imagePROGRAF iPF8000 Series iPF8400S

SERVICE MANUAL

Canon

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Rev. 0

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Application

This manual has been issued by Canon Inc. for qualified persons to learn technical theory, installation, maintenance, and repair of products. This manual covers all localities where the products are sold. For this reason, there may be information in this manual that does not apply to your locality.

Corrections

This manual may contain technical inaccuracies or typographical errors due to improvements or changes in products. When changes occur in applicable products or in the contents of this manual, Canon will release technical information as the need arises. In the event of major changes in the contents of this manual over a long or short period, Canon will issue a new edition of this manual.

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Caution

Use of this manual should be strictly supervised to avoid disclosure of confidential information.

Symbols Used

This documentation uses the following symbols to indicate special information:

Symbol	Description
	Indicates an item of a non-specific nature, possibly classified as Note, Caution, or Warning.
	Indicates an item requiring care to avoid electric shocks.
	Indicates an item requiring care to avoid combustion (fire).
	Indicates an item prohibiting disassembly to avoid electric shocks or problems.
	Indicates an item requiring disconnection of the power plug from the electric outlet.
 Memo	Indicates an item intended to provide notes assisting the understanding of the topic in question.
 REF.	Indicates an item of reference assisting the understanding of the topic in question.
	Provides a description of a service mode.
	Provides a description of the nature of an error indication.

The following rules apply throughout this Service Manual:

1. Each chapter contains sections explaining the purpose of specific functions and the relationship between electrical and mechanical systems with reference to the timing of operation.
   In the diagrams, ▭▮▮▮▭ represents the path of mechanical drive; where a signal name accompanies the symbol , the arrow ⟶ indicates the direction of the electric signal.
   The expression "turn on the power" means flipping on the power switch, closing the front door, and closing the delivery unit door, which results in supplying the machine with power.
2. In the digital circuits, '1'is used to indicate that the voltage level of a given signal is "High", while '0' is used to indicate "Low".(The voltage value, however, differs from circuit to circuit.) In addition, the asterisk (*) as in "DRMD*" indicates that the DRMD signal goes on when '0'.
   In practically all cases, the internal mechanisms of a microprocessor cannot be checked in the field. Therefore, the operations of the microprocessors used in the machines are not discussed: they are explained in terms of from sensors to the input of the DC controller PCB and from the output of the DC controller PCB to the loads.

The descriptions in this Service Manual are subject to change without notice for product improvement or other purposes, and major changes will be communicated in the form of Service Information bulletins.
All service persons are expected to have a good understanding of the contents of this Service Manual and all relevant Service Information bulletins and be able to identify and isolate faults in the machine."

Contents

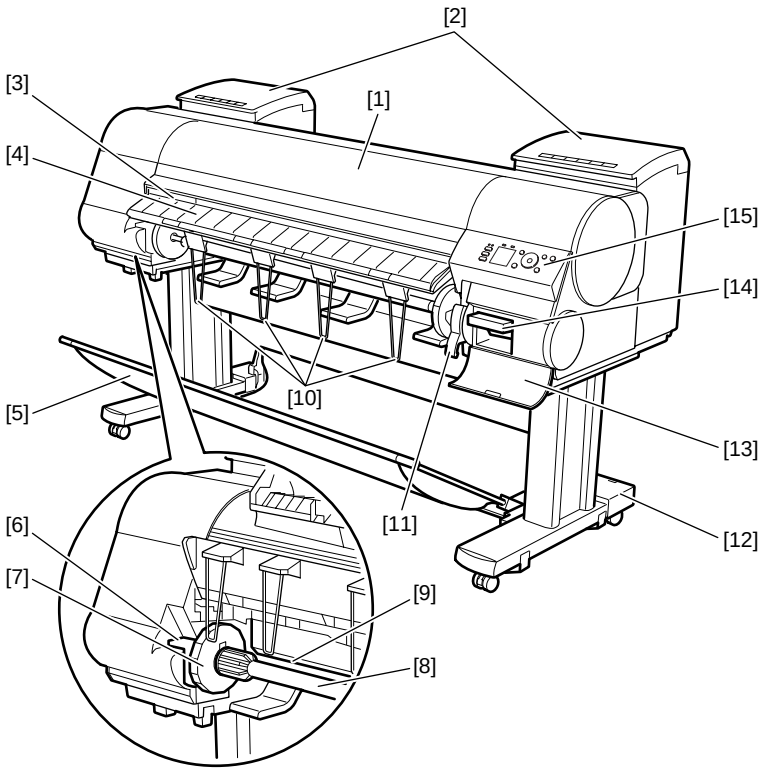
Chapter 1 PRODUCT DESCRIPTION

Contents

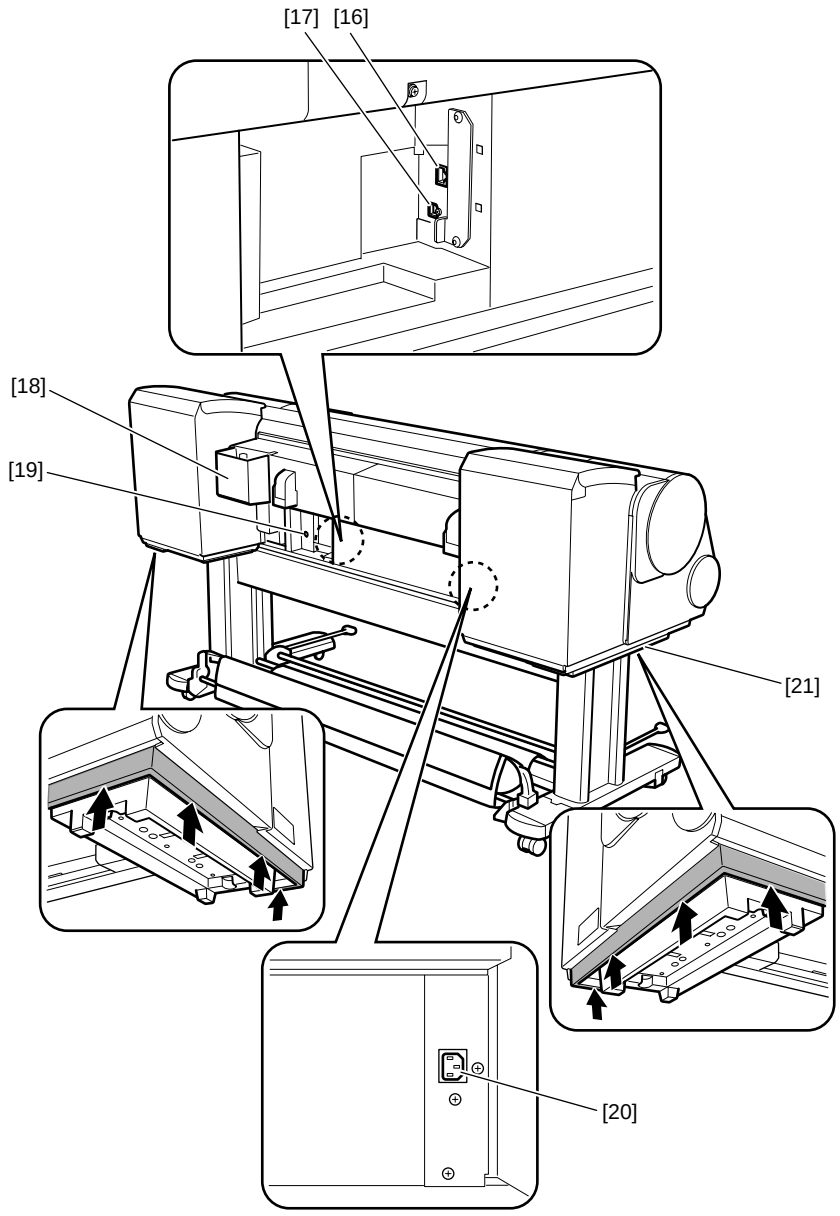
1.1 Product Overview

1.1.1 Product Overview

This printer is a large-format printer that prints in a maximum width of 44 inches with high-speed photographic picture quality.
This printer is a stand-mounted type printer and is capable of output to either roll media or cut sheet.



F-1-1



F-1-2

[1]	Upper Cover	[12]	Stand
[2]	Ink Tank Cover	[13]	Maintenance Cartridge Cover
[3]	Ejection Slot	[14]	Maintenance Cartridge
[4]	Ejection Guide	[15]	Operation Panel
[5]	Output Stacker	[16]	Ethernet Port
[6]	Roll Holder Slot	[17]	USB Port
[7]	Holder Stopper	[18]	Accessory Pocket
[8]	Roll Holder	[19]	Media Take-up Unit Power Inlet
[9]	Paper Feed Slot	[20]	Power Supply Connector
[10]	Ejection Support	[21]	Carrying Handles
[11]	Release Lever		

1.2 Features

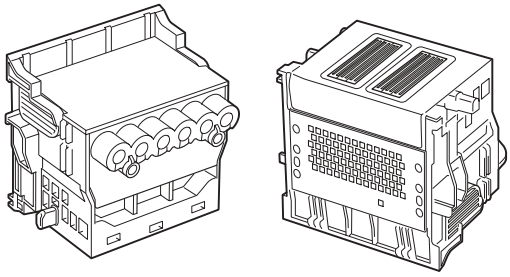
1.2.1 Features

- Media pass in widths up to 44 inches (1117.6 mm).
- Large ink tanks reduce the need for frequent ink replacement.
- Uninterrupted printing from subtanks.
- BK and MBK inks are loaded concurrently to eliminate the need for their replacement.
- A 8-color pigment ink system "LUCIA EX" is used to improve rubfastness, chromogenic effect, and bronzing resistance, ensuring higher-grade printing.
- A printing mode that improved control of the optimum ink droplet landing order (when in the mode for the highest image quality) and the ink droplet landing accuracy ensure higher-grade printing.
- A printhead having nozzles (I-shaped nozzle) with a new shape reduces ink mist, ensuring superfine printing.
- The symmetrical order of the printhead's ink nozzle color reduces uneven print.
- The operation panel that equipped a 160 x 128-dot large LCD allows you to operate the printer intuitively.
- Media take-up unit (option) is supported.
- Media take-up unit (option) can be mounted concurrently with a basket.
- Durability will be added by maintenance kit.
- Barcodes printed on roll media makes measuring the remaining roll length more manageable.
- Borderless four-side printing support (roll media) reduces laborious cutting work, easing the job of creating posters to a significant degree.
- High-speed printing with a 1-inch head for each color (1280 nozzles), under bidirectional print control.
- The color calibration feature adds to the faithfulness of color reproduction.
- The network interface (10Base-T/100Base-TX/1000Base-T) compatible with 1000Base-T (Gigabit Ethernet) comes standard with the printer to cope with the high-speed LAN environment.
- Compatibility with e-maintenance/imageWARE Remote allows centralized management of customer's printer information.
- The hard disk is installed for better print job management.

Functional enhancements new to this model include:
- The processing ability of the printed data will enhance by increase of hard disk drive capacity.
- A newly multi sensor has been able to perform a high accurate color calibration.

1.2.2 Printhead

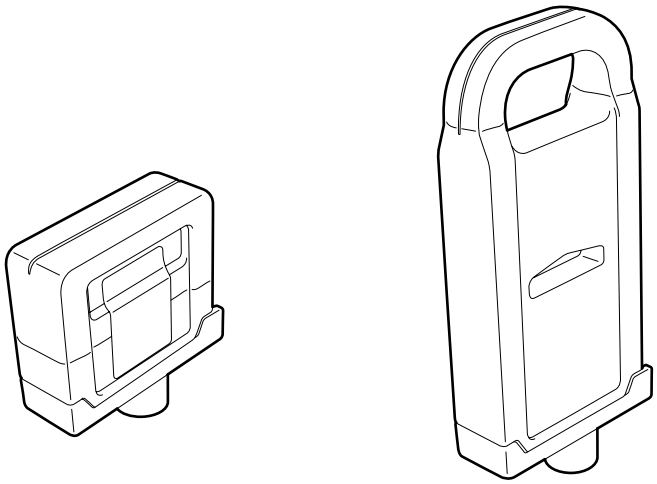
The printhead that mounts on the carriage is an integrated six-color disposable printhead.
It has 2,560 nozzles for each color, comprising two rows of 1,280 nozzles each arranged in a staggerd pattern.
If print quality does not improve despite carrying out the specified cleaning, the printhead must be replaced with a new one.



F-1-3

1.2.3 Ink Tank

The ink tanks are disposable.
The ink tanks come with 8-colors: mat black(MBK), black(BK), photo cyan(PC), cyan(C), photo magenta(PM), magenta(M), yellow(Y) and gray(GY). Each of these inks are pigment ink.
The ink tanks are also available in two capacities: 330 ml and 700 ml.
Each tank is furnished with a notch for preventing incorrect installation, which will allow the tank to be installed only at the position marked in the right color.
An ink tank should be replaced when an ink tank replacement prompt message appears.



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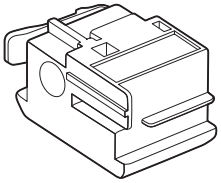
1.2.4 Cutter Unit

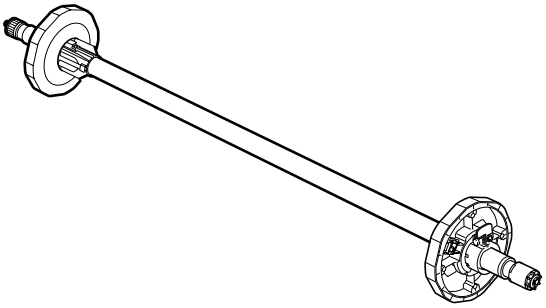
The cutter unit that mounts on the carriage unit is disposable.
Replace the cutter unit when it gets dull.



F-1-5

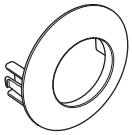
1.2.5 Roll Holder

The roller holder accepts paper tubes having inside diameters of both 2 and 3 inches. It is furnished with attachments for 2- and 3-inch diameter paper tubes.
The roll holder clamps the paper tube of a roll not exceeding 150 mm in outside diameter from the inside.



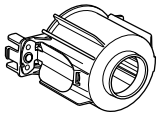
F-1-6

[2-inch paper tube attachment]



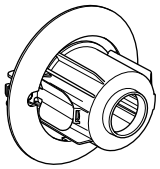
F-1-7

[3-inch paper tube attachment 1]



F-1-8

[3-inch paper tube attachment 2]



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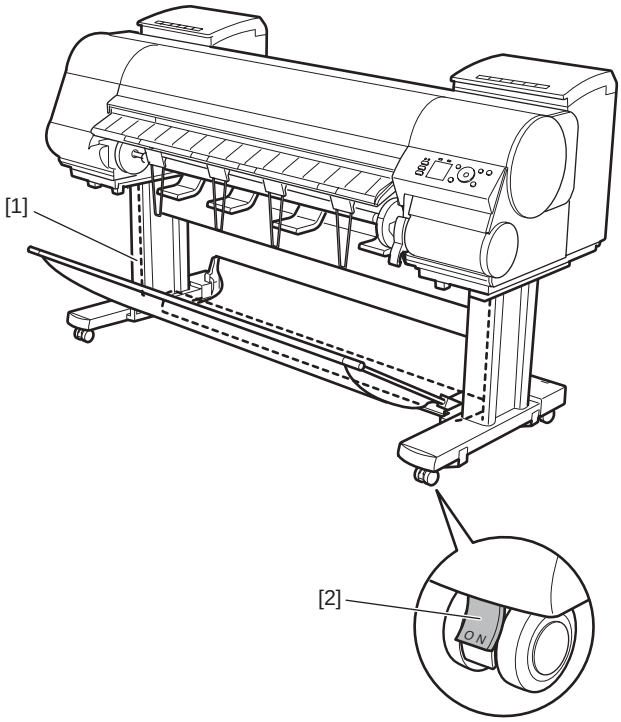
1.2.6 Stand

The stand is equipped with casters so that the printer can be easily moved.



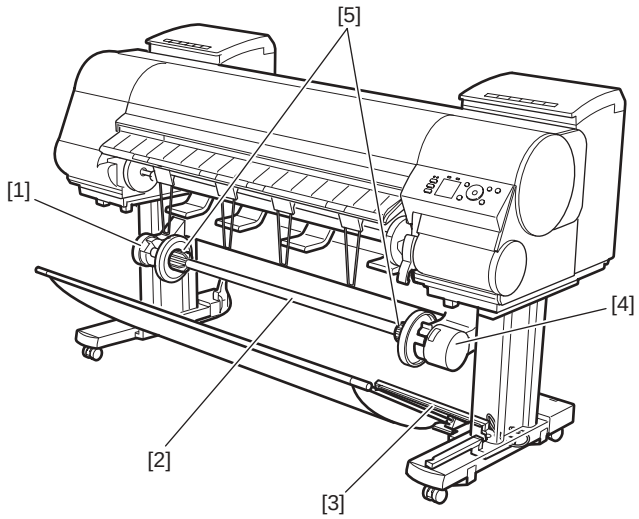
F-1-10

[1] Stand [2] Stopper

1.2.7 Media Take-up Unit

Media take-up unit
The Media Take-up unit spools the 2 or 3 inch core, the roll media (17" to 44"), after it is printed by the host computer.
Take-up begins once the falling paper is detected by the Media take-up paper detection sensor, attached to the weight roller.
The roll media may also be manually spooled, using the button on the media take up unit.
The media take-up unit has an overload protection feature to prevent accidents while spooling rolls. (This feature will disable the motor automatically when an overload occurs while spooling a roll.)

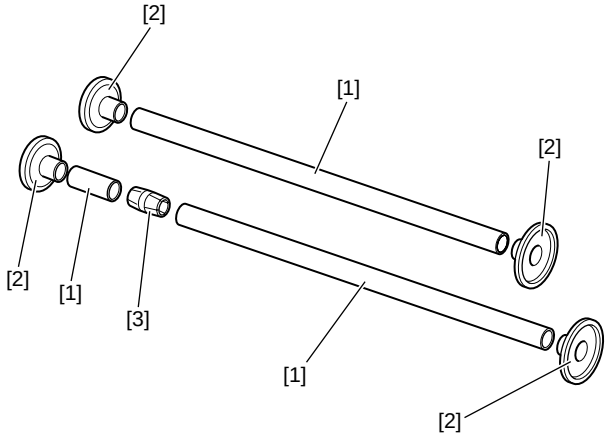
Additional features of the media take-up unit include:
- An adapter may be installed to support a 3-inch paper tube.
- Roll media can be unwound by feeding them backwards to visually check the images.
- Weight rollers varying in length to suit specific roll widths ensure added takeup efficiency.
- The printer detects errors in the media take-up unit as an independent function.
- Linked with the printer's sleep mode.



F-1-11

[1]	Left media take-up unit	[4]	Media take-up unit
[2]	Rewind spool	[5]	3-inch adapter
[3]	Media take-up sensor		

Weight
This weight consists of weight roll(7 pcs.)[1], weight flange(2 sets)[2] and weight joint[3].



F-1-12

1.2.8 Hard Disk Drive

Each print job received from the host computer is saved to the hard disk drive(serial ATA connection) attached to the printer, so the printer can print the job repeatedly as needed, without having to wait for its retransmission from the host computer.

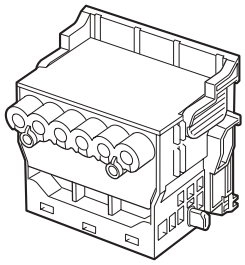
Saving print jobs will offer the following benefits:
- Eased computer workload
A print job may be automatically preserved to the hard disk when printing or may be preserved to the hard disk without printing. A print job preserved can be printed in as many copies as needed without having to use the host computer.

- Reprinting after error occurrence
If the printer encounters errors, such as paper out, while printing a print job, it can resume the print operation as soon as the errors are cleared, without needing its retransmission from the host computer.

- Higher print work efficiency
Print jobs can be printed selectively or in a specified number of copies without using a host computer. Multiple print jobs can be printed batched. Unattended print operations in the nighttime are also possible.

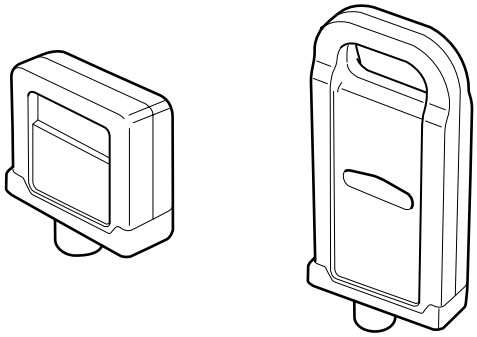
1.2.9 Consumables

Printhead
The consumable printhead is the same as the one that comes with the printer.



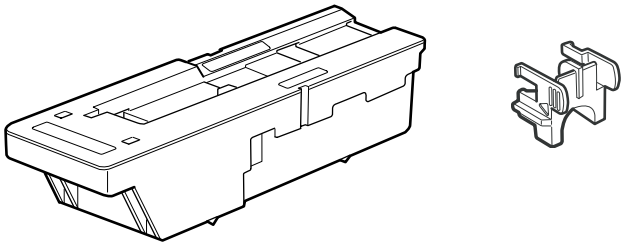
F-1-13

Ink tanks
The consumable ink tanks contain 8 colors: mat black, black, photo cyan, cyan, photo magenta, magenta, yellow and gray. Each tank is available in two capacities: 330 ml and 700 ml.



F-1-14

Maintenance cartridge
The consumable maintenance cartridge (including the shaft cleaner) is the same as the one that comes with the printer.



F-1-15

1.3 Product Specifications

1.3.1 Product Specifications

Type	Bubble jet large-sized paper printer (stand model)
Feeding system	Roll media: Manual (front loading) Cut sheet: Paper tray (front loading)
Feeding capacity	- Roll media One roll Outer diameter of roll: 150 mm or less - Cut sheet 1 sheet
Delivery method	Forward delivery, face up
Sheet delivery capability	1 sheet (using the outout stacker of the stand)
Cutter	Automatic cross-cutter (round blade)
Type of media	Plain Paper, Plain Paper (High Quality), Plain Paper (High Grade), Coated Paper, Heavyweight Coated Paper, Premium Matte Paper, Glossy Photo Paper, Semi-Glossy Photo Paper, Backlit Film, Backprint Film, Flame-Resistant Cloth, Fine Art Photo, Fine Art Heavyweight Photo, Fine Art Textured, Canvas Matte, Premium Coated Paper, Graphic Canvas, Durable Backlit Film, Durable Banner, Matt Coated Paper, Extra Matt Coated Paper, Opaque Paper, Hi Res Graphic Paper, Prem Art Paper Embossed, Prem Art Paper Smooth, Hi Res Barrier Paper, Scrim Banner, Uni Opaque Backlit Film, Roll-Up Film, Water Res Art Canvas, Adhesive Matt Vinyl Stretch
Supported thickness	0.07mm to 0.8mm
Media size (Roll media)	Width: 254mm (10") to 1118mm (44") Length: 203mm (8") to 18m (709") * Outer diameter of roll :150mm or less * The maximum amount of length may vary by the using operating system or the applications.
Media size (Cut sheet)	Width: 203mm (8") to 1118mm (44") Length: 203mm (8") to 1600mm (63")
Printable area (Roll media)	Internal area, excluding a 5-mm top, bottom and left and right margins. * The printable area may vary with each type of paper media used.
Printable area (Cut sheet)	Internal area, excluding a 5-mm top margin, a 23-mm bottom margin and 5-mm left and right margins. * The printable area may vary with each type of paper media used.
Printing recommendation area (Roll media)	Internal area, excluding a 20-mm top margin, a 5-mm bottom margin and 5-mm left and right margins.
Printing recommendation area (Cut sheet)	Internal area, excluding a 20-mm top margin, a 23-mm bottom margin and 5-mm left and right margins.
Borderless printing	* Roll media only width: 254mm(10"), 355.6mm(14"), 431.8mm(17"), 515mm(B2/B3), 594mm(A1/A2), 609.6mm(24"), 841mm(A0/A1), 914.4mm(36"), 1030mm(B0/B1), 1066.8mm(42"), 1117.6mm(44")
Memory	384MB Increase of memory: none
Hard disk drive	250GB (2.5inch, 5400rpm, S-ATA I/F)
Firmware	Flash ROM (update from USB or Ethernet) - Printer description language GARO (Graphic Arts language with Raster Operation)
Emulation	None
Interface	USB 2.0 Hi-speed Network (10BASE-T/100BASE-TX/1000BASE-T)
Operation panel	LCD (160 X 128 dots), 13 keys, 5 LEDs - Panel language English - Message language English, German, French, Italian, Spanish, Chinese, Korean, Russianand and Japanese
Printhead/Ink Tank type	Printhead and separate ink tanks
Printhead	[PF-05] Structure: Integrated six-color assembly - Number of nozzles C, PC, PM, GY: 2,560 for each color X2 - Number of nozzles BK, MBK, M, Y: 2,560 for each color
Ink tank	[PFI-306/8306] BK/MBK/C/M/Y/PC/PM/GY [PFI-706/8706] BK/MBK/C/M/Y/PC/PM/GY Ink type: Pigment ink Ink tank capacity: [PFI-306/8306] 330 ml, [PFI-706/8706] 700 ml
Detection functions (Cover system)	Cover open/closed detection: Yes Left and right ink tank cover open/closed detection: Yes

Detection functions (Ink passage system)	Ink tank presence/absence detection: Yes Remaining ink level detection: Yes Maintenance cartridge presence/absence detection: Yes Used ink tank full detection: Yes
Detection functions (Carriage system)	Printhead presence/absence detection: Yes Carriage position detection: Yes Carriage home position detection: Yes Carriage cover open/closed detection: Yes Carriage temperature detection: Yes Printhead height detection: Yes Non-discharging nozzle detection: Yes Non-discharging nozzle backup feature: Yes
Detection functions (Paper path system)	Paper presence/absence detection: Yes Paper width detection: Yes Skew detection: Yes Paper release lever position detection: Yes Remaining roll media detection: Yes Feed roller rotation detection: Yes
Operating noise	Operating: Approx. 50dB (A) or less Standby: Approx. 35dB (A) or less
Operating environment	Temperature: 15 to 35 degrees centigrade Humidity: 10% to 90%RH
Print quality guaranteed environment	Temperature: 15 to 30 degrees centigrade Humidity: 10% to 80%RH
Power supply	100-240 VAC (50/60 Hz)
Power consumption (Maximum)	During printing: Max. 190W
Power consumption	In power save (sleep) mode: 100-120 VAC : 5W or less 220-240 VAC : 6W or less During standby: 0.5W or less
Printer unit dimensions (WxDxH)	1893mm x 975mm x 1144mm (with stand and output stacker)
Weight	Approx. 143 kg (with stand and output stacker)

1.4 Detailed Specifications

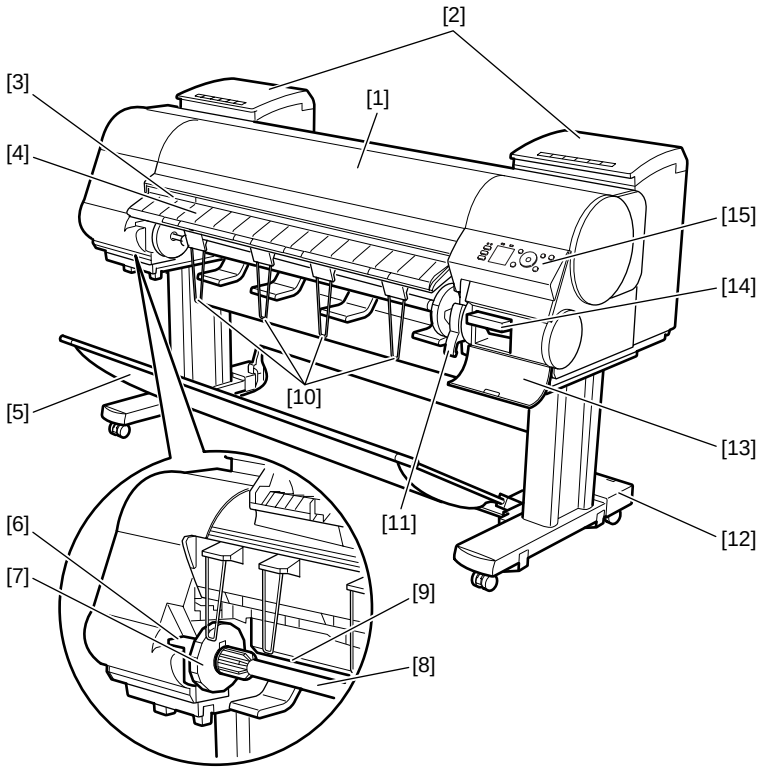
1.4.1 Interface Specifications

a. USB (standard)
(1) Interface type
USB 2.0 Hi-Speed (Full speed (12 Mbits/sec), High speed (480 Mbits/sec))
(2) Data transfer system
Control transfer
Bulk transfer
(3) Signal level
Compliant with the USB standard.
(4) Interface cable
Twisted-pair shielded cable, 5.0 m max.
Compliant with the USB standard.
Wire materials: AWG No.28, data wire pair (AWF: American Wire Gauge)
AWG No.20 to No.28, power distribution wire pair
(5) Interface connector
Printer side: Series B receptacle compliant with USB standard
Cable side: Series B plug compliant with USB standard

b. Network (standard)
(1) Interface type
Interface compliant with IEEE802.3
(2) Data transfer system
IEEE802.0 10Base-T, IEEE802.3u 100Base-TX/Auto-Negotiation, IEEE802.3ab 1000Base-T/Auto-Negotiation, IEEE802.3x Full Duplex
(3) Interface cable
Category 5 (UTP or FTP) cable, 100 m or shorter
Compliant with ANSI/EIA/TIA-568A or ANSI/EIA/TIA-568B
(4) Interface connector
Printer side: Compliant with IEEE802.3, ANSI X3.263, ISO/IEC60603-7
(5) Protocol
IPX/SPX (Netware4.2(J), 5.1(J), 6.0(J)), SNMP, TCP/IP, AppleTalk, HTTP

1.5 Names and Functions of Components

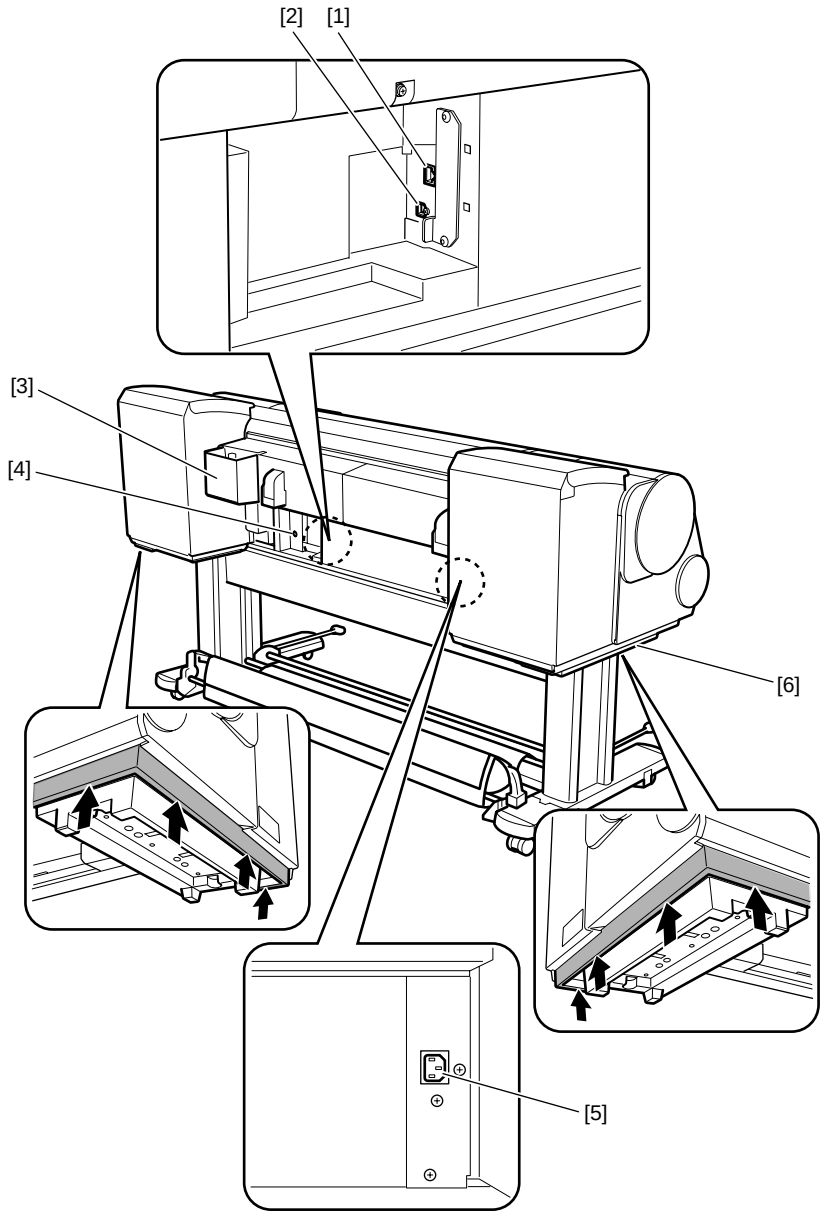
1.5.1 Front



F-1-16

[1] Top Cover
Open this cover to install the Printhead, load paper, and remove any jammed paper from inside the printer as needed.
[2] Ink Tank Cover
Open this cover to replace an Ink Tank.
[3] Ejection Slot
All printed matter is ejected from this port.
[4] Ejection Guide
Guides printed documents as they are ejected. Open this guide when loading a roll.
[5] Output Stacker
A cloth tray that catches ejected documents.
[6] Roll Holder Slot
Slide the Roll Holder into this slot.
[7] Holder Stopper
Secure the roll on the Roll Holder with this part.
[8] Roll Holder
Load the roll on this holder.
[9] Paper Feed Slot
When loading a roll, insert the edge of the roll paper here.
[10] Ejection Support
Prevents printed documents from winding around the Roll Holder or Paper Feed Slot.
[11] Release Lever
Releases the Paper Retainer. Lift this lever toward the front of the printer when loading paper.
[12] Stand
A stand that holds the printer. Equipped with casters to facilitate moving the printer.
[13] Maintenance Cartridge Cover
Open this cover to replace the Maintenance Cartridge.
[14] Maintenance Cartridge
Ink used for maintenance purposes such as head cleaning is absorbed. (Replace the cartridge when it is full.)
[15] Operation Panel
Use this panel to operate the printer and check the printer status.

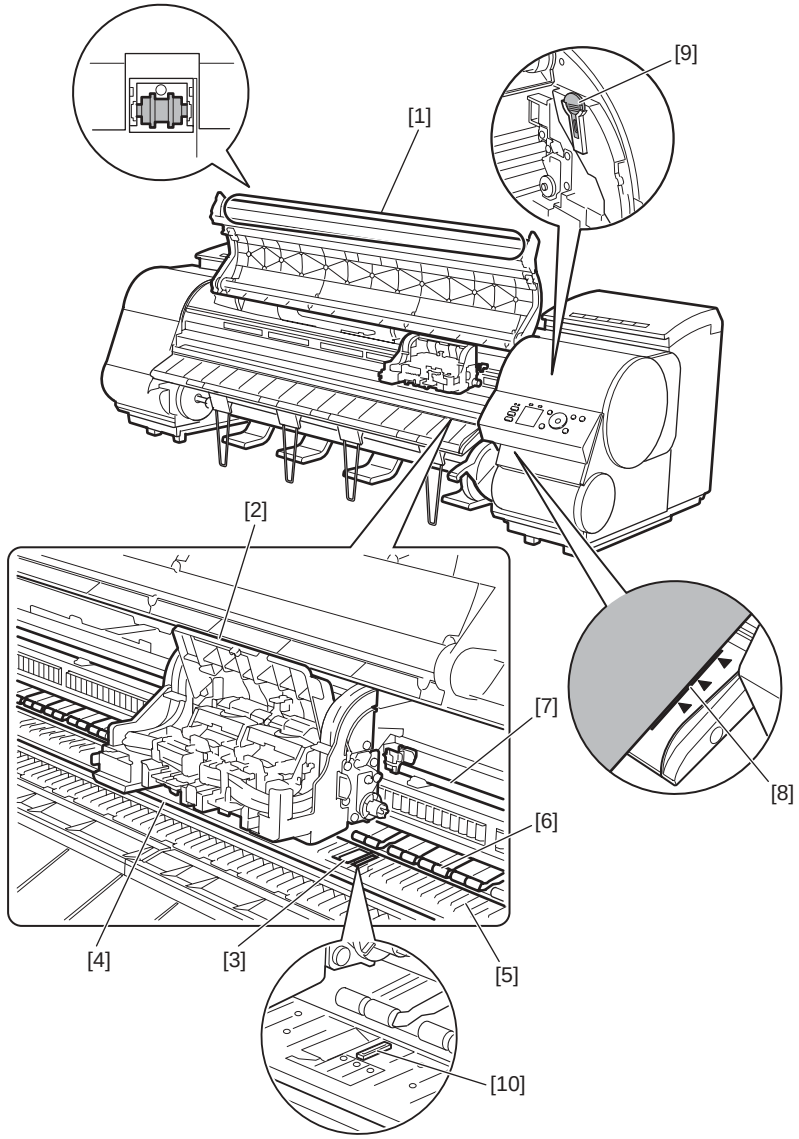
1.5.2 Rear



F-1-17

[1] Ethernet Port
Connect an Ethernet cable to this port. The lamp is lit if the Ethernet cable is connected correctly and communication is possible between the computer and printer.
[2] USB Port
Connect a USB cable to this port. This port is compatible with USB 2.0 Hi-Speed mode.
[3] Accessory Pocket
Holds printer manuals, assembly tools, and other items.
[4] Media Take-up Unit Power Inlet
Connect the power cord of the Media Take-up Unit here.
[5] Power Supply Connector
Connect the power cord to this connector.
[6] Carrying handles
When carrying the printer, have six people hold it by these handles under both sides.

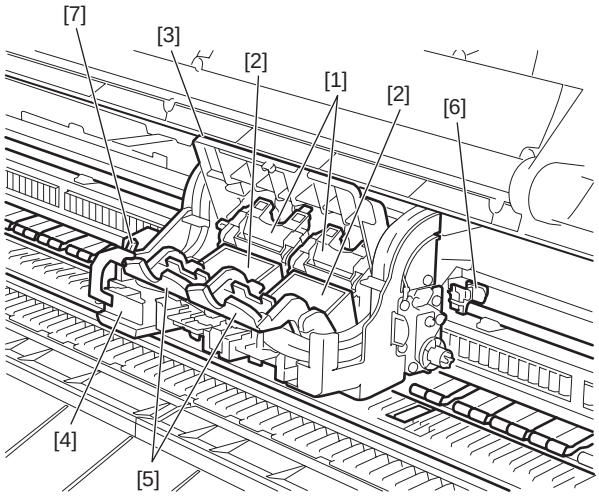
1.5.3 Top Cover (Inside)



F-1-18

[1] Top Cover Roller
Prevents paper from rising when ejected.
[2] Carriage
Moves the Printhead. The carriage serves a key role in printing.
[3] Borderless Printing Ink Grooves
These grooves catch ink outside the edges of paper during borderless printing.
[4] Fixed Blade
The Cutter Unit passes through this blade to cut paper.
[5]Platen
The Printhead moves across the platen to print. The Vacuum holes on the platen hold paper in place.
[6] Pinch Roller
Important in supplying the paper. This retainer holds paper as it is fed.
[7] Carriage Shaft
The Carriage slides along this shaft.
[8] Paper Alignment Line
Align paper with this line when loading it.
[9] Cleaning Brush
When cleaning inside of the Top Cover, use this brush to sweep away paper dust on the Platen.
[10] Switch
Set the switch to the side opposite of the circle mark if the edges of printed images are blurred. Set the switch to the circle mark side before borderless printing.

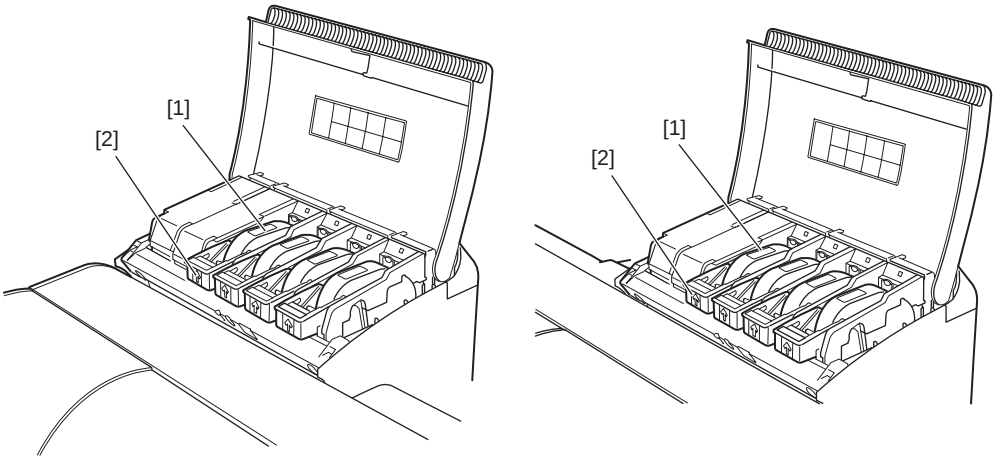
1.5.4 Carriage



F-1-19

[1] Printhead Fixer Cover
Holds the Printhead in place.
[2] Printhead
Equipped with ink nozzles. Printheads serve a key role in printing.
[3] Carriage Cover
Protects the Carriage.
[4] Cutter Unit
A round-bladed cutter for automatic paper cutting. The cutter blade is retracted inside when not cutting.
[5] Printhead Fixer Lever
Locks the Printhead Fixer Cover.
[6] Shaft Cleaner
Prevents the Carriage Shaft from becoming dirty.
[7] Cutter Unit Detachment Lever
Used when replacing the Cutter Unit.

