle based on the shift-in image data.

- **Motors and solenoids**

The following table lists the motors and solenoids used for the printer.

Name	Type	Voltage	Driving board	Control items	Error detection	Remarks
Ink supply motor 1 to 7	DC motor	24 V	PCB-ASSY-ACT3	Normal rotation, reverse rotation, brake PWM control	Over current protection element	
Air release solenoid 1 to 3	Solenoid	24 V	PCB-ASSY-ACT3	ON/OFF	Over current protection element	
Cap motor	DC motor	24 V	PCB-ASSY-ACT3	Brake, UP/DOWN PWM control	Over current protection element	
Capping unit up/down motor	DC motor	24 V	PCB-ASSY-ACT3	Normal rotation, reverse rotation, brake PWM control	Over current protection element	
Suction ump/ wipe motor	Stepping motor	24 V	PCB-ASSY-ACT3	ON/OFF PWM control	Over current protection element	
Take-up motor	DC motor	24 V	PCB-ASSY-ACT3	Normal rotation, reverse rotation, brake, free PWM control	Overcurrent detection circuit	
X motor	Stepping motor	38 V	PCB-ASSY-ACT3	Normal rotation, reverse rotation, brake, free	Overcurrent detection circuit	
Y motor	DC motor	38 V	PCB-ASSY-ACT3	Normal rotation, reverse rotation, brake, free Software servo	Overcurrent detection circuit	

- **Fans**

The following table lists the fans used for the printer.

Name	Type	Voltage	Driving board	Control items	Error detection	Remarks
Suction fan 1 to 4	Sirocco fan	24 V	PCB-ASSY-ACT3	Variable driving voltage via DA converter	Lock detection	
Exhaust fan 1 to 2	Axial fan	24 V	PCB-ASSY-ACT3	ON/OFF	None	Two fans are controlled together.
Electrical unit cooling fan	Axial fan	24 V	PCB-ASSY-ACT3	Always ON	None	
PSU cooling fan	Axial fan	24 V	PCB-ASSY-ACT3	Always ON	None	
Print head cooling fan 1 to 2	Axial fan	24 V	PCB-ASSY-HCB1M	Variable driving voltage via DA converter		
Rear fan 1 to 4	Axial fan	24 V	PCB-ASSY-ACT3	ON/OFF	None	

- **Heaters**

The following table lists the heaters used for the printer.

Name	Type	Voltage	Driving board	Control items	Error detection	Remarks
Preheater	Aluminum foil heater	AC	PCB-ASSY-TRC-MW	Software PID control	Thermistor Thermostat	1 circuit configuration
Printhead heater	Linear heater	AC	PCB-ASSY-TRC-MW	Software PID control	Thermistor Thermostat	1 circuit configuration
Afterheater	Aluminum foil heater	AC	PCB-ASSY-TRC-MW	Software PID control	Thermistor Thermostat	1 circuit configuration
Head heater	Chip resistor	38 V	PCB-ASSY-HCB1M	Software PID control	Thermistor Thermal fuse Overheat protection	Included in the print head

• **Sensors**

The following table lists the sensors used for the printer.

Name	Type	Reading component	0 indication	1 indication	Readout number when disconnected	Remarks																
Ink cartridge detection 1 to 7	Microprobe connector	PCB-ASSY-ACT3 CPLD-VSU	Yes	No	1																	
Subtank full sensor 1 to 7	Reflective photo sensor	PCB-ASSY-ACT3 CPLD-VSU	Reflective photo sensor	Reflective photo sensor	1	High level with light blocked																
Subtank empty sensor 1 to 7	Reflective photo sensor	PCB-ASSY-ACT3 CPLD-VSU	Reflective photo sensor	End	1	Low level with light blocked																
Roll end switch	Micro switch	PCB-ASSY-ACT3 CPLD-VSU	Reflective photo sensor	End	1																	
TUR switch	Toggle switch	PCB-ASSY-ACT3 CPLD-VSU	<table border="1"> <thead> <tr> <th>SW1</th> <th>SW2</th> <th>Logic</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>0</td> <td>----</td> </tr> <tr> <td>1</td> <td>0</td> <td>Outward</td> </tr> <tr> <td>0</td> <td>1</td> <td>Inward</td> </tr> <tr> <td>1</td> <td>1</td> <td>No winding</td> </tr> </tbody> </table>			SW1	SW2	Logic	0	0	----	1	0	Outward	0	1	Inward	1	1	No winding	1	
SW1	SW2	Logic																				
0	0	----																				
1	0	Outward																				
0	1	Inward																				
1	1	No winding																				
TUR upper limit sensor	Discrete type photo sensor	PCB-ASSY-ACT3 CPLD-VSU	Reflective photo sensor	Upper limit	1	Low level with light blocked																
TUR lower limit sensor	Discrete type photo sensor	PCB-ASSY-ACT3 CPLD-VSU	Reflective photo sensor	Lower limit	1	High level with light blocked																
Ink supply pump sensor 1 to 7	Reflective photo sensor	PCB-ASSY-ACT3 CPLD-VSU	Closed	Open	1	High level with light blocked																
Wiper position sensor	Leaf switch	PCB-ASSY-ACT3 CPLD-VSU	At home position	Not at home position	1																	
Capping unit sensor	Leaf switch	PCB-ASSY-ACT3 CPLD-VSU	Lower	Upper	1																	
Home position sensor	Photo interrupter	PCB-ASSY-ACT3 CPLD-VSU	No	Yes	1	High level with light blocked																
Grip sensor	Photo interrupter	PCB-ASSY-ACT3 CPLD-VSU	Closed	Open	1	High level with light blocked																
Waste ink bottle sensor	Leaf switch	PCB-ASSY-ACT3 CPLD-VSU	Yes	No	1																	

Name	Type	Reading component	0 indication	1 indication	Readout number when disconnected	Remarks
Ink cover sensor	Photo interrupter	PCB-ASSY-ACT3 CPLD-VSU	Closed	Open	1	Low level with light blocked
Suction fan lock detection 1 to 4	Internal fan element	PCB-ASSY-ACT3 CPLD-VSU	Rotating	Locked	1	
FFC connection detection CN9 to CN12	By checking GND connection on HCB1M board	PCB-ASSY-IPB5-100 FPGA-BTC	Yes	No	1	
ACT3 board detection	By checking GND connection on ACT3 board	PCB-ASSY-IPB5-100 FPGA-BTC	Yes	No	1	
TRC-MW board detection	By checking GND connection on TRC-MW board	PCB-ASSY-IPB5-100 FPGA-BTC	Yes	No	1	
Zero cross detection	Photocoupler on TRC-MW board	PCB-ASSY-IPB5-100 FPGA-BTC	At zero cross	Not at zero cross	1	
Operation panel power switch	Tact switch on MCP4M (MCP5) board	PCB-ASSY-IPB5-100 FPGA-BTC	OFF	ON	1	
Media discharge sensor	Reflective photo sensor	PCB-ASSY-ACT3 AD converter	Low voltage: No reflective object	High voltage: Reflective object detected	Approx. 5 V	
Media feed sensor	Reflective photo sensor	PCB-ASSY-ACT3 AD converter	Low voltage: No reflective object	High voltage: Reflective object detected	Approx. 5 V	
PCB-ASSY-ACT3 AD converter	Reflective photo sensor	PCB-ASSY-ACT3 AD converter	Low voltage: No reflective object	High voltage: Reflective object detected	Approx. 5 V	
Linear encoder	Reads linear scale with optical sensor	PCB-ASSY-HCB1M FPGA-PTG PCB-ASSY-IPB5-100 FPGA-BTC			1	Two outputs to A phase and B phase
IONIZER	Checks high voltage applied to the ion generating device	PCB-ASSY-HCB1 AD converter			0	Normally 1.5 V to 3.5 V
LCIS ink weight sensor	Potentiometer	PCB-ASSY-ACT3			0	Normally 1.8 V to 3.3 V

- **Thermistors**

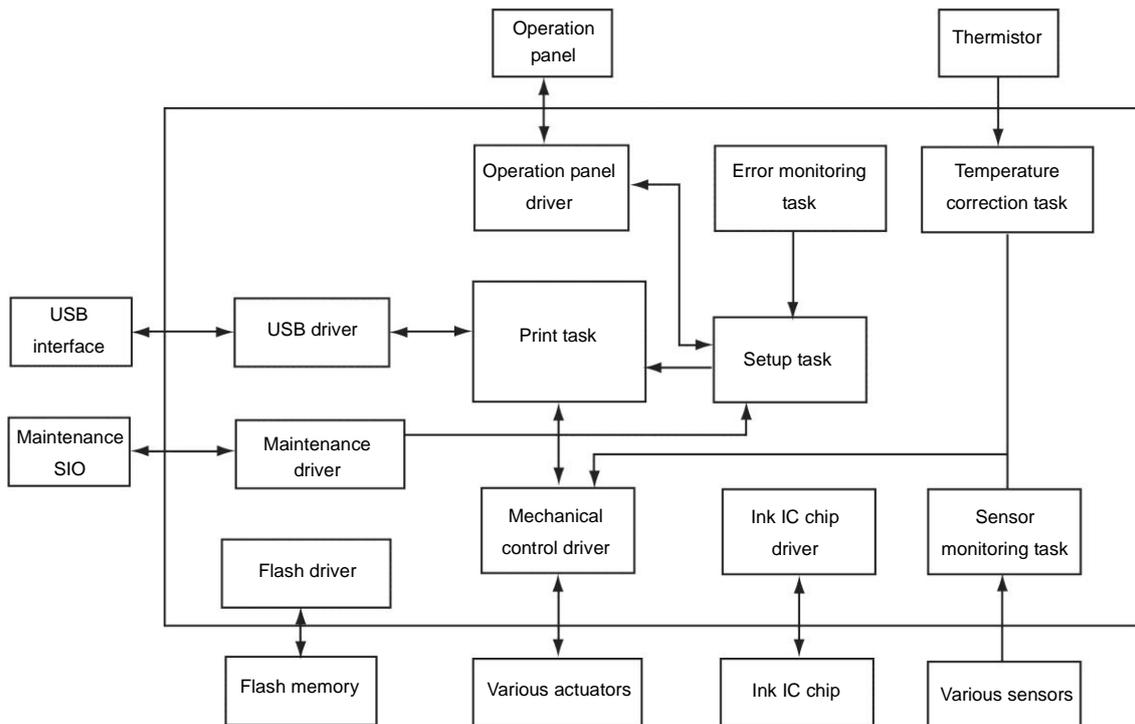
The following table lists the thermistors used for the printer.

<b>Name</b>	<b>Type</b>	<b>Reading component</b>	<b>Readout number at disconnection</b>	<b>Remarks</b>
Ambient temperature thermistor	Thermistor	PCB-ASSY-ACT3 AD converter	Approx. 0.24 V	
Preheater thermistor	Thermistor	PCB-ASSY-ACT3 AD converter	Approx. 0.24 V	
Afterheater thermistor	Thermistor	PCB-ASSY-ACT3 AD converter	Approx. 0.24 V	
Printhead thermistor	Thermistor	PCB-ASSY-ACT3 AD converter	Approx. 0.24 V	
Head PZT temperature detection thermistor	Thermistor	PCB-ASSY-HCB1M AD converter	Approx. 5 V	
Head driver IC temperature detection thermistor	Thermistor	PCB-ASSY-HCB1M AD converter	Approx. 5 V	

## 8.9 Engine Control Firmware

### 8.9.1 Function block

The following block diagram shows the USB/engine firmware functions.



## 8.9.2 Performance description

### Description of operation: USB/engine firmware functions block

The USB/engine firmware runs on the IPB5 board to control each section of the engine and USB interface.

The following describes the main function blocks of the USB/engine firmware.

Operation panel driver:	Controls I/O of the LCD, LED, button and buzzer on the operation panel.
USB driver:	Controls the USB interface.
Mechanical control driver:	Controls the printing performance of the mechanical system and also controls the various actuators to enable maintenance of the ink system and control of the media heater.
Maintenance driver:	Controls the serial interface for the maintenance console.
Temperature correction task:	Monitors the thermistor.
Sensor monitoring task:	Monitors the sensors.
Setup task:	Allows various operations via the operation panel, and prints various built-in patterns.
Flash driver:	Reads from and writes to the flash memory.
Ink IC chip driver:	(CIS model) Reads from and writes to the IC chip included in the ink cartridge. (LCIS model) Reads from and writes to the IC ink amount extension chip.
Error monitoring task:	Monitors sensors to check the engine anomalies.
Print task:	Controls the band memory and print data.

## 8.10 Power Supply Unit

The printer uses two power supply units. The following explains the 24VDC PSU, a power supply outputting 24 V DC, and the 38VDC PSU, the other power supply outputting 38 V DC.

### 8.10.1 Electric specifications

AC input specifications

	DC24V PSU	DC38V PSU
Rated input voltage	200-240 V AC	200-240 V AC
Input voltage range	180-260 V AC	180-260 V AC
Rated input frequency	50/60 Hz	50/60 Hz
Input frequency range	50/60 Hz $\pm$ 1 Hz	50/60 Hz $\pm$ 1 Hz
Number of phase	Single	Single

DC output specifications

	DC24V PSU	DC38V PSU
Output voltage	24 V DC	38 V DC
Rated current	10 A	6.3 A
Peak current	20 A	12.6 A
Adjusting range	21.6-27.5 V	32.4-39.6 V

## 8.10.2 Connector specifications

### AC input connectors

Pin No.	DC24V PSU
1	LIVE
3	NEUTRAL
5	GND

Pin No.	DC24V PSU
↓	GND
N	NEUTRAL
L	LIVE

### DC output connectors

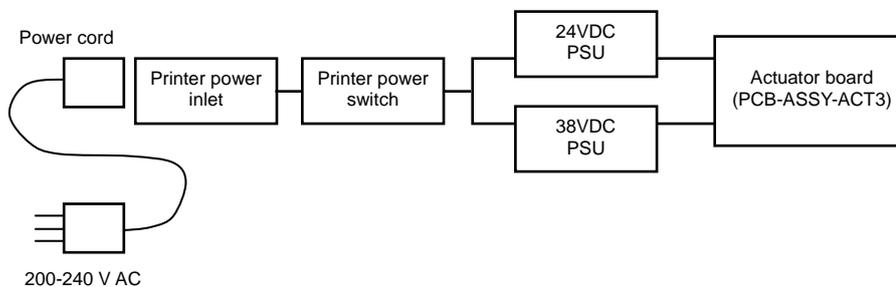
Pin No.	DC24V PSU
1	GND
2	GND
3	GND
4	GND
5	+24 V
6	+24 V
7	+24 V
8	+24 V

Pin No.	DC38V PSU
-	GND
+	+38 V

### 8.10.3 DC power supply configuration

The printer is equipped with two power supply units with single output. The two power supply units are connected to the printer power inlet via the printer power switch on the printer's rear. Turning on the printer power switch starts supply of AC power to the power supply units, which outputs 24 V DC and 38 V DC.