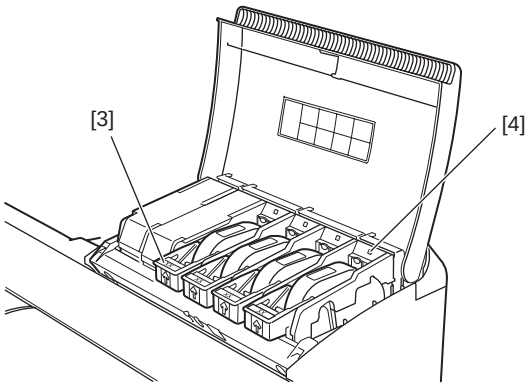
1.5.5 Ink Tank Cover (Inside)



<Left> <Right>

F-1-20

[1] Ink Tank
Cartridges of ink in each color.
[2] Ink Tank Lock Lever
A lever that locks the Ink Tank in place and protects it. Lift and press down the lever when replacing an Ink Tank. To open it, lift the stopper of the lever until it stops, and then push it down toward the front. To close it, push it down until it clicks into place.



F-1-21

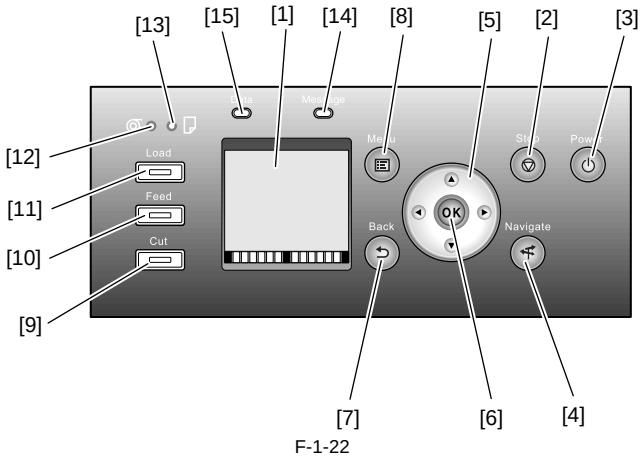
[3] Ink Lamp (Red)
Indicates the state of the Ink Tank as follows when the Ink Tank Cover is opened.
- On: The Ink Tank is installed correctly.
- Off: No Ink Tank is installed, or the ink level detection function is off.
- Flashing slowly: Not much ink is left.
- Flashing rapidly: Ink tank is empty.

[4] Ink Color Label
Load an Ink Tank that matches the color and name on this label.

1.6 Basic Operation

1.6.1 Operation Panel

This section explains the functions of the buttons and the meanings of the LEDs on the operation panel.



F-1-22

[1] Display
Printer menus, statuses, and messages are shown on this display.
[2] [Power] button
Use this button to turn on or off the printer.
When the printer is powered or in the sleep mode, the [Power] button lamp stays lit.
[3] [Stop] button
Use this button to stop execution of a job or drying ink.
[4] [Navi] button
Use this key to confirm the procedures for loading/unloading media, replacing an ink tank, and replacing the printhead.
[5] Direction buttons

- ◄ button: Pressing this button on the [tab selection screen] moves the tab. When a menu requiring you to enter a value is selected, pressing this button allows you to move to the left-hand digit.
- ▲ button: Pressing this button in a menu displays the upper item or setting value.
- ► button: Pressing this button on the [tab selection screen] moves the tab. When a menu requiring you to enter a value is selected, pressing this button allows you to move to the right-hand digit.
- ▼ button: Pressing this button in a menu displays the lower item or setting value.

[6] [OK] button
Pressing this button on the [tab selection screen] displays the menu for the displayed tab.
In the menu for a tab, pressing this button at the item preceded by [+] allows you to move to the bottom layer of menu items, where you can execute a menu item or set values. Also press this button when a message asking you to press the [OK] button is shown on the display.
[7] [Back] button
Pressing this button displays the preceding screen.
[8] [Menu] button
Pressing this button displays the [tab selection screen] screen.
[9] [Media Cut] button
When roll media is loaded, pressing this button cuts the media.
[10] [Media Feed] button
When roll media is loaded, pressing this button allows you to change the media position.
[11] [Media Change] button
Press this button when loading/replacing media.
[12] [Cut Sheet] lamp (green)
This lamp stays lit when cut sheet is selected as a media type.
[13] [Roll Media] lamp (green)
This lamp stays lit when roll media is selected as a media type.
[14] Message lamp (orange)
- Stays lit: A warning message is being displayed.
- Blinking: An error message is being displayed.
- Not lit: The printer is normal or not powered.

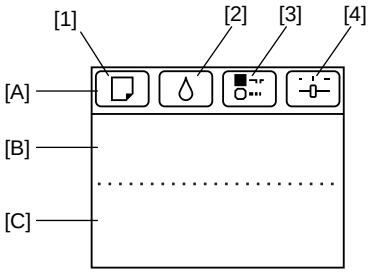
[15] Data reception lamp (green)
- Blinking: When the printer is making prints, this lamp indicates that a print job is being received or processed. When the printer is not making prints, this lamp indicates that the print job is suspended or the firmware data is being received.
- Not lit: This lamp indicates that there is no print job.

MEMO:
When the printer is in the sleep mode, pressing any button other than the [Power] button wakes up the printer.

1.6.2 Display

When the printer starts, the [tab selection screen] appears on the display.
There are four types of tabs on which the relevant printer status, menu, and error information are displayed.

The tab appears as the icon to the top field of display. The tab moves by ◀ key or ▶ key.



F-1-23

[1] Media tab
This tab shows the printer status and menu related to media. When this tab is shown in reverse video, pressing the [OK] button displays the [Media] menu.
-[A] Top field of display: Shows the media icon in reverse video.
-[B] Middle field of display: Shows the printer status and a menu name.
-[C] Bottom field of display: Shows the media type in the first row and the media size in the second row.

[2] Ink tab
This tab shows the printer status and menu related to ink. When this tab is shown in reverse video, pressing the [OK] button displays the [Ink] menu.
-[A] Top field of display: Shows the ink icon in reverse video.
-[B] Middle field of display: Shows the printer status and a menu name.
-[C] Bottom field of display: Shows the remaining ink levels of the ink tanks loaded in the printer.

[3] Job tab
This tab shows the printer status and menu related to the print job. When this tab is shown in reverse video, pressing the [OK] button displays the [Job] menu.
-[A] Top field of display: Shows the job icon in reverse video.
-[B] Middle field of display: Shows the printer status and a menu name.

[4] Setup/Adjustment tab
This tab shows the printer status and menu related to setup/adjustment. When this tab is shown in reverse video, pressing the [OK] button displays the [Setup/Adjustment] menu.
-[A] Top field of display: Shows the setup/adjustment icon in reverse video.
-[B] Middle field of display: Shows the printer status and a menu name.
-[C] Bottom field of display: Shows the remaining ink level of the maintenance cartridge.

1.6.3 Main Menu

The printer has a Main menu which includes a menu related to maintenance such as adjustment of ink ejection position of each nozzle and head cleaning, a menu related to printing settings such as auto cutting and ink drying time, and a menu related to parameters such as a message language.

1. Menu Operation

a) Displaying menu on each tab

Press the ◄ key or ► key on the [Tab Selection] screen to select a tab, and press the [OK] key.
A menu associated with each tab is displayed.

Press the ▲ key or ▼ key to select a menu and press the [OK] key.
The menu is selected and menu items are displayed.
Select a menu with [+] on the left side and press the [OK] key to navigate to lower level menus.

b) Setting menu items

Press the ▲ key or ▼ key to select an item to set and press the [OK] key.
The item is checked on the left side check box to confirm that it is set.
After 2 seconds, the menu that is one level above is displayed.

c) Setting numeric value for a menu item

Proceed as follows to set a numeric value for an item such as network settings.

1. Press the ◄ key or ► key to move the underscore to the field you want to enter a numeric value.
2. Press the ▲ key or ▼ key to enter a numeric value.
3. Repeat steps 1 and 2 and press the [OK] key when finished.

2. Main Menu
The structure and settings of the main menu is as follows. The asterisk mark "*" is default setting.
[Paper Menu]

T-1-1

First Level	Second Level	Third Level	Fourth Level	Fifth Level
[Load Paper]	[Roll Paper]			
	[Cut Sheet]			
[Eject Paper]				
[Chg. Paper Type]	[Roll Paper]	(The paper type is displayed here.)		
	[Cut Sheet]	(The paper type is displayed here.)		
[Chg. Paper Size]	[Sheet Size]*2	(The paper type is displayed here.)		
		[CustomPaperSize]	(Set the paper length and width.)	
	[Roll Length]*1	(Set the paper length.)		
	[Roll Width]*2	(Set the paper width.)		
[ManageRemainRoll]	[Off]*			
	[On]			
[Paper Details]	(The paper type is displayed here.)	[Head Height]	[Automatic]*	
			[Highest]	
			[High]	
			[Standard]	
			[Low]	
			[Lowest]	
			[Super Low]	
		[Skew Check Lv.]	[Standard]*	
			[Loose]	
			[Off]	
		[Cutting Mode]	[Automatic]	
			[Eject]	
			[Manual]	
		[Cut Speed]	[Fast]	
			[Standard]	
			[Slow]	
		[Trim Edge First]	[Automatic]	
			[Off]	
			[On (Preset Len)]	
			[On(Input Length)]	
			[Manual]	
		[CutDustReduct.]	[Off]	
			[On]	
		[VacuumStrngth]	[Automatic]*	
			[Strongest]	
			[Strong]	
			[Standard]	
			[Weak]	
			[Weakest]	
		[Roll Tension]	[High]	
			[Standard]	

T-1-2

First Level	Second Level	Third Level	Fourth Level	Fifth Level
[Paper Details]	(The paper type is displayed here.)	[Scan Wait Time]	[Dry time]	[Off]
				[1 sec.]
				[3 sec.]
				[5 sec.]
				[7 sec.]
				[9 sec.]
			[Area]*18	[Entire area]*
				[Leading edge]
		[Roll DryingTime]	[Off]	
			[30 sec.]	
			[1 min.]	
			[3 min.]	
			[5 min.]	
			[10 min.]	
			[30 min.]	
			[60 min.]	
		[NearEnd RollMrgn]	[5mm]	
			[20mm]	
		[NearEnd Sht Mrgn]	[5mm]	
			[20mm]	
		[Bordless Oversize]	[Standard]*	
			[Little]	
		[Width Detection]	[Off]	
			[On]*	
		[Return Defaults]		
[Paper Details]				
[Keep Paper Type]	[Off]*			
	[On]			

[Ink Menu]

T-1-3

First Level	Second Level	Third Level	Fourth Level	Fifth Level
[Rep. Ink Tank]				
[Head Cleaning A]				

[Job Menu]

T-1-4

First Level	Second Level	Third Level	Fourth Level	Fifth Level
[Print Job]	[Job List]	(Select Print Job.)	[Delete]	
			[Preempt Jobs]*11	
[Stored Job]	[Mailbox List]	(Enter a password if one has been set.)	[Job List]	[Print]
				[Delete]
			[Print Job List]	
[Job Log]	(Choose from information about the latest three print jobs.)	[Document Name]		
		[User Name]		
		[Page Count]		
		[Job Status]	[OK]	
			[CANCELED]	
		[Print Start Time]	[yyyy/mm/dd hh:mm:ss]	
		[Print End Time]	[yyyy/mm/dd hh:mm:ss]	
		[Print Time]	[xxxsec.]	
		[Output Img. Size]	[xxxxxxxxsq.mm]	
		[Media Type]		
		[Paper Consumed]		
		[Paper Length]		
		[Paper Width]		
		[Interface]	[USB]	
			[Network]	
			[HDD]	
		[Ink Consumed]	[Tot.Ink Consumed]	xxx.xxx ml
			(The ink color is displayed here.)	xxx.xxx ml
		[Print Settings]		
		[Head Height]		
		[Temp./Humidity]		
		[Adjustment reg.]		
[Print Job Log]				
[Pause Print]	[Off]*			
	[On]			
[HDD Information]	[Total capacity Box free space]			

[Set./Adj. Menu]

T-1-5

First Level	Second Level	Third Level	Fourth Level	Fifth Level
[Test Print]	[Nozzle Check]			
	[Status Print]			
	[Interface Print]			
	[Paper Details]			
	[Print Job Log]			
	[Menu Map]			
[Adjust Printer]	[Head Posi. Adj.]	[Standard]		
		[Simple]		
		[Other]	[Initial adjustmt]	
			[Manual]	
	[Feed Priority]	[Adj. Priority]*6	[Automatic]*	
			[Print Quality]	
			[Print Length]	
		[Adj. Quality]*4*6	[Auto(GenuinePpr)]	
			[Auto(OtherPaper)]	
			[Manual]	
		[Adjust Length]*5*6	[AdjustmentPrint]	[A:High]
				[B:Standard/Draft]
			[Change Settings]	[A:High]
				[B:Standard/Draft]
	[Calibration]	[Auto Adjust]		
		[Calibration Log]	[Date]	
			[Paper Type]	
			[Adjustment Type]	
		[Use Adj. Value]	[Disable]	
			[Enable]*	
		[Set Exec. Guide]	[Off]*	
			[On]	
		[Return Defaults]		
[Maintenance]	[Head Cleaning]	[Head Cleaning A]		
		[Head Cleaning B]		
	[Nozzle Check]			
	[Replace P.head]	[Printhead L]		
		[Printhead R]		
		[L & R Printheads]		
	[Repl. maint cart]			
	[Repl. S. Cleaner]			
	[Change Cutter]			
[Interface Setup]	[EOP Timer]*12	[10 sec.]		
		[30 sec.]		
		[1 min.]		
		[2 min.]		
		[5 min.]		
		[10 min.]*		
		[30 min.]		
		[60 min.]		

T-1-6

First Level	Second Level	Third Level	Fourth Level	Fifth Level	Sixth Level	Seventh Level
[Interface Setup]	[TCP/IP]*12	[IPv4]	[IPv4 Mode]	[Automatic]		
				[Manual]*		
			[Protocol]*7	[DHCP]	[On]	
					[Off]*	
				[BOOTP]	[On]	
					[Off]*	
				[RARP]	[On]	
					[Off]*	
			[IPv4 Settings]*13	[IP Address]	xxx.xxx.xxx.xxx	
				[Subnet Mask]	xxx.xxx.xxx.xxx	
				[Default G/W]	xxx.xxx.xxx.xxx	
			[DNS Settings]*13	[DNS Dync update]	[On]	
					[Off]*	
				[Pri. DNS SrvAddr]		
				[Sec. DNS SrvAddr]		
				[DNS Host Name]		
				[DNS Domain Name]		
		[IPv6]	[IPv6 Support]	[On]		
				[Off]*		
			[IPv6 StlessAddrs]*9	[On]*		
				[Off]		
			[DHCPv6]*9	[On]		
				[Off]*		
			[DNS Settings]*9*13	[DNS Dync update]	[Statefull Addr]	[On]
						[Off]*
					[Stateless Addr]	[On]
						[Off]*
				[Pri. DNS SrvAddr]		
				[Sec. DNS SrvAddr]		
				[DNS Host Name]		
				[DNS Domain Name]		
	[NetWare]*12	[NetWare]	[On]			
			[Off]*			
		[Frame Type]*8	[Auto Detect]			
			[Ethernet 2]			
			[Ethernet 802.2]*			
			[Ethernet 802.3]			
			[Ethernet SNAP]			
		[Print Service]*8	[BinderyPServer]			
			[RPrinter]			
			[NDSPServer]			
			[NPrinter]			

T-1-7

First Level	Second Level	Third Level	Fourth Level	Fifth Level
[Interface Setup]	[AppleTalk]*12	[On]		
		[Off]*		
	[Ethernet Driver]*12	[Auto Detect]	[On]*	
			[Off]	
		[Comm.Mode]*10	[Half Duplex]*	
			[Full Duplex]	
		[Ethernet Type]*10	[10Base-T]*	
			[100Base-TX]	
			[1000Base-T]	
		[Spanning Tree]	[Not Use]*	
			[Use]	
		[MAC Address]	xxxxxxxxxxxx	
	[Interface Print]*12			
	[Return Defaults]*12			
[System Setup]	[Sleep Timer]*19	[5 min.]*		
		[10 min.]		
		[15 min.]		
		[20 min.]		
		[30 min.]		
		[40 min.]		
		[50 min.]		
		[60 min.]		
		[210 min.]		
	[Shut Down Timer]	[off]		
		[5 min.]		
		[10 min.]		
		[30 min.]		
		[1 hour]		
		[4 hours]		
		[8 hours]		
		[12 hours]		
	[Buzzer]	[Off]		
		[On]*		
	[Contrast Adj.]	-4,-3,-2,-1,0*,+1,+2,+3,+4		
	[Date & Time]*12	[Date]	[yyyy/mm/dd]*14	
			[Time]	[hh:mm]
	[Date Format]*12	[yyyy/mm/dd]*		
		[dd/mm/yyyy]		
		[mm/dd/yyyy]		
	[Language]	[English]		
		[Japanese]		
		[Francais]		
		[Italiano]		
		[Deutsch]		
		[Espanol]		
		[Russian]		
		[Chinese] (simplified)		
		[Korean]		

T-1-8

First Level	Second Level	Third Level	Fourth Level	Fifth Level
[System Setup]	[Time Zone]*12	[0:London(GMT)]		
		[+1:Paris,Rome]		
		[+2:Athens,Cairo]		
		[+3:Moscow]		
		[+4:Eerevan,Baku]		
		[+5:Islamabad]		
		[+6:Dacca]		
		[+7:Bangkok]		
		[+8:Hong Kong]		
		[+9:Tokyo,Seoul]		
		[+10:Canberra]		
		[+11NewCaledonia]		
		[+12:Wellington]		
		[-12:Eniwetok]		
		[-11:Midway is.]		
		[-10Hawaii(AHST)]		
		[-9:Alaska(AKST)]		
		[-8:Oregon (PST)]		
		[-7:Arizona(MST)]		
		[-6:Texas(CST)]		
		[-5:NewYork(EST)]		
		[-4:Santiago]		
		[-3:Buenos Aires]		
		[-2:]		
		[-1:Cape Verde]		
	[Length Unit]	[meter]*		
		[feet/inch]		
	[Detect Mismatch]	[Pause]		
		[Warning]		
		[None]*		
		[Hold Job]*2		
	[Paper Size Basis]	[Sht Selection 1]	[ISO A3+]*	
			[13"X19" (Super B)]	
		[Sht Selection 2]	[ISO B1]*	
			[28"X40" (ANSI F)]	
	[Keep Paper Size]	[Off]*		
		[On]		
	[Rep.P.head Print]	[Off]		
		[On]*		

T-1-9

First Level	Second Level	Third Level	Fourth Level	Fifth Level
[System Setup]	[Nozzle Check]	[Frequency]	[Standard]*	
			[1 page]	
			[10 pages]	
			[Off]	
		[Warning]	[Off]*	
			[On]	
	[CarriageScanWidth]	[Automatic]*		
		[Fixed]		
	[Use RemoteUI]*12	[On]*		
		[Off]		
	[Reset PaprSetngs]*12			
	[Erase HDD Data]*12	[High Speed]		
		[Secure High Spd.]		
		[Secure]		
	[Output Method]	[Print]*		
		[Print (Auto Del)]		
		[Save: Box XX]		
	[Print After Recv]	[Off]*		
		[On]		
	[Common Box Set.]*12	[Print]		
		[Print (Auto Del)]*		
	[Show Job Log]	[Off]		
		[On]*		
[Take-up Reel]	[Use Take-up Reel]	[Disable]*		
		[Enable]		
	[Auto Feed]*16			
	[Skip Take-up Err]*17	[Off]*		
		[On]		
[Prep.MovePrinter]	[Level 1]			
	[Level 2]			
	[Level 3]			
[Admin. Menu]*12	[Change Password]*13	(The screen for setting the password is displayed)		
	[Init.Admin.Pswd]*13			
[Printer Info]	[Paper Info]			
	[Ink Info]			
	[Head Info]			
	[System Info]			
	[Error Log]			
	[Other Counter]			

*1: Available only if ManageRemainRoll is On.
*2: Available only if Width Detection is set to Off.
*3: Available after Auto(Advanced) in Head Posi. Adj. has been used once.
*4: Available when you have specified Feed Priority > Adj. Priority > Automatic or Print Quality.
*5: Available when you have specified Feed Priority > Adj. Priority > Automatic or Print Length.
*6: Displayed if a sheet is loaded in the printer.
*7: Not shown if you have set IPv4 Mode to Manual.
*8: Not shown if you have set NetWare to Off.
*9: Not displayed if IPv6 Support is Off.
*10: Not shown if you have set Auto Detect to On.
*11: Print Anyway is displayed when a job being held is selected.
*12: Viewing and configuration is possible for administrators, and only viewing for other users.
*13: Viewing and configuration is possible for administrators only.
*14: Follows the setting in Date Format.
*15: Displayed only when the Media Take-up Unit is attached.
*16: Available if: Use Take-up Reel is Enable, roll paper is loaded, and you have not executed Auto Feed for the loaded roll.
*17: Available when Use Take-up Reel is Enable.
*18: Leading edge is not available as a setting option in the Paper Detailed Settings dialog box of the printer driver.
*19: Default setting for the time to enter the power save mode/sleep mode is recommended.

3. Main menu during printing

The structure of the main menu during printing is as follows.

T-1-10

First Level	Second Level	Third Level	Fourth Level	Fifth Level
[Adj. Fine Feed]				
[Printer Info]	[Paper Info]			
	[Ink Info]			
	[Head Info]			
	[System Info]			
	[Error Log]			
	[Other Counter]			

4. Main Menu Settings
Main menu items are described in the following tables.

[Paper Menu]

T-1-11

Setting Item		Description/Instructions
[Load Paper]		Select either roll paper or cut sheet.
[Eject Paper]		Choose this item before removing loaded paper.
[Chg. Paper Type]		Change currently set paper type.
[Chg. Paper Size]		Change currently set paper size.
[ManageRemainRoll]		Choose On to print a barcode at the end of a roll before you remove it. The printed barcode can be used in managing the amount of roll paper left. ChooseOff if you prefer not to print the barcode.
[Paper Details] (The paper type is displayed here.)	[Head Height]	Adjust the Printhead height.
	[Skew Check Lv.]	If you print on the paper that has an irregular width, choose Loose for a higher skew detection threshold, or choose Off to disable skew detection. However, if paper is loaded askew when detection is Off, note that paper jams or Platen soiling may occur.
	[Cutting Mode]	Select whether to use standard round blade cutter or not. Select [Automatic] to cut paper after printing. Select [Manual] to print a line at the cut position after printing without cutting. Select [Eject] to prevent the printout from dropping until the ink dries after printing.
	[Cut Speed]	Choose the cutting speed. If you use adhesive paper, choosing Slow helps prevent adhesive from sticking to the cutter and keeps the cutter sharp.
	[Trim Edge First]	If a roll is loaded, the end of the paper will be cut.
	[CutDustReduct.]	Choose On to reduce the amount of debris generated when cutting film and similar media by printing a line at the cut position. This option reduces the amount of debris given off after cutting. It also helps prevent adhesive from sticking to the cutter and keeps the cutter sharp if you use adhesive paper.
	[VacuumStrngth]	Specify the level of suction that holds paper against the Platen.
	[Roll Tension]	Choose the back tension of the roll media.
	[Scan Wait Time]	Specify the time to wait for the ink to dry between each scan in bidirectional printing, in consideration of how quickly the ink dries. Note that printing will take longer if you specify a wait time.
	[Roll DryingTime]	Specify the time to wait for the ink to dry for each sheet.
	[NearEnd RollMrgn]	Specify the minimum margin at the leading edge of roll paper to ensure better printing quality at the leading edge. Note that if you choose 5mm, it may lower the printing quality at the leading edge and affect feeding accuracy. The printed surface may be scratched, and ink may adhere to the leading edge. It may also cause the Platen to become soiled.
	[NearEnd Sht Mrgn]	Specify a margin at the leading edge of sheets to ensure better printing quality at the leading edge. Note that if you choose 5mm, it may lower the printing quality at the leading edge and affect feeding accuracy. The printed surface may be scratched, and ink may adhere to the leading edge.
	[Bordless Oversize]	Choose the margin during borderless printing.
	[Width Detection]	Make this setting when the print size is different from the media size, for example, when you want to make a print within a frame. When you select [OFF], the paper width is not detected.
	[Return Defaults]	Choose OK to restore Paper Details to the factory default values.
[Print Paper Detail]		Print the paper settings set with [Paper Details].
[Keep Paper Type]		Select [On] to continue using the same type of paper.

[Ink Menu]

T-1-12

Setting Item	Description/Instructions
[Rep. Ink Tank]	When replacing the Ink Tank, choose Yes and follow the instructions on the screen.
[Head Cleaning A]	Specify Printhead cleaning options. Execute Head Cleaning A if printing is faint, oddly colored, or contains foreign substances.

[Job Menu]

T-1-13

Setting Item				Description/Instructions
[Print Job]	[Job List]	(Select Print Job.)	[Delete]	Delete the current job or queued jobs.
			[Preempt Jobs]	Print the job first after the current print job is finished printing.
[Stored Job]	[Mailbox List]	(Enter a password if one has been set.)	[Job List]-[Print]	Prints a saved job.
			[Job List]-[Delete]	Deletes a saved job.
			[Print Job List]	Prints a list of saved jobs.
[Job Log]	(Choose from information about the latest three print jobs.)	[Document Name]		Indicates the document name of the selected print job.
		[User Name]		Indicates the name of the user who sent the print job.
		[Page Count]		Indicates the number of pages in the job.
		[Job Status]		Indicates the printing results.
		[Print Start Time]		Indicates when the print job was started.
		[Print End Time]		Indicates when the print job was finished.
		[Print Time]		Indicates the time required to print the job.
		[Output Img. Size]		Indicates the image size in the print job.
		[Media Type]		Indicates the type of paper in the print job.
		[Paper Consumed]		Indicates the consumption of paper.
		[Paper Length]		Indicates the length of paper.
		[Paper Width]		Indicates the width of paper.
		[Interface]		Indicates the interface used for the print job.
		[Ink Consumed]		Indicates a rough estimate of how much ink was consumed per job.
		[Print Settings]		A counter for maintenance purposes. Indicates the job print settings.
		[Head Height]		A counter for maintenance purposes. Indicates the head height when jobs were printed.
		[Temp./Humidity]		A counter for maintenance purposes. Indicates the temperature and humidity when jobs were printed.
		[Adjustment reg.]		A counter for maintenance purposes. Indicates the adjustment conditions applied to jobs.
[Print Job Log]				Print the print job information such as paper type, size, and ink consumption. Ink consumption is the approximate amount of ink used to print one sheet.
[Pause Print]				Select [On] to stop printing.
[HDD Information]				Indicates the total hard disk capacity and the mail box free space.

[Set./Adj. Menu]

T-1-14

Setting Item				Description/Instructions
[Test Print]	[Nozzle Check]			Print a nozzle check pattern.
	[Status Print]			Print the printer information.
	[Interface Print]			Print the interface settings.
	[Paper Details]			Prints the paper settings set with [Paper Details].
	[Print Job Log]			Print print job information such as paper type, size, and ink consumption. Ink consumption is the approximate amount of ink used to print one sheet.
	[Menu Map]			Print the menu list.
[Adjust Printer]	[Head Posi. Adj.]			The printer prints and reads a test pattern for automatic or manual adjustment of Printhead alignment relative to the printing direction.
	[Feed Priority]	[Adj. Priority]	[Automatic]	Set the priority feed precision. Normally select [Automatic]. Select [Print Quality] to print at high quality. Select [Print Quality] to reduce horizontal streaks. Select [Print Length] to accurately control the feed amount. However, selecting [Print Length] may cause colors to become slightly uneven in the carriage scan direction.
			[Print Quality]	
			[Print Length]	
		[Adj. Quality]	[Auto(GenuinePpr)]	Set when using paper described in the paper reference guide. A pattern to adjust the paper feed amount is printed, and the feed amount is automatically adjusted from the printed result.
			[Auto(OtherPaper)]	Set when using paper not described in the paper reference guide. A pattern to adjust the paper feed amount is printed, and the feed amount is automatically adjusted from the printed result. This takes longer than [Auto (GenuinePpr)] to print and consumes more ink.
			[Manual]	Select for paper that cannot be adjusted by [Auto(GenuinePpr)] or [Auto(OtherPaper)], such as highly transparent paper. Print a pattern to adjust the paper feed amount according to the type of paper.
		[Adjust Length]	[AdjustmentPrint]-[A:High]/[B:Standard/Draft]	Print a test pattern for adjustment relative to paper stretching or shrinkage, after which you can enter the amount of adjustment.
			[Change Settings]-[A:High]/[B:Standard/Draft]	Displayed when [Print Length] is selected as [Adj. Priority] for [Feed Priority]. Adjust the expansion rate of the currently loaded paper. Enter the result adjusted with [AdjustmentPrint] or the difference with your own measurement in %. Increase the adjustment value to increase the feed amount for paper that tends to expand, and reduce it for paper that tends to shrink.
	[Calibration]	[Auto Adjust]		Choose Yes for automatic adjustment of the adjustment value after a test pattern for color calibration is printed. The new color calibration adjustment value is applied in all print jobs.
		[Calibration Log]		Check the date when color calibration was executed, as well as the type of paper used, as shown on the Display Screen.
		[Use Adj. Value]		Choose Disabled >OK if you prefer not to apply the color calibration adjustment value in print jobs. The printer driver settings will be used instead. Choose Enabled >OK to apply the color calibration adjustment value in print jobs. However, printer driver settings are given priority.
		[Set Exec. Guide]		Choose On if you want to be displayed the message at the recommended timing of the calibration.
		[Return Defaults]		Clear the color calibration adjustment value and the execution log.
[Maintenance]	[Head Cleaning]			Specify Printhead cleaning options. Choose Head Cleaning A if printing is faint, oddly colored, or contains foreign substances. Choose Head Cleaning B if no ink is printed at all, or if printing is not improved by Head Cleaning A.
	[Nozzle Check]			Print a nozzle check pattern.
	[Replace P.head]			Not displayed during a warning message that the remaining Maintenance Cartridge capacity is low. When replacing the Printhead, choose Yes and follow the instructions on the screen.
	[Repl. maint cart]			When exchanging the maintenance cartridge, choose Yes and follow the instructions on the screen.
	[Repl. S. Cleaner]			When replacing the Shaft Cleaner, choose Yes and follow the instructions on the screen.
	[Change Cutter]			When transferring the printer to another location, choose the level of transfer and follow the instructions on the screen.

T-1-15

Setting Item					Description/Instructions
[Interface Setup]	[EOP Timer]				Specify the timeout period before cancellation of print jobs that cannot be received by the printer.
	[TCP/IP]	[IPv4]	[IPv4 Mode]		Choose whether the printer IP address is configured automatically or a static IP address is entered manually.
			[Protocol]	[DHCP]/ [BOOTP]/ [RARP]	Specify the protocol used to configure the IP address automatically.
			[IPv4 Settings]	[IP Address]/ [Subnet Mask]/ [Default G/W]	Specify the printer network information when using a static IP address. Enter the IP address assigned to the printer, as well as the network subnet mask and default gateway.
			[DNS Settings]	[DNS Dync update]	Specify whether DNS server registration is updated automatically.
				[Pri. DNS SrvAddr]/[Sec. DNS SrvAddr]	Specify the DNS server address.
				[DNS Host Name]	Specify the DNS host name.
				[DNS Domain Name]	Specify the DNS domain name.
		[IPv6]	[IPv6 Support]		Set whether to support IPv6 connection.
			[IPv6 StlessAddrs]		Set whether to use IPv6 stateless address.
			[DHCPv6]		Set whether to use DHCPv6 setting.
			[DNS Settings]	[DNS Dync update]-[Statefull Addr]/ [Stateless Addr]	Specify whether DNS server registration is updated automatically.
				[Pri. DNS SrvAddr]/[Sec. DNS SrvAddr]	Specify the DNS server address.
				[DNS Host Name]	Specify the DNS host name.
				[DNS Domain Name]	Specify the DNS domain name.
	[NetWare]	[NetWare]			Specify the NetWare protocol. To apply your changes, choose Register Setting.
		[Frame Type]			Specify the frame type to use.
		[Print Service]			Choose the print service.
	[AppleTalk]				Specify whether to use the AppleTalk protocol. To apply your changes, choose Register Setting.
	[Ethernet Driver]*12	[Auto Detect]			Specify the communication method. To apply your changes, choose Register Setting. Choose On for automatic configuration of the LAN communication protocol. Choose Off to use settings values of Comm.Mode and Ethernet Type.
		[Comm.Mode]			Choose the LAN communication method.
		[Ethernet Type]			Choose the LAN transfer rate.
		[Spanning Tree]			Choose whether spanning-tree packets are supported over the LAN.
		[MAC Address]			Displays the MAC address.
	[Interface Print]				Print the interface settings.
	[Return Defaults]				Select [OK] to return the [Interface Setup] settings to factory default.

T-1-16

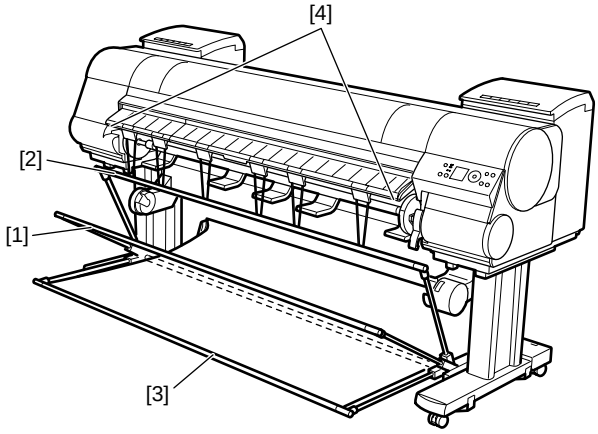
Setting Item			Description/Instructions
[System Setup]	[Sleep Timer]		Specify the period before the printer enters Sleep mode.
	[Shut Down Timer]		Specify the period before the printer shuts down.
	[Buzzer]		Set the buzzer. Choose On for the buzzer to sound once for warnings and three times for errors.
	[Contrast Adj.]		Adjust the Display Screen contrast level.
	[Date & Time]	[Date]	Set the current date.
		[Time]	Set the current time. This can be set only when [Date] is set.
	[Date Format]		Specify the date format.
	[Language]		Specify the language used on the Display Screen.
	[Time Zone]		Specify the time zone. Time zone options indicate a main city in this time zone and the difference from Greenwich Mean Time.
	[Length Unit]		Choose the unit of measurement when roll length is displayed. You can switch the unit displayed for the remaining paper amount.
	[Detect Mismatch]		Set the printing behavior when the paper type and size set with the printer menu does not match the paper type and size set with the printer driver. Select [Pause] to pause printing. Select [Warning] to print a warning and continue printing. Select [None] to continue printing without displaying a warning. Select [Hold Job] to queue the job with different paper type and size in a job queue on the hard disk.
	[Paper Size Basis]	[Sht Selection 1]	Select which size is to be recognized, [ISO A3+] or [13"x19"(Super B)], when the detected size of the cut sheet is between these sizes.
		[Sht Selection 2]	Select which size is to be recognized, [ISO B1] or [28"x40"(ANSI F)], when the detected size of the cut sheet is between these sizes.
	[Keep Paper Size]		Select [On] to give priority to paper size. If the margin set with the printer driver is less than the margin set with the printer menu, the margin set with the printer menu has priority and text and images extending beyond the margins are truncated. Select [Off] to give priority to margin settings. If the margins set with the printer driver and the margins set with the printer menu are different, the larger settings are used for printing.
	[Rep.P.head Print]		Select [On] to automatically perform [Adjust Detail] after replacing the Printhead.
	[Nozzle Check]		Set with [Frequency] the timing to check for nozzle clogging after printing. Select [Standard] to adjust the checking timing according to the nozzle usage. Select [1 page] or [10 pages] to check every one page or 10 pages. Select [On] for [Warning] to display a warning when the print head nozzle is clogged while printing.
	[Use RemoteUI]		Select [Off] to disable access from RemoteUI and enable setting only from the operation panel.
	[Reset PaprSetngs]		Restores settings that you have changed with Media Configuration Tool to the factory default values.

T-1-17

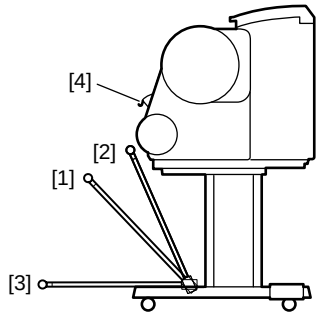
Setting Item			Description/Instructions
[System Setup]	[Erase HDD Data]	[High Speed]	Delete the file management information of the saved data in the HDD.
		[Secure High Spd.]	Overwrite the random data in the whole of the hard disk drive.
		[Secure]	Overwrite 00 and FF and random data in the whole of the hard disk drive once at a time. Execute the verify check whether the data has written correctly to the hard disk drive.
	[Output Method]	[Print]	Select the output method of jobs sent from software other than the printer driver. This can be set from the printer if you are using a printer driver. Select [Print] to print normally. Select [Print (AutoDel)] to print and delete the data in hard disk. Select [Save: Box XX] to save to box without printing.
		[Print (Auto Del)]	
		[Save: Box XX]	
	[Print After Recv]		Setting of jobs sent from software other than the printer driver. This can be set from the printer if you are using a printer driver. Select [On] to print after saving.
	[Common Box Set.]		Select [Print(AutoDel)] to print without saving to a common box.
	[Show Job Log]		Selecting Off prevents display of the log in Job Menu > Job Log. Additionally, the log is not printed if you choose Job Menu > Print Job Log. Note that because job logs are not collected, the Status Monitor accounting functions will not work correctly.
[Take-up Reel]	[Use Take-up Reel]		Choose Enable to use the Media Take-up Unit.
	[Auto Feed]		This command is available only if Take-up Reel is set to Enable. Choose Yes to advance roll paper automatically on the Rewind Spool, up to the fastening position.
	[Skip Take-Up Err]		Choose On to continue with printing even if an error occurs with the Media Take-up Unit. Choose Off to have the printer pause before printing if a rewinding error occurs.
[Prep.MovePrinter]	[Level 1]		Select when moving the printer. Follow the instruction on the screen and perform the necessary process. This is not displayed when displaying a warning message about the amount remaining maintenance cartridge.
	[Level 2]		
	[Level 3]		
[Admin. Menu]	[Change Password]		Set a password to restrict displaying/setting of menus as follows. Allowed value is from 0 to 9999999. - Allow only administrator to display/set [IPv4] [Change Password] [Init.Admin.Pswd] - Allow administrator to display/set and non-administrator to display only [Interface Setup](exclude [IPv4]) [Date & Time] [Date Format] [Time Zone] [Use RemoteUI] [Reset PaprSetngs] [Save: Shared Box]
	[Init.Admin.Pswd]		Press [OK] to return the [Administrator Menu] password to factory default.
[Printer Info]	[Paper Info]		Indicates the current paper size, type, and related printer settings.
	[Ink Info]		Indicates ink levels and maintenance cartridge capacity.
	[Head Info]		Indicates information about the printhead.
	[System Info]		Indicates the firmware version, serial number, and interface information.
	[Error Log]		Indicates the most recent error messages (up to five).
	[Other Counter]		Indicates the total printing volume of the printer.

1.6.4 Basket Unit

The Basket Unit(output stacker) can be installed at four positions, as shown.



F-1-24



F-1-25

[1] When storing printed documents on the Output Stacker, set it to this position.
[2] When the Output Stacker is not used, set it to this position.
[3] When printing on large and stiff sheets, or when the Media Take-up Unit is used, or when the Output Stacker is stored for long periods, lower it to this position for storage.
When using the Output Stacker again after storage, reattach the Basket Rod on the front of the Output Stacker to the tips of the left and right Basket Rods and pull the side rods out completely.
[4] When printing banners or when printing on delicate paper, set it to this position.

- When storing printed documents on the Output Stacker, always use it in position [1]. If you do not, printed documents may not be dropped into the Output Stacker, and the printed surface may become soiled.
- The Output Stacker can hold one sheet. When printing multiple pages, remove each sheet after it is printed.
- Before using the Output Stacker, remove the Rewind Spool. If you do not, it may prevent printed documents from being held correctly, and it they may be scratched.

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a. Using the Output Stacker in the position for ejection in the front of the printer
You can also set the Output Stacker to the following position when printing banners or when printing on delicate paper.

MEMO:
- Always choose [Cutting Mode] > [Eject] in the main menu when the Output Stacker is in the position for ejection in the front of the printer. If you choose [Automatic], printed documents may be damaged.
- During ejection in the front of the printer, be especially careful when using delicate paper or paper that curls easily.
- With some types of paper, the leading edge may curl or bend during ejection. In this case, straighten out the paper. Printed documents may be damaged if the paper is curled or bent.
- Some types of paper may get caught between the Ejection Guide and Output Stacker during ejection. In this case, free the paper from where it is caught. Printed documents may be damaged if the paper gets caught.

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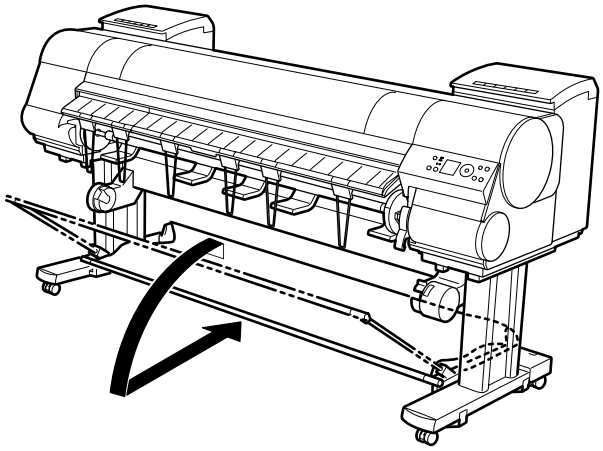
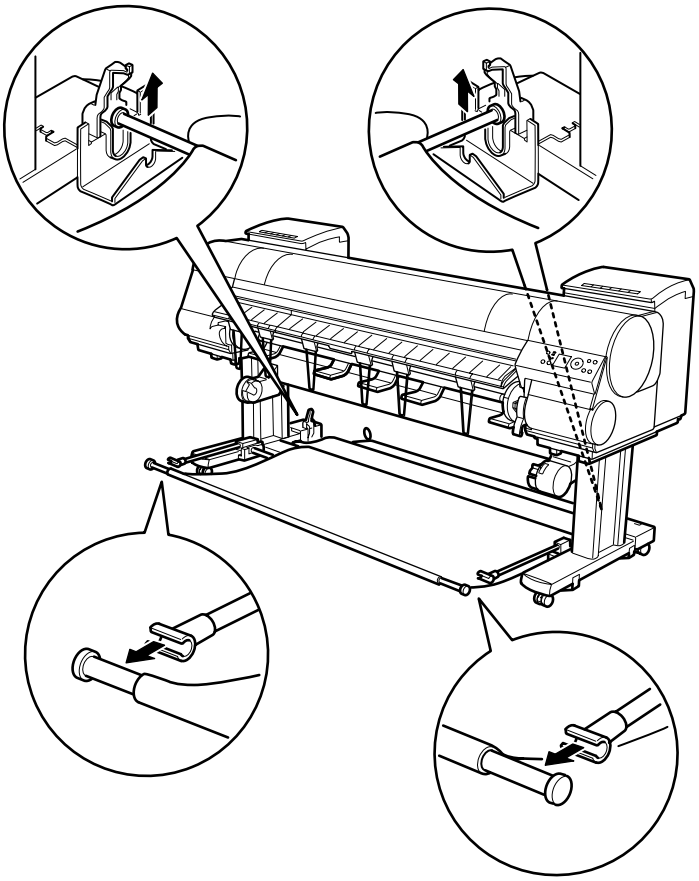
1) Lift the Basket Rod gently to release the lock, lower the stacker toward the front, and push it all the way back.



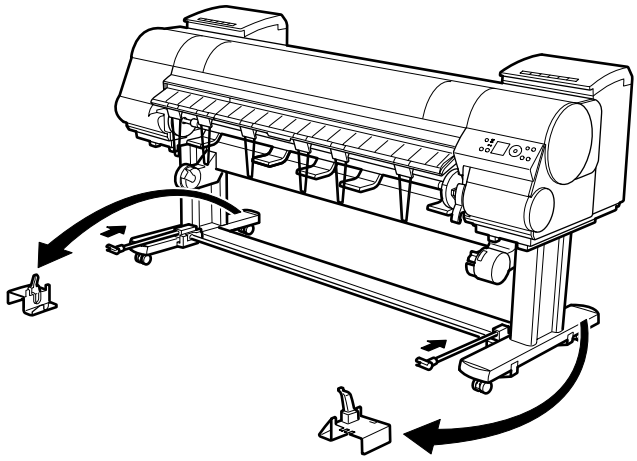
F-1-26

2) Remove the front Basket Rod from the left and right Basket Rods, and remove the back Basket Rod and the black cord from the Rod Holder.



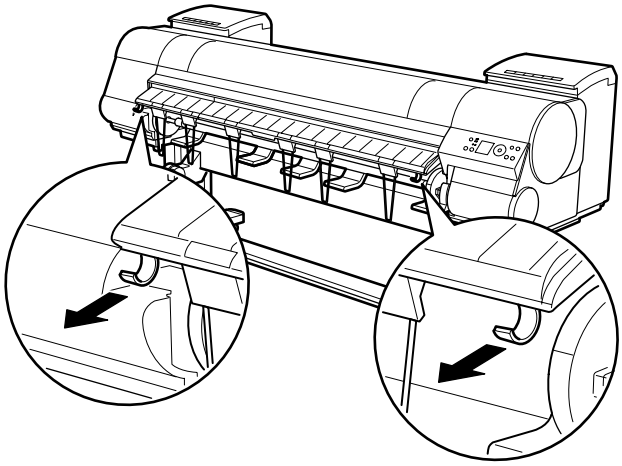
F-1-27

3) Store the left and right Basket Rods. Next, remove the Rod Holder Adapter, leaving the Rod Holder attached, and put it in front of the printer.



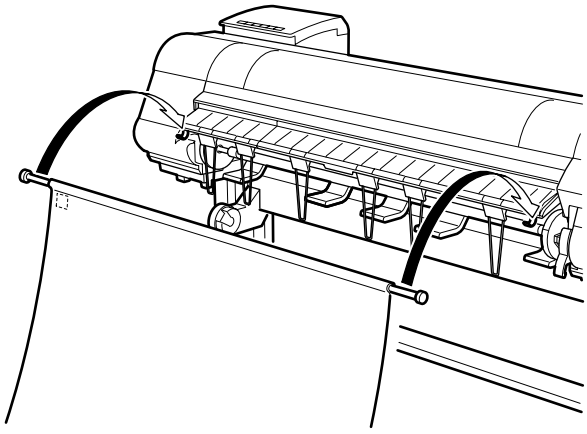
F-1-28

4) Pull out the Basket Hooks from the left and right side of the Ejection Guide.



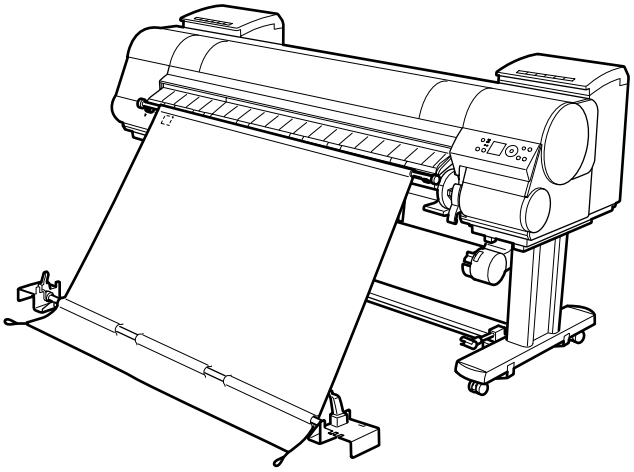
F-1-29

5) Attach the Basket Rod to the Basket Hooks so that the white tag of the Basket Cloth is on the left side.



F-1-30

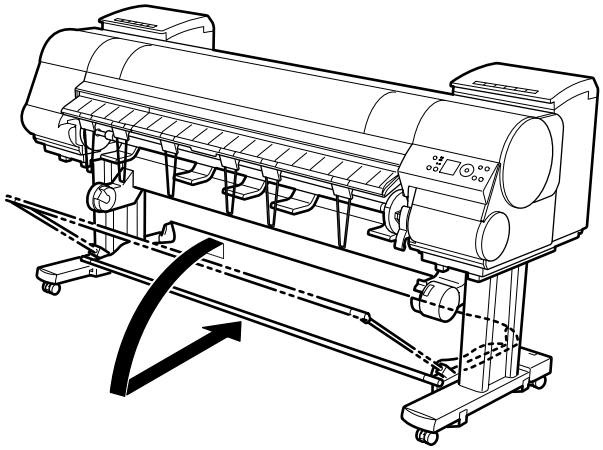
6) Form the Basket Cloth into a sloping shape to make it taut, and attach the middle Basket Rod to the Rod Holder.



F-1-31

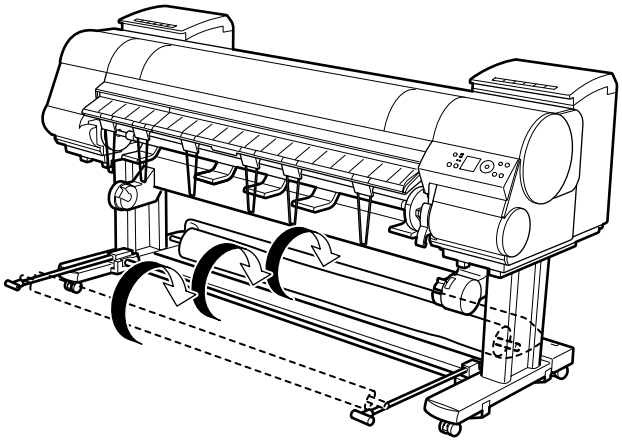
b. Stowing the Output Stacker
Stow the Output Stacker if you will use the Media Take-up Unit or if you will not use the Output Stacker for an extended period.

1) Lift the front Basket Rod gently to release the lock, lower the stacker toward the front, and push it all the way back.

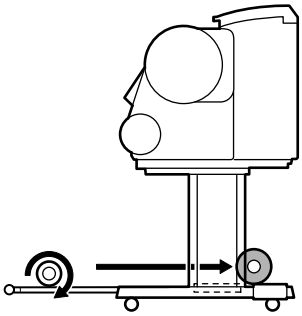


F-1-32

2) Remove the front Basket Rod from the left and right Basket Rods. Roll up the Basket Cloth and put it at the back of the Bottom Stand Stay.

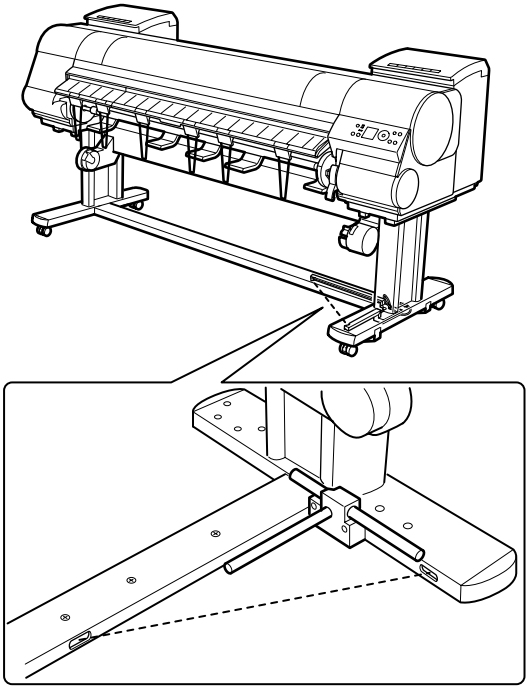


F-1-33



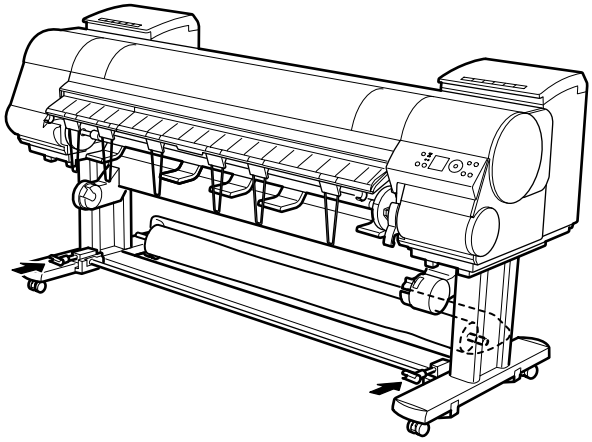
F-1-34

Arrange the Basket Cloth and Basket Rod so they do not interfere with the Media Take-up Sensor.



F-1-35

3) Push in the left and right Basket Rods toward the back all the way, until they stop.



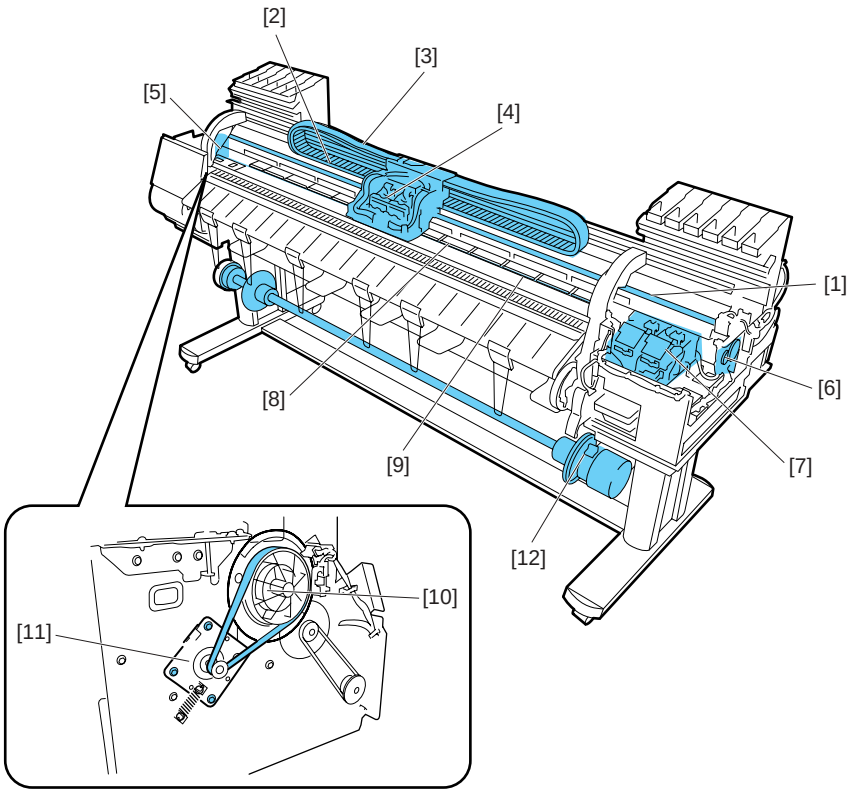
F-1-36

1.7 Safety and Precautions

1.7.1 Safety Precautions

1.7.1.1 Moving Parts

Be careful not to get your hair, clothes, or accessories caught in the moving parts of the printer.
These include the carriage unit activated by the carriage motor, the carriage belt, the ink tube and the flexible cable; the feed motor-driven the feed roller, the pinch roller; and the purge motor-driven the purge unit.
To prevent accidents, the upper cover of the printer is locked during printing so that it does not open. If the upper cover is opened in the online/offline mode, the carriage motor, feed motor, and other driving power supplies are turned off.

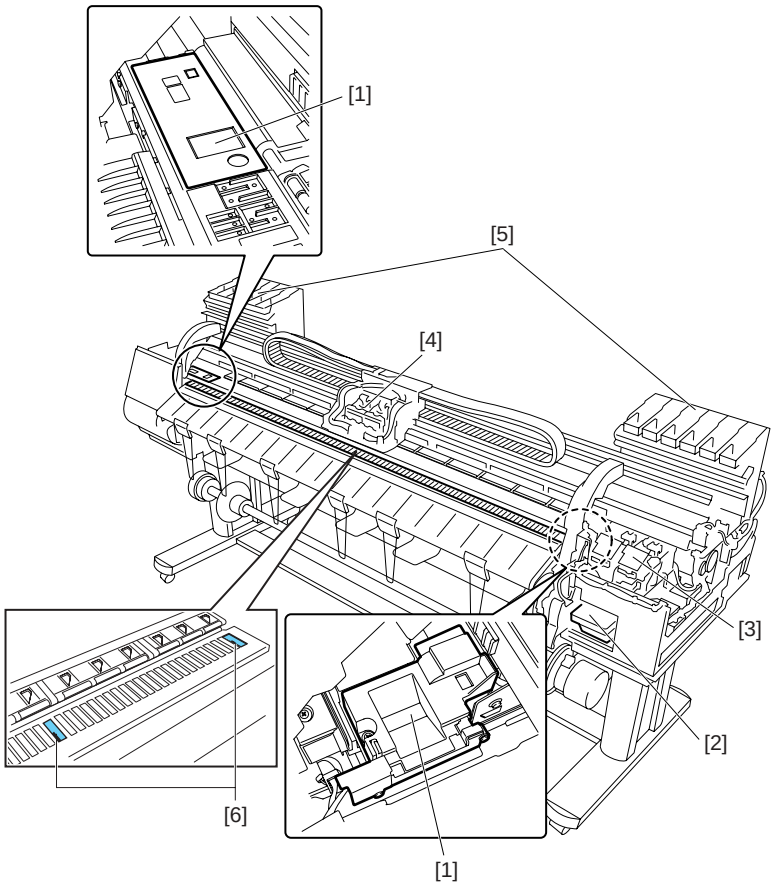


F-1-37

[1]	Carriage belt	[7]	Purge unit
[2]	Ink tube	[8]	Pinch roller
[3]	Flexible cable	[9]	Feed roller
[4]	Carriage unit	[10]	Feed unit
[5]	Carriage motor	[11]	Feed motor
[6]	Lift unit	[12]	Media take-up unit

1.7.1.2 Adhesion of Ink

1. Ink passages
   Be careful not to touch the ink passages of the printer or to allow ink to stain the workbench, hands, clothes or the printer under repair.
   The ink flows through the ink tank unit, carriage unit, purge unit, maintenance-jet tray, borderless print ink groove, maintenance cartridge and the ink tubes that relay ink to each unit.



F-1-38

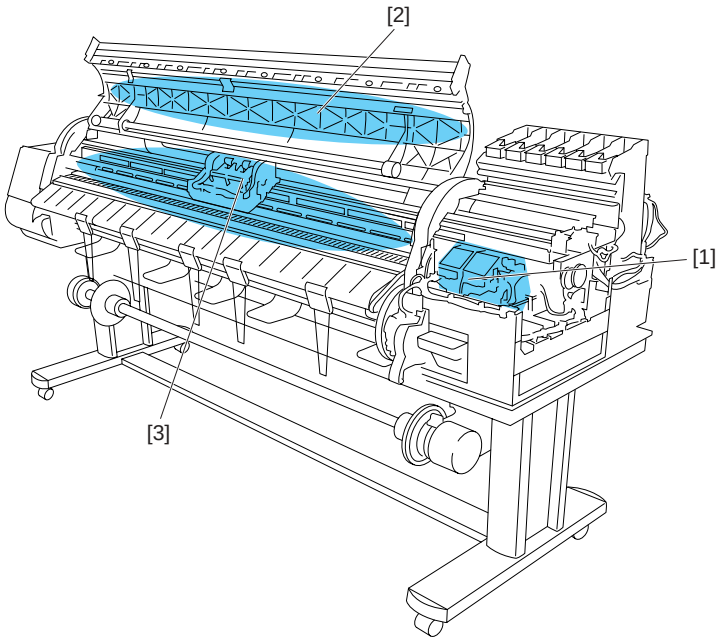
[1]	Maintenance-jet tray	[4]	Carriage unit
[2]	Maintenance cartridge	[5]	Ink tank unit
[3]	Purge unit	[6]	Borderless print ink groove

Although the ink is not harmful to the human body, it contains organic solvents.
Avoid getting the ink in your mouth or eyes.
Flush well with water and see a doctor if contact occurs.
In case of accidental ingestion of a large quantity, call a doctor immediately.

Since this ink contains pigment, stains will not come out of clothing.

2. Ink mist

Since the printhead prints by squirting ink onto the media, a minute amount of ink mist is generated in the printing unit during printing. The ink mist is collected in the printer by the airflow. However, uncollected ink mist may stain the platen unit, carriage unit, main rail unit, external unit, or purge unit.
These stains may soil the print media or hands and clothes when servicing the printer, wipe them off carefully with a soft, well-wrung damp cloth.

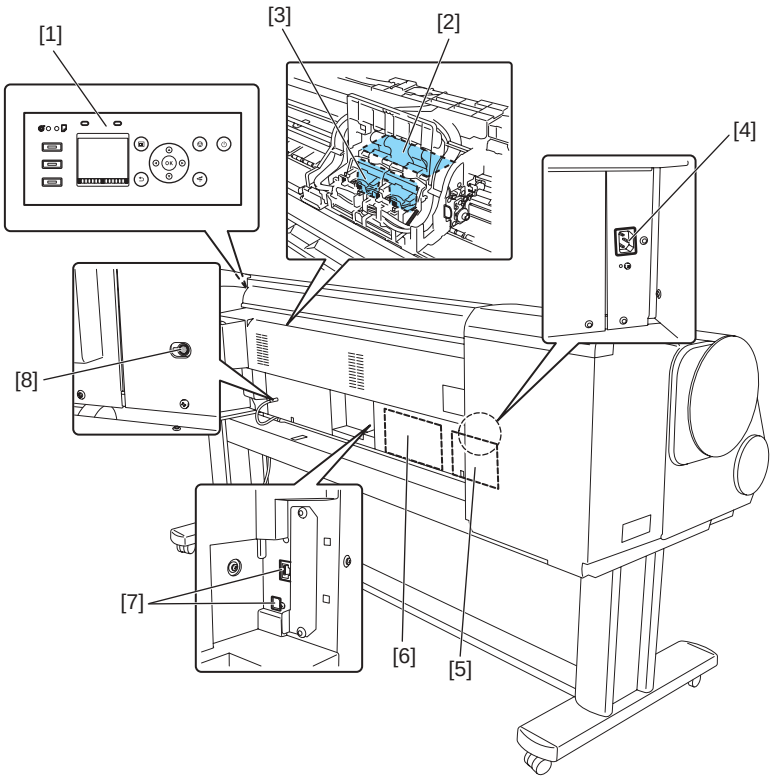


F-1-39

[1] Purge unit
[2] Upper cover
[3] Platen unit/Carriage unit/Main rail unit

1.7.1.3 Electric Parts

The electrical unit of the printer is activated when connected to the AC power supply.
At the rear of the printer are the main controller, power supply, interface connector, and optional media take-up unit connector. The head relay PCB and carriage relay PCB are incorporated in the carriage unit, and the operation panel is located on the upper right cover.
When servicing the printer with the cover removed, be extremely careful to avoid electric shock and shorting contacts.



F-1-40

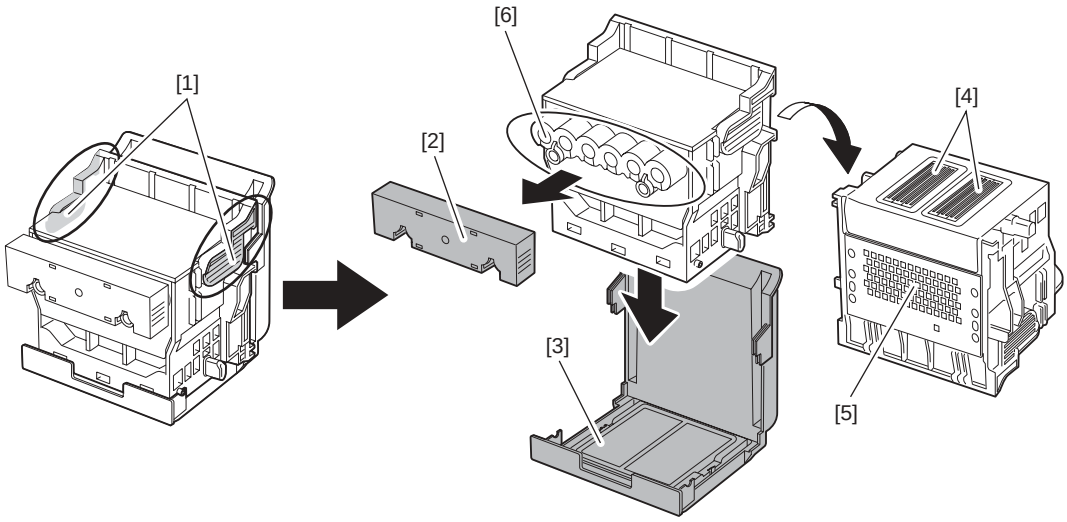
[1]	Operation panel	[5]	Power Supply
[2]	Carriage relay PCB	[6]	Main controller PCB
[3]	Head relay PCB	[7]	Interface connector
[4]	AC inlet	[8]	Media take-up unit connector

1.7.2 Other Precautions

1.7.2.1 Printhead

1. How to Handle the Printhead
Do not open the printhead package until you are ready to install the head.
When installing the printhead in the printer, hold the knob and then remove the protective cap 1 and protective cap 2 in that order.
Do not reattach the protective cap to the printhead because the cap may damage the nozzles.
To prevent the nozzles from getting clogged with foreign matter or dried ink, install the printhead immediately after you remove the protective caps.
Also make sure to press down the locking lever of the printhead until you feel a click.
In addition, to prevent clogging of the nozzles with foreign matter and improper supply of ink, never touch the nozzles or ink port, or wipe it with tissue paper or anything else.
Do not touch Electriacl contact.
Also, never attempt to disassemble/reassemble the printhead or wash it with water.

MEMO:
If the nozzles are clogged or an ink suction problem occurs, white lines can appear on the printout a constant frequency or color dulling can occur. If this problem is not resolved by cleaning operations, replace the printhead with a new one.



F-1-41

[1] Knob
[2] Protective cap 1
[3] Protective cap 2
[4] Nozzles
[5] Electrical contact
[6] Ink port

2. Capping
The printer will perform the capping operation when printing has ended or during standby due to an error, in order to protect the printhead and avoid ink leakage. If the power cord is accidentally unplugged, turn off the Power button, reconnect the power cord, and then turn on the Power button. Confirm that the printer starts up properly and enters to the "Online" or "Offline" status, and then power off the printer using the Power button.

⚠
Improper "capping operation" may cause clogged nozzles due to dried ink or ink leakage from the printhead.

3. When the printer is not used for a long time
Keep the printhead installed in the printer even when it is not used for an extended period of time.

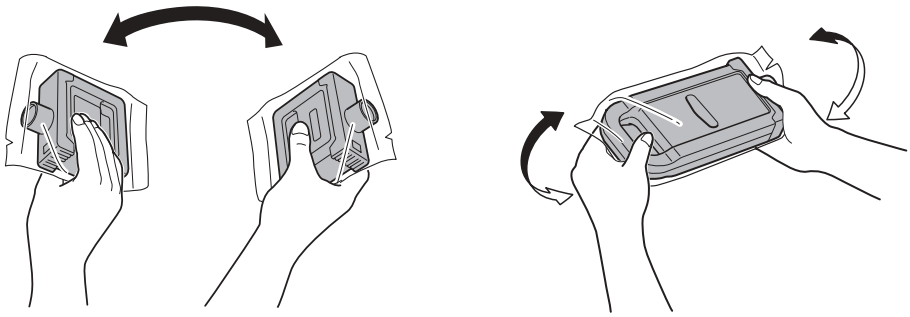
⚠
If the printhead is left uninstalled, a printing failure may arise from closed nozzles due to depositing of foreign matter or dried ink when it is reinstalled.
Even if the head remains installed, the nozzle may dry out and cause a printing failure if the ink is drained for transport.

4. Conductivity of Ink
The ink used in this printer is electrically conductive. If ink leaks to into the mechanical unit, wipe clean with a soft, well-wrung damp cloth. If ink leaks onto electrical units, wipe them completely using tissue paper. If you cannot remove ink completely, replace the electrical units with new ones.

⚠
If electrical units are powered with ink leaked onto them, the units may damage.
Never connect the power cord when ink has leaded onto the electrical units.

1.7.2.2 Ink Tank

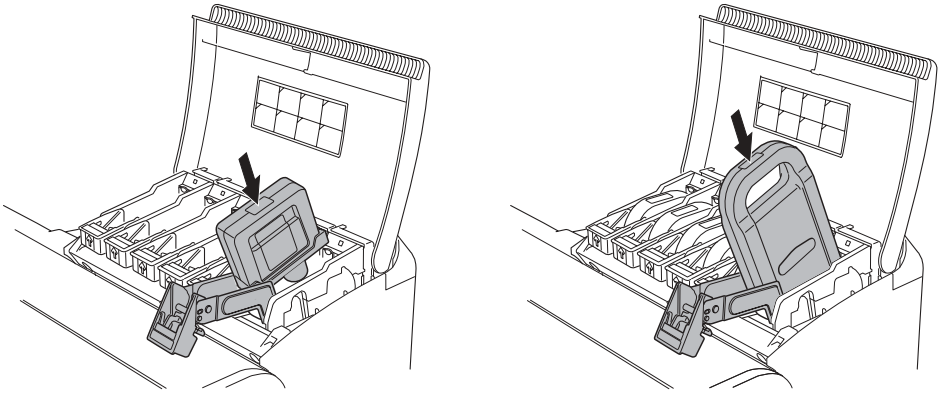
1. Unpacking the Ink Tank
Do not unpack the ink tank until you are ready to install it.
When installing the ink tank, be sure to shake it slowly 7 to 8 times before unpacking it. Otherwise, the ink ingredients may precipitate and degrade the print quality.
To prevent foreign matter from entering the ink port, install the unpacked ink tank in the printer immediately.



330ml 700ml

F-1-42

2. Handling the Ink Tank
To prevent foreign matter from entering the ink flow path and causing ink suction and printing problems, never touch the ink port and contacts of the ink tank.
When you press down the ink tank cover, the needle enters the ink port, allowing ink to flow between the printer and ink tank.
Do not raise or lower the ink tank cover except when replacing the ink tank.

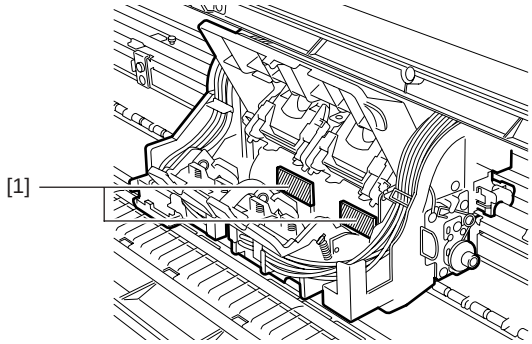


330ml 700ml

F-1-43

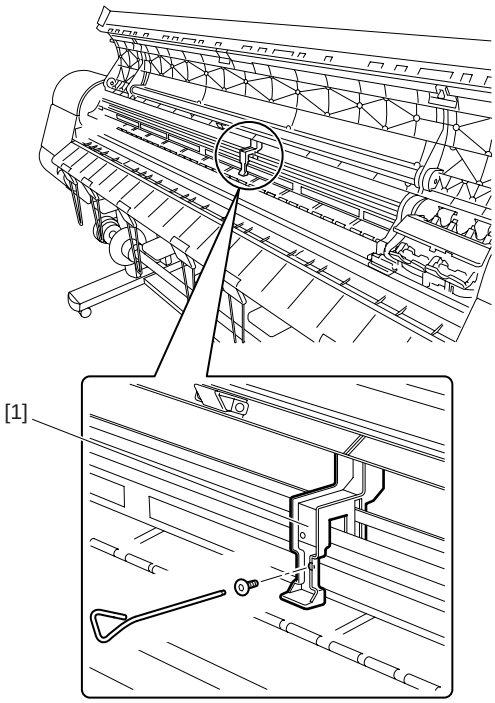
1.7.2.3 Handling the Printer

1. Precautions against Static Electricity
Certain clothing may generate static electricity, causing an electrical charge to build up on your body. Such a charge can damage electrical devices or change their electrical characteristics.
In particular, never touch the printhead contacts[1].



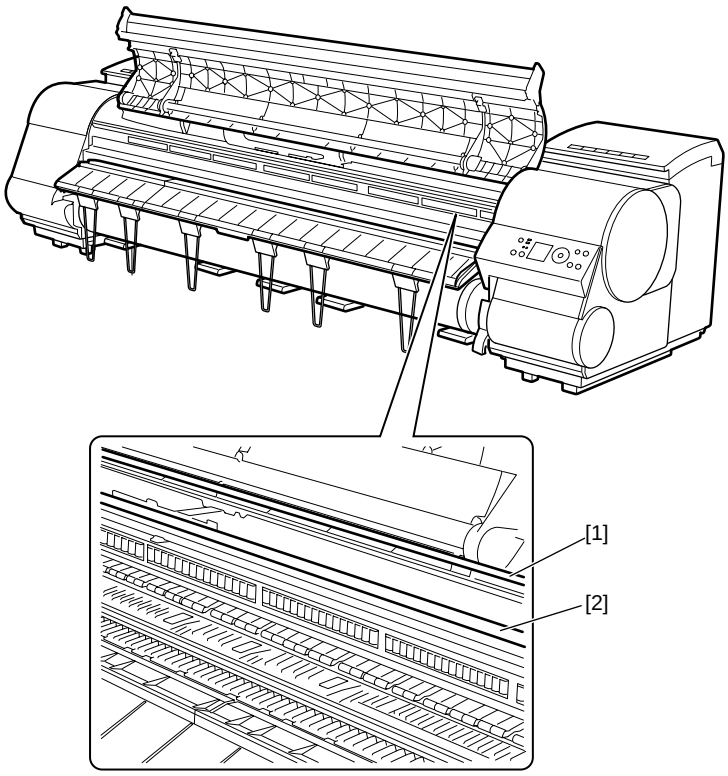
F-1-44

2. Fixing the Carriage
After completion of printing, the carriage is mechanically locked by the lock arm in the purge unit at the same moment the printhead is capped.
Before transporting the printer, secure the carriage at its home position using belt stopper[1] so that the carriage does not become separated from the lock arm and damage or ink does not leak.



F-1-45

3. Contact of Linear Scale/Carriage Shaft
Do not touch the linear scale and carriage shaft when the upper cover is opened, for maintenance.
Touching the linear scale and carriage shaft might cause abnormal movement of the carriage and produce defective prints.



F-1-46

[1] Linear Scale

[2] Carriage Shaft

Don't apply the grease to the linear scale and carriage shaft. It may cause abnormal operations and defective prints.

4. Replacing the Maintenance Cartridge
When the maintenance cartridge detects that the tank is full, the "Repl. Maint. C" error appears. In this case the maintenance cartridge must be replaced.
The printer will not operate until the error is cancelled.
Be careful that the waste ink does not splash when you remove the used maintenance cartridge from the printer.

MEMO:
This printer has an EEPROM in the maintenance cartridge and the maintenance cartridge status is controlled by the main controller PCB which reads and writes the contents of that EEPROM. Therefore, initializing the counter information will not be needed when the maintenance cartridge is replaced.

5. Refilling the ink
After draining the ink from the printer according to the automatic or manual ink draining procedure for disassemble, reassemble, or transport/ship the printer, refill the ink as soon as possible upon completion of those tasks.
Dried remaining ink on the surface of some components, may cause damage or abnormal operations.

1.7.3 Precautions When Servicing Printer

1.7.3.1 Notes on the Data Stored in the Printer

This printer counts the print length, number of ink tank replacements, carriage driving time, number of cleaning operations, number of cutter operations, and so on and stores them in the main controller's EEPROM as a COUNTER in Service mode.
COUNTER provides important information about the printer usage status.
You can check this information by printing it in the service mode or displaying it on the display.

Follow the precautions below when servicing the printer.

(1) Repairing/replacing the PCB
When replacing the main controller, follow the specified replacement procedure.
For the main controller replacement procedure, see "DISASSEMBLY/REASSEMBLY" > "Points to Note on Disassembly and Reassembly" > "PCBs".

(2) After replacing the carriage unit
The information about the carriage driving time resides in the carriage unit. After replacing the carriage unit, select [INITIALIZE] > [CARRIAGE] in the service mode to initialize the information about the carriage driving time.

(3) After replacing the purge unit
The information about the number of cleanings resides in the purge unit. After replacing the purge unit, select [INITIALIZE] > [PURGE] in the service mode to initialize (clear) the information about the number of cleanings.

(4) On replacement of supplies
After supplies have been replaced, execute [INITIALIZE] > [PARTS COUNTER] > [PARTS xx] in service mode to initialize (clear) the parts counter information.
For the consumable parts, see "MAINTENANCE" > "Periodic Replacement Parts".

You cannot check the counter information once it is initialized (cleared). Be careful not to initialize the counter information before checking it.
You cannot modify the counter information from the operation panel.

1.7.3.2 Confirming the Firmware Version

Firmware has been downloaded to the main controller.
When you have replaced the main controller, check that the firmware is the latest version. If not, update it to the latest version.

Reference:
For instruction on how to update the main controller, refer to "TROUBLESHOOTING" > "Version Up".

1.7.3.3 Precautions against Static Electricity

Certain clothing may generate static electricity, causing an electrical charge to build up on your body. Such a charge can damage electrical devices.
To prevent this, discharge any static buildup by touching a grounded metal fitting before you start disassembling the printer.

1.7.3.4 Precautions for Disassembly/Reassembly

The precautions for disassembly/reassembly are described in "DISASSEMBLY/REASSEMBLY".

1.7.3.5 Self-diagnostic Feature

The printer has a self-diagnostic feature to analyze hardware problems.
The self-diagnosis result is shown on the display and indicated by lamps.
For detailed information, see "ERROR CODE".

1.7.3.6 Disposing of the Lithium Battery

The main controller PCB of this printer is equipped with a lithium battery to back up various data.

⚠
Risk of explosion if battery is replaced by an incorrect type.
Dispose of used batteries according to the instructions.

"For CA, USA Only
Included battery contains Perchlorate Material-special handling may apply. See
http://www.dtsc.ca.gov/hazardouswaste/perchlorate/ for detail."

Achtung:
Die Lithiumbatterie darf nur durch das Originalersatzteil (Parts Katalog) ersetzt werden;
ansonsten besteht Brand-/Explosionsgefahr.
Lithiumbatterien niemals aufladen, demontieren oder durch Verbrennen entsorgen;
bei der Entsorgung die örtlichen Entsorgungsvorschriften beachten (Schadstoffe; Sondermüll).