The above-mentioned 24 V DC and 38 V DC power are first input to the ACT3 board, converted into proper voltage, and then supplied to each unit. For details, see the power supply schematic diagram and the table on the second page of the diagram.



The following table lists the main DC power supplies on the boards and their destinations. Note that even the same voltage supplied from the same board may be divided into two or more lines. For details, see the power supply schematic diagram in the appendix.

Board name	DC power	Connected to
IPB5 board	38 V	P5V generation
	5 V	Logic IC, 3.3 V generation, 1.9 V generation
	3.3 V	Logic IC, FPGA I/O, 1.2 V generation
	1.9 V	SH3 core
	1.2 V	FPGA core
ACT3 board	38 V	P12V generation, P5V generation, P3.3V generation, P24VSF generation (suction fan power supply), P24VRF generation (rear fan power supply), X motor, Y motor, HCB1M board
	24 V	Capping motor, cap up/down motor, interlock relay, suction pump/wipe motor, air release solenoid, electrical unit cooling fan, PSU cooling fan, exhaust fan, take-up motors, ink supply motor
	12 V	Y motor driving circuit
	5 V	Logic IC, sensors, P3.3V generation
	3.3 V	Logic IC, FPGA I/O, P1.2V generation
	1.2 V	FPGA core
HCB1M board	38 V	P5V generation, VDD2 generation, P12V generation, head heater
	VDD2	Head
	12 V	Ionizer, automatic print adjustment
	24 V	Head cooling fan
	5 V	Logic IC, sensors, P3.3V generation, PREF generation, automatic print adjustment
	3.3 V	Logic IC, P1.2V generation, FPGA I/O
	1.2 V	FPGA core
MCP4M board	5 V	Logic IC, LCD backlight
MCP5 board	3.3 V	Logic IC, CPLD, LCD module

#### 8.10.4 When the interlock is disconnected

When the interlock on the printer side is disconnected, the printer blocks the power output using two relays on the ACT3 board. Power supply units output the voltage irrespective of the interlock switch status. The following table shows the units blocked from power supply. For details, see the power supply schematic diagram in the appendix.

Relay	Power system	Connected unit
38 V line relay	P36VAR	Y motor X motor
	P36VCRG	VDD2 (S508 head driving power supply) Ionizer, automatic print adjustment
24 V line relay	P24VAR	Capping unit up/down motor Suction pump/wipe motor Air release solenoid

### 8.10.5 Power output voltage variability

The power supply unit output voltage can be adjusted with an output voltage variable button.

Use the 24VDC power supply with the default setting.

The 38VDC power supply is shipped with the voltage adjusted to  $38.2 \text{ V} \pm 0.3 \text{ V}$ .

### 8.10.6 Protection circuit

The power supply units contain the following protection circuits.

Protection Circuit	DC24V PSU	DC38V PSU
Overcurrent protection function	Yes The power supply is restored automatically.	
Overvoltage protection function	Yes The power supply is restored automatically when the power is turned on again.	
Overheat protection function	<p>Overheat protection circuit is incorporated. The overheat protection circuit function may be activated and the power may be shut down on the situations below:</p> <ul style="list-style-type: none"> <li>- The electrical unit cooling fan was stopped.</li> <li>- Air inlet or outlet of the electrical components tray was obstructed.</li> <li>- High temperature air flows into the printer from the air inlet.</li> </ul> <p>If the power output is shut down because of one of the situations above, recover the problem, and cool down the overheated unit. Then the power supply will be restored when the printer is turned on again.</p>	

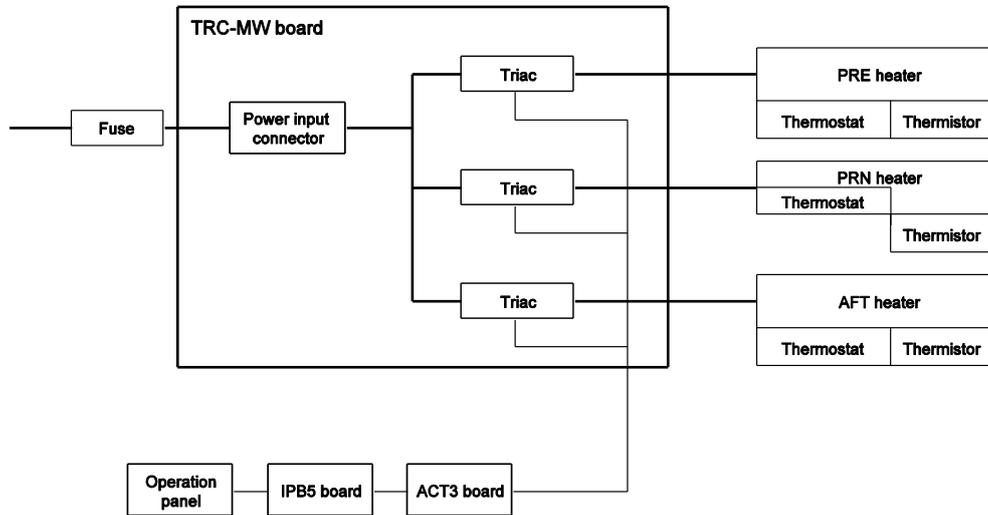
## 8.11 Media Heater Section

### 8.11.1 Configuration

The media heater hardware consists of the following units.

Unit name	Capability	Remarks
Operation panel	<ul style="list-style-type: none"> <li>Inputs heater control settings</li> <li>Displays heater status</li> </ul>	Display capabilities can be switched using the heater button on the panel.
IPB5 board	<ul style="list-style-type: none"> <li>Heater control</li> <li>DA converter for detecting thermistor temperature</li> </ul>	The heater control of this device is done not by an independent CPU, but by the firmware running on the main CPU (SH3).
ACT3 board	<ul style="list-style-type: none"> <li>TRC-MW board interface.</li> <li>Thermistor interface</li> </ul>	
TRC-MW board	Controls ON/OFF of the AC power supplied to each heater.	<ul style="list-style-type: none"> <li>An external fuse is installed on the TRC-MW board. This fuse blows in case of overcurrent. Replace the fuse if it has blown.</li> <li>On the TRC-MW board, there is a LED lighting up when each triac driving is turned ON. Checking the LED enables you to locate the problem, whether it is on the AC side or on the control side.</li> </ul>
Preheater	A heater to warm up the supply-side paper guide.	<ul style="list-style-type: none"> <li>Symbol for <b>pre</b>: PRE</li> </ul>
Printheater	A heater to warm up the platen.	<ul style="list-style-type: none"> <li>Symbol for <b>print</b>: PRN</li> </ul>
Afterheater	A heater to warm up the take-up side paper guide.	<ul style="list-style-type: none"> <li>Symbol for <b>post</b>: AFT</li> </ul>