⚠ 警告

如果更換不正確之電池型式會有爆炸的風險

請依製造商説明書處理用過之電池

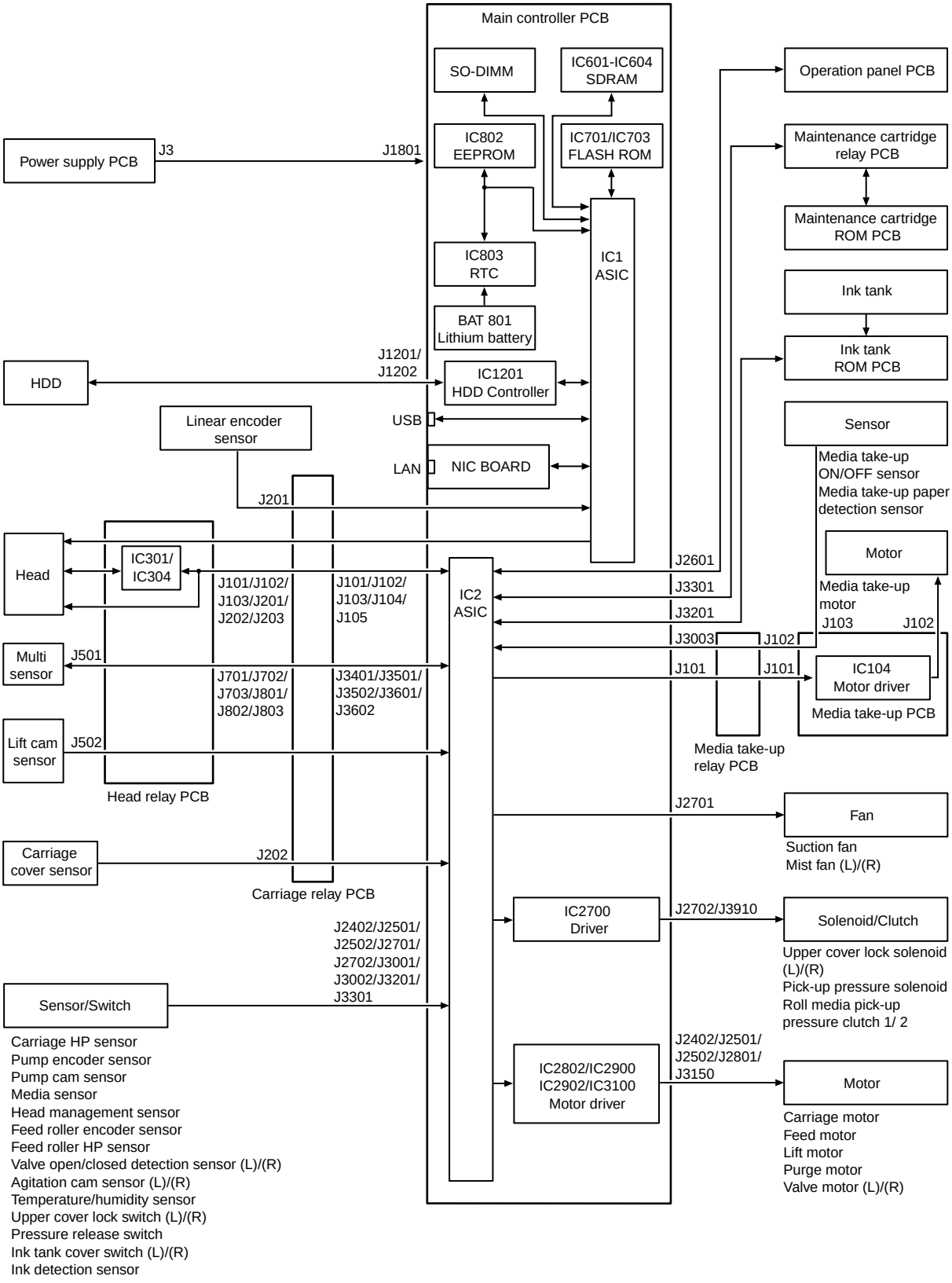
Chapter 2 TECHNICAL REFERENCE

Contents

2.1 Basic Operation Outline

2.1.1 Printer Diagram

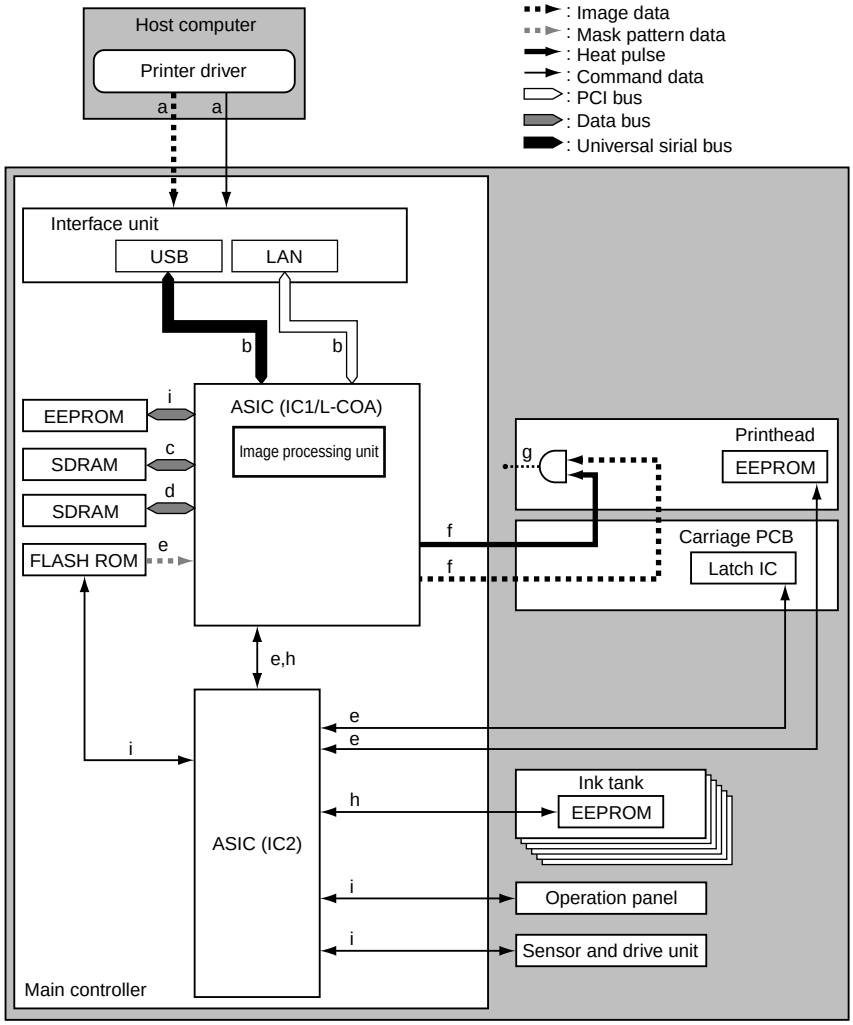
Shown below is a printer diagram.



F-2-1

2.1.2 Print Signal Sequence

The signal sequence from when the printer receives the print signals until printing starts is shown in the following figure.



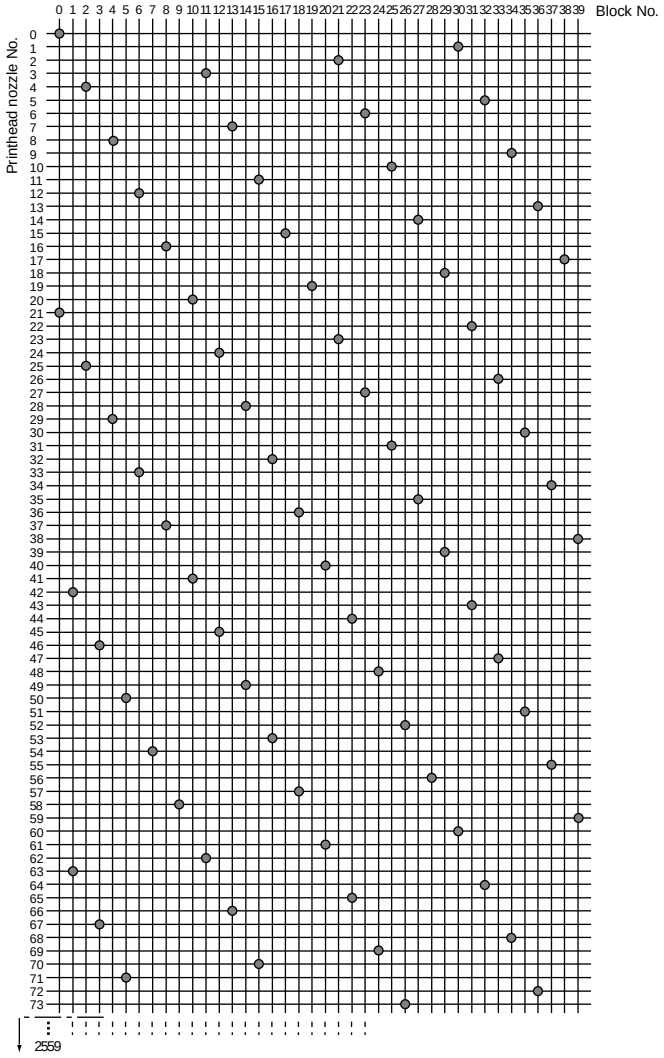
F-2-2

a) The printer driver on the host computer transmits print data, including command data, to the printer after compressing the image data, without resolution, color and 8-color binarization conversion.
To achieve high-quality image output, the image processing table data used for image data color conversion and binarization conversion are generated as command data to meet the Media Type and other specifications of the printer driver.
b) This printer receives print data from the individual interfaces on the main controller, transmitting the received print data to ASIC (IC1).
c) The main controller decompresses the print data transmitted to the ASIC and gets it through resolution, color and 8-color binarization conversion while loading the data into SDRAM from time to time.
It also converts the print data to 8-color binary equivalents of image and command data.
d) The ASIC (IC1) generates image data synthesized with mask data within the ASIC in sync with the discharge time while loading the data into SDRAM from time to time.
e) The ASIC (IC2) collects printhead information from EEPROM mounted on the printheads and the printer temperature from the latch IC on the carriage board and transmit them to the ASIC (IC1).
The ASIC (IC1) also receives mask pattern data from the firmware installed in flash ROM.
f) The ASIC (IC1) converts the image data synthesized with the mask pattern to data associated with the printhead information and the printer temperature, transmitting the data to the printheads as a print signal. It transmits heat pulses to the printheads at the same time to optimize head driving.
g) The printheads convert the received print signal from a serial signal to a parallel signal for each row of nozzles and then the signal is composed with the heat pulses to perform the printing.
h) The ASIC (IC1) controls the general aspects of image processing and print drive control by detecting the status of the individual printer components with reference to the adjustment values stored in EEPROM. SDRAM is used as work memory.
i) The ASIC (IC2) controls the general aspects of drive control by controlling button actuations and message displays on the basis of the firmware installed in flash ROM.

2.1.3 Print Driving

Print and control signals are transferred via the carriage board to the printheads to discharge inks from the nozzle assembly at printing.
Each printhead has 12 trains of nozzles arranged in a zigzag pattern.
This printer uses two printheads arranged side by side.
(In installed state, from left to right, PC, C, PM, GY, MBK, M, Y, BK, GY, PM, C, PC)
Print signals directed at each nozzle train are even-numbered nozzle data (Hx-x-DATA-x-EV) and odd-numbered nozzle data (Hx-x-DATA-x-OD). These are transferred in timing with a data transfer clock (Hx-CLK) and data latch pulses (Hx-LT).
The Heat Enable (Hx-x-HE-x) drive control signal enables inks to be discharged from the nozzles.

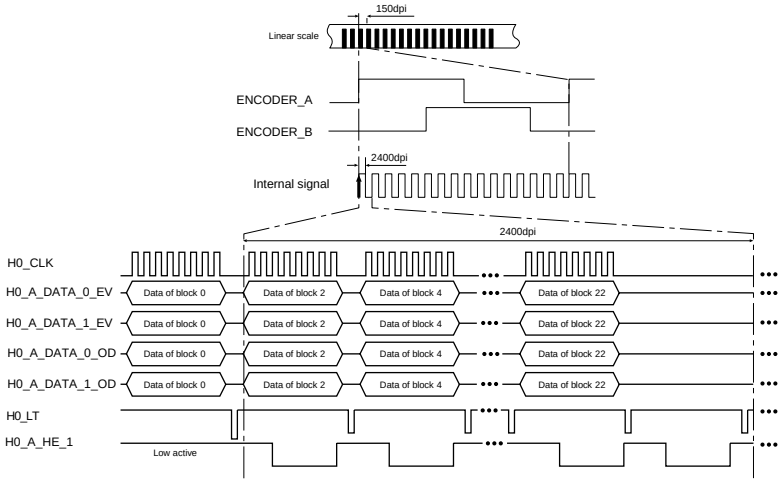
1. Pint drive control
Each train of nozzles in a printhead has 2,560 nozzles.
Ink discharge nozzles are selected split in 40-, 20- or 10-nozzle blocks according to the Block Enable information in the even-numbered nozzle data and odd-numbered nozzle data.
Each selected block of nozzles is impressed with a Heat Enable signal generated with variable pulse widths according to the head rank, head temperature and printer temperature for optimized ink discharges. The nozzles are driven by heater boards in the nozzles to discharge inks. Optimal nozzle blocks are selected according to the print path.
The diagram below illustrates the relationship between a 40-block nozzle and nozzles driven.



F-2-3

2. Print drive timing

Each printhead houses 12 trains of nozzles, which share the same data transfer clock (Hx-CLK) and data latch pulses (Hx-LT).
Even-numbered nozzle data (Hx-x-DATA-x-EV), odd-numbered nozzle data (Hx-x-DATA-x-OD) and the Heat Enable (Hx-x-HE-x) signal are generated for each nozzle train and controlled individually.
Printing is carried out in two ways through reciprocating motion of the carriage.
An encoder sensor mounted on the carriage generates a 150-dpi-pitched linear scale detection signal (ENCODER_A) and a signal (ENCODER_B) shifted 120 degrees in phase. The direction of carriage motion is detected from the status of the ENCODER_B signal relative to the leading edge of the ENCODER_A signal.
The printhead is driven using a 2400-dpi timing signal (internal signal), which is generated by dividing the ENCODER_A signal detected at the 150 dpi timing into 16 equal sections.
Printing in the forward direction is triggered at the leading edge of the detection signal (ENCODER_A).
Printing in the backward direction is carried out the same way as printing in the forward direction but at the trailing edge of the detection signal (ENCODER_A), when the order of heated nozzles is reversed depending on the sequence of transfer of even-numbered nozzle data and odd-numbered nozzle data.

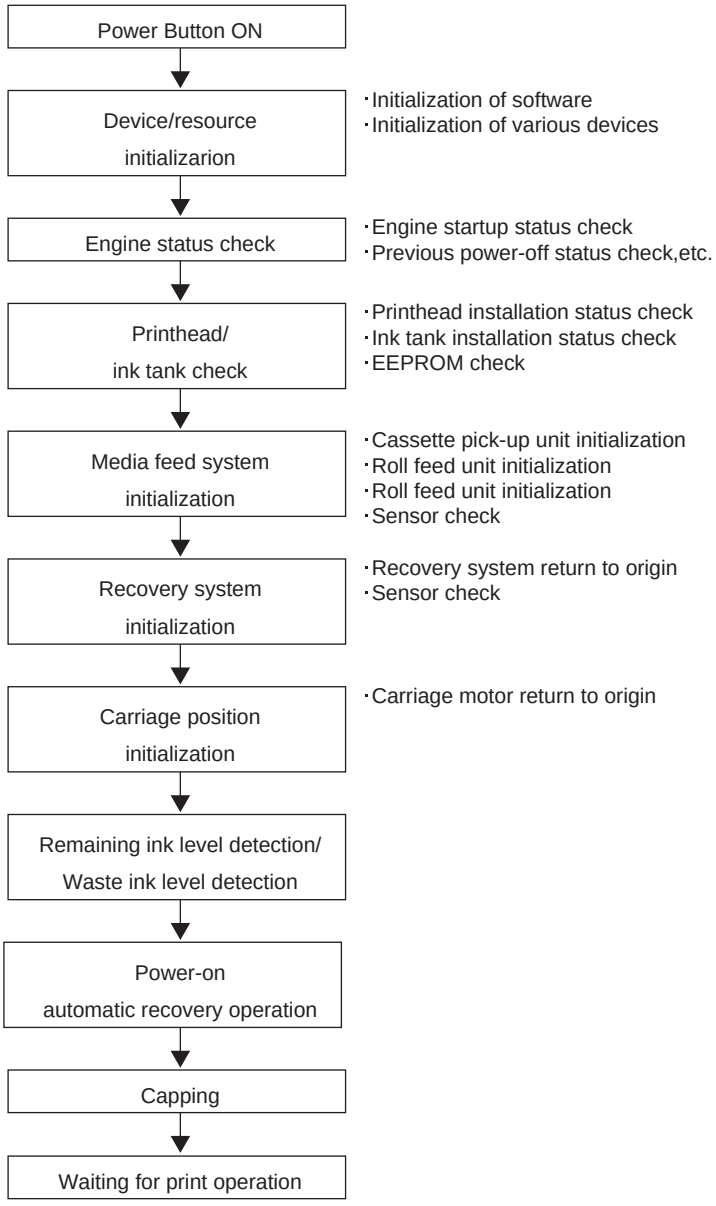


F-2-4

2.2 Firmware

2.2.1 Operation Sequence at Power-on

The sequence of printer operations, from power-on to transition to online mode, is flowcharted below. The printer takes less than 1 minute to initialize itself(*).
* Excluding the times spent supplying inks and cleaning the printhead after leaving the printer for extended periods of time.



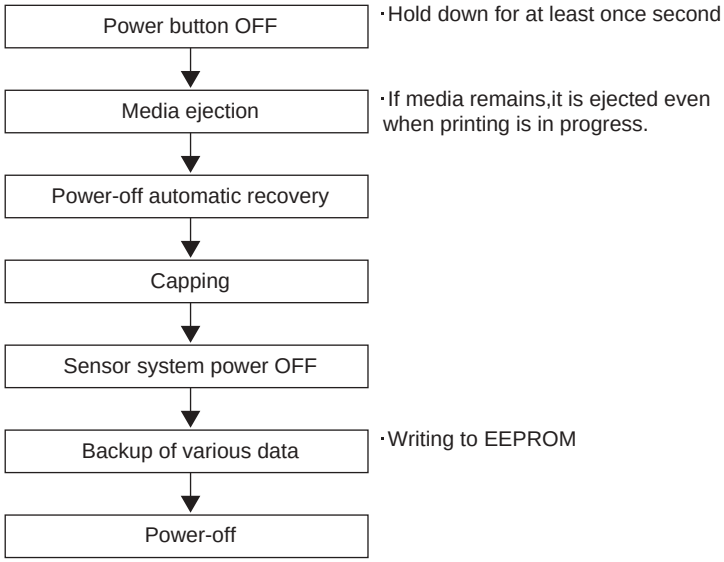
F-2-5

2.2.2 Operation Sequence at Power-off

Turning off the power switch cuts off the drive voltage supply, launching a firmware power-off sequence as shown below.

If the power cord is disconnected from the wall outlet or the upper cover or any other cover is opend, the printer cancels the ongoing operation and shuts down immediately. Since printhead capping may or may not have been carried out properly, reconnect the power cord to the wall out and turn on the power switch. Making sure that the printer has entered online mode, turn off the power switch.

1. Power-off sequence



F-2-6

2.2.3 Print Position Adjustment Function

This printer supports a print position adjustment for the vertical and horizontal print positions, the bidirectional print position of the printhead mounted on the carriage, and the feedrate.
There are two adjustment modes for the print: automatic adjustment, in which print position adjustment patterns printed are detected by the multi sensor attached to the lower left part of the carriage, and manual adjustment, in which print position adjustment patterns that are slightly modified from one another are printed, so that visually verified adjustment values can be set from the operation panel.
To make print position adjustments, A3-or-larger-sized roll media or cut media are needed.

2.2.4 Head Management

This printer supports a nozzle check function to spot non-discharging nozzles in the printhead.
When the printer detects a non-discharging nozzle, it starts cleaning the printhead automatically to correct its discharge failure. If cleaning does not work, the printer backs up the non-discharging nozzle with an alternative nozzle automatically to ensure unfailing print performance.

Detection timings (automatic):
Power-on, carriage cover open detection, print start (check timing variable by selecting Nozzle Check from the system menu).

2.2.5 Printhead Overheating Protection Control

When an abnormal temperature rise in the printhead is detected, overheating protection control launches.
Overheating could occur in the printhead after a period of print operations without the nozzles being filled with inks.
Overheating protection control is implemented on the basis of the temperature detected by the head temperature sensor for each nozzle. When an abnormal temperature is detected in any nozzle train, overheating protection control is exerted at one of two levels according to that temperature.

Protection level 1:
If the head temperature sensor (DI sensor) detects a temperature higher than the protection temperature, it halts the carriage temporarily at the scan end position in the direction of travel according to the carriage scan status.
Printing resumes when the printhead radiates naturally to cool down below a predetermined temperature or when 30 seconds or longer have elapsed since the detection of the higher temperature.

Protection level 2:
If the head temperature sensor (DI sensor) detects a temperature higher than the abnormal temperature, the printer shuts down the print operation immediately, moving the carriage to the home position for capping, with an error indication on the display.

2.2.6 Pause between Pages

An inter-page function is available to prevent ink rubbing, which keeps paper just printed hanging above the platen and waiting for a predetermined period of time before delivery.
The wait time is user-programmable from the print driver. This feature is particularly useful on paper that takes time to dry after printing, such as film.

2.2.7 White Raster Skip

This printer supports a white raster skip function to bypass carriage scanning in a consecutive sequence of voids in print data, for added throughput.

2.2.8 Sleep Mode

The printer has sleep mode to reduce its standby power requirement.
The printer transitions to sleep mode automatically when it has been left idle or no print data has been received for a predetermined period of time while the printer is online or offline.
The printer exits sleep mode when any operation panel key is activated or print data is received from the host computer.
The time to transition to sleep mode is variable from the operation panel (Default: 5minutes).

2.2.9 Hard Disk Drive

This printer features a hard disk drive, which provides the following functions.
- Early release of the host computer
- Error recovery
- Job preservation
- Preserved job print
- Job queue handling

1) Early release of the host computer
Each print job received from the host computer is preserved to the hard disk drive attached to the printer, so the printer can proceed with independent printing, releasing the host computer before the print job completes.

2) Error recovery
If a print job aborts as a result of any print problem, such as a paper jam or insufficient paper, the printer reloads the print job stored on the hard disk so it can resume the print job without having to retransmit the job from the host computer to it.

3) Job preservation
Print jobs are in the common box, a place of temporary data storage, and in the personal box, a place of permanent data storage.
Normal print jobs are stored in the common box as they are received. Due to the limited hard disk space available, jobs stored in the common box are deleted from the oldest one in sequence.
Print jobs can be simply stored in the personal box without printing. Print jobs stored in the common box can be moved to the personal box.

4) Preserved job handling
Print jobs stored in the personal box or common box can be printed from the operation panel.

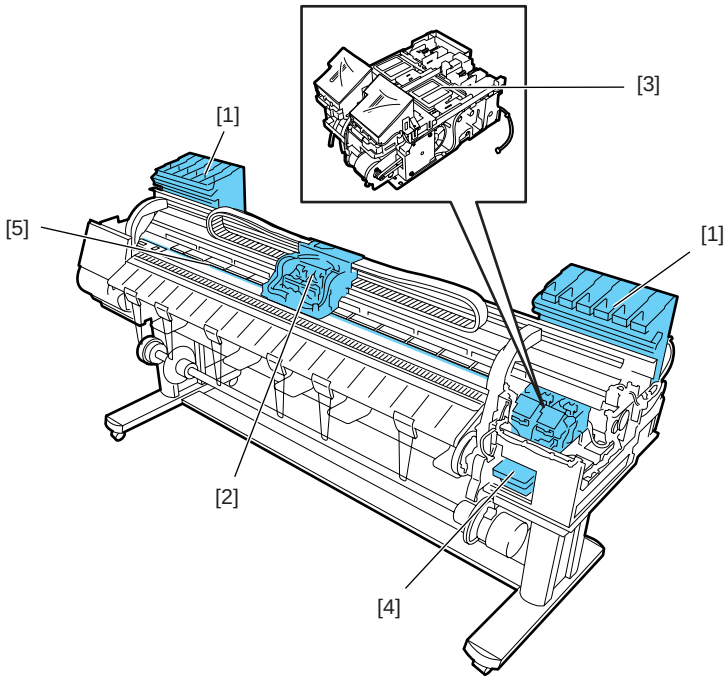
5) Job queue handling
Multiple jobs queued for print can be handled. including the raising priority order of selected jobs in the queue or canceling selected print jobs.

2.3 Printer Mechanical System

2.3.1 Outline

2.3.1.1 Outline

The printer mechanism is broken down into two broad sections: ink passage and paper passage.
The ink passage consists primarily of the carriage unit[2] that houses ink tanks[1] and a printhead, purge unit[3] and maintenance cartridge[4], and supplies, which circulates, sucks and otherwise handles inks.
The paper passage consists of mechanical components, such as the paper feed unit[5], which is designed to feed, convey and deliver paper in two ways.
A summary description of each mechanical component of the printer is given below.



F-2-7

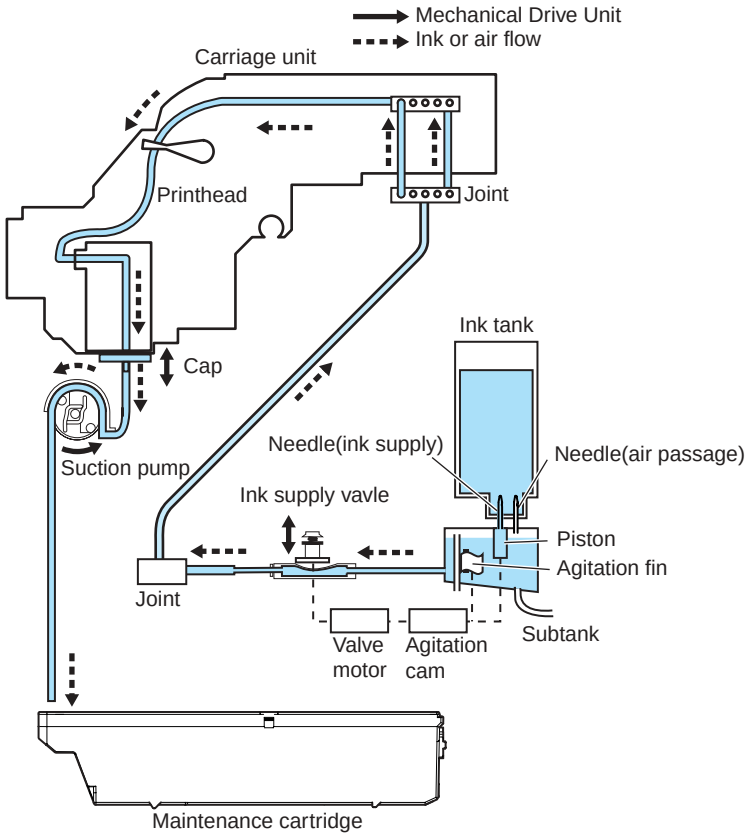
2.3.2 Ink Passage

2.3.2.1 Ink Passage

2.3.2.1.1 Overview of Ink Passage

The ink passage comprises ink tanks, a printheads, caps, a maintenance jet tray, a maintenance cartridge, ink tubes interconnecting the mechanical components of the printer, and a suction pump that is driven to suck inks. It supplies, circulates, sucks and otherwise handles inks.

The ink passage (per color) is schematically shown below, along with the ink flow.



F-2-8

a) Supplying inks from the ink tanks to the ink supply valve assembly
The ink tanks each contain ink to feed the printhead.
Head differences allow the inks to flow from the ink tanks to the subtanks first, then to the ink supply valves.
Air is discharged through the air passage of the subtanks to keep the internal pressure of the ink tanks constant.

b) Supplying inks from the ink supply valves to the printhead
The ink stored in an ink tank flows to the printhead when the suction pipe is driven with the ink supply valve opened and the head capped.

c) Supplying inks while printing
The ink supply valves are kept open while printing, so that ink is constantly flowing to the printhead under the negative pressure of the nozzle assembly which is caused by the discharging inks.
Furthermore, waste inks sucked in the cleaning operation and inks from the maintenance jet tray flow into the maintenance cartridge.

⚠
Opening all the ink passages (by opening both the ink supply valve and the printhead fixer lever with an ink tank yet to be installed) while an ink tube is being filled with ink could cause the ink in the ink tube to flow backwards due to a head pressure difference, causing leakage through the hollow needle in the ink tank.
As a precaution, never open all the ink passages at the same time while the ink tubes are being filled with inks.

---

d) Ink agitating
Ink will be agitated to prevent the element of the pigment ink from subsiding in the ink tank and the sub-tank.
The valve motor drive is transmitted to the agitation cam, the agitation fin in the sub-tank rotates and ink in the sub-tank will be agitated. In addition, ink flows backward by moving the piston under the needle(ink supply) up and down in the ink tank, and ink in the ink tank will be agitated.

2.3.2.2 Ink Tank Unit

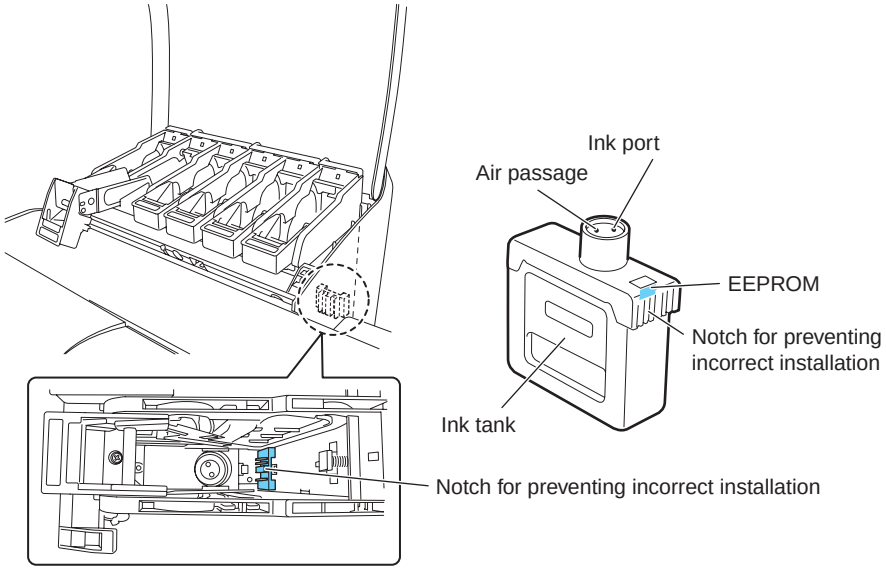
2.3.2.2.1 Structure of Ink Tank Unit

a) Ink tanks
The ink level in each ink tank is memorized in EEPROM attached to the tank and is detected as a dot count on the basis of the EEPROM information.
When an electrode attached to a hollow needle detects no continuity, it displays a message reporting that the ink tank is nearly empty.
If the dot count reaches a predesigned value in this state, an ink out condition is assumed.

b) Ink port
Depressing the ink tank fixer lever on the printer would cause would cause a hollow needle to pierce the ink tank port sealed by a rubber plug, linking the ink passage of the ink to the printer.

c) Air passage
Depressing the ink tank fixer lever on the printer would cause an open hollow needle to pierce the air passage sealed by a rubber plug releasing the internal pressure of the ink tank to keep it constant.

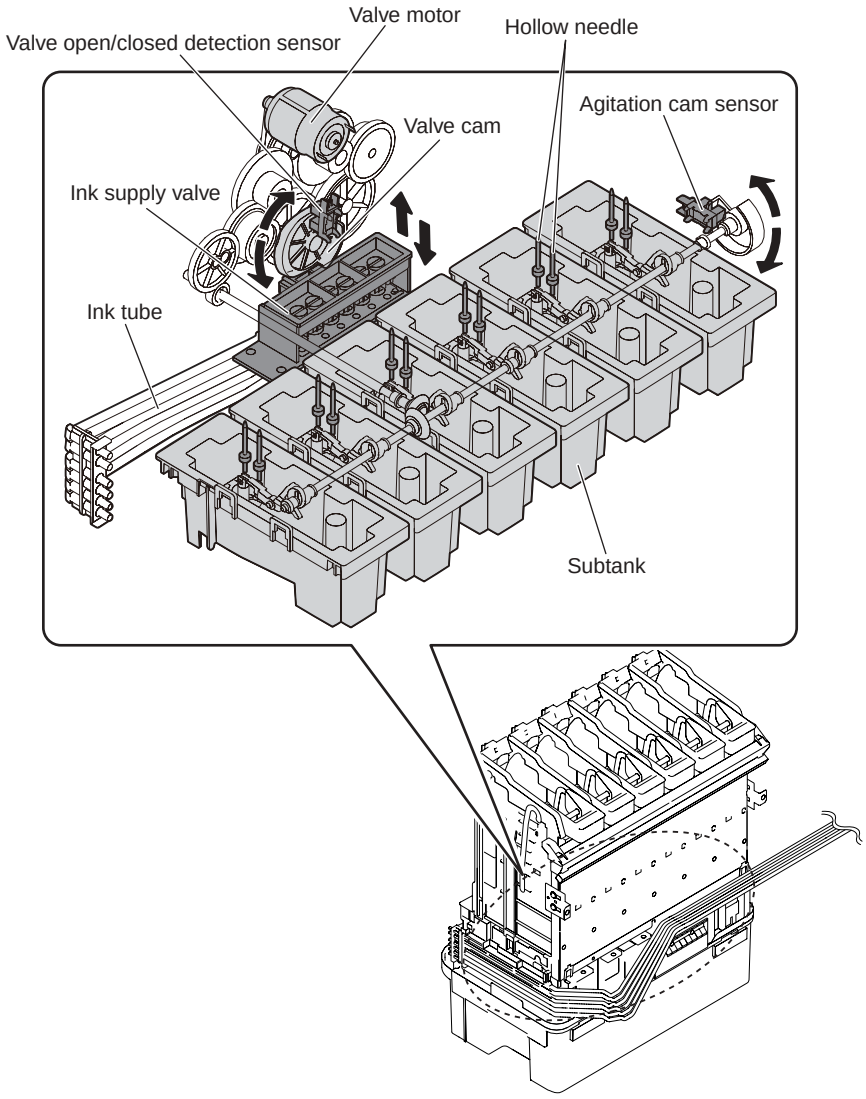
d) Notches for preventing incorrect installation
Ink tanks are furnished with a notch for preventing incorrect installation.
If the installation of an ink tank in incorrect position is attempted, the notch would interfere with it, preventing its installation.
The ink tank fixer lever won't lower without the ink tank fully inserted to reach the mounting position, so the ink cannot be supplied.



F-2-9

e) Subtank
The subtank installed under each ink tank complements the work of the ink tank, agitating the ink in the tank.
If the ink tank runs out of the ink while printing, the ink stored in the subtank is available, allowing the ink tank to be replaced without having to stop printing.

f) Ink supply valves
Ink tank supply valves are located halfway between the ink tanks and the ink tubes. These valves prevent the leakage of inks that might otherwise be caused by the opening of the ink tubes on the side of the ink tanks during their replacement.
The ink supply valves are caused to open and close by the valve open/close mechanism that is activated by driving the valve motors.
The ink tank unit consists of tank bases each are organized into one group of six colors, and six-color ink tubes.
The color-specific ink supply valves will open and close at the same time for all colors.



F-2-10

2.3.2.3 Carriage Unit

2.3.2.3.1 Functions of Carriage Unit

a) Printhead mounting function
The carriage, which fixes the printhead in position mechanically, is connected to the contacts of the head relay PCB.

b) Control function
The carriage carries a carriage relay PCB, which relays drive signals from the main controller PCB, a head relay PCB, which relays printhead drive signals to the printhead, a linear encoder, which generates print timing signals, and a multi sensor, which detects the width of paper and skews in it, adjusts is registration and the head height.
The carriage relay PCB is connected to the main controller PCB by a flexible cable.

c) Carriage drive function
The carriage is moved over the platen by means of the carriage belt that is driven by the power imparted from the carriage motor.

d) Printhead maintenance function
This printer performs cleaning operations, such as wiping the printhead and sucking inks, with the carriage halted at its home position.

e) Nozzle check function
This printer carries out an ink discharge operation with the carriage halted at the head management sensor, locating a non-discharging nozzle in the printhead.

f) Carriage height adjustment function
If the separation between the face of the printhead and the paper (carriage height) is varied as a result of differing paper thicknesses, crooked or curled paper or other problems, the printer is liable to generate excess mist as the carriage height increases or to result in head rubbing as the carriage height decreases.
To maintain an acceptable carriage height, the lift motor is driven according to the selected paper type, feeding method, print conditions (borderless printing/prioritized picture quality) , environmental condition(temperature/humidity) and multi sensor measurements to automatically adjust the separation between the face of the printhead and the paper

The table below shows the relation between the media type and the height of the head.

T-2-1

Height of printhead (mm)	Media type (reference)	Remarks
1.2	Plain paper	
1.4	Photopaper, Synthetic paper, Film, Plain paper(Line drawing)	Capping position
1.8	Coated paper(Line drawing)	
2.0	Plain paper, Coated paper, Fabric banner	
2.2	Premium matte paper, Fine art(watercolor,block print)	
2.6	Canvas	

g) Paper leading edge detection function/paper width detection function/skew detection function
The multi sensor attached to the lower left part of the carriage detects the leading edge and width of paper feeding on the platen and any skews in it.

h) Automatic printhead position adjustment function
The multi sensor attached to the lower left part of the carriage reads an adjustment pattern printed on a form and adjusts the print timing of each printhead automatically.

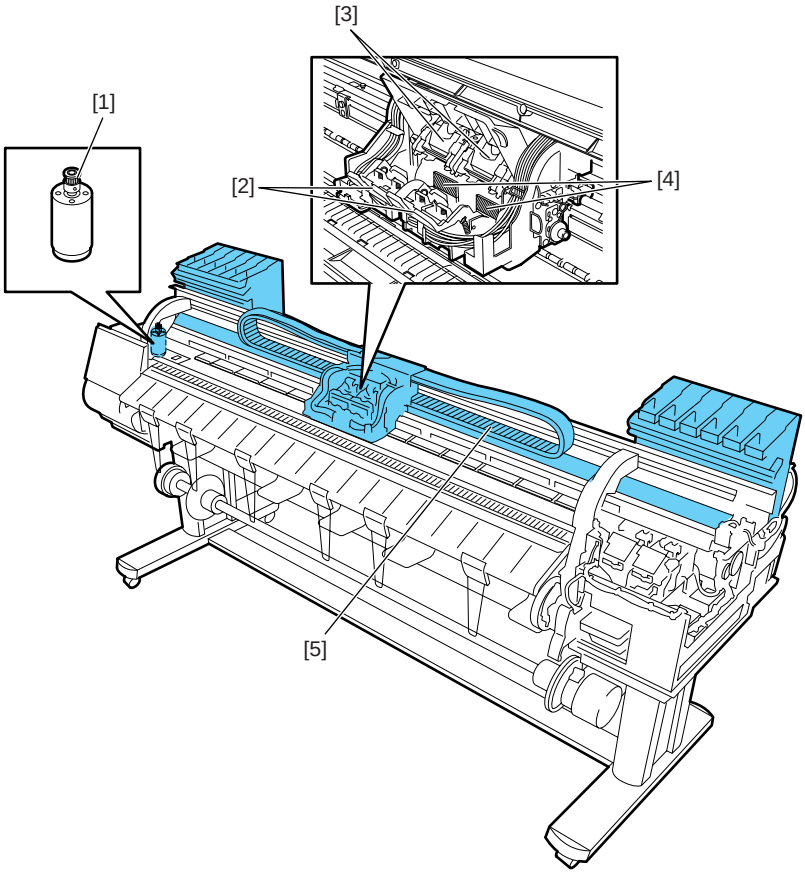
i) Remaining roll media detection function
The printer prints a bar code on roll media upon installation of the roll media. The multi sensor attached to the lower left part of the carriage detects the remaining roll length.

j) Internal unit temperature sensor
A thermistor installed on the head relay PCB detects the internal unit temperature near the printhead.

2.3.2.3.2 Structure of Carriage Unit

a) Printhead mount
The printhead is secured to the carriage by the printhead fixer cover and the printhead fixer lever.
When the printhead is secured to the carriage, the signal contact of the head relay PCB is pressed against that of the printhead to convey print signals.
Furthermore, the ink passage from the ink tanks is connected to the printhead via the ink tubes.

b) Ink port
Ink is supplied to the printhead via an ink tube, which is connected to ink joints, and runs between the tube guides to reach the carriage and follow its movement.



F-2-11

[1] Carriage motor
[2] Printhead fixer lever
[3] Printhead fixer cover
[4] Electrical contact
[5] Ink tube

c) Controller
The Carriage relay PCB is connected to the head relay PCB by means of a short flexible cable.
The flexible cable between the main controller and the carriage relay PCB follows up the motion of the carriage together with the tube guide.
A photocoupler encoder mounted in the lower part of the back of the carriage detects a linear scale reading as the carriage moves.

d) Carriage drive
Mechanical misregistrations in the vertical/horizontal and bidirectional print positions of the printhead mounted can be corrected by selecting Adjust Printer from the main menu to shift the print timing.
A DC-operated carriage motor drives the carriage reciprocally on the platen by way of the carriage belt.
The carriage home position, or the capping position, is detected by the sensor flag on the right side of the carriage and the photointerrupter-based carriage HP sensor on the right side of the printer. When the linear scale position is set as a reference home position for use in subsequent position control operations, the carriage motor is driven by a control signal generated from the main controller PCB.

e) Printhead maintenance unit
This printer cleans the printhead with the carriage halted at its home position.
Wiping takes place through the rotation of the motor.
Wiper blades mounted on the carriage wipe the printhead while the carriage is halted at its home position.
Wet wiping is carried out for added wiping removal performance, whereby the wiper blades are moistened with glycerin as they are pressed against an absorber impregnated with glycerin.
Maintenance jet ejection is carried out on the cap, at the maintenance jet tray, borderless printing ink tray and on the paper surface.
A suction operation is carried out by a suction cap in the purge unit.