### 8.11.2 Block diagram



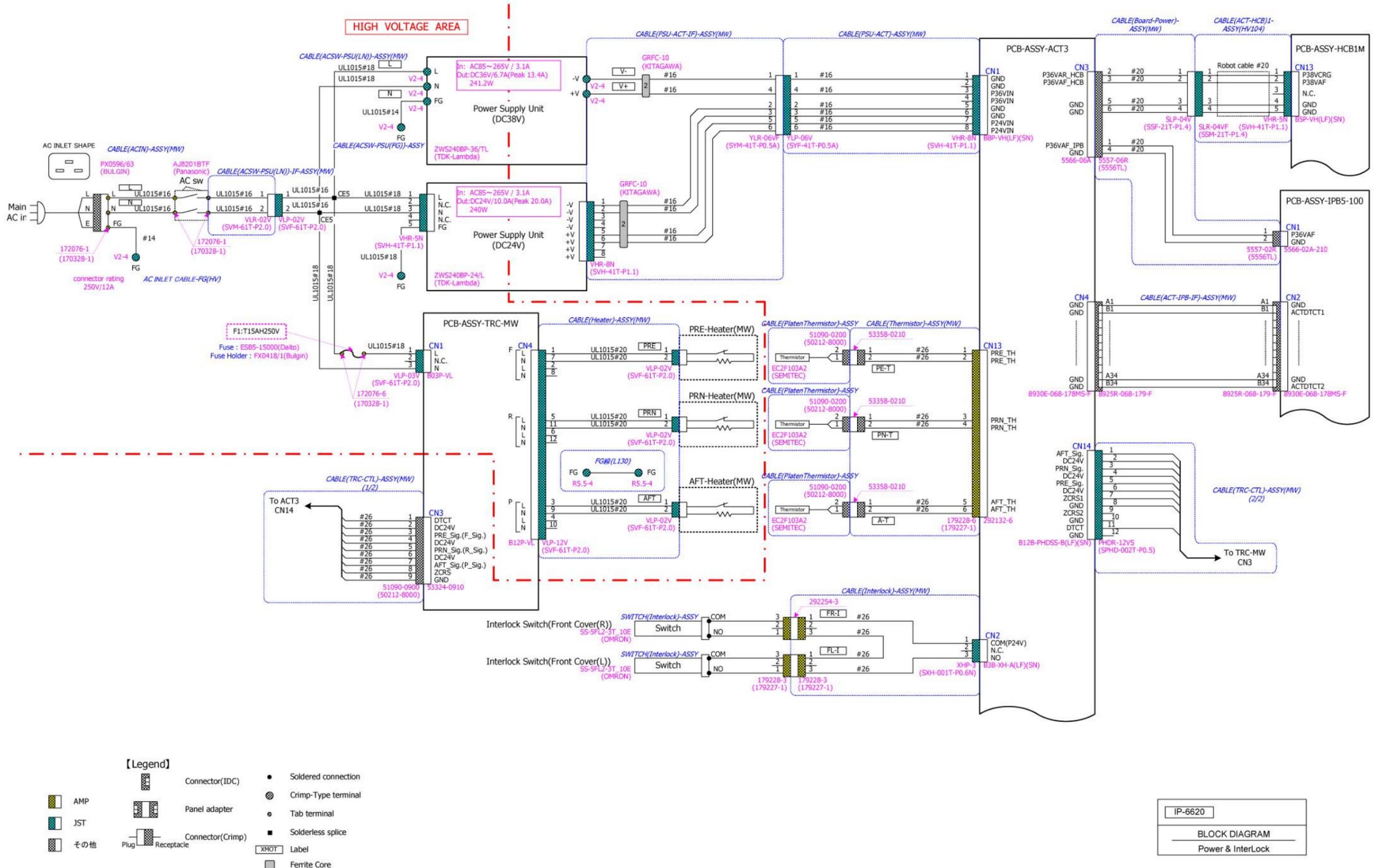
# Appendix IP-6620 Wiring Diagram

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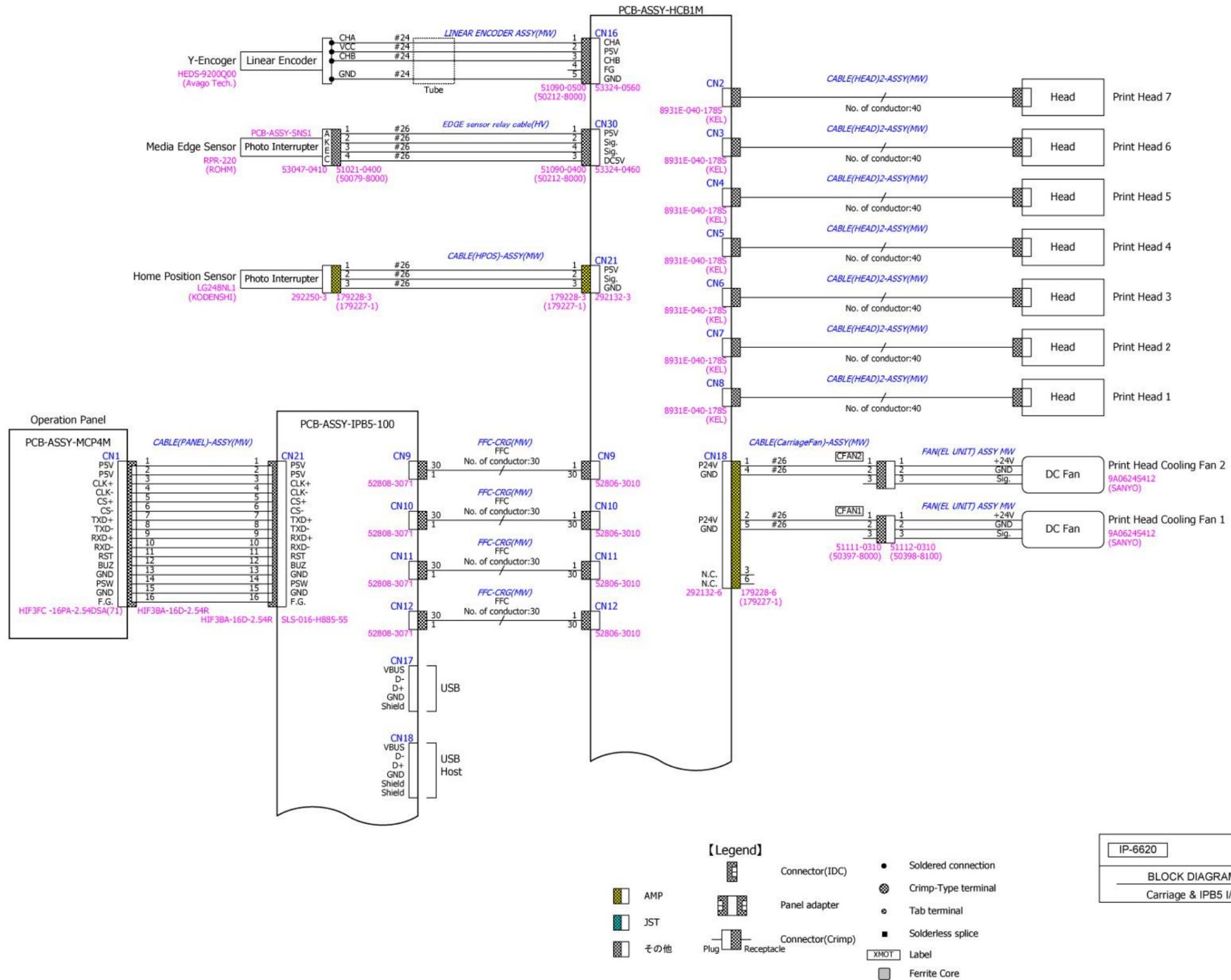
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The following shows the electrical connection diagrams of the IP-6620.

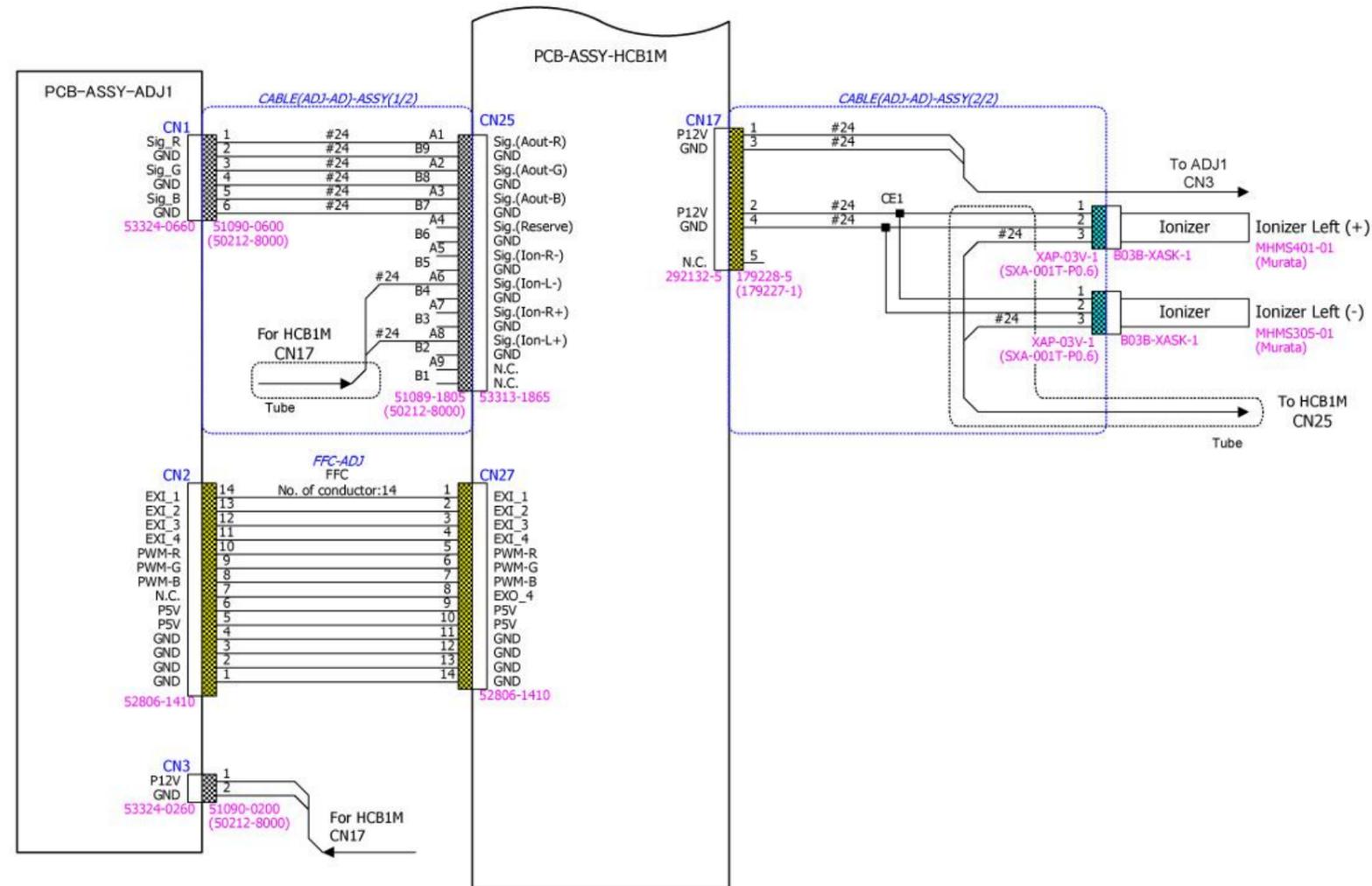
Appendix 1 Power & Interlock Wiring Diagram



### Appendix 2 Carriage & IPB5 Interface Wiring Diagram



### Appendix 3 Carriage & ADJ1 Interface Wiring Diagram



**【Legend】**

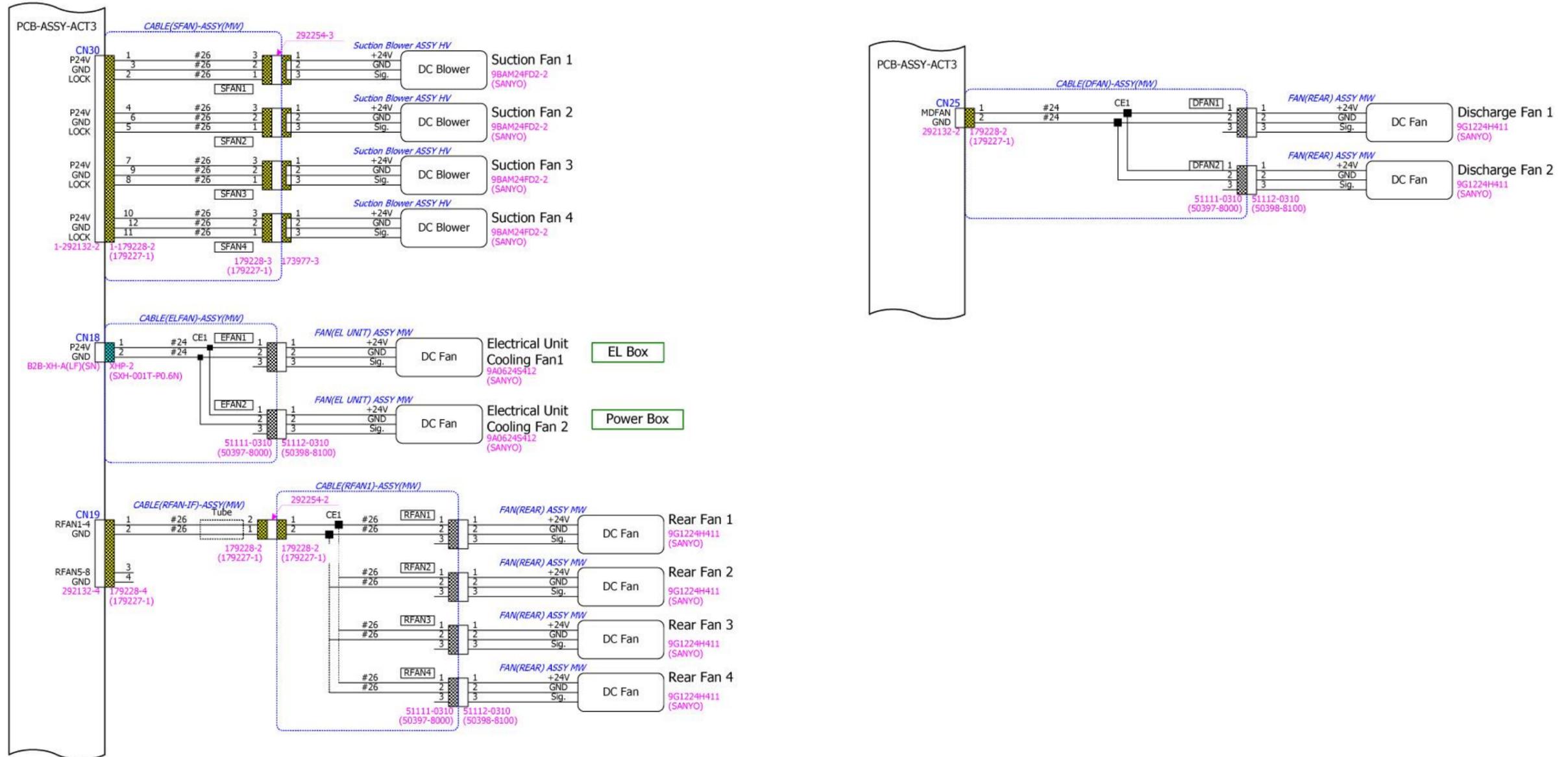
	AMP		Connector(IDC)		Soldered connection
	JST		Panel adapter		Crimp-Type terminal
	その他		Plug		Tab terminal
			Receptacle		Solderless splice
			Connector(Crimp)		Label
					Ferrite Core