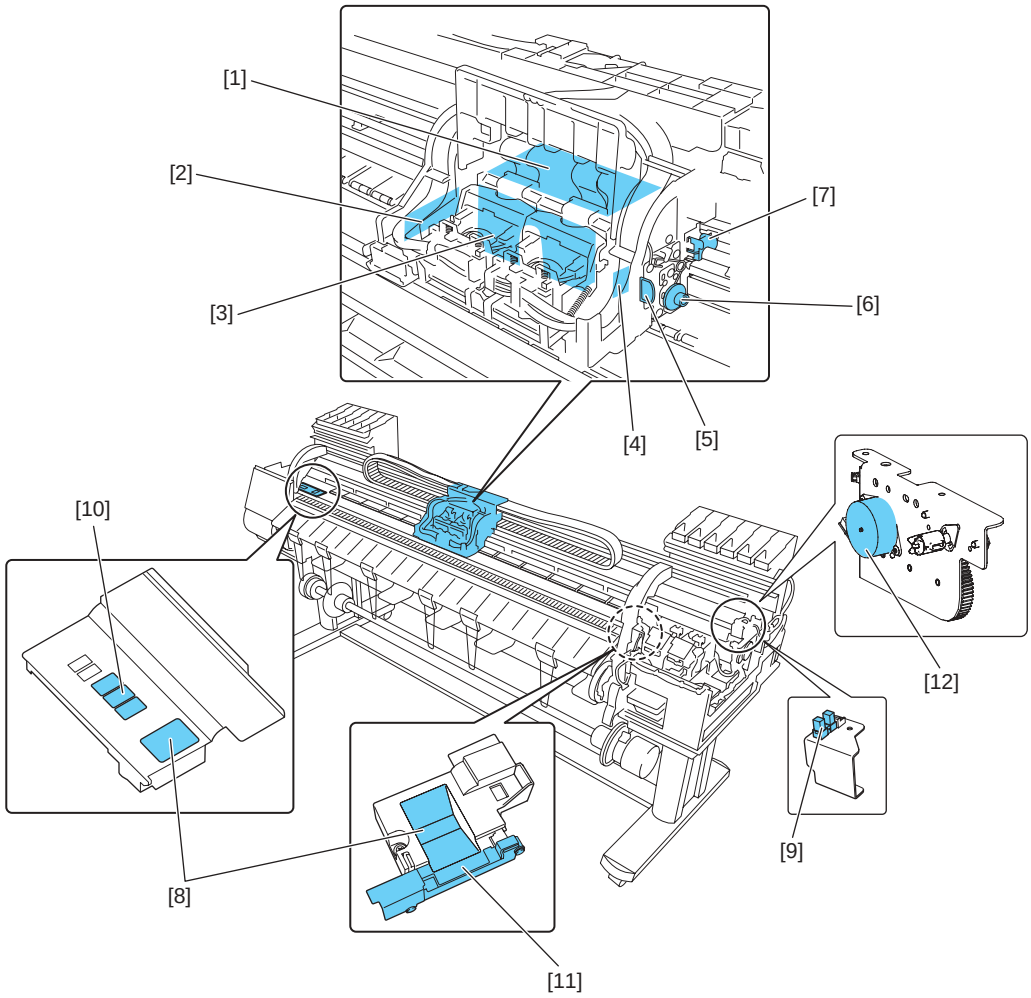
f) Carriage height adjustment unit
The head height is adjusted with the carriage halted at its home position.
The lift motor is driven to rotate the lift shaft within the carriage, in sync with which the lift cams on both sides of the carriage move the head holder up and down, thereby varying the separation between the face of the printhead and the paper.
The printhead height is detected from the lift cam sensor within the carriage and the distance of rotation of the lift motor.

g) Multi sensor

The multi sensor attached to the lower left part of the carriage consists of four LEDs and four light-receiving sensors to detect the leading edges and width of paper and skews in it, and to adjust its registration and head height.
The multi sensor reference has the white plate attached to it, so that a reference value can be calculated during carriage height measurement by measuring the intensity of light reflected upon the white plate.
(Service mode: SERVICE MODE>ADJUST>GAP CALIB)

h) Rail cleaner
The shaft cleaner located in the right rear of the carriage helps keep the main rail clean.

i) Internal unit temperature sensor
One thermistor is installed on the head relay PCB on the back of the head holder to detect the internal unit temperature.



F-2-12

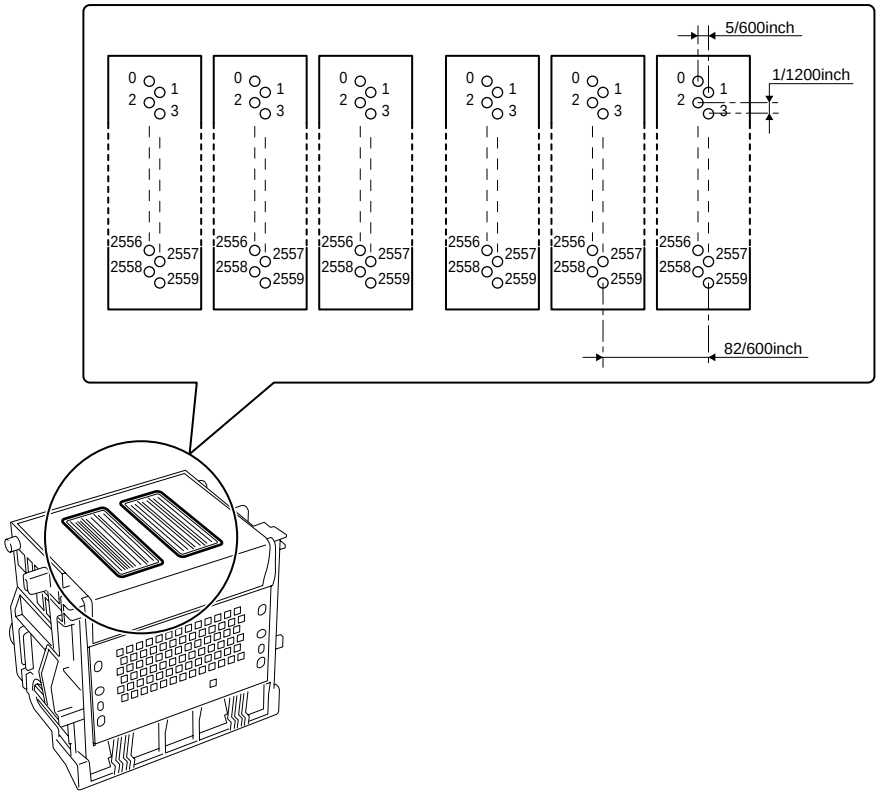
[1]	Carriage relay PCB	[7]	Shaft cleaner
[2]	Multi sensor	[8]	Maintenance jet tray
[3]	Head relay PCB	[9]	Carriage HP sensor
[4]	Lift cam sensor	[10]	Multisensor reference
[5]	Sensor flag	[11]	Head management sensor unit
[6]	Lift cam	[12]	Lift motor

2.3.2.4 Printhead

2.3.2.4.1 Structure of Printhead

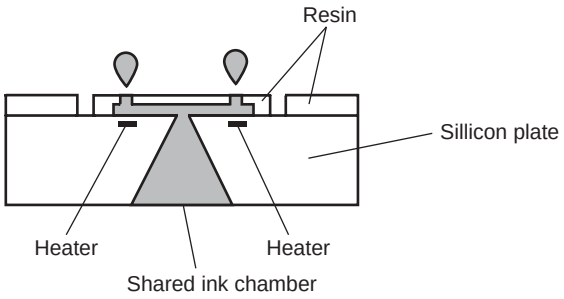
Each printhead is an integrated assembly of six trains of nozzles. Capable of controlling each nozzle individually, each printhead implements discharge control for six colors by itself.

a) Nozzle arrangement
The nozzle assembly is formed of 1,280 nozzles arranged at 600-dpi intervals in a zigzag pattern, offering a total of 2,560 nozzles 1,200-dpi intervals.



F-2-13

b) Nozzle assembly structure
Inks supplied from the ink tanks are filtered through a mesh ink filter before being sent to the nozzle assembly.
Each nozzle train is supplied with an ink from the common nozzle chamber.
A head drive current subsequently flowing through the nozzle heater boils the ink, generating bubbles to discharge ink drops from the nozzle assembly.



F-2-14

2.3.2.5 Purge Unit

2.3.2.5.1 Functions of Purge Unit

To maintain high print quality, the purge unit performs maintenance of the nozzles of the printhead.
The purge unit supports a capping function, cleaning function, and ink supply function.

a) Capping function
The capping function presses the cap of the purge unit against the face plate on the nozzle section of the printhead to prevent nozzle drying and dust adhesion.
Capping is performed when printing is complete, at the start of the suction operation, and when switching to the standby state due to an error.
The capping function also establishes the ink passage between the printhead and purge unit.

b) Cleaning function
The cleaning function restores the printhead to the state where ink can be easily discharged from nozzles. This function includes the following three types of operations.

- Wiping operation
This operation is performed to remove paper fibers and dried ink from the face plate.

- Pumping operation
This operation is performed to remove ink from the nozzles and fill the nozzles with fresh ink.

- Maintenance jet operation
This operation is performed to spray ink from the nozzles to the cap, the borderless ink jet tray, and on paper to remove bubbles in the nozzles and dust and other foreign particles.

c) Ink supply function
The suction pump of the purge unit operates together with the ink supply valve to supply ink to the printhead during the initial filling and ink level adjustment.

Details of the cleaning function are shown in the table below.

Cleaning mode	Name of Service mode or PRINT INF (Name of Main Menu)	Operation	Description of cleaning
Cleaning 1	CLN-A-1/CLN-M-1 (Head Cleaning A)	Normal cleaning	Removes dried ink from nozzles, thick ink accumulated on the face, and paper particles.
Cleaning 2	CLN-A-2	Ink level adjustment and cleaning	Adjust the ink level in the head by suction, and then performs normal cleaning.
Cleaning 3	CLN-A-3	Initial filling ink	Fills the empty tube (during initial installation) with ink, and then performs normal cleaning.
Cleaning 4	CLN-M-4 (Replace P.head)	Ink drainage for head replacement	Drains ink to replace the head (drains only the ink in the head).
Cleaning 5	CLN-M-5 (Move Printer)	Ink drainage for secondary transport	Drains ink from the head and tube for secondary transport.
Cleaning 6	CLN-A-6/CLN-M-6 (Head Cleaning B)	Normal (strong) cleaning	Performs suction stronger than when adjusting the ink filling amount in the head or normal cleaning to unclog nozzles.
Cleaning 7	CLN-A-7	Aging	Performs idle ejection after replacement of the head.
Cleaning 10	CLN-A-10 (Move Printer)	Ink filling after secondary transport	Fills the empty tube (during installation after secondary transport) with ink, and performs normal cleaning.
Cleaning 11	CLN-A-11	Ink filling after head replacement	Performs normal cleaning after head replacement and ink filling.
Cleaning 15	CLN-A-15	Dot count suction	Performs suction to remove ink adhered to dried nozzles and thick ink accumulated on the face when the dot count reaches the prescribed value.
Cleaning 16	CLN-A-16	Precipitated ink agitation	Performs the agitation (ink supply valve open/close) operation to prevent the ink ingredient from precipitating.
Cleaning 17	CLN-A-17	Cleaning (weak)	Performs cleaning weaker than normal cleaning to unclog nozzles.

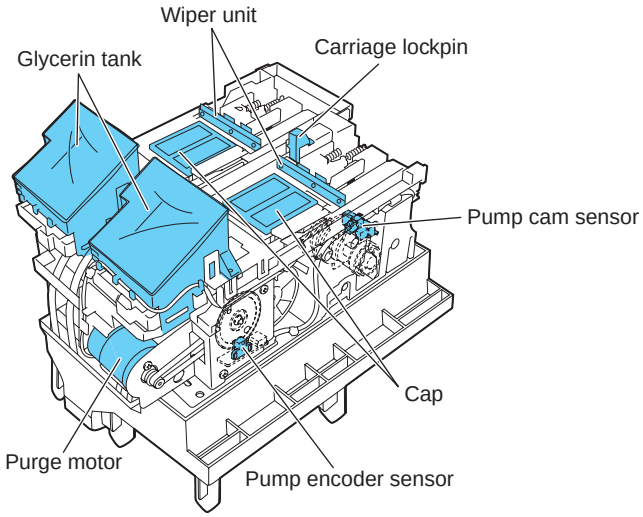
Cleaning operation timings are as follows.

Printer status				Cleaning operation	Consumption (typ.)*1
Standby	168 hours elapsed capped			Cleaning 1 (Normal Cleaning)	1g
	At least 720 to 960 hours elapsed since the last session of Cleaning 2, 3, 6 or 10 (480 hours after initial installation)			Cleaning 6 (Normal (strong) Cleaning)	5g
	At initial installation and 96 hours elapsed since the last session of Cleaning 16			Cleaning 16 (Precipitated ink agitation)	-
	1 hour elapsed capped with a specified number of dots discharged per chip completed after last wiping			Wiping + Idle ejection	0.013g
Power-on	At initial installation			Cleaning 3 (initial filling ink)	40g
	Both heads and inks available	The print operation has completed.	168 to 720 hours elapsed capped	Cleaning 1 (Normal Cleaning)	1g
			At least 720 to 960 hours elapsed since the last session of Cleaning 2, 3, 6 or 10 (360 to 480 hours after initial installation)	Cleaning 6 (Normal (strong) Cleaning)	5g
			At least 960 to 2160 hours elapsed since the last session of Cleaning 2, 3, 6 or 10 (480 hours after initial installation)	Cleaning 2 (Ink level adjustment and cleaning)	10g
			At least 96 hours elapsed since the last session of Cleaning 16	Cleaning 16 (Precipitated ink agitation)	-
			At least 1 hour elapsed capped with a specified number of dots discharged per chip completed after last wiping	Wiping + Idle ejection	0.013g
		Print operation aborted (uncapped) and CR error occurring	Up to 72 hours elapsed after an abort	Cleaning 1 (Normal Cleaning)	1g
			Over 72 hours elapsed after an abort	Cleaning 6 (Normal (strong) Cleaning)	5g
		Print operation aborted (uncapped) and no CR error occurring		Cleaning 11 (ink filling after head replacement)	10g
	No heads are available			Cleaning 10 (ink filling on secondary transport)	40g
Power off	Specified number of dots discharged per chip completed since the last session of wiping			Wiping + Idle ejection	0.013g
Before the start of printing	Less than 168 hours elapsed capped			Idle ejection	0.013g
	At least 168 hours elapsed capped			Cleaning 1 (Normal Cleaning)	1g
	Before printing in the wake of an error occurrence			Cleaning 1 (Normal Cleaning)	1g
Printing	Before scanning while printing			Idle ejection (+Wiping)	- (0.013g)
After the end of printing	A specified number of dots (color) discharged per chip since the last session of Cleaning 2, 3, 6 or 1			Cleaning 6 (Normal (strong) Cleaning)	5g
	A specified number of dots discharged per chip after the last session of wiping			Wiping + Idle ejection	0.013g
	3 minutes elapsed since the last session of capping			Wiping + Idle ejection	0.013g
	Total 2 hours elapsed uncapped since the last session of Cleaning 1, 2, 3, 6 or 10			Cleaning 1 (Normal Cleaning)	1g
When the Head Cleaning menu choice is executed	Manual Cleaning (Head Cleaning A)			Cleaning 1 (Normal Cleaning)	1g
	Manual cleaning (Head cleaning B)			Cleaning 6 (Normal (strong) Cleaning)	5g
When the Replace Print Head menu choice is executed	After head replacement			Cleaning 2 (ink level adjustment and cleaning) + Cleaning 4 (ink drainage for head replacement)	10g
When the Move Printer menu choice is executed	After the Move Printer menu choice is executed			Cleaning 5 (ink drainage for secondary transport)	10g
	After power-on at secondary installation			After power-on at secondary installation	15g

*1: Quantities of ink consumption by nozzle train

2.3.2.5.2 Structure of Purge Unit

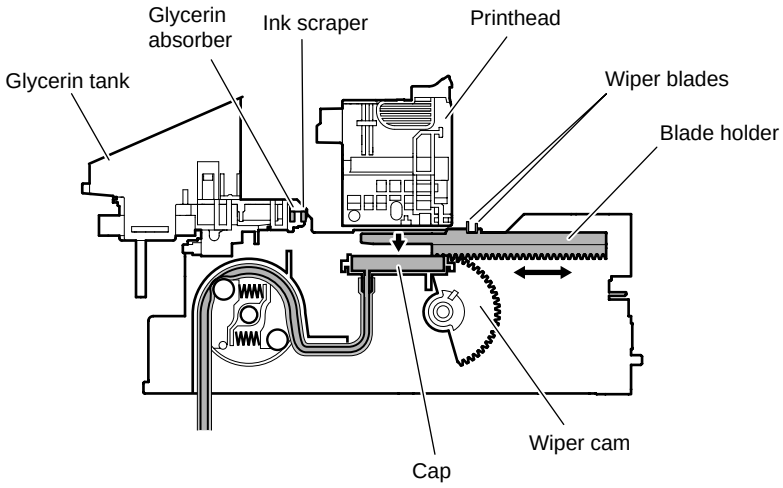
a) Caps
The caps cap the nozzle assembly in the left printhead during capping and cleaning. The part of the caps that comes into contact with the face plate of the nozzle assembly is made of rubber. Two caps are in position to meet each of the printheads mounted on the carriage (six trains of nozzles).
The caps are activated to protect the nozzle assembly on capping. When the carriage moves to the home position , the caps are elevated by the cap cam that is driven by the capping motor, capping the nozzle assembly to protect it.
These caps cap the nozzle assembly to suck inks from the printhead by means of the suction pump.



F-2-15

b) Wipers
The wipers are driven by the purge motor to wipe the six trains of nozzles in the nozzle assembly in the printhead simultaneously.
A pair of wiper blades are in position to ensure wiping performance. The wiping operation operates on a slide wiping basis, sliding the wiper blades via wiper cams through the normal rotation of the purge motor.
Wiping is executed by the wiper blades moving at a constant speed to the front of the printer after the end of a print or suction operation.
A wiper blade set perpendicularly to the head wipes the entire face of the printhead, followed by a narrower blade wiping the nozzle assembly.
The wiper blades are cleaned before they are replaced at the wiping position after wiping to preserve wiping performance.
Wiper blade cleaning is carried out by scraping off the inks that have been wiped off from the head with an ink scraper linked to the maintenance cartridge, then wiping the blades with a blade cleaner.
Wet wiping is carried out for added wiping removal performance, whereby the wiper blades are moistened with glycerin as they are pressed against an absorber impregnated with glycerin. The quantity of glycerin used is managed by counting the number of times the wiper blades have been pressed against the absorber. When this count falls to equal any of the following values, either a replacement warning (continued print available) or replacement required indication (service call error) is issued.

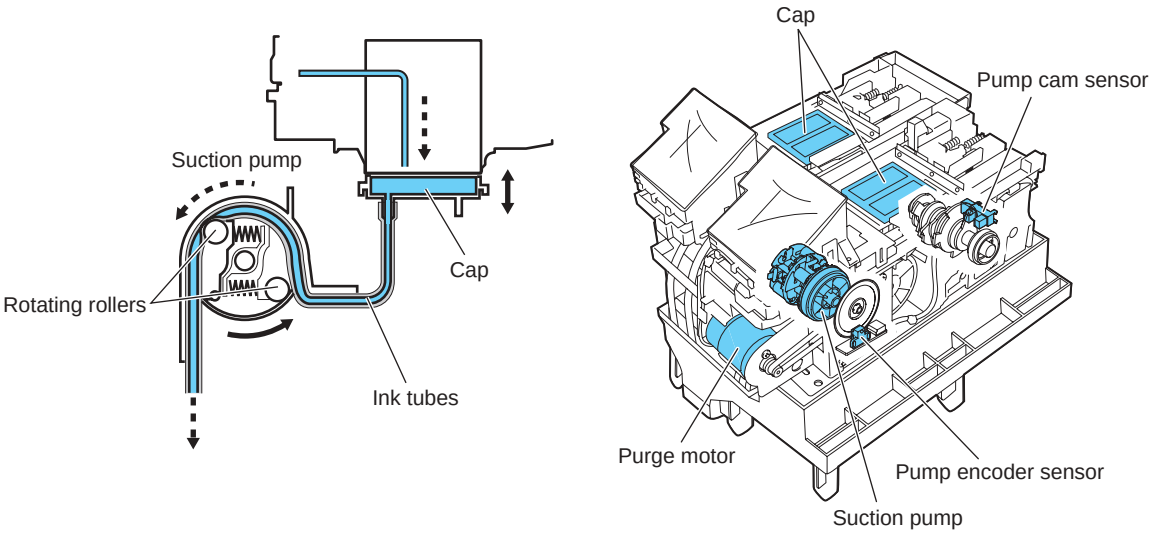
Display	Times
Replacement warning indication	71,250 times
Service calls	75,000 times



F-2-16

c) Pump
The pump (suction pump) is a tube pump that pressurizes the ink tubes with rotating rollers to generate a negative pressure for sucking inks.
A single tube is sequentially pressurized by a pair of rotating rollers to control the level of ink suction by a wide margin.

The timing at which the rotating rollers rotate is detected by the pump cam sensor, with the distance of rotation being controlled by the driving of the purge motor.



F-2-17

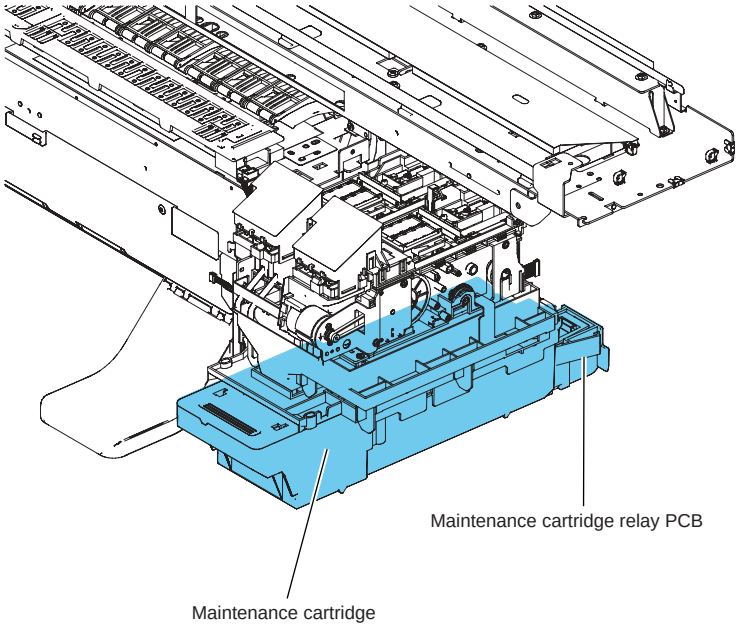
2.3.2.6 Maintenance Cartridge

2.3.2.6.1 Maintenance Cartridge

a) Maintenance cartridge
The maintenance cartridge holds as much about 1200 mL of used inks (about 1280 g: including the evaporation of moisture from the used inks).

b) Used maintenance cartridge ink detection
Used maintenance cartridge ink detection is monitored with regard to a dot count.
When the quantity of the used ink reaches about 960 mL (about 1024 g, 80% of the cartridge capacity), the warning message "Check maint cartridge capacity" is displayed to tell that the maintenance cartridge is nearly full.
Printing may continue even when the warning message is displayed.
When the quantity of the used ink reaches about 1200 mL (about 1280 g, 100% of the cartridge capacity), a replacement prompt error message is displayed, telling that the maintenance cartridge is full.
When the printer determines that the maintenance cartridge is full, it shuts down even while it is printing.
The printer will remain inoperable until the maintenance cartridge is replaced.

MEMO:
The maintenance cartridge houses EEPROM, so that main controller PCB can control the status of the maintenance cartridge by writing to and reading from the EEPROM content.
There is no need to initialize the counter information, therefore, when the maintenance cartridge is replaced.

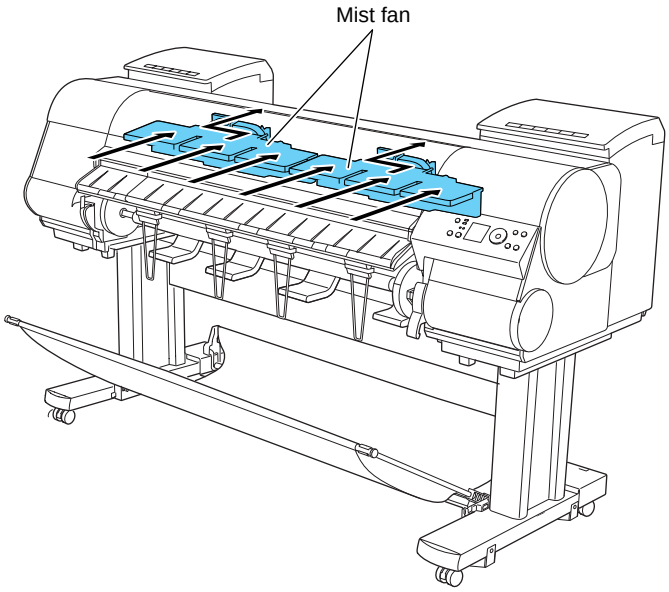


F-2-18

2.3.2.7 Air Flow

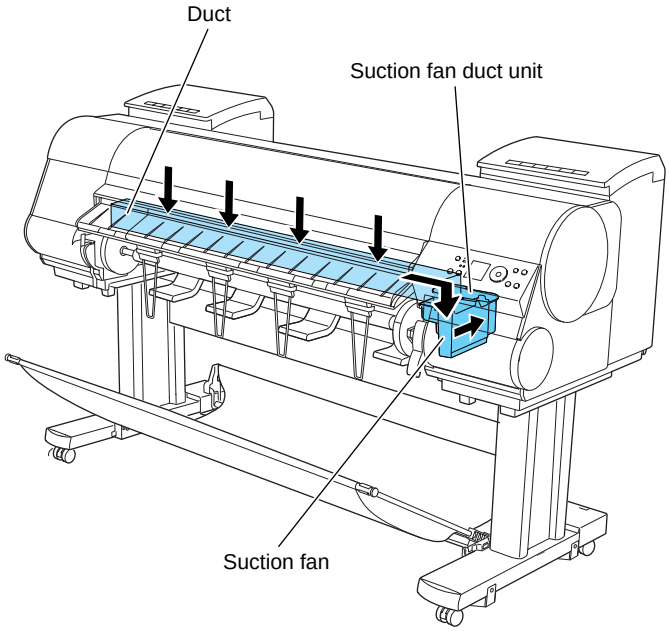
2.3.2.7.1 Air Flow

This printer has two fans, a mist fan used to collect mist and a suction fan used to suck media onto the platen.
Ink mists floating during printing or springing back from the paper are collected in the mist fan unit by air flow in the printer.
Two mist fans located on the rear side of the printer makes the airflow that carries the ink mists to the mist fan unit.



F-2-19

A duct is located under the platen, along with a platen ink box unit used for collecting waste ink during borderless printing and idle discharges. The suction fan collects the ink mist in the duct into the suction fan duct unit.



F-2-20

2.3.3 Paper Path

2.3.3.1 Outline

2.3.3.1.1 Overview of Paper Path

The key components of the paper passage consist of a feed roller assembly, a pinch roller drive that locks and releases the pinch roller and sensors that detect the feed status of paper. It feeds paper in trays, conveys and delivers paper.

Basic operation of the roll media loading sequence
1) Multi sensor light quantity adjustment.
2) Paper leading edge detection sensor.
3) Paper left edge detection sensor.
4) Barcode read.
 * Performed only if Chk Remain.Roll is turned on.
5) Paper skew detection sensor.
6) Paper right edge detection sensor.
7) Trim edge first detection sensor.
 * Performed only if Trim Edge First is turned on.
8) Leading edge cutting.
 * Leading edge cutting is executed under the following conditions.
  a. Trim Edge First is set to Forced.
  b. Trim Edge First is set to Automatic, and the need for cutting determined.
  c. A barcode is detected when Chk Remain.Roll is on (forced cutting, regardless of the setting of Trim Edge First).
9) Paper leading edge detection sensor.

Basic operation of the cut sheet loading sequence
1) Paper trailing edge detection sensor.
2) Multi sensor light quantity adjustment.
3) Paper width detection sensor.
4) Paper leading edge detection sensor.
5) Paper skew detection sensor.

MEMO:

Press the [▼] key while the printer is offline to deliver paper, the [▲ key to rewind the paper.

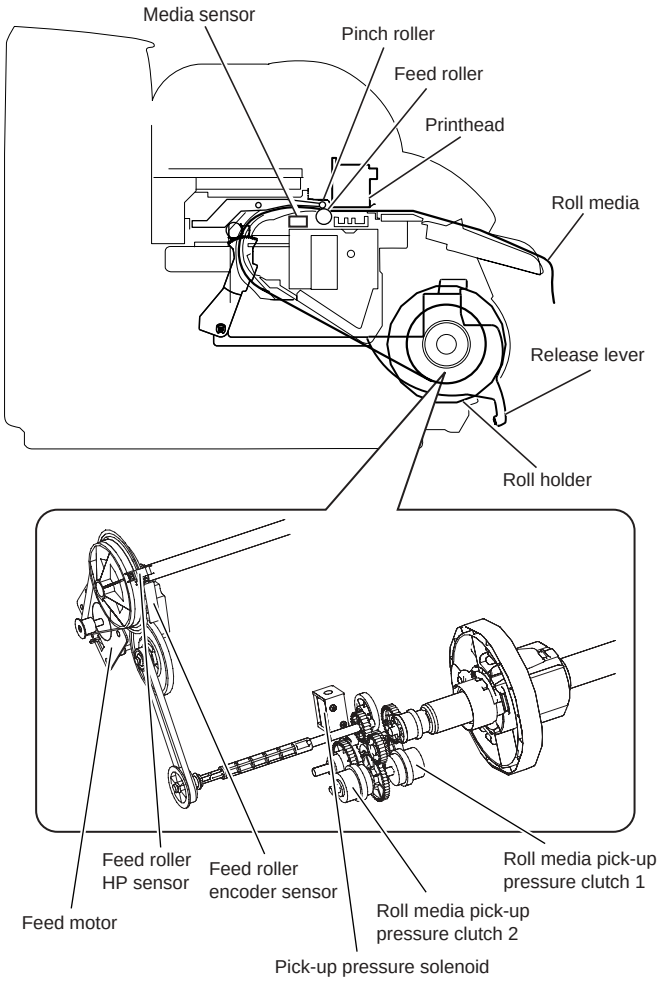
2.3.3.2 Paper Path

2.3.3.2.1 Structure of Feed Roller Unit

a) Paper feed assembly
The paper feed assembly consists of paper feeding mechanisms, such as a feed roller that is driven by the feed motor and a pinch roller unit that follows up the motion of the feed roller.
Paper feeds horizontally under the printheads on the carriage as it is kept level on the platen to prevent cockle.

b) Sensors
The paper feed assembly includes sensors for detecting the status of paper feeding and that of the mechanical components that make up the paper passage.
For more details, see TECHNICAL REFERENCE > Detection Functions with Sensors.

c) Roll media pick-up drive unit
When the roll media feeds, the roll media pick-up pressure clutch 1 turns on to actuate the torque limiter in the pick-up drive unit. Thus the back tension works to prevent the roll media from sags or skew.
At this time, if the paper tube of roll media is inside diameter of 3 inches, the pick-up pressure solenoid and roll media pick-up pressure clutch 2 turn on to increase the back tension (about 2.6 times higher than before).

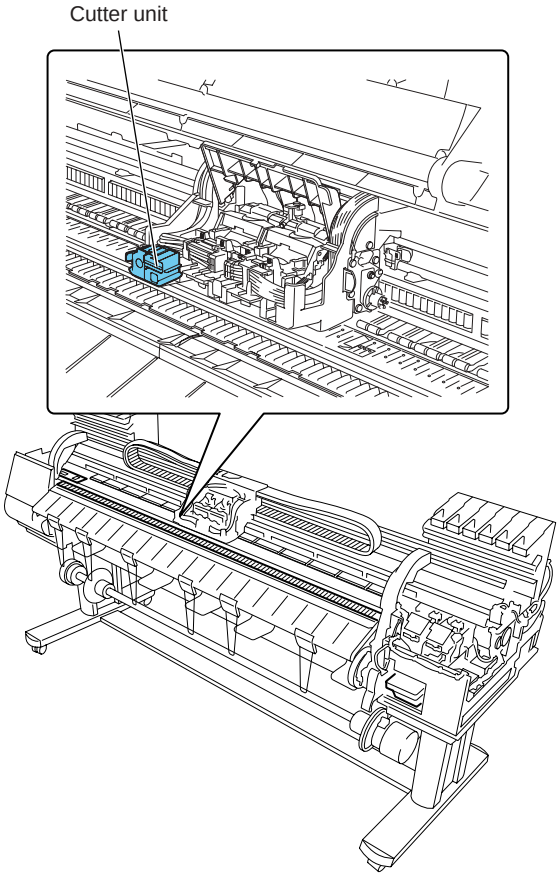


F-2-21

2.3.3.3 Cutter Unit

2.3.3.3.1 Structure of Cutter Unit

If the print driver is configured to use a cutter with roll media, cutter unit attached to the left side of the carriage cuts roll media automatically. Cutter unit won't cut roll media if the print driver is configured otherwise.



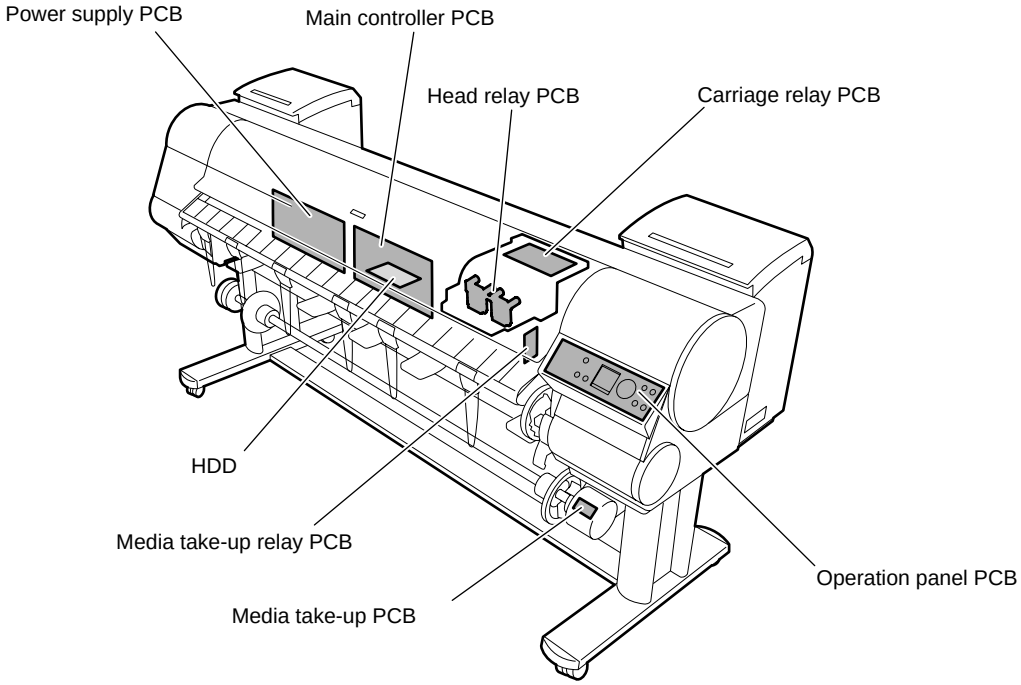
F-2-22

2.4 Printer Electrical System

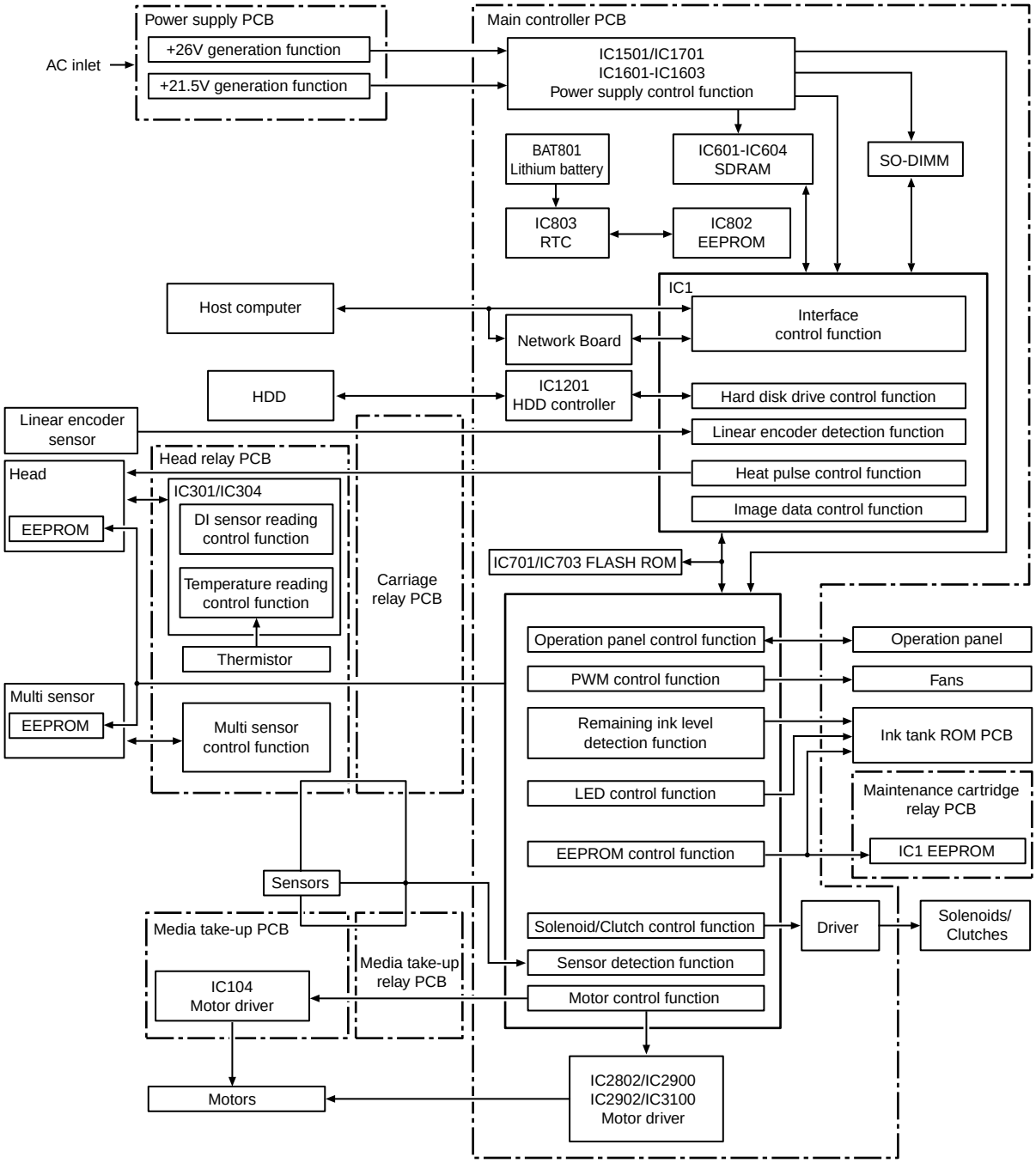
2.4.1 Outline

2.4.1.1 Overview

The printer electrical system consists of the main controller PCB and power supply PCB which are mounted on the back side of the printer, the carriage relay PCB, the head relay PCB, and printhead which are mounted in the carriage, the operation panel on the right upper cover and other electrical components such as sensors, and motors.
The main controller PCB manages the image data processing and the entire electrical system, and controls relay PCBs and driver functions.



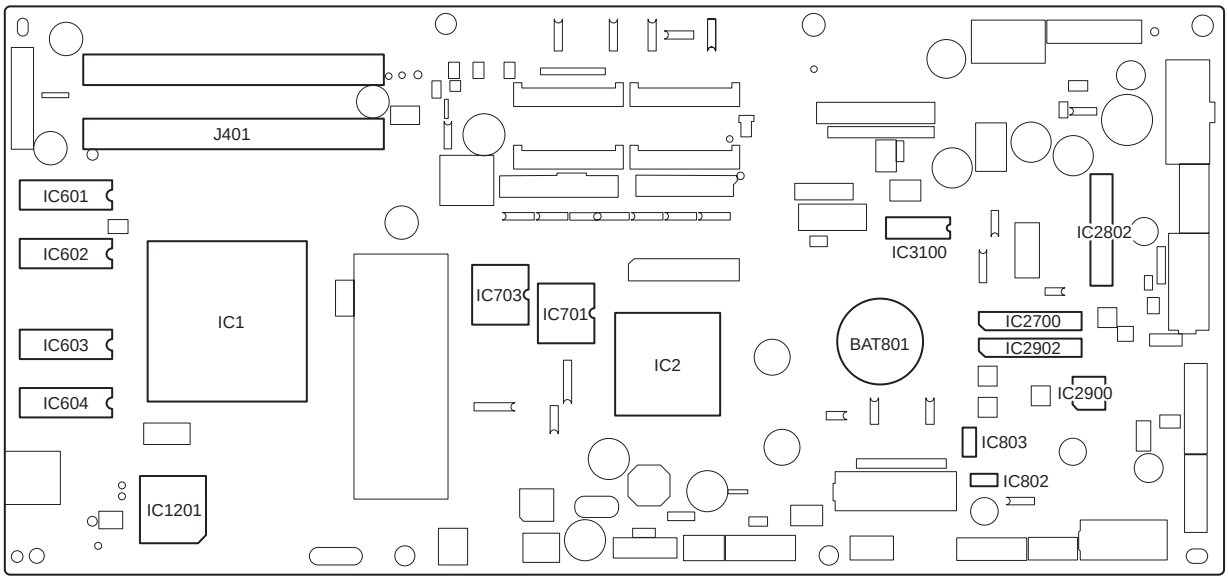
F-2-23


Power supply PCB
AC inlet
+26V generation function
+21.5V generation function
Main controller PCB
IC1501/IC1701
IC1601-IC1603
Power supply control function
BAT801
Lithium battery
IC601-IC604
SDRAM
SO-DIMM
IC803
RTC
IC802
EEPROM
IC1
Host computer
Interface
control function
Network Board
HDD
IC1201
HDD controller
Hard disk drive control function
Linear encoder
sensor
Linear encoder detection function
Head relay PCB
Head
Heat pulse control function
IC301/IC304
EEPROM
DI sensor reading
control function
Image data control function
Temperature reading
control function
Carriage
relay PCB
IC701/IC703 FLASH ROM
Thermistor
Operation panel control function
Operation panel
Multi sensor
PWM control function
Fans
EEPROM
Remaining ink level
detection function
Ink tank ROM PCB
Multi sensor
control function
LED control function
Maintenance cartridge
relay PCB
EEPROM control function
IC1 EEPROM
Sensors
Media take-up PCB
Solenoid/Clutch control function
Driver
Solenoids/
Clutches
Media take-up
relay PCB
Sensor detection function
IC104
Motor driver
Motor control function
IC2802/IC2900
IC2902/IC3100
Motor driver
Motors

F-2-24

2.4.2 Main Controller

2.4.2.1 Main controller PCB components



F-2-25

a) ASIC (IC1/IC2)
The ASIC(IC1/IC2) with a 32/16-bit internal bus is driven in sync with the 330/66 MHz external clock. It supports the following functions:

Image processing unit
This unit converts the RGB multi-value image data or CMYK multi-value data received from the host computer through the interface connector to the binary image data for the ink colors used.