IP-6620

BLOCK DIAGRAM

Carriage & ADJ1 I/F

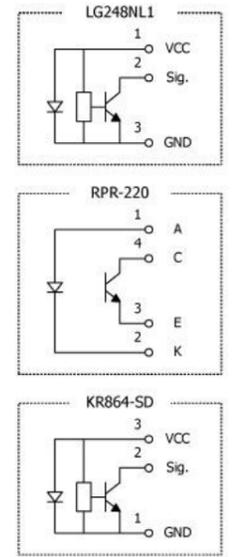
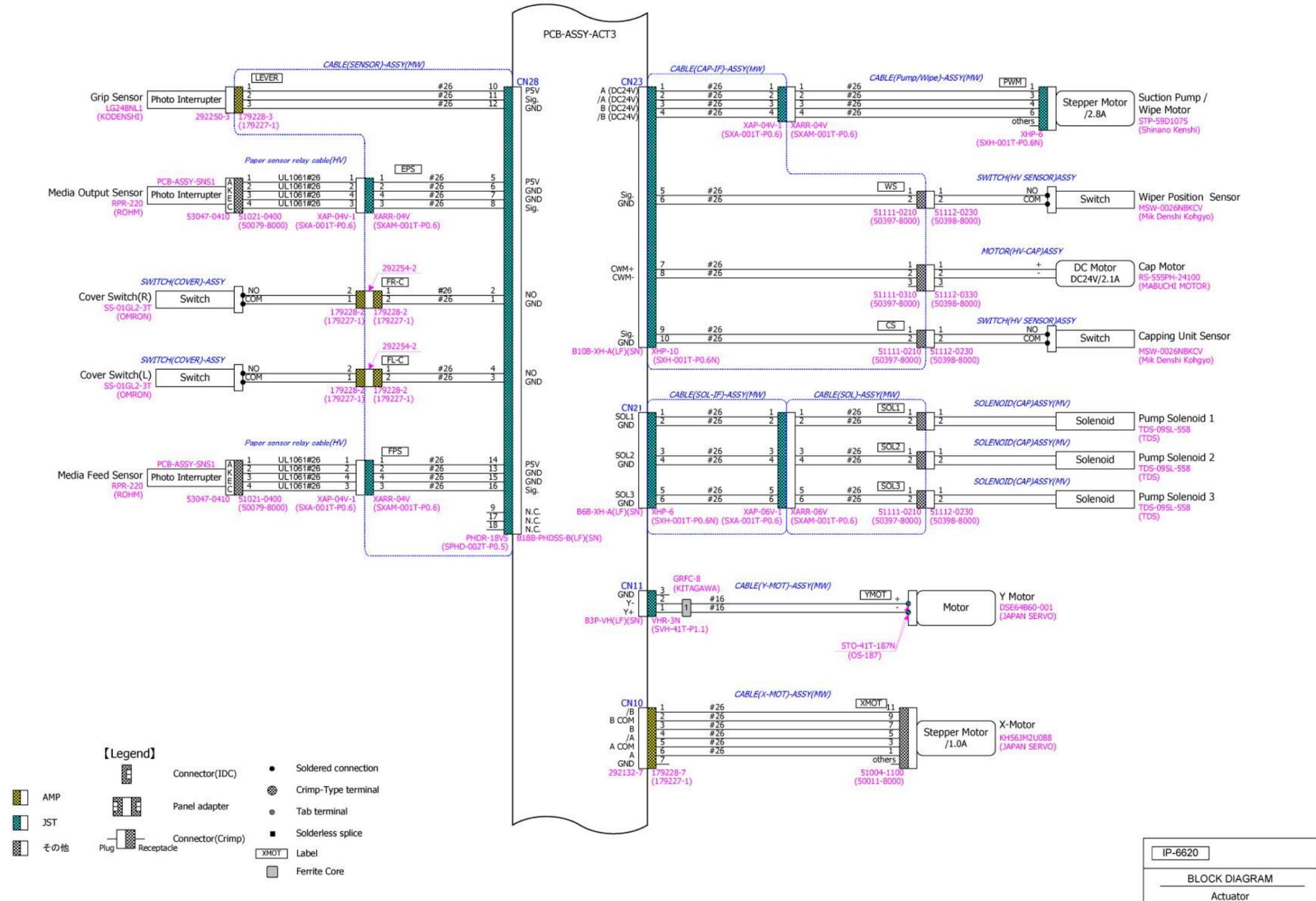
Appendix 4 Blower & Fan Wiring Diagram



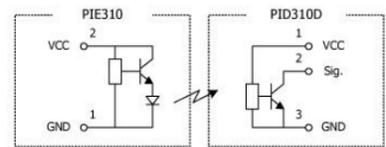
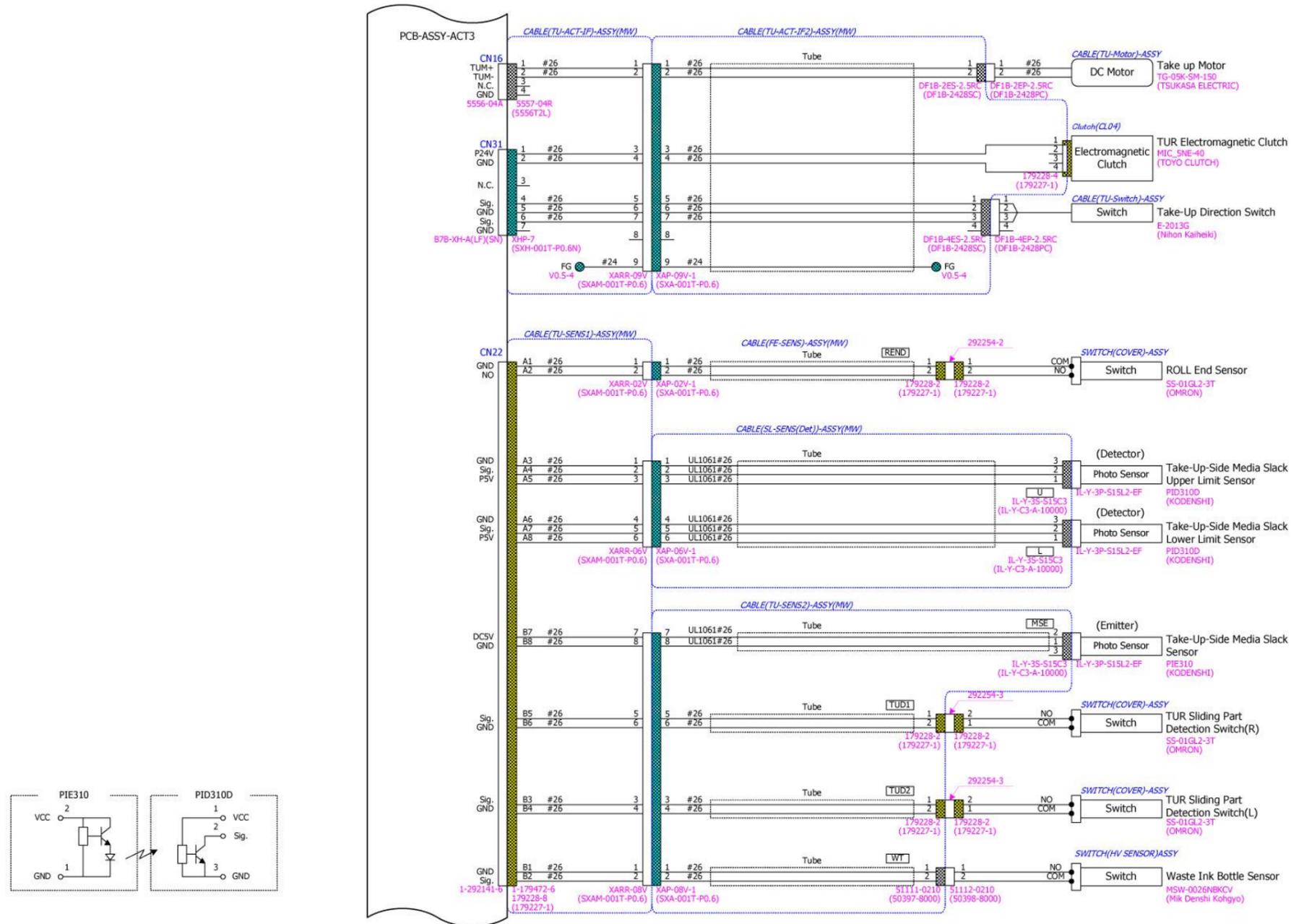
- [Legend]**
- AMP
  - JST
  - その他
  - Connector(IDC)
  - Panel adapter
  - Connector(Crimp)
  - Plug
  - Receptacle
  - Soldered connection
  - Crimp-Type terminal
  - Tab terminal
  - Solderless splice
  - Label
  - Ferrite Core

IP-6620  
BLOCK DIAGRAM  
Blower & Fan

Appendix 5 Actuator Wiring Diagram



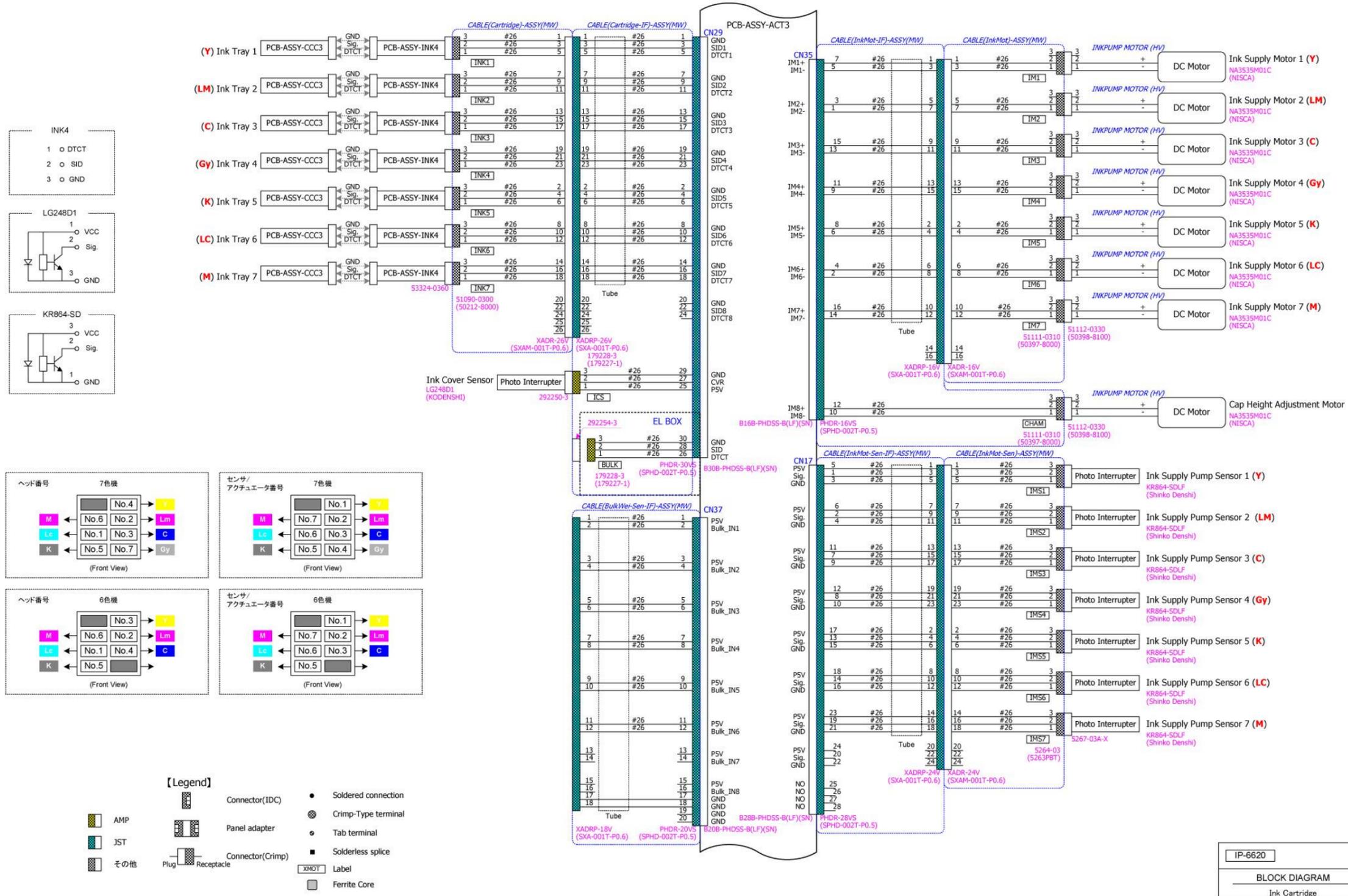
Appendix 6 Take-Up Unit & Feed Unit Wiring Diagram



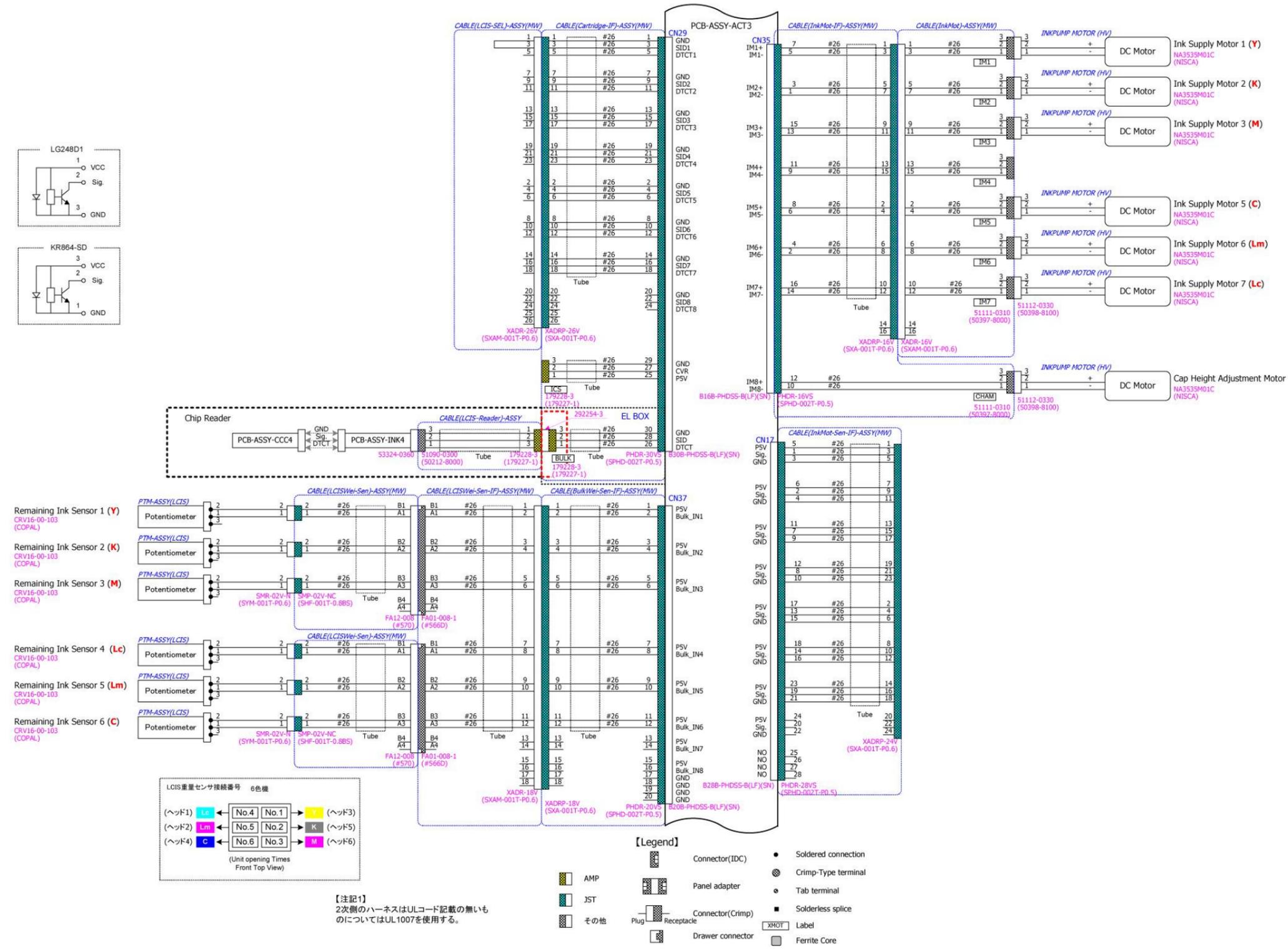
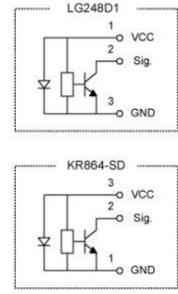
- Legend**
- AMP
  - JST
  - その他
  - Connector(IDC)
  - Panel adapter
  - Connector(Crimp)
  - Plug
  - Receptacle
  - Soldered connection
  - Crimp-Type terminal
  - Tab terminal
  - Solderless splice
  - Label
  - Ferrite Core