DMA controller
This controller control DMA transfer of the data transferred through the input interfaces such as the USB and expansion card slot as well as DMA transfer of the data stored in the DIMM.

Image data generation/output function
This function generates image data for color printing from the received image data and the mask pattern (corresponding to print mode) stored in the FLASH ROM, and stored the generated image data in DIMM. It also outputs the generated image data to the carriage relay PCB.

Interrupt controller
This controller receives and processes internal interrupts and external interrupts from the USB, image processing unit, and expansion card slot.

Timer function
Even when the printer is turned off, the timer function is held on using the RTC(IC803) and lithium battery(BAT801) to assist the cleaning function.
When the power cord is plugged to the outlet, power is supplied to the RTC and therefore the lithium battery power is not consumed.

Heat Enable signal control function
This function uses the pulse width to perform variable control of the time of application of the Heat Enable signal to the nozzle heater board for each printhead nozzle array.

Linear scale count function
This function reads the linear scale when the carriage moves, thus generating the ink discharge timing. It also counts the linear scale timing cycle using the reference clock to measure the carriage moving speed.

Dot count function
This function controls the discharge dots used as the information for Heat Enable signal control, maintenance jet control, cleaning control, and remaining ink level for each nozzle array.

Operation panel control function
This function controls serial communication with the operation panel.

PWM control function
This function controls driving of the suction fan and mist fan as well as the temperature of the printhead.

Remaining ink level detection function
This function detects the remaining level of each color of ink based on the signal received from the hollow needle mounted in the ink tank unit.

LED control function
This function controls the LEDs on the ink tank unit.

I/O port function
This function controls input signals from sensors.

Power ON/OFF control function
This function controls turning on/off of the drive power (32V and 5.1V) supplied from the power supply PCB.

Head DI sensor read control function
This function controls read operation by the head DI sensor.

Multi sensor control function
This function controls the LED, adjusts the gain, and controls obtainment of the reading for the multi sensor.

EEPROM control function
This function controls the EEPROMs of individual ink tanks, the maintenance cartridge EEPROM, the EEPROM on the maintenance cartridge relay PCB, and the head EEPROM in addition to the on-board EEPROM.

Motor control function
This function controls the carriage motor, feed motor, valve motor, purge motor and lift motor based on the input signals from sensors.

b) Driver IC (IC3100)
This IC generates a carriage motor control signal based on the control signal from the ASIC.

c) Driver IC (IC2802)
This IC generates feed motor control signal based on the control signal from the ASIC.

d) Driver IC (IC2900)
This IC generates purge motor and valve motor control signals based on the control signal from the ASIC.

e) Driver IC (IC2902)
This IC generates lift motor control signal based on the control signal from the ASIC.

f) Driver IC (IC2700)
This IC generates solenoid and clutch control signals based on the control signal from the ASIC.

g) DIMMs (IC601/IC602/IC603/IC604)
The DIMM comprising a 128-MB SDR-SDRAM is connected to the 32-bit data bus to be used as a work area.
During print data reception, it is also used as an image buffer.
It cannot be expanded.

h) FLASH ROM (IC701/IC703)
A 128-MB flash ROM is connected to the 8-bit data bus to store the printer control program.

i) EEPROM (IC802)
The 128-KB EEPROM stores various setting values, adjustment values, log data, counter values related to the user/servicing.

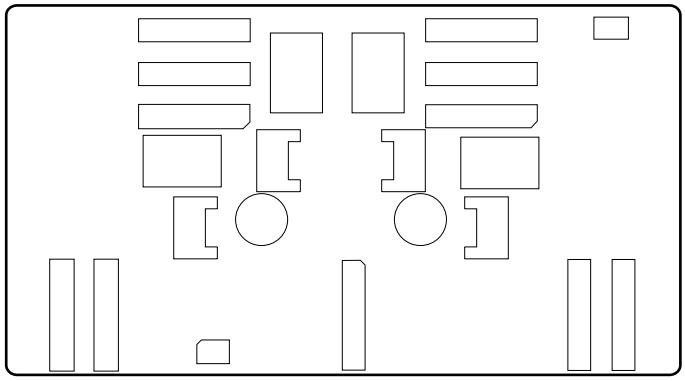
j) SO-DIMM
The 256-MB SO-DIMM (J401) is connected to the 32-bit data bus to be used as a work area.
During print data reception, it is also used as an image buffer.
It cannot be expanded.

k) HDD controller (IC1201)
This controller control the hard disk drive.

MEMO:
After replacement of the main controller PCB, the printer must be started up in the service mode to copy over the setting and adjustment values to the new PCB properly (the service mode will be switched to the PCB replacement mode automatically).

2.4.3 Carriage Relay PCB

2.4.3.1 Carriage relay PCB components



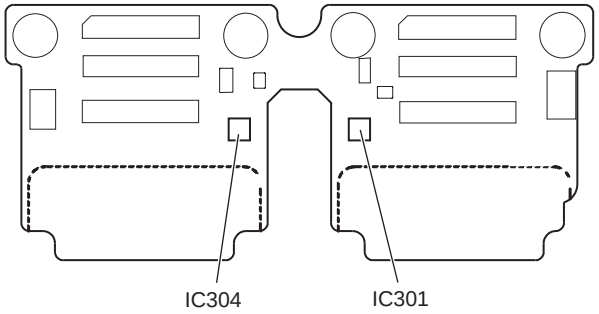
F-2-26

a) Image data relay function
This function relays the image data from the main controller PCB to the printhead.
The function for processing image data is not supported.

b) Sensor relay function
This function relays the input signals from the multi sensor, lift cam sensor, carriage cover sensor, and linear encoder to the main controller PCB.

2.4.4 Head Relay PCB

2.4.4.1 Head relay PCB components



F-2-27

a) Latch IC (IC301,IC304)
DI sensor read control function
Obtains reading value of the DI sensor in the printhead and the head rank value for each color and outputs them to the main controller based on the control commands from the main controller.

Environment temperature read control function
Outputs the environment temperature detected by the thermistor on the head relay PCB to the main controller based on the control commands from the main controller.

Relay function of the power to the logic components in the printhead
Supplies the power to the logic components in the printhead based on the control commands from the main controller.

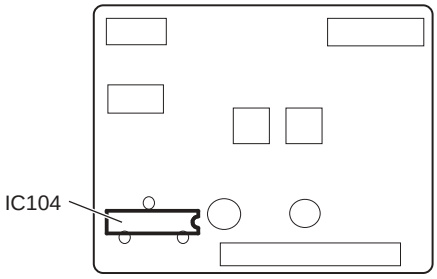
b) Multi sensor control IC
These IC's generates the LED control signals and makes gain adjustment for the multi sensor.

c) Image data relay function
This function relays the image data from the main controller PCB to the printhead.

d) Sensor relay function
This function relays the input signals from the multi sensor, lift cam sensor, carriage cover sensor, and linear encoder to the main controller PCB.

2.4.5 Motor Driver

2.4.5.1 Media take-up PCB components



F-2-28

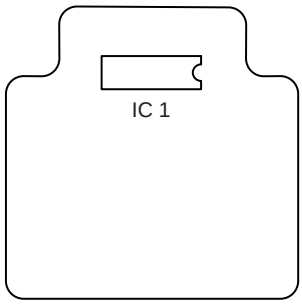
a) Driver IC (IC104)

Media take-up motor drive function
This function controls the Media take-up motor based on the control signals from the main controller.

Sensor relay function
This function relays the input signals from the Media take-up paper detection sensor and Media take-up on/off sensor to the main controller PCB.

2.4.6 Maintenance Cartridge Relay PCB

2.4.6.1 Maintenance cartridge relay PCB components

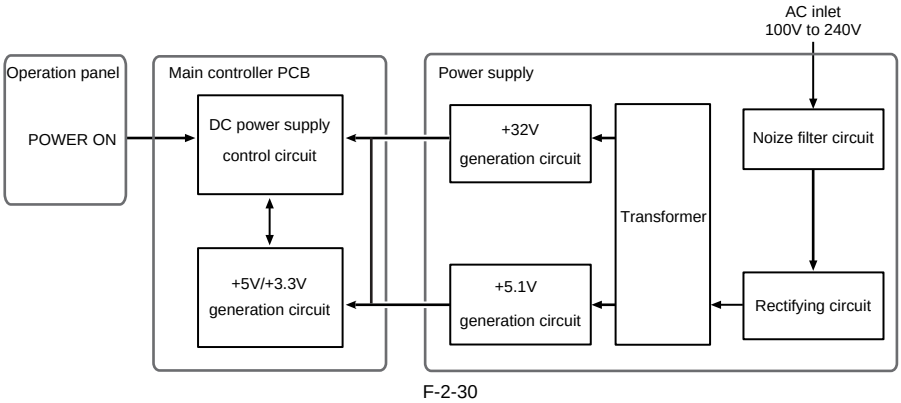


F-2-29

a) EEPROM (IC1)
The 2-KB EEPROM stores all information written in the EEPROM on the main controller PCB.

2.4.7 Power Supply

2.4.7.1 Power supply block diagram

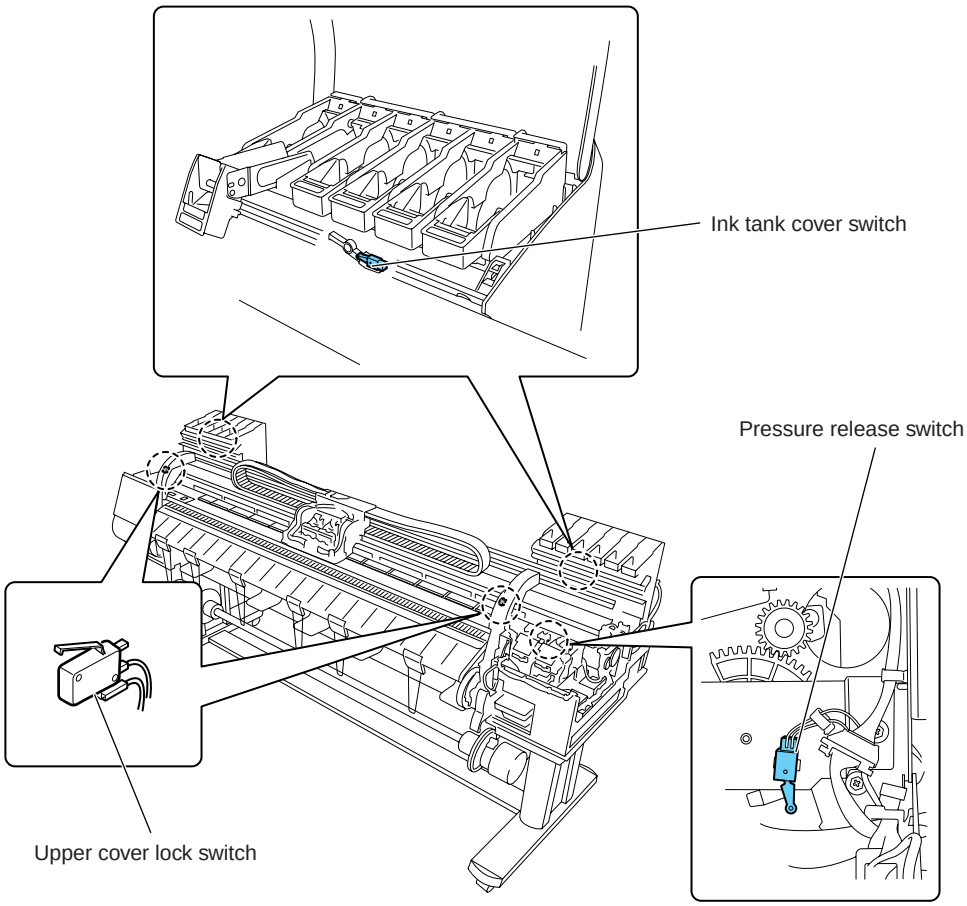


F-2-30

The power supply converts AC voltages ranging from 100V to 240V from the AC inlet to DC voltages for driving the ICs, motor, and others.
The voltage generator circuits include the +32V generation circuit for driving motors, fans, and the +5.1V generator circuit for driving sensors, logic circuits.
When in the power saving mode, the power supply cut out the +32V and the +5.1V.
Power ON/OFF operation is controlled by the main controller PCB. When the upper cover is open, the power supply cut out only the +32V power to the carriage.

2.5 Detection Functions with Sensors

2.5.1 Covers



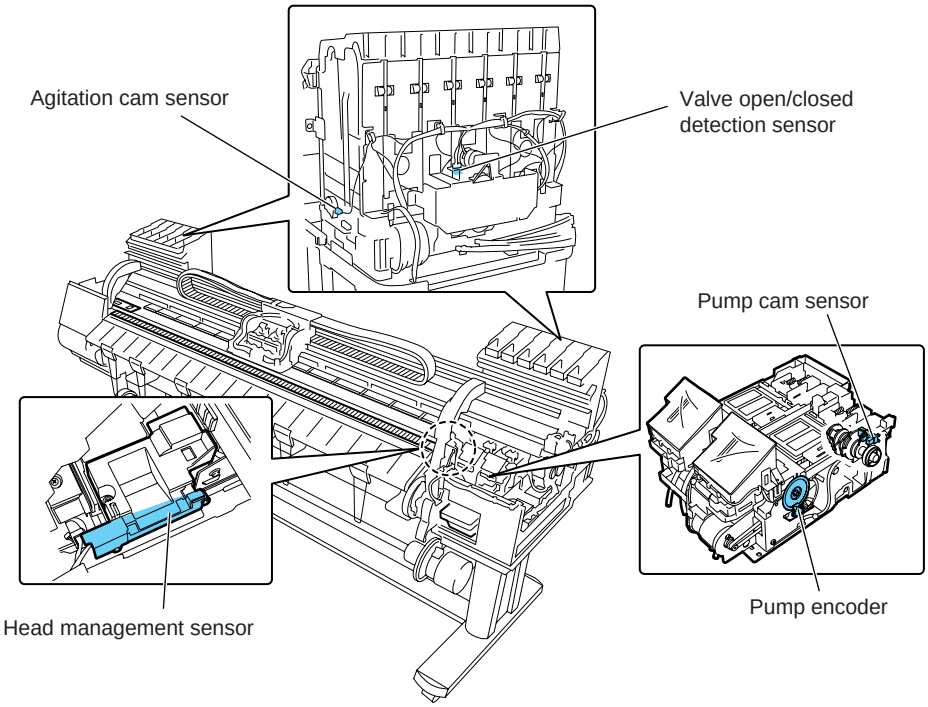
F-2-31

Upper cover lock switch (L) / (R)
The microswitch-based upper cover lock switches detect the open/closed states of the upper cover.
When the upper cover close, the switches are pressed to detect the closed state of the upper cover.
The printer has one switch installed on the left and right sides each to prevent one-sided closure of the upper cover.

Ink tank cover switch (L) / (R)
The microswitch-based ink tank cover switches detect the open/closed states of ink tank covers.
When an ink tank cover closes, the switches are pressed to detect the closed state of the ink tank cover.

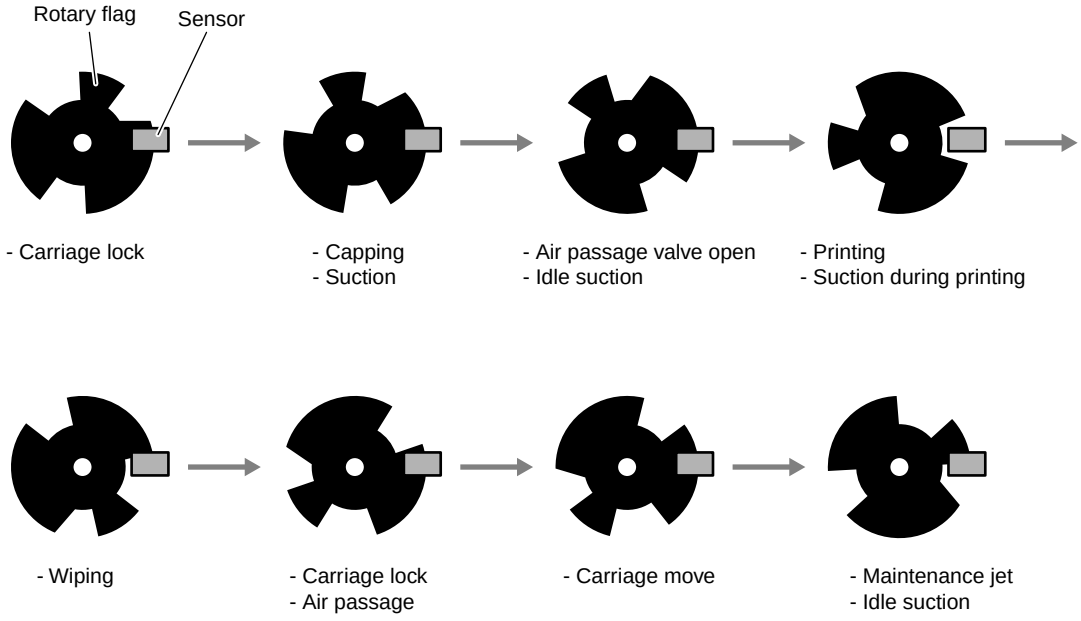
Pressure release switch
The microswitch-based pressure release switch detects the status of the paper release lever.
When the paper release lever closes, the switch is pressed to detect the closed state of the paper release lever.

2.5.2 Ink passage system



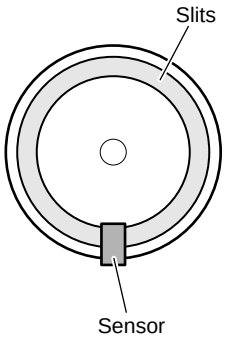
F-2-32

Pump cam sensor
As the cam rotates, it shields the sensor light of the photointerrupter-based pump cam sensor or allows it to be transmitted. The status of the purge unit, such as capped, suction and wiping, is detected by the combination of the pump cam sensor detection and the control of pump motor rotation by the pump encoder sensor.



F-2-33

Pump encoder sensor
The photointerrupter-based sensor reads slits in the encoder film of the Purge motor and controls the amount of its rotaion accordingly.

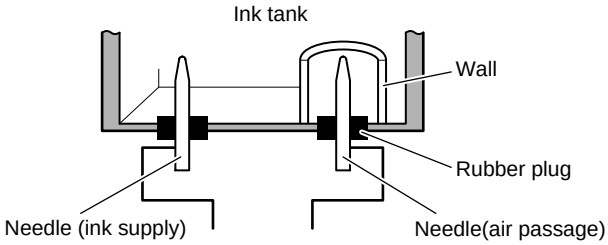


F-2-34

Valve open/closed detection sensor
The photointerrupter-based valve open/closed detection sensor detects the status of the valve.
The sensor detects that the ink supply valve is open when the sensor light is shielded by a flag linked with the valve cam.

Agitation cam sensor
The photointerrupter-based agitation cam sensor detects the status of the agitation cam.
The sensor detects the agitation cam home position when the sensor light allows it to be transmitted.

Ink detection sensor
The ink detection sensor detects the presence or absence of the ink in an ink tank with respect to the status of continuity between two hollow needles.
When the ink level in the tank falls to a point below the wall surrounding the hollow needles in the air passage, continuity with the hollow needle on the ink supply side is disrupted, causing the sensor to detect that the ink is out.

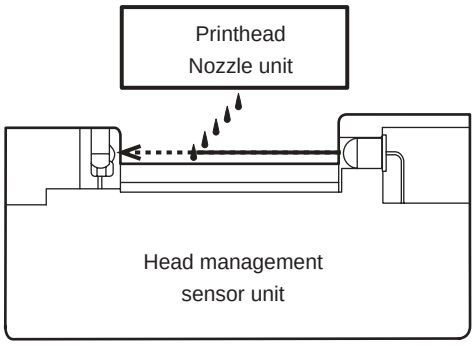


F-2-35

Head management sensor
The photo-transmission-type sensor detects that the printhead is discharging ink.
The carriage moves to and stops at the detection positions for individual nozzle arrays. When the carriage is at a stop, nozzles discharge ink on after another.
The sensor detects each nozzle due to the voltage change caused when ink discharged from the nozzle blocks the sensor light.

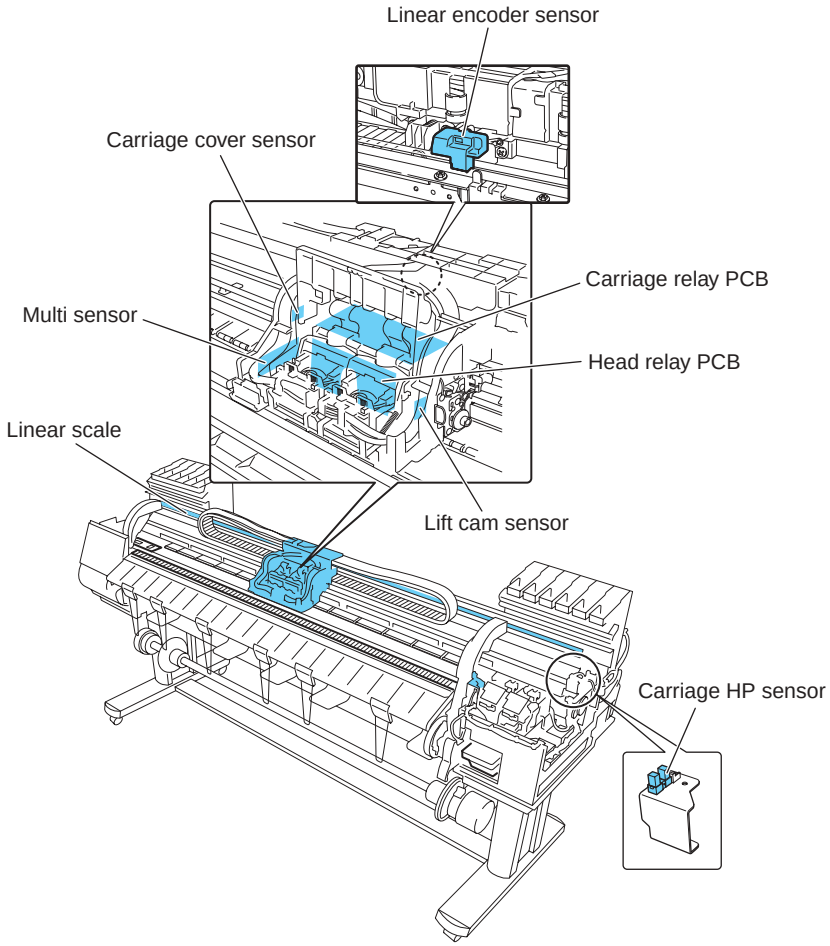
Non-discharging nozzle detection is carried out at the following timings:
- After the execution of Cleaning 1, Cleaning 2, Cleaning 3, Cleaning 6 or Cleaning 10
- After the number of copies that has been set by the user menu choice Nozzle Check Frequency have been printed

If more than a specified number of non-discharging nozzles have been located in one session of non-discharging nozzle detection, the normal cleaning sequence is launched before a second session of non-discharging nozzle detection is conducted. If more than a specified number of non-discharging nozzles are located in the second session of non-discharging nozzle detection, the normal (High) cleaning session is launched before a third session of non-discharging nozzle detection is conducted.
If there are at least 320 non-discharging nozzles out of 2560 nozzles as the result of non-discharging nozzle detection, printing is canceled after displaying a message to replace the head.
However, if service mode: [SERVICE MODE] > [SETTING] > [HEAD DOT INF] is [ON], the following message appears.
If there are at least 30 nozzles unable to correct the non-discharging state and the number of non-discharging nozzles is less than 100 out of 2,560 nozzles as the result of non-discharging nozzle detection, printing can continue after displaying a message to check the printing. Also, if the number of non-discharging nozzles is at least 100 but less than 320 nozzles, printing can continue after displaying a message to check the head. And if there are at least 320 non-discharging nozzles, printing is canceled after displaying a message to replace the head.



F-2-36

2.5.3 Carriage system



F-2-37

Carriage cover sensor
The photointerrupter-based carriage cover sensor detects the opening and closing of the carriage cover.
When the carriage cover is closed, the sensor light is shielded by the sensor arm, enabling the sensor to detect that the carriage cover is closed.

Carriage HP sensor
The photointerrupter-based carriage HP sensor detects the home position of the carriage.
Installed on the right side plate of the printer, the sensor detects an edge of the carriage home position on the carriage unit under carriage movement control.
The printer establishes the carriage home position from the position at which its edge is detected as a reference position.

Linear encoder sensor
Mounted on the back of the carriage, the linear encoder detects the position of the carriage from a slit in the linear scale during its movement.

Lift cam sensor
This sensor is a photointerrupter-based sensor. After the sensor light is shielded by the flag, the lift motor is driven by a predetermined number of pulses to regulate the separation between the printheads and platen automatically.

Ambient temperature sensor
The thermostat-based ambient temperature sensor mounted on the head relay PCB detects the ambient temperature to which the carriage is exposed.
The resistance of the thermistor that varies as a function of temperature changes in the printer is transmitted to the main controller via the carriage relay PCB.
The ambient temperature is used to help calibrate the head temperature sensor and detect abnormal ambient temperatures.

Head temperature sensor
The head temperature sensor detects the temperature of the printhead.
The printhead temperature is transmitted to the main controller via the carriage relay PCB.
The printhead temperature is used to help control the head drive and detect abnormal printhead temperatures.

Printhead contact detection
The printhead contact detects the status of printhead installation by electrical means.
The contact detects the status of contact from voltage changes in the flexible cables on the carriage side that come into contact with two terminals of the printhead with remote contact surfaces, the power terminals and GND terminal.

Multi sensor

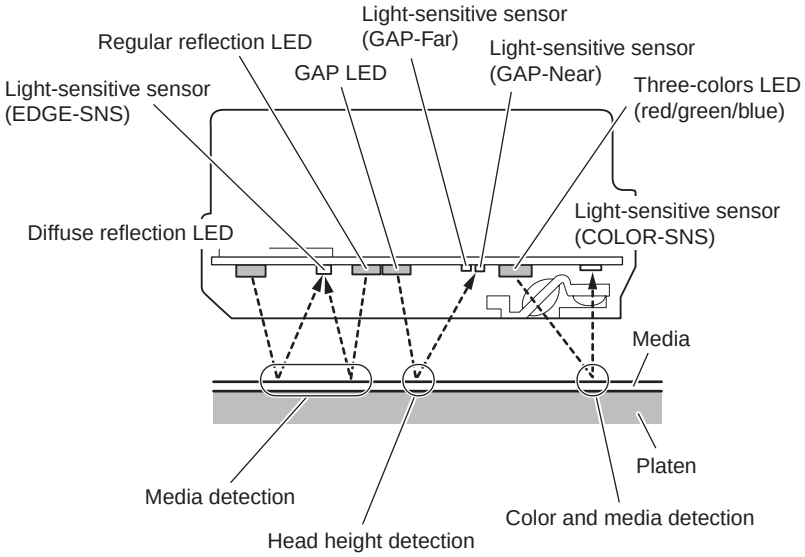
The photo-reflection-type multi sensor is composed of four LEDs and four light-sensitive sensors. It detects the leading edge, skewing, and width of media and is used for adjustment of the registration, head height, and color calibration.

During head adjustment, the light reflected by the GAP LED is detected by two light-sensitive sensors (GAP-Far, GAP-Near))to calculate the head height from the difference between the measurements.

When color calibration is executed, the light reflected from the printed color chart by the the three-colors LED (red, blue, green) is detected by the light-sensitive sensor (COLOR-SNS), so the color correction is implemented on the basis of the readings.

During media detection, the light reflected by the diffuse reflection LED and regular reflection LED and the three-colors LED (red, blue, green) are detected by the light-sensitive sensors (EDGE-SNS, COLOR-SNS).

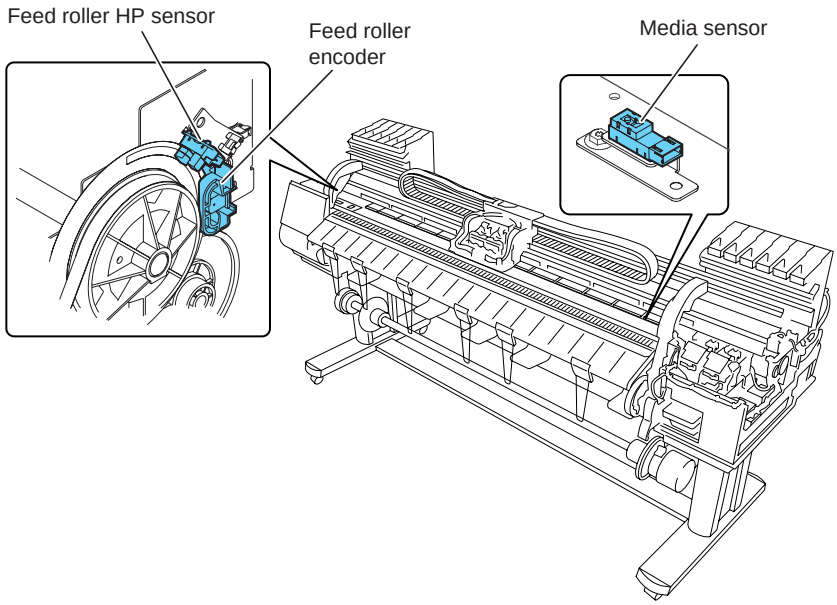
Ink mist adhering to the sensor could deliver incorrect measurement readings when color calibration is executed. If the ink dot count exceeds a tolerance, the service error (E194-4034) would occur. If it does, execute service mode: SERVICE MODE > ADJUST > GAP CALIB. after the multisensor has been replaced to clear the dot count.



F-2-38

- Service mode: After SERVICE MODE > ADJUST > GAP CALIB. has been carried out, pass paper to make sure that it is detected properly.
- If performing the calibration in parallel with the "Head Posi Adj." of the main menu, perform the "Head Posi Adj." first for the sake of higher color calibration accuracy.

2.5.4 Paper path system



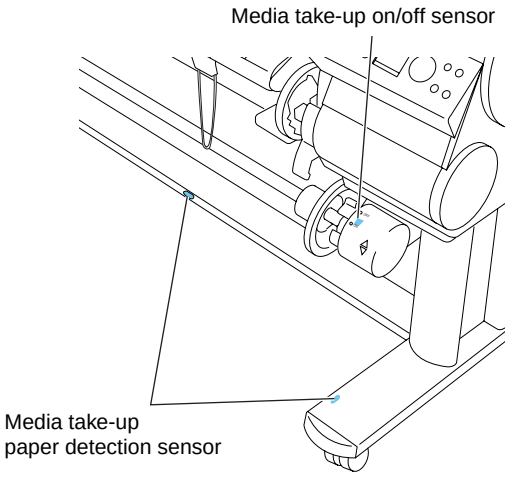
F-2-39

Media sensor
The photoreflector-based media sensor detects the presence or absence of paper on the platen.
The sensor detects the presence of paper when it receives sensor light reflected upon the paper.

Feed roller HP sensor
The feed roller HP sensor detects transitions from white (transmitted), or a reference, to black (shielded) when the printer is switched on, thereby setting the home position of feed roller eccentricity correction.

Feed roller encoder sensor
The feed roller encoder sensor is driven to detect the length of paper feeding for each rotation of the feed roller from encoder slits.

2.5.5 Media take-up Unit

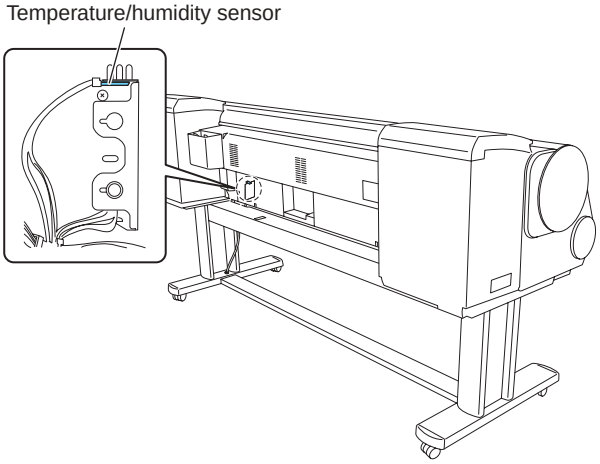


F-2-40

Media take-up on/off sensor
The photointerrupter-based media take-up on/off sensor detects the switch status of the media take-up unit.
When the media take-up switch is set to ON, the sensor arm transmits the sensor light, power-on the media take-up unit.
When the media take-up switch is set to OFF, the sensor arm shields the sensor light, shutting down the media take-up unit.

Media take-up paper detection sensor
When the sensor light is shielded by a loop of printed paper, the media take-up motor rotates to take up the paper.

2.5.6 Others



F-2-41

Temperature/humidity sensor
This sensor detects the temperature and humidity around the printer so that the measured values are used for head height adjustment, idle discharge control, waste ink evaporation amount calculation, and suction fan control.

Chapter 3 INSTALLATION

Contents

3.1 Transporting the Printer

3.1.1 Transporting the Printer

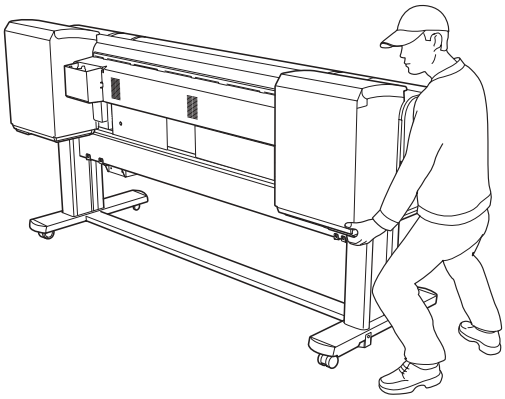
3.1.1.1 Transporting the Printer

When transporting the printer, the printhead must be capped and stay in the carriage.
In spite of this precaution, shocks incurred during transportation can damage the printhead.
Print the nozzle check pattern before making preparations for transporting the printer, pint the nozzle check pattern again after installing the printer at the new location, and then compare the two printouts.
If any problem such as nozzle clogging cannot be resolved by printhead cleaning, replace the printhead with a new one.

This section describes how to transport the printer.
The procedure depends on the mode of transportation. Select the appropriate transportation level from the following transportation modes.

1. Transportation mode
- Moving the printer on the same floor with no difference in grade (without tilting the printer): LEVEL 0
- Moving the printer on floor where there is difference in grade or by truck (by tilting the printer): LEVEL 1
- Moving the printer by plane or ship (tilting direction of printer is unpredictable): LEVEL 2
- Moving the printer in low temperature environment such as sub zero: LEVEL 2
- Moving the printer on its end: LEVEL 3

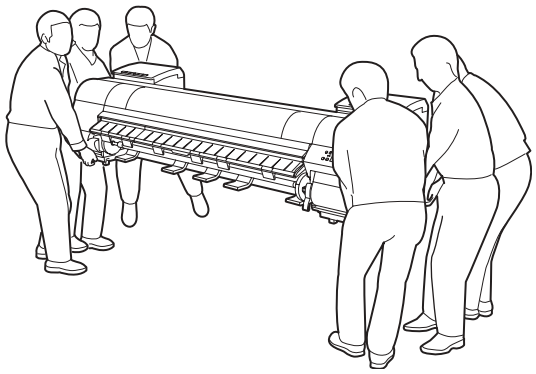
When lifting or moving the printer, be sure to hold the left and right carrying handles of the printer. If holding the cover, it may cause to deform the cover.



F-3-1

F-3-2

The printer main unit weights approximately 110 kg. When moving the printer, have at least six people hold it from both sides taking care not to hurt their back.

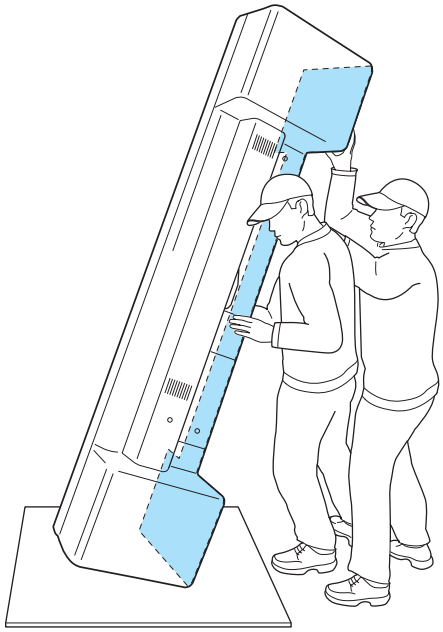


F-3-3

Do not place or transport the printer with load placed only at the center of the printer. Otherwise the printer can be deformed or damaged.

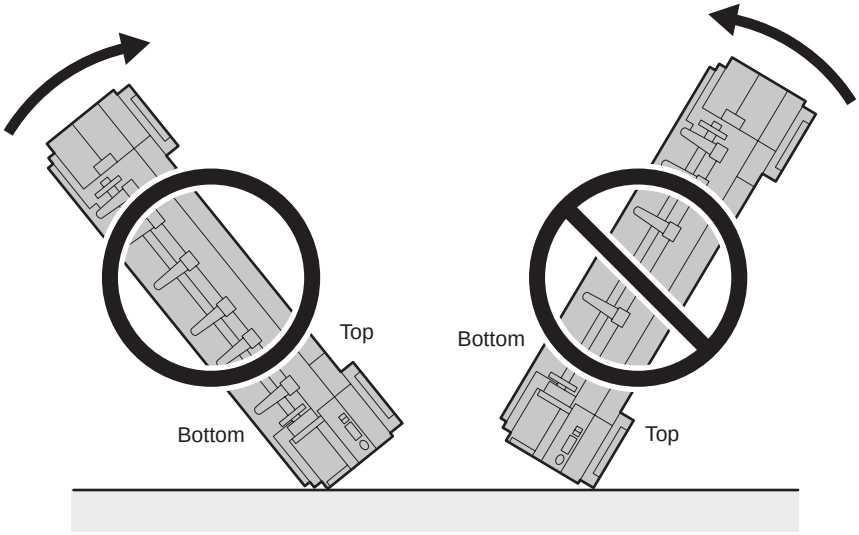
F-3-4

When tilting the printer, be sure to hold the carrying handles or the bottom's metal cover of the printer and place a cardboard or blanket on the floor to prevent damage to the printer.



F-3-5

When tilting the printer, support the printer at bottom left and right side of the printer.
If the printer is supported at any other location, the printer may be damaged or deformed.

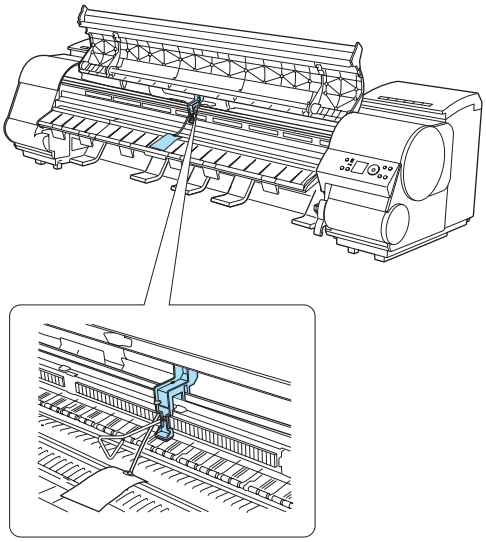


F-3-6

a. LEVEL 0
Moving the printer on the same floor without difference in grade

Item	Description
[Prep. MovePrinter] on the Main menu	This need not be performed.
Allowed tilting angle	Do not tilt.
Ink consumption	No ink is consumed.
Ink tank	It may be installed or removed.
Separation of main unit and stand	They do not need to be separated.
Maintenance cartridge	Install. There is no need to open a new maintenance cartridge.
Replacement of consumable parts	There is no need to replace consumable parts.
Service support	No service support is necessary.

Transportation procedure
1) Turn off the power and check that the heads are capped.
2) Open the upper cover and mount the belt stopper.



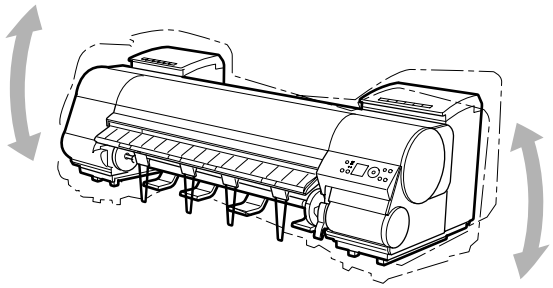
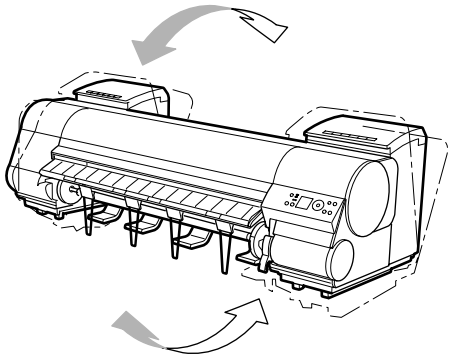
F-3-7

When mounting the belt stopper, be careful not to move the carriage by applying too much pressure. If the carriage moves when the heads are capped, the rubber part of the cap may touch the nozzles on the heads and damage the print head.

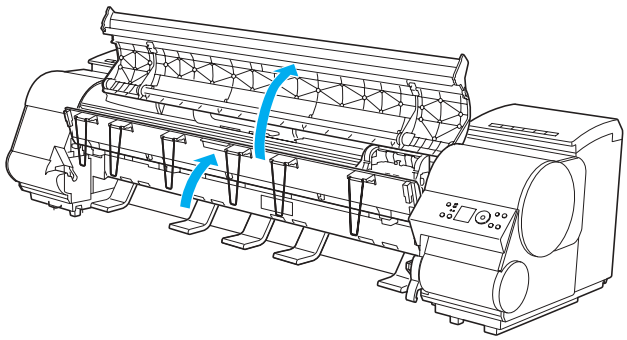
3) Close the upper cover.
4) Remove the paper and roll holder.
5) Remove power cord and interface cable.
6) Unlock the casters on the stand and move the printer slowly.

If the printer is subjected to strong vibrations when it is moved, it can cause ink leakage or damage to the print head. Be sure to move the printer slowly and carefully.

b. LEVEL 1
Moving the printer on a floor with difference in grade or by truck

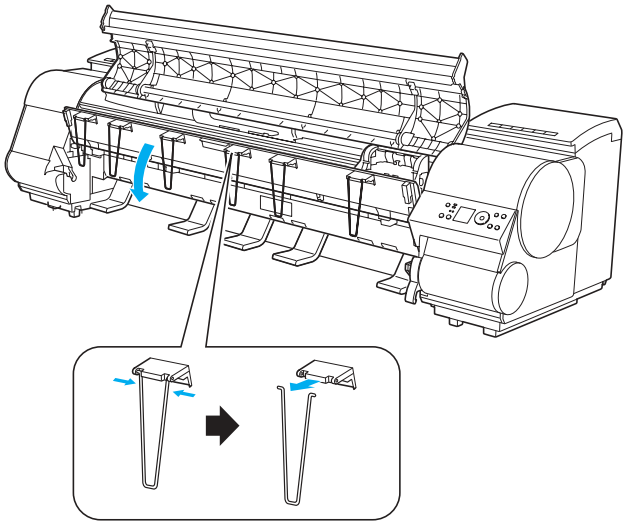
Item	Description
[Prep. MovePrinter] on the Main menu	Perform [LEVEL 1].
Allowed tilting angle	Lengthwise: -30 to +30 degrees
	
	Rotation: -10 to +10 degrees
	
Ink consumption	No ink is consumed.
Ink tank	It may be installed or removed.
Separation of main unit and stand	They do not need to be separated.
Maintenance cartridge	Install. There is no need to open a new maintenance cartridge. However, if there is a message instructing to replace the maintenance cartridge or check the remaining ink, replace with new maintenance cartridge before transporting.
Replacement of consumable parts	Replacement of consumable parts and resetting of counter may be necessary.
Service support	If consumable parts must be replaced, service support is necessary.

Transportation procedure
1) If there is a message instructing to replace the maintenance cartridge or check the remaining ink, replace the maintenance cartridge.
2) Remove the paper and roll holder.
3) From [Set/Adj. Menu] > [Prep. MovePrinter], select [LEVEL 1].
4) Press the [OK] key and perform [LEVEL 1] MOVE PRINTER.
5) If the consumable parts counter is checked and a message to replace consumable parts appear, check the consumable parts counter from service mode and replace the necessary consumable part.
See "d. Replacing consumable parts during transportation."
Repeat [LEVEL 1] after replacing consumable parts and resetting the counter.
6) When MOVE PRINTER completed message appears, turn off the power, and remove the power cord and interface cable.
7) Open the upper cover and raise the ejection guide.



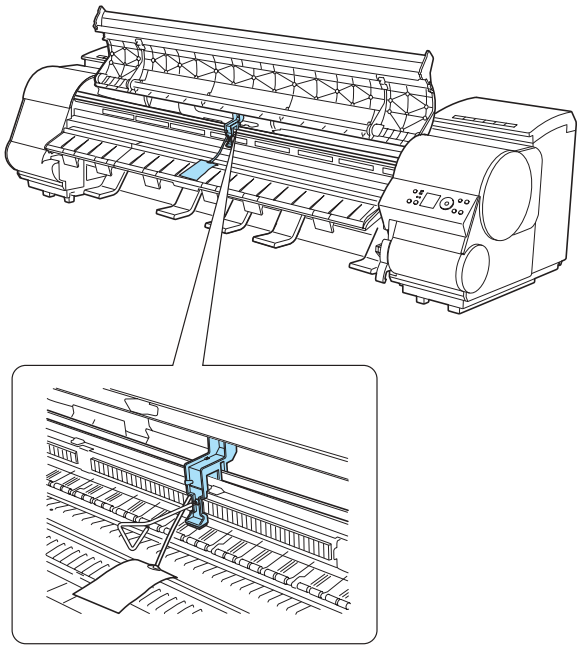
F-3-8

8) Remove the ejection support and lower the ejection guide.



F-3-9

9) Install the belt stopper.



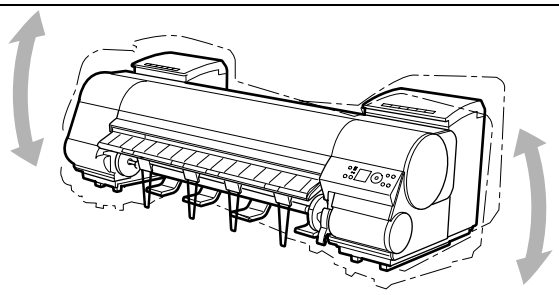
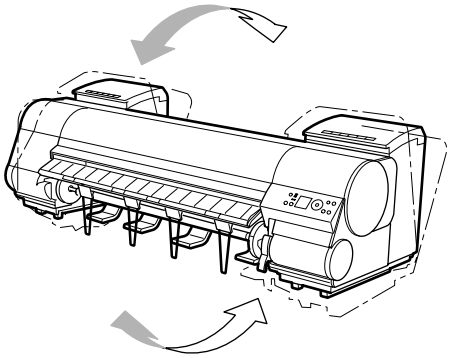
F-3-10

When mounting the belt stopper, be careful not to move the carriage by applying too much pressure. If the carriage moves when the heads are capped, the rubber part of the cap may touch the nozzles on the heads and damage the print head.

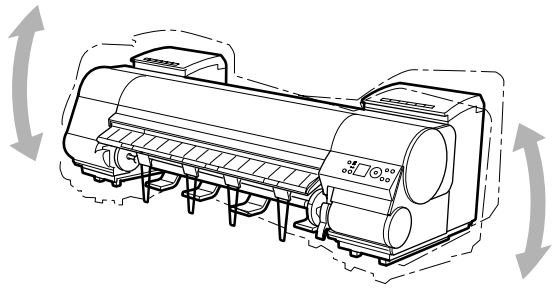
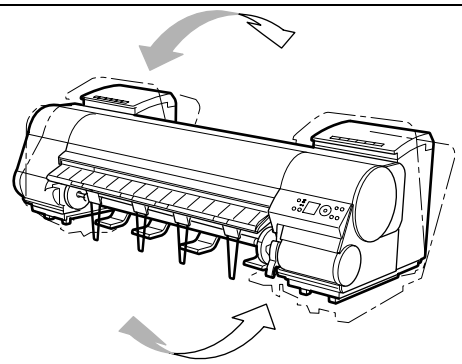
10) Close the upper cover.
11) Attach the cushioning materials and tape.
12) Unlock the casters on the stand and move the printer slowly.

If the printer is subjected to strong vibrations when it is moved, it can cause ink leakage or damage to the print head. Be sure to move the printer slowly and carefully.

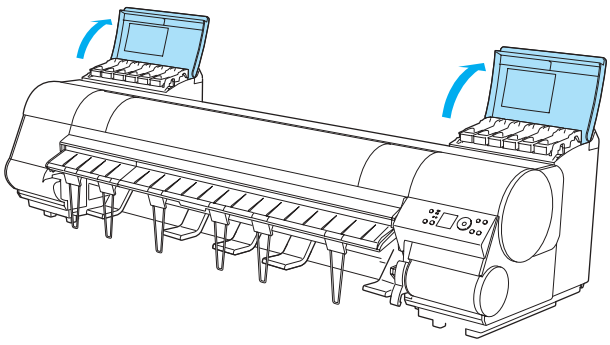
c-1. LEVEL 2
Transporting by plane or ship
Transporting in low temperature environment such as sub zero

Item	Description
[Prep. MovePrinter] on the Main menu	Perform [LEVEL 2].
Allowed tilting angle	Lengthwise: -30 to +30 degrees
	
	Rotation: -30 to +30 degrees
	
Ink consumption	Approximately 1200ml of ink is consumed.
Ink tank	Remove all ink tanks.
Separation of main unit and stand	Separate.
Maintenance cartridge	Replace with new maintenance cartridge before performing transporting procedure. Two new maintenance cartridges must be provided. (One for disposing waste ink and one to be installed new maintenance cartridge during transportation)
Replacement of consumable parts	Replacement of consumable parts and resetting of counter may be necessary.
Service support	If consumable parts must be replaced, service support is necessary.

c-2. LEVEL 3
Moving the printer on its end

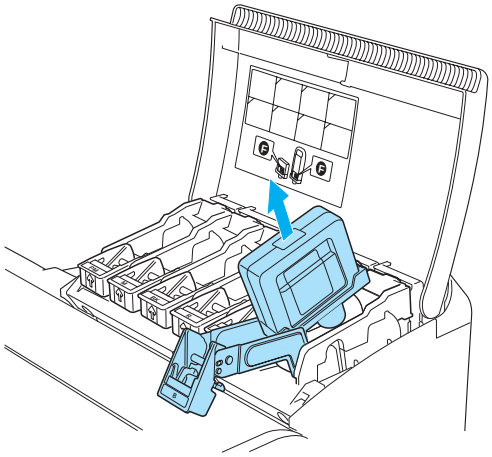
Item	Description
[Prep. MovePrinter] on the Main menu	Perform [LEVEL 3].
Allowed tilting angle	Lengthwise: -90 to +90 degrees
	
	Rotation: -30 to +30 degrees
	
Ink consumption	Approximately 1200ml of ink is consumed.
Ink tank	Remove all ink tanks.
Separation of main unit and stand	Separate.
Maintenance cartridge	Replace with new maintenance cartridge before performing transporting procedure. Three new maintenance cartridges must be provided. (Two for disposing waste ink and one to be installed new maintenance cartridge during transportation)
Replacement of consumable parts	Replacement of consumable parts and resetting of counter may be necessary.
Service support	If consumable parts must be replaced, service support is necessary.

Transportation procedure
1) If there is a message instructing to replace the maintenance cartridge or check the remaining ink, replace the maintenance cartridge.
2) Remove the paper and roll holder.
3) From [Set/Adj. Menu] > [Prep. MovePrinter], select [LEVEL 2] or [LEVEL 3].
4) Press the [OK] key and perform [LEVEL 2] or [LEVEL 3] MOVE PRINTER.
5) If the counter is checked and a message to replace consumable parts appear, check the consumable parts counter from service mode and replace the necessary consumable part.
See "d. Replacing consumable parts during transportation."
Repeat [LEVEL 2] or [LEVEL 3] after replacing consumable parts and resetting the counter.
6) Follow the displayed message and open the left and right ink tank covers.



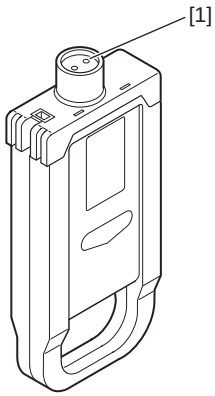
F-3-11

7) Raise the ink tank lock lever and remove all ink tanks.



F-3-12

Put the removed ink tanks in the plastic bag with the ink supply part [1] upward and close the opening.

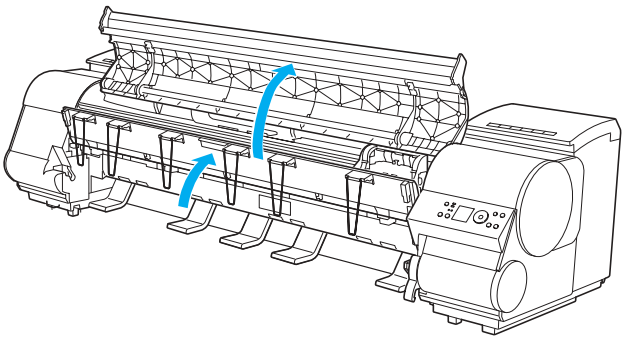


F-3-13

8) Return the ink tank lock lever and close the ink tank cover.
Ink drainage is performed automatically. Replace the maintenance cartridge when the cartridge replacement message appears.

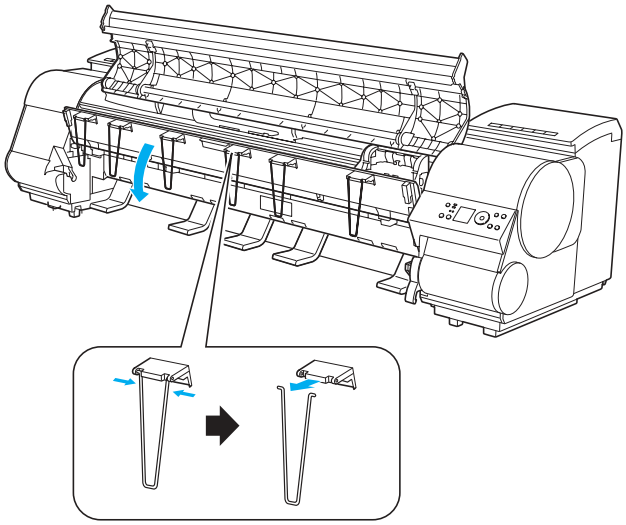
When transporting the printer, install the new maintenance cartridge to avoid the ink leakage.

9) When MOVE PRINTER completed message appears, turn off the power, and remove the power cord and interface cable.
10) Open the upper cover and raise the ejection guide.



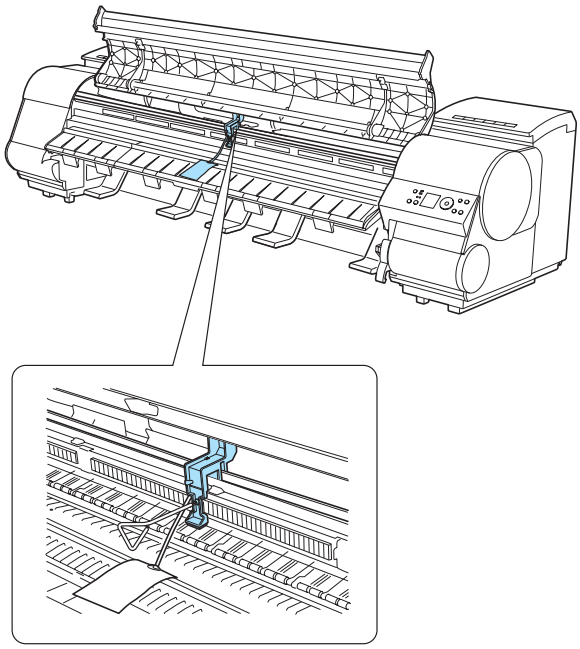
F-3-14

11) Remove the ejection support and lower the ejection guide.



F-3-15

12) Install the belt stopper.



F-3-16

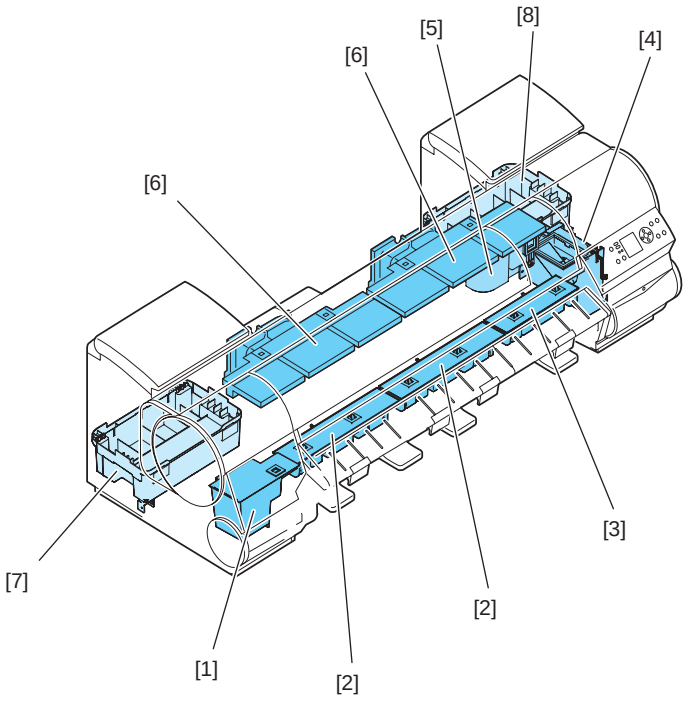
When mounting the belt stopper, be careful not to move the carriage by applying too much pressure. If the carriage moves when the heads are capped, the rubber part of the cap may touch the nozzles on the heads and damage the print head.

13) Close the upper cover.
14) Attach the cushioning materials and tape.
15) If a basket is installed, remove the basket.
16) Remove the printer from the stand.
Hold the transporting handles at left and right bottom of the printer with three persons on each side and separate the printer from the stand.
17) Reverse the assembly procedure to disassemble the stand and media take-up unit as necessary and pack them.
18) Pack the printer and transport.

If the printer is subjected to strong vibrations when it is moved, it can cause ink leakage or damage to the print head. Be sure to move the printer slowly and carefully.

d. Replacing consumable parts during transportation

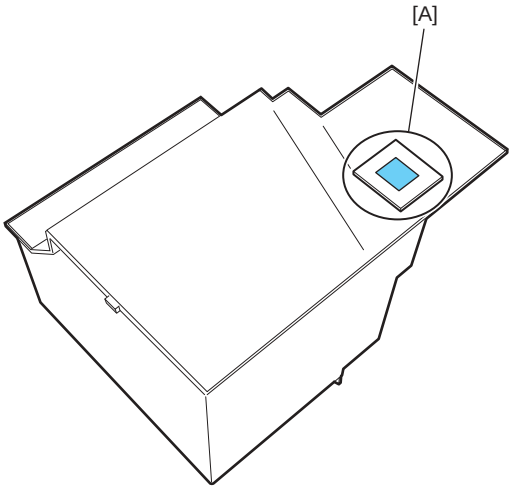
During [MOVE PRINTER], if a message to replace consumable parts appear, check the consumable parts counter from service mode and replace the necessary consumable parts that is over the threshold value of counter in the following table.
See "Service mode" about how to check the counter.
The consumable parts to be replaced and counter to be reset depends on the [LEVEL].



F-3-17

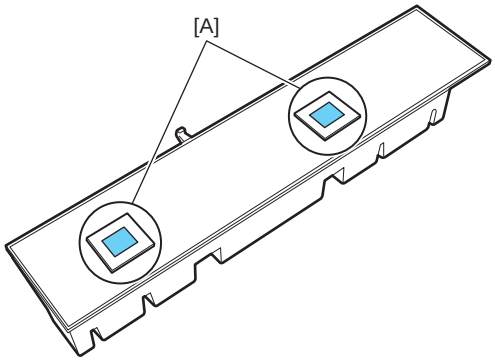
No	Part number	Name	Q'ty	Service Mode PARTS xx	Threshold value of counter (Unit: ml)	Level x (Main menu)
[1]	QL2-2110	WASTE INK ABSORBER UNIT	1	Wia-1	581	1, 2, 3
[2]	QL2-2108	WASTE INK ABSORBER UNIT (L)	2	Wia-3/Wia-4	143	
[3]	QL2-1650	WASTE INK ABSORBER UNIT (S)	1	Wia-5	47	
[4]	QM3-3069	SUCTION FAN UNIT	1	Wia-6	152	
[5]	QL2-1663	DUCT	1			
[6]	QM3-7025	FAN UNIT	2	Mi-1	241	2, 3
[7]	QM3-1033	INK SUPPLY MOUNT UNIT (L)	1	If there is waste ink, perform waste ink disposal or parts replacement. And confirm that the ink leakage has not caused to the surrounding area of ink supply mount unit.		
[8]	QM3-1034	INK SUPPLY MOUNT UNIT (R)	1			

When replacing consumable parts, check for leaking waste ink. When replacing each consumable part, be careful of leaking waste ink especially from the marked area [A] and avoid tilting the part when removing.



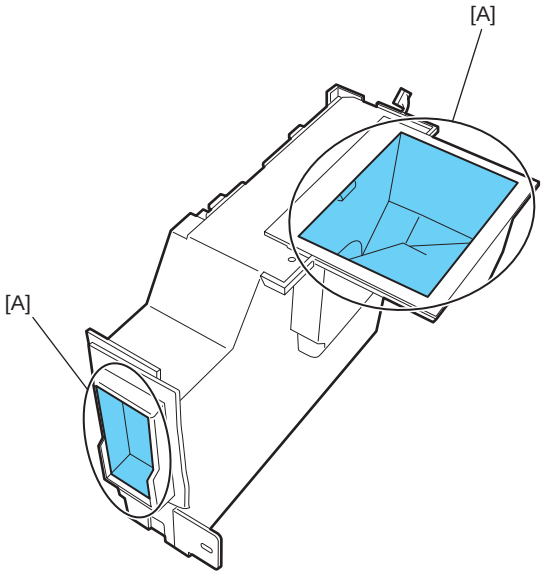
F-3-18

[1] WASTE INK ABSORBER UNIT



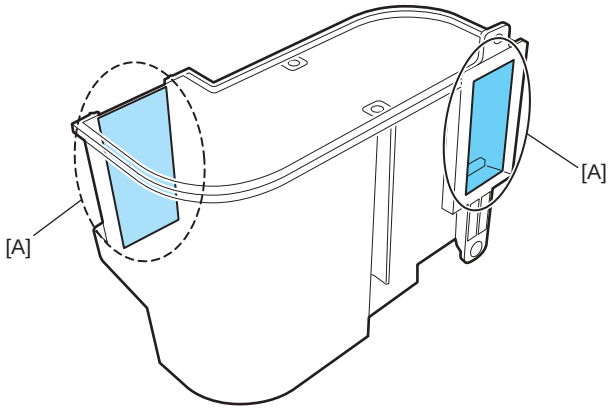
F-3-19

[2] WASTE INK ABSORBER UNIT (L)
[3] WASTE INK ABSORBER UNIT (S)



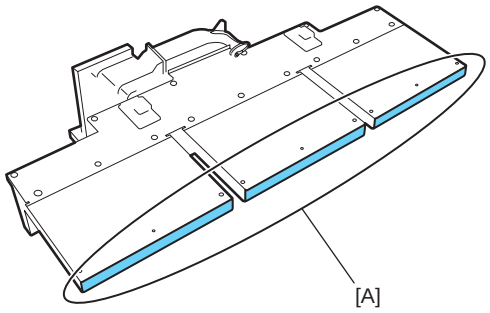
F-3-20

[4] SUCTION FAN UNIT



F-3-21

[5] DUCT



F-3-22

[6] FAN UNIT

3.1.2 Reinstalling the Printer

3.1.2.1 Reinstalling the Printer

1. Installing after transporting by LEVEL 0 or LEVEL 1.
If ink drainage was not performed when transporting by LEVEL 0 or 1, remove the belt stopper and attach the power cord and interface cable after moving the printer to the installation location, and then check the operation of the printer (with test pattern).

2. Installing after transporting by LEVEL 2 or LEVEL 3.
If ink drainage was performed when transporting by LEVEL 2 or LEVEL 3, follow the installation procedure which is nearly identical to the procedure when installing for the first time.

Chapter 4 DISASSEMBLY/REASSEMBLY

Contents

4.1 Service Parts

4.1.1 Service Parts

The service parts indicated below require careful handling.

1. Keep all packages with the warning not to turn over.
Pay careful attention to all individually packaged service part (carriage unit, purge unit, ink tank unit, and other parts) boxes marked "This side up" and handle appropriately.

F-4-1

2. Feed roller
The feed roller is a functionally important part. Therefore, be careful that the roller is not scratched or marked during storage or transport of the service parts, when removing them from the individual boxes, when assembling, or performing any other
operations.

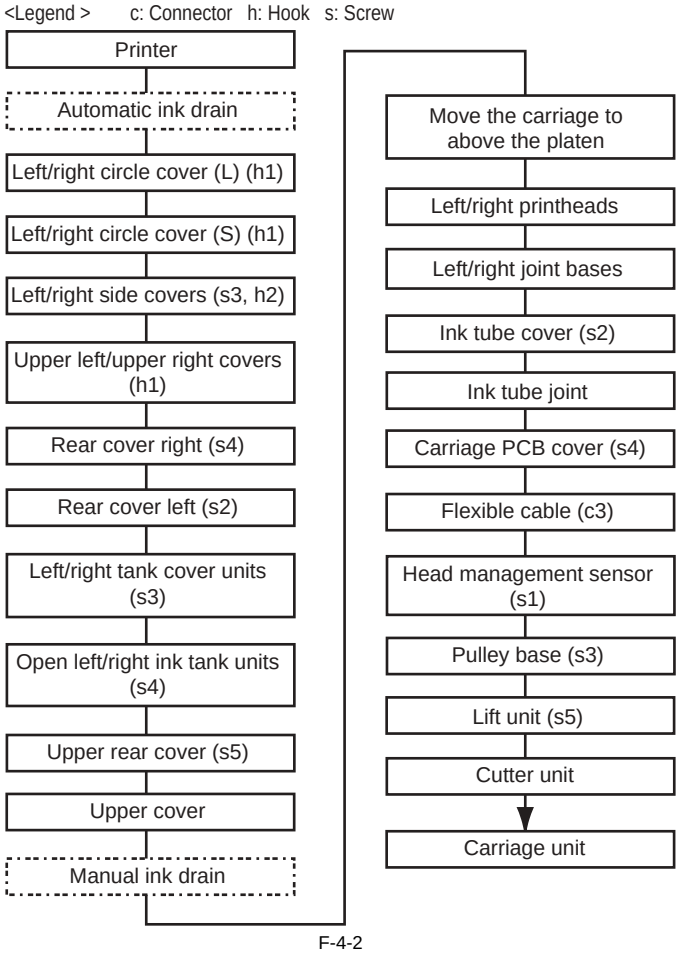
4.2 Disassembly/Reassembly

4.2.1 Disassembly/Reassembly

See the Parts Catalog for the disassembly and reassembly procedures. The following four main units do not apply.
Main Units:
1. Carriage unit
2. Ink tube unit
3. Purge unit
4. Ink tank unit
The parts layout illustration in the Parts Catalog shows the figure numbers associated with the disassembly procedure for each product.

Main unit disassembly and assembly flows
* Ink drainage in the dotted lines may be performed using either the automatic or manual ink drain procedure.

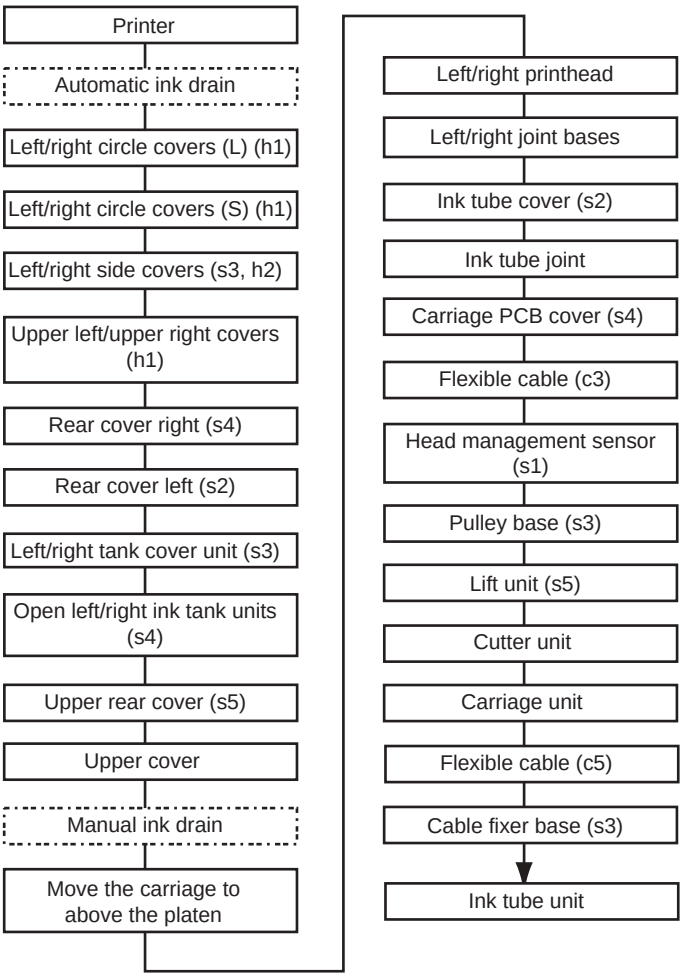
1. Carriage Unit Disassembly Flow



F-4-2

2. Ink Tube Unit Disassembly Flow

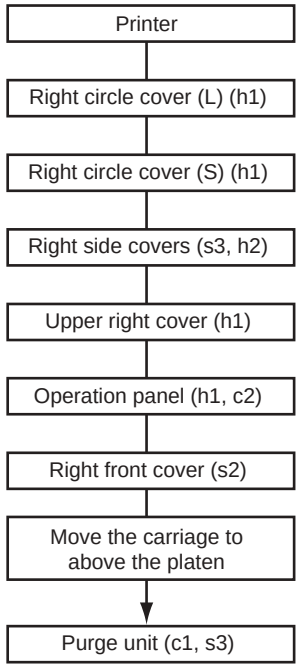
<Legend > c: Connector h: Hook s: Screw



F-4-3

3. Purge Unit Disassembly Flow

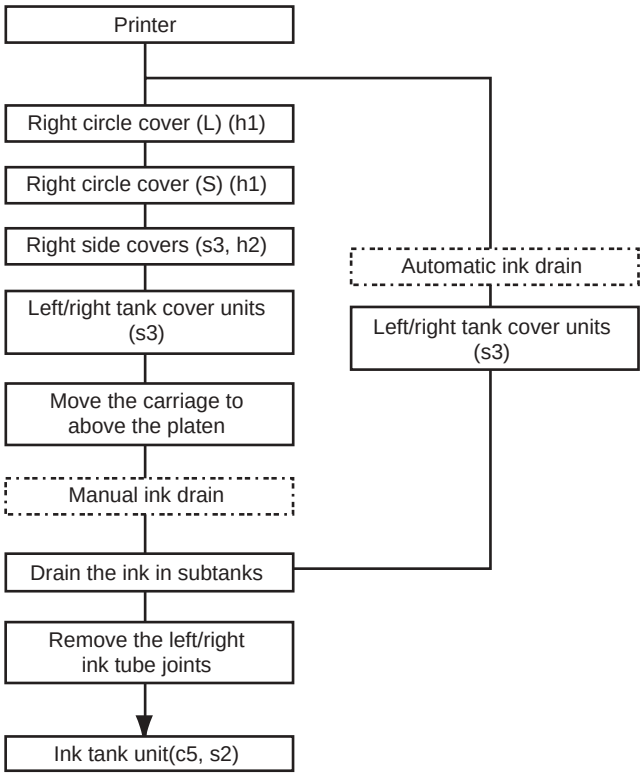
<Legend > c: Connector h: Hook s: Screw



F-4-4

4. Ink Tank unit Disassembly Flow

<Legend > c: Connector h: Hook s: Screw



F-4-5

4.3 Points to Note on Disassembly and Reassembly

4.3.1 Note: Items that should never be disassembled

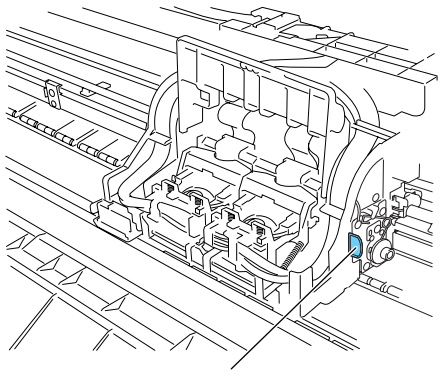
Assemblies that should never be removed after initial factory adjustments, are indicated by the presence of red screws.
Under no circumstance should these red screws be loosened or removed. Removing these screws will render the printer out of alignment forever.

F-4-6

4.3.2 Moving the carriage manually

When moving the carriage, hold it by the handle [1] shown below.

Move the carriage as required during assembly and disassembly to prevent the carriage from contacting the parts to be removed.
You cannot move the carriage when capping has been performed. Refer to DISASSEMBLY/REASSEMBLY > Points to Notes on Disassembly and Reassembly > Opening the caps and moving the wiper unit to remove the caps, and then move the carriage.



F-4-7

4.3.3 Units requiring draining of ink

When disassembling the following units, drain the ink completely, to prevent ink leakage. For ink drain instructions, refer to **DISASSEMBLY/REASSEMBLY > Points to Notes on Disassembly and Reassembly > Draining the ink.**

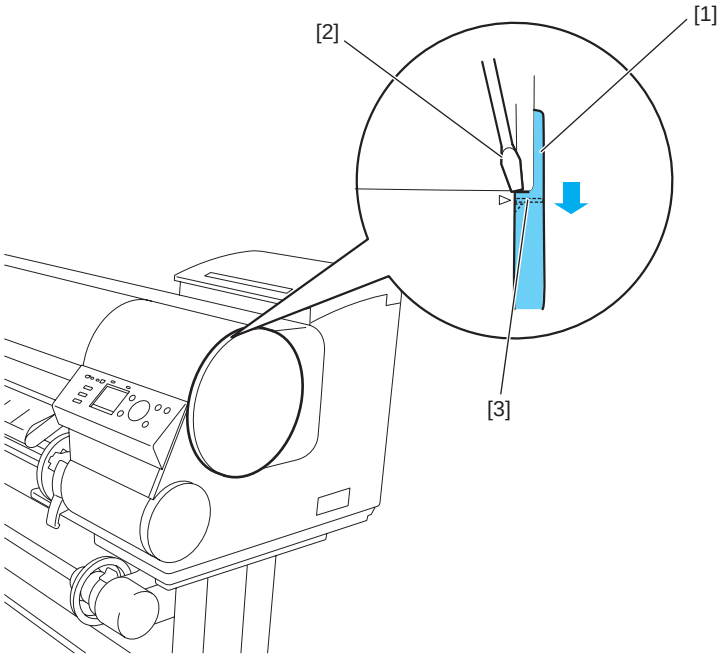
[1] Carriage unit
Refer to DISASSEMBLY/REASSEMBLY > Points to Notes on Disassembly and Reassembly > Carriage unit.
[2] Ink tube unit
Refer to DISASSEMBLY/REASSEMBLY > Points to Notes on Disassembly and Reassembly > Ink tube unit.
[3] Ink tank unit
Refer to DISASSEMBLY/REASSEMBLY > Points to Notes on Disassembly and Reassembly >Ink tank unit.

4.3.4 External Covers

a) Left circle cover (L)/Right circle cover (L)

Removing the left circle cover (L)/right circle cover (L)

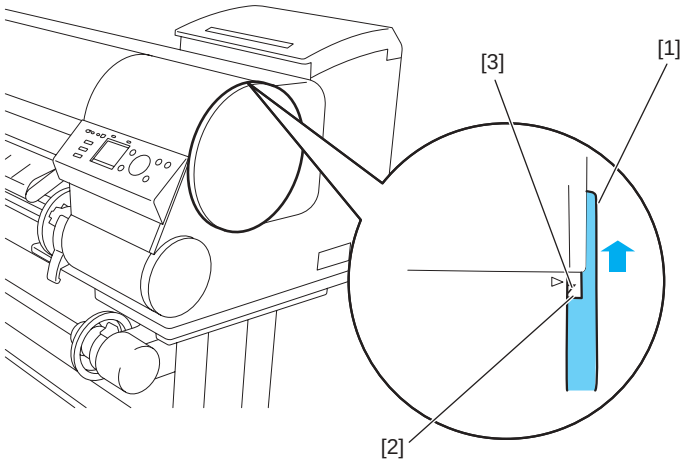
1) To remove circle cover (L) [1], insert flathead screwdriver [2] at the position shown in the figure to remove claw [3] and turn the cover forward to remove.



F-4-8

Installing the left circle cover (L)/right circle cover (L)

1) Install circle cover (L) [1] with its part [2] inserted in arrow mark [3] of the right side cover and turn the cover backward to install.

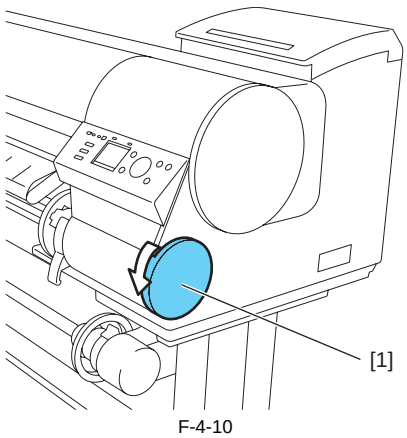


F-4-9

b) Left circle cover (S)/Right circle cover (S)

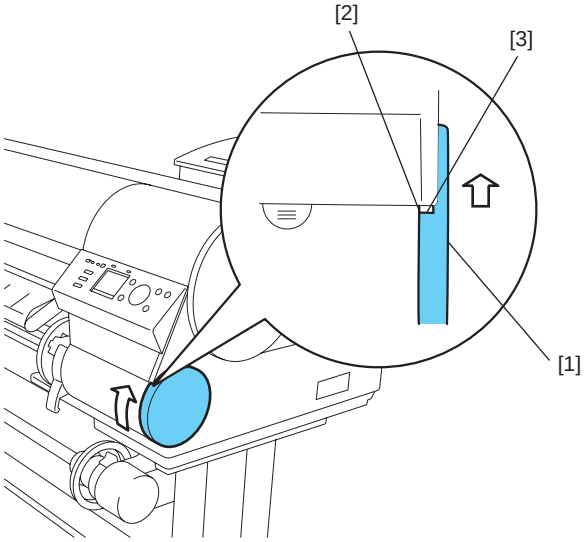
Removing the left circle cover (S)/right circle cover (S)

1) Remove circle cover (S) [1] by turning it forward to remove the hook.



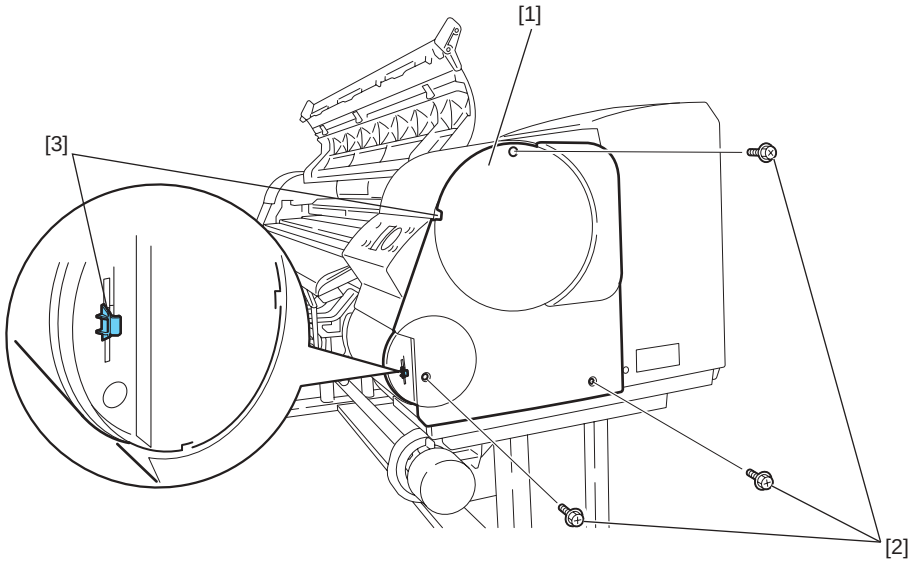
F-4-10

Installing the left circle cover (S)/right circle cover (S)
1) Install circle cover (S) [1] with its part [2] inserted in part [3] of the side cover and turn the cover rearward to install.



F-4-11

c) Left side cover/Right side cover
Removing the left side cover/right side cover
1) To remove left and right side covers [1], remove left and right circle covers (L) and left and right circle covers (S).
2) Remove three screws [2] and two hooks [3], and remove the side cover by opening its bottom side.