IP-6620  
BLOCK DIAGRAM  
TakeUp UNIT & Feed UNIT

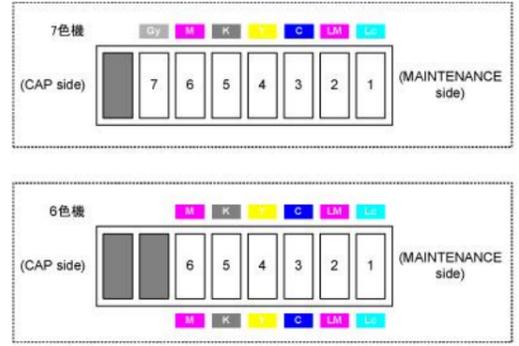
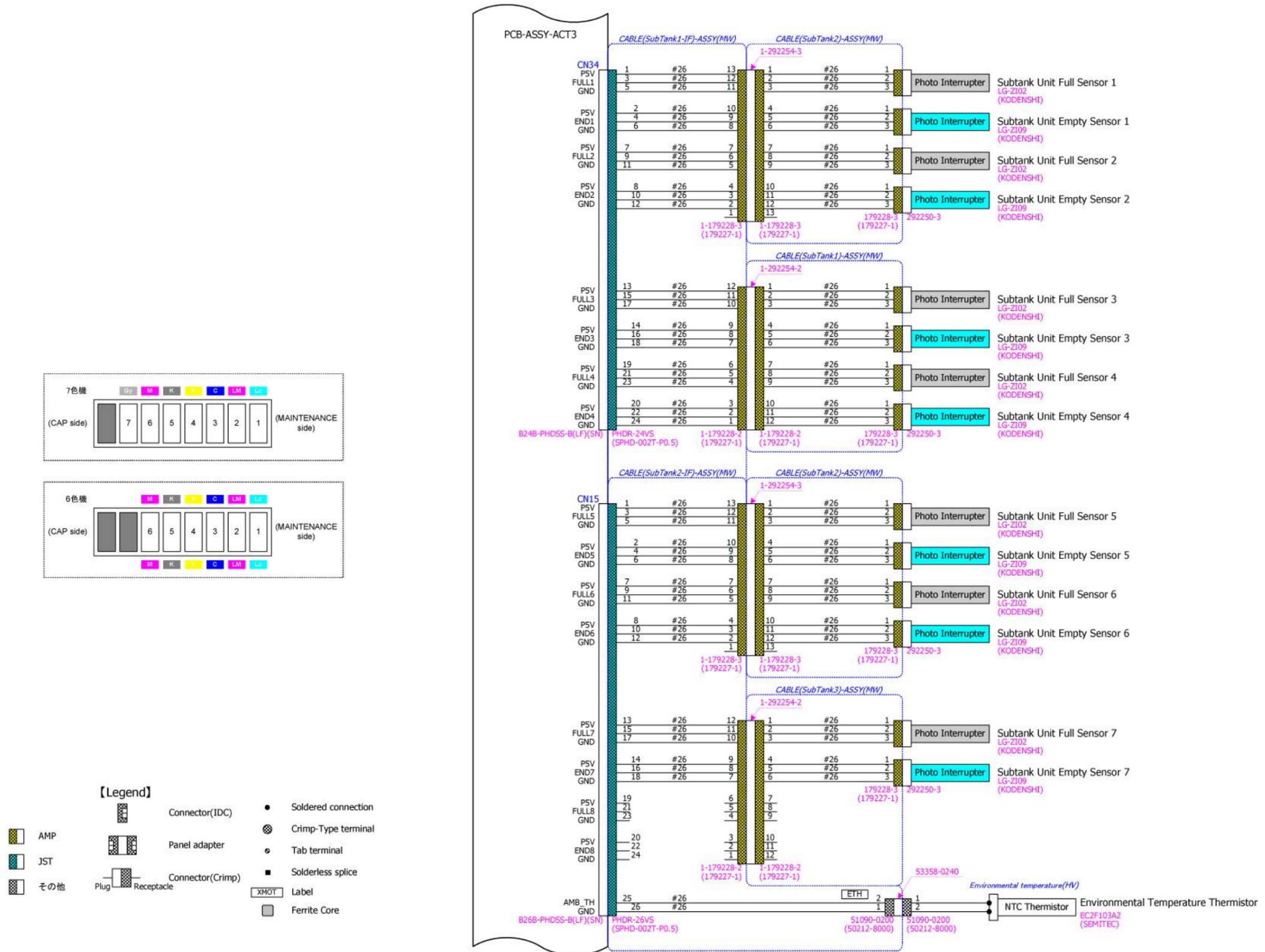
Appendix 7 Ink Cartridge Wiring Diagram (CIS model)



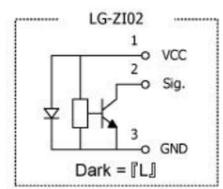
Appendix 8 Ink Cartridge Wiring Diagram (LCIS model)



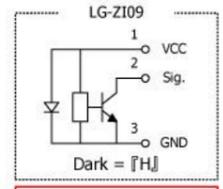
Appendix 9 Subtank Unit Wiring Diagram



- 【Legend】**
- AMP
  - JST
  - その他 (Others)
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  - Panel adapter
  - Connector(Crimp)
  - Plug
  - Receptacle
  - Soldered connection
  - Crimp-Type terminal
  - Tab terminal
  - Solderless splice
  - Label
  - Ferrite Core



Black marking



Blue marking