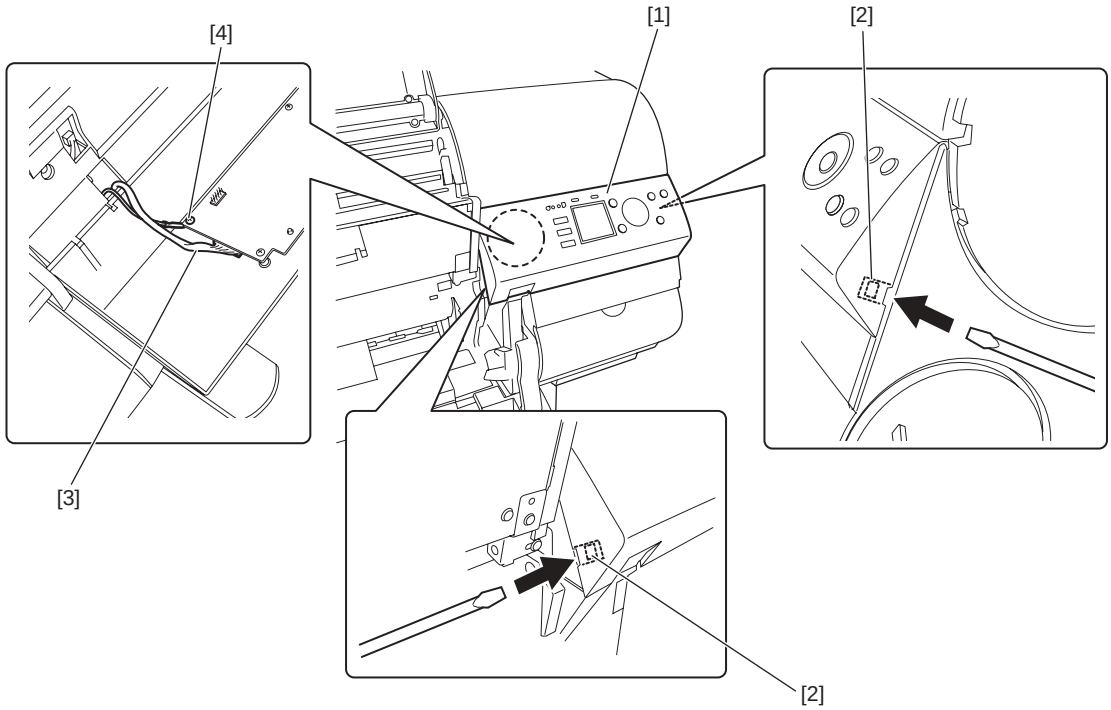


F-4-12

d) Operation panel

Removing the operation panel

1) To remove operation panel [1], open the upper cover and raise the ejection guides. Remove two claws [2] using a flathead screwdriver and disconnect connector [3] and ground wire [4].



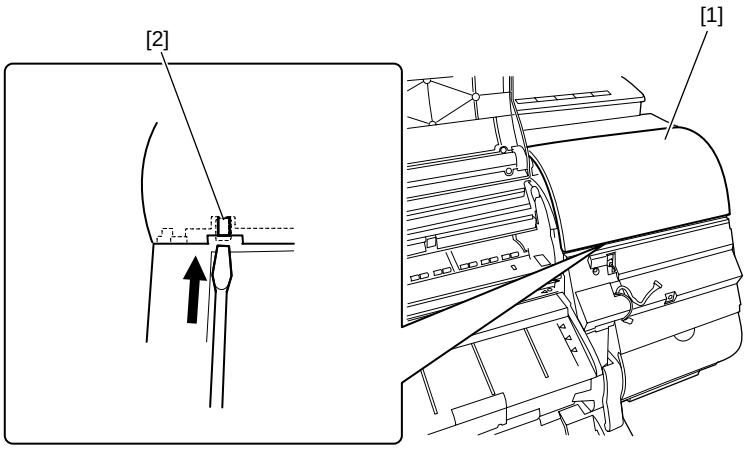
F-4-13

e) Upper left cover/Upper right cover

Removing the upper left cover/upper right cover

1) To remove upper left cover/upper right cover [1], remove left and right circle covers (L), left and right circle covers (S), left and right side covers and operation panel.

2) Insert a flathead screwdriver at the position shown in the figure to remove hook [2].

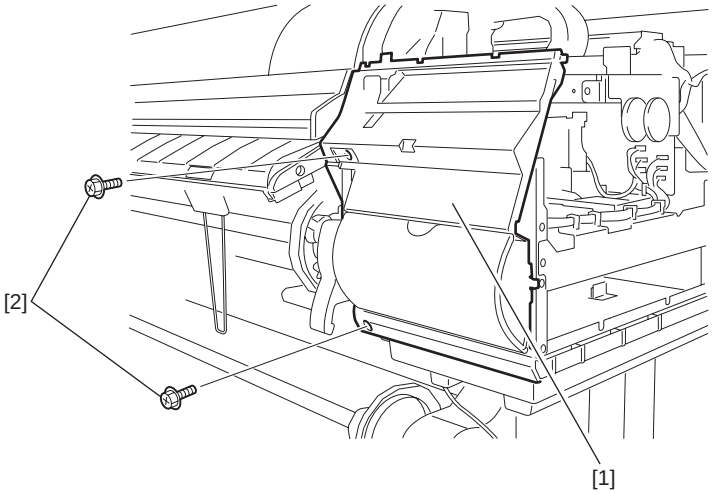


F-4-14

f) Right front cover

Removing the right front cover

1) To remove right front cover [1], remove right circle cover (L), right circle cover (S), right side cover, upper right cover and the operation panel.
2) Remove two screws [2].

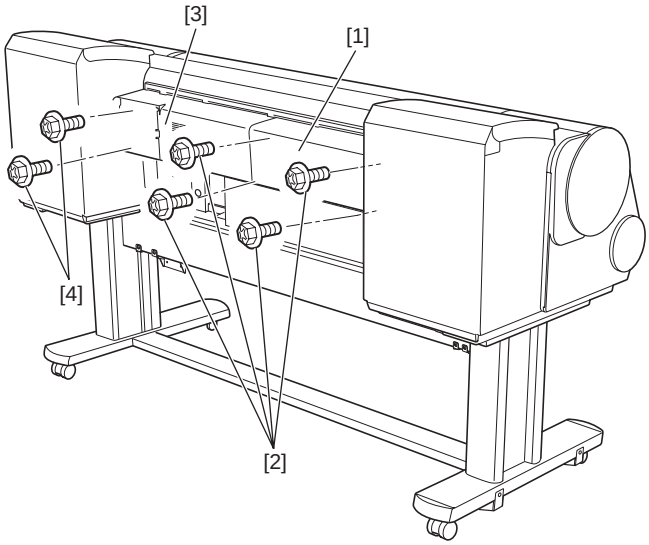


F-4-15

g) Left rear cover/Right rear cover

Removing the left rear cover/right rear cover

1) To remove right rear cover [1], remove four screws [2].
2) To remove left rear cover [3], remove the right rear cover and two screws [4].

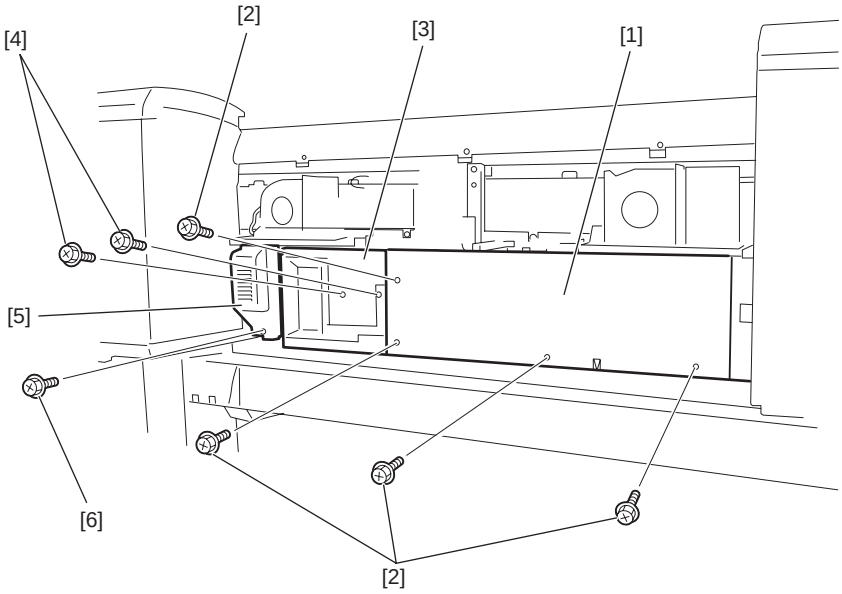


F-4-16

h) Left lower rear cover/Right lower rear cover, filter cover

Removing the left lower rear cover/right lower rear cover and filter cover

1) To remove right lower rear cover [1], remove four screws [2].
2) To remove left lower rear cover [3], remove two screws [4].
3) To remove filter cover [5], remove screw [6].

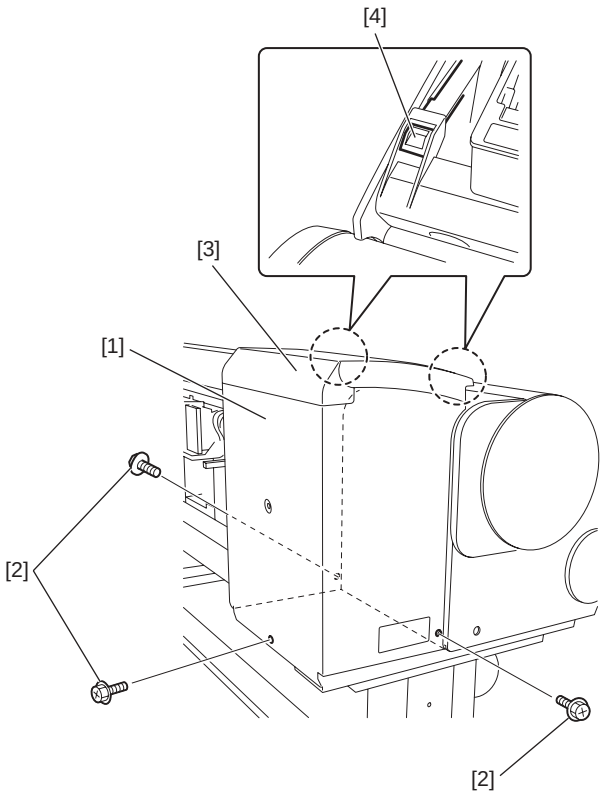


F-4-17

i) Left/Right ink tank cover units

Removing the left/right ink tank cover units

1) To remove ink tank cover unit [1], remove three screws [2], open tank cover [3] and remove two hooks [4].

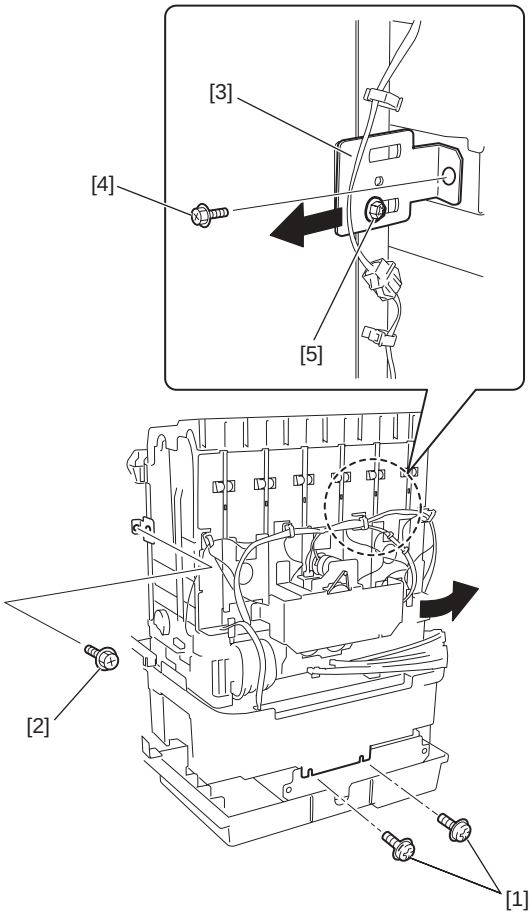


F-4-18

j) Left/Right ink tank units

Opening the left/right ink tank units

1) To open the left/right ink tank units, remove left/right circle covers (L), left/right circle covers (S), left/right side covers, upper left/right covers and left/right ink tank cover units.
2) Remove two screws [1].
3) Remove screw [2] from the support plate at inner side of the printer.
4) Remove screw [4] from the support plate [3] at outer side of the printer, loosen screw [5] and slide the support plate to open the ink tank unit.
(The following figure is the case of the left ink tank unit.)



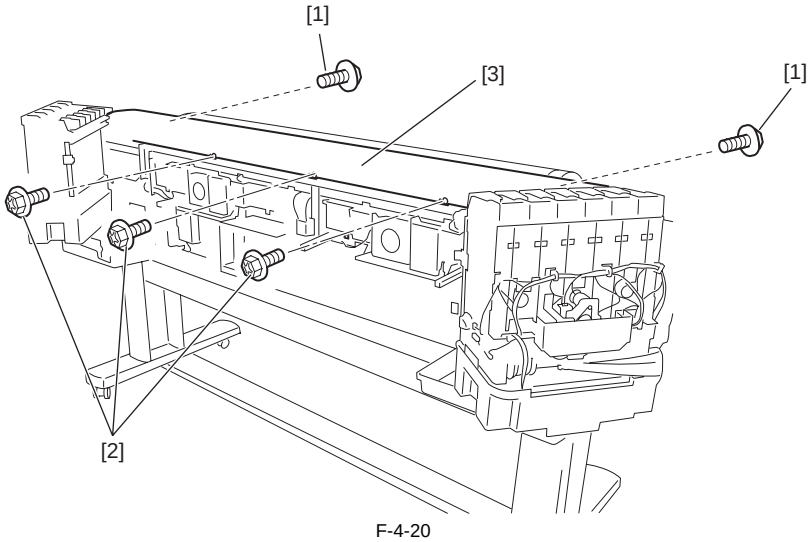
F-4-19

The ink tank units will lock themselves when they are opened to the maximum allowable angle.
Be sure to open the ink tank unit to their maximum allowable angle to prevent them from turning over.

k) Upper rear cover

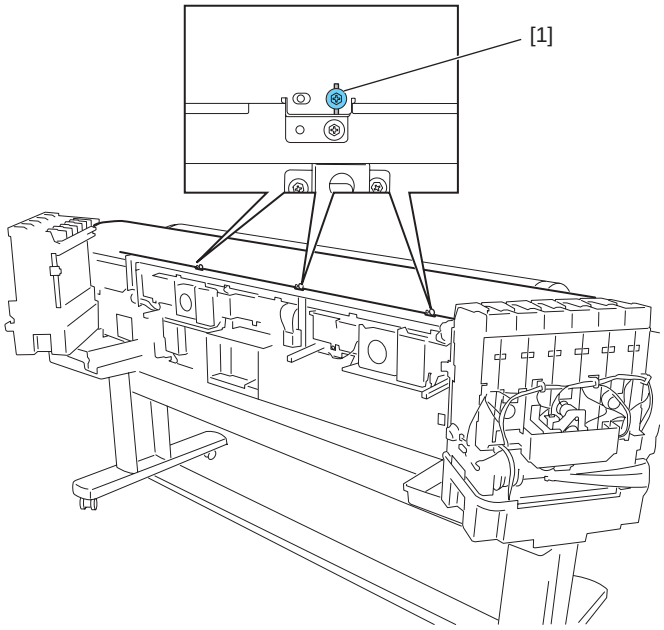
Removing the upper rear cover

1) To remove the upper rear cover, remove left/right circle covers (L), left/right circle covers (S), left/right side covers, upper left/right covers, left/right rear covers and left/right ink tank cover units and then open the left/right ink tanks.
2) Remove two screws [1] on front side of the printer and three screws [2] on the rear side, and then remove upper rear cover [3].



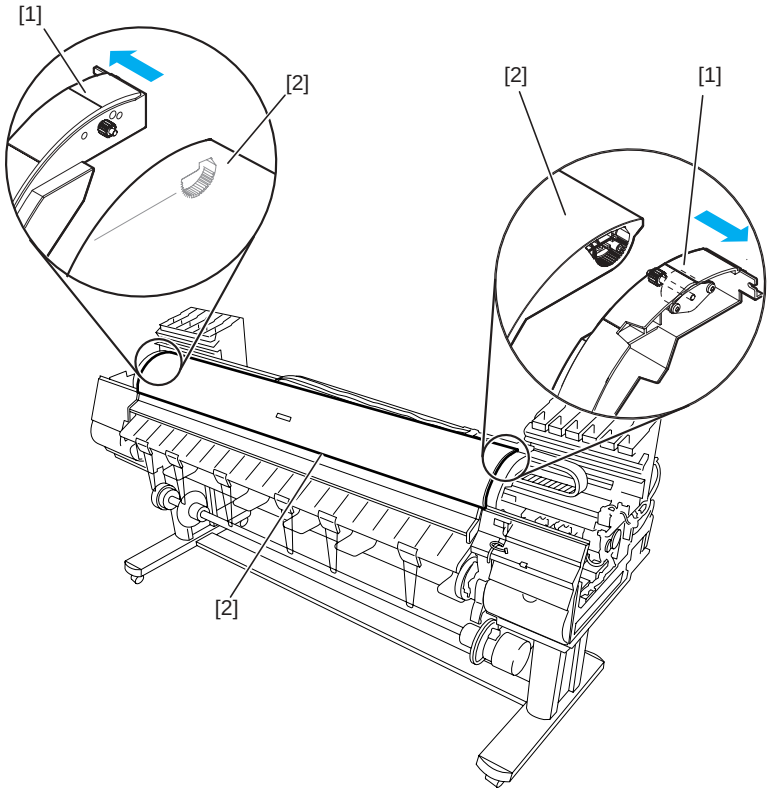
F-4-20

Note on installing the upper rear cover
1) Fit three rear-panel screws [1] into screw holes on the right side.



F-4-21

l) Upper cover
Removing the upper cover
1) To remove the upper cover, remove left/right circle covers (L), left/right circle covers (S), left/right side covers, upper left/right covers, left/right rear covers, right cover unit and upper rear cover.
2) Remove upper cover [2] while opening left/right arm stays [1] outward one by one.



F-4-22

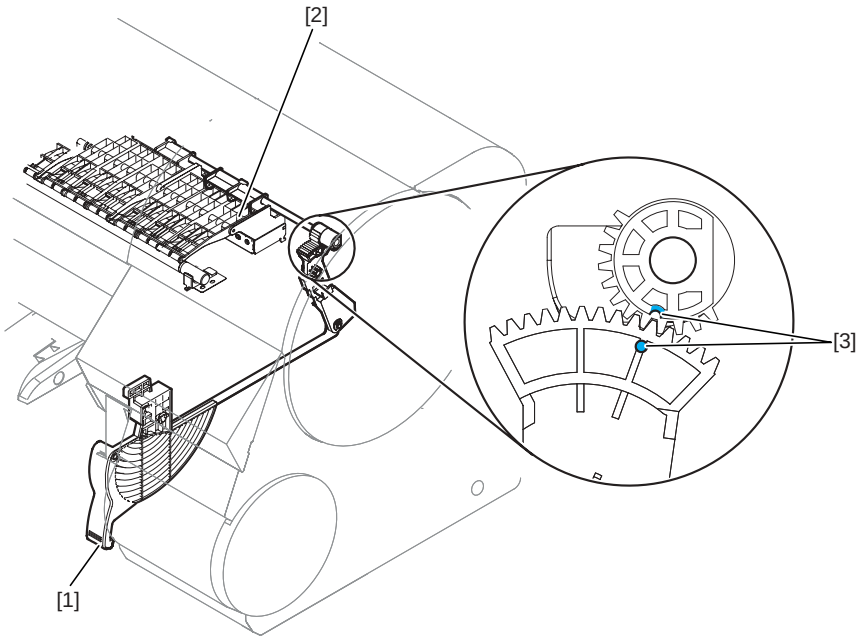
m) Release lever

Removing the release lever

1) To remove release lever [1], remove the purge unit and then remove the release lever. To do so, keep pinch roller [2] pressurized to ease the work of phase alignment during gear installation.

Reinstalling the release lever

1) To install the release lever, align the gear of the release lever with mark [3] (phase) in the receiving gear.

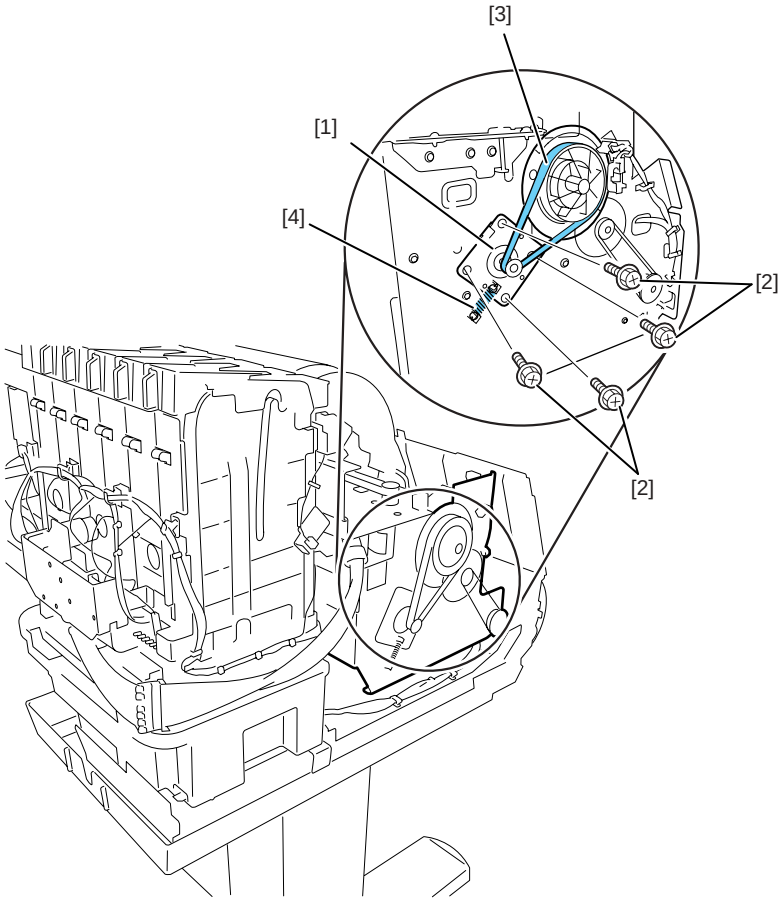


F-4-23

4.3.5 Drive Unit

a) Feed motor
Removing the feed motor
1) To remove feed motor [1], loosen four screws [2] and remove timing belt [3] and spring [4].
2) Remove four loosened screws [2] to release feed motor [1] and remove the connector.

Reinstalling the feed motor
To reassemble the feed roller drive timing belt [3] into position, set the tension of timing belt [3] by adjusting the pressure of spring [4]. Then, fix feed motor [1].



F-4-24

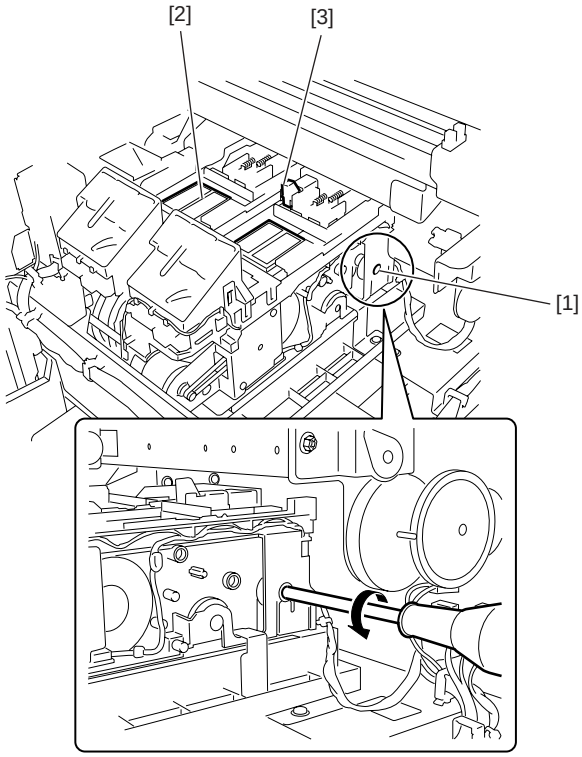
b) Action to take after replacing the feed roller encoder and feed roller
This printer as shipped has the feed roller eccentricity (that is, variations in the rate of paper feed from rotation to rotation) corrected for enhanced media feed accuracy. When the feed roller HP sensor or feed roller encoder and feed roller pertaining to the correction of eccentricity variations has been replaced, therefore, they should require adjustment.
Execute service mode under the following conditions to launch automatic adjustment:
Service mode: SERVICE MODE > ADJUST > PRINT PATTERN > LF TUNING
Media type: Glossy photo paper

If adjustment cannot be done properly by selecting "SERVICE MODE > ADJUST > PRINT PATTERN > LF TUNING" (auto adjustment), carry out manual adjustment.

Service mode SERVICE MODE > ADJUST > PRINT PATTERN > LF TUNING2
Media type: Gloss photo paper
Check the printed pattern and enter values for adjustment.

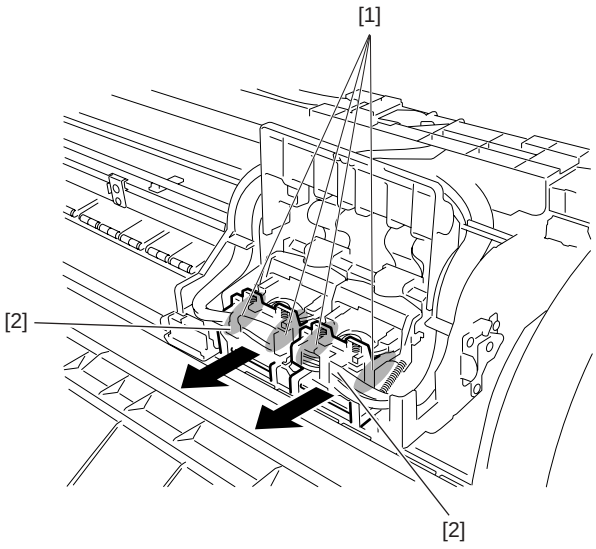
4.3.6 Carriage Unit

a) Removing the carriage unit
1) Drain the ink. See Disassembly/Reassembly > Points to Note on Disassembly/Reassembly > Draining the ink.
2) Turn off the power and move the carriage to above the platen. If the carriage is locked at its home position, insert a Phillips screwdriver from the right side into hole [1] in the shaft of the lifting unit in the purge unit and turn it counterclockwise. This will lower cap [2] and lock pin [3], allowing the carriage to be moved.



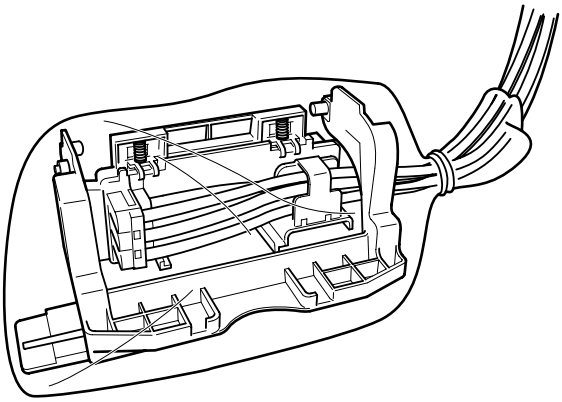
F-4-25

3) Remove the printheads.
4) Release the ink tube from the guide, detach four link levers [1] from the printhead fixer lever, than remove two joint bases [2].



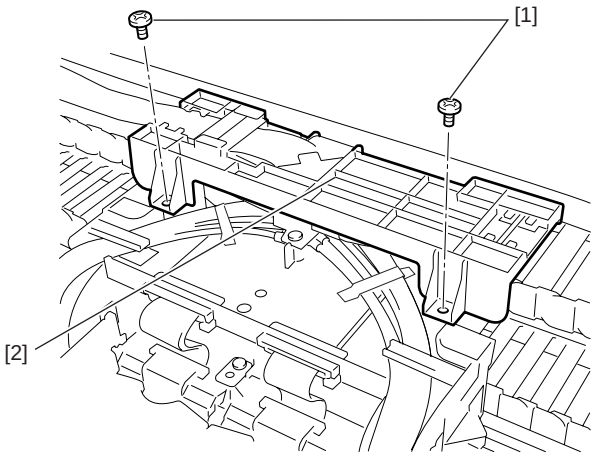
F-4-26

Cover the joints in the ink tube, as with a PVC bag, to keep inks from splashing from them.



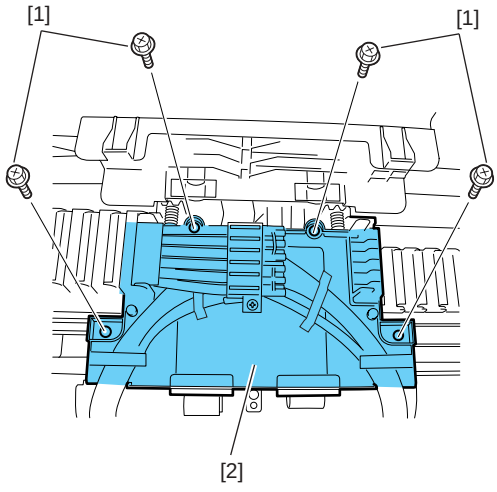
F-4-27

5) Remove two screws [1] and ink tube cover [2].



F-4-28

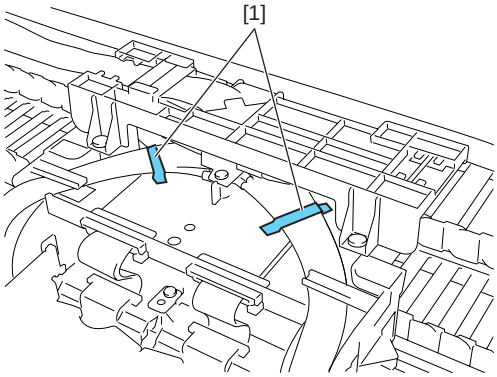
6) Remove four screws [1] and open carriage relay PCB cover [2].



F-4-29

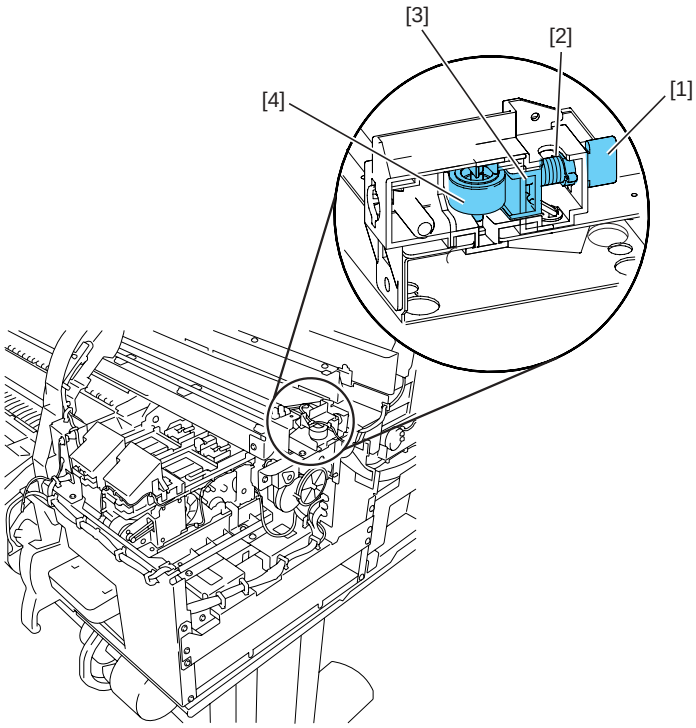
7) Disconnect five flexible cables from the carriage relay PCB.

Never peel off tape [1] that fixes the ink tube when detaching the joints of the ink tube on the upper part of the carriage or when removing the joint base from the carriage.



F-4-30

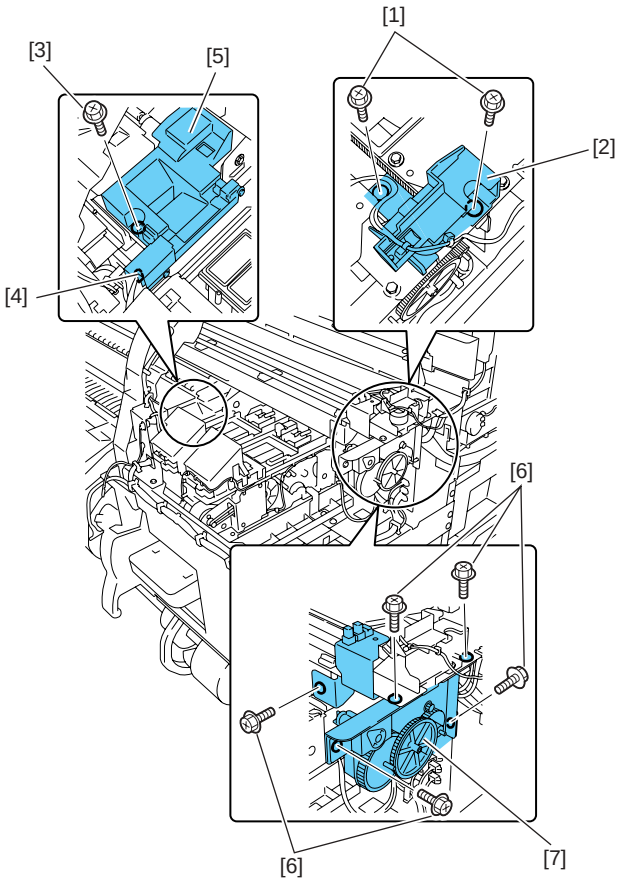
8) Twist off belt fixer knob [1] to loosen the belt, and remove spring [2], guide [3] and pulley [4].



F-4-31

9) Release carriage belt from the pulley of the carriage motor.

10) Remove two screws [1] and pulley base [2].
11) Remove screw [3] and the connector [4] to release head management sensor unit [5].
12) Remove five screws [6] and lift unit [7].

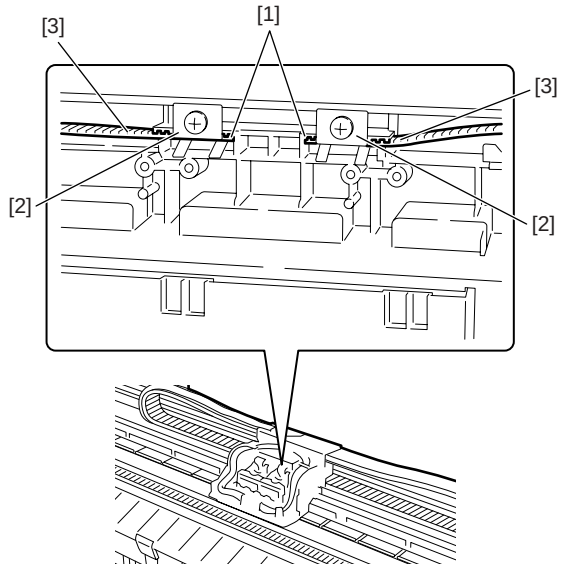


F-4-32

13) Remove the purge unit.
14) Remove the cutter unit, and lay the caterpillar of the ink tube unit on its side, and then remove the carriage from the right side of the printer.

⚠
To remove the carriage unit, pull it out of position keeping the carriage unit level with care not to harm the linear scale. Flaws on the linear scale could result in malfunctioning.

b) Mounting the carriage belt
To install the carriage belt, put in the point of the belt to the interior of the groove [1], and have all the cogs of carriage belt [3] engaged with belt stopper [2].



F-4-33

c) Note on replacing the carriage unit and the multi sensor
When either carriage unit or multi sensor has been replaced, be sure to replace the multi sensor reference plate(QL2-8099: MOUNT, SENSOR ADJUSTING) as well.

d) Action to take after replacing the carriage unit and the multi sensor
Because the distance between the multi sensor (in the carriage unit) and the nozzles (in each printhead) is varied from one unit to another, the printer has its optical axis corrected and paper gap adjustment sensor gain and sensor calibration adjusted prior to shipment. When the carriage unit or multi sensor has been replaced, they should require adjustment.

Execute service mode under the following conditions to launch automatic adjustment:

1) Optical axis correction
- Service mode: SERVICE MODE > ADJUST > PRINT PATTERN > OPTICAL AXIS
Media type: Gloss photo paper

2) Paper gap adjustment
- Service mode: SERVICE MODE > ADJUST > GAP CALIB.

e) Action following the replacement of the carriage unit, carriage motor, carriage belt or linear encoder sensor
After the carriage unit or carriage motor or carriage belt or linear encoder sensor have been removed or replaced, execute the following service mode.
- Service mode: SERVICE MODE > ADJUST > CR MOTOR COG

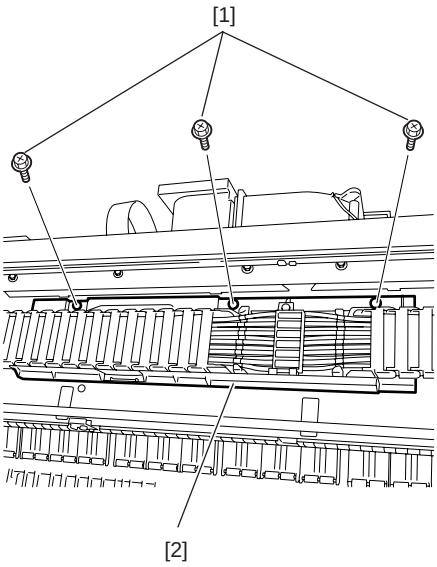
f) Precautions against handling the carriage shaft

The carriage shaft is functionally important part. Therefore, be sure to note the following points.
- Do not touch the shaft.
- Do not allow the shaft to get scratched or marked.
- Do not apply the grease to the shaft.

4.3.7 Ink Tube Unit

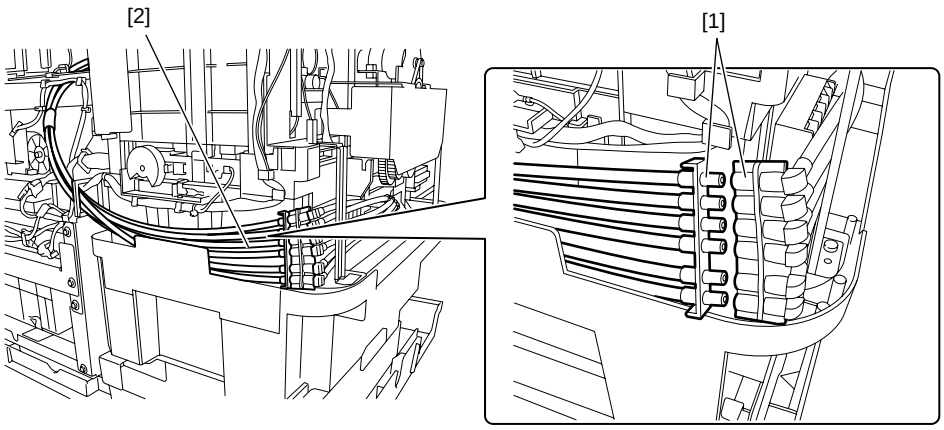
a) Removing ink tube unit

1) Drain the ink. See Disassembly/Reassembly > Points to Note on Disassembly/Reassembly >Draining the ink.
2) Remove the carriage unit. See Disassembly/Reassembly > Points to Note on Disassembly/Reassembly > Carriage Unit.
3) Disconnect five flexible cables from the main controller PCB.
4) Remove the flexible cable leading to the carriage PCB cover from the guide.
5) Remove three screws [1] and release ink tube fixer base [2] from the frame.



F-4-34

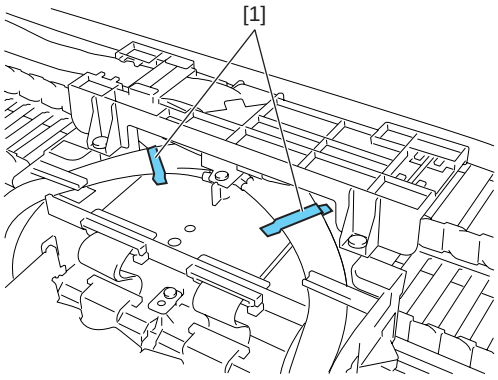
6) Remove joint [1] of the ink tube unit from left and right ink tank unit to remove ink tube unit [2].



F-4-35

⚠

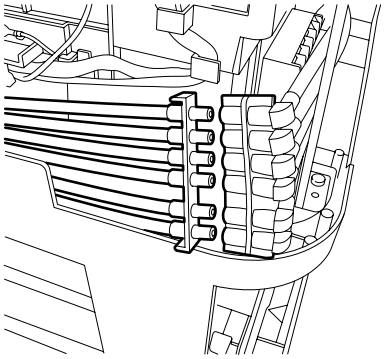
Never peel off tape [1] that fixes the ink tube when detaching the joints of the ink tube on the upper part of the carriage or when removing the joint base from the carriage.
When replacing the ink tube unit, be sure that the tapes [1] are posted to the new ink tube unit.



F-4-36

b) Reassembling ink tube units
When the ink tube unit has been replaced, turn on the power without mounting the printhead and the ink tanks.
Then, mount the printhead and ink tanks as directed by message guidance.

After detaching the joint of the ink tube unit, the joint might become easy to come off by the ink that has adhered to it.
In that case, please wash the joint by alcohol and remove the adhering ink.

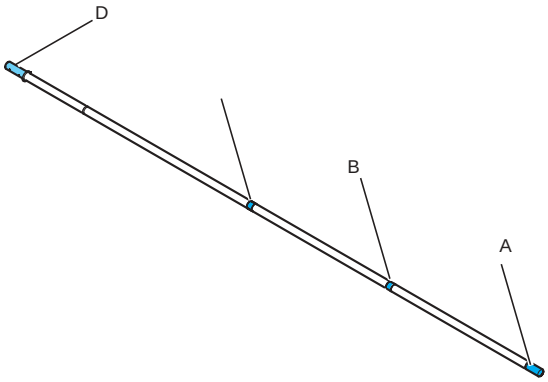


F-4-37

4.3.8 Feeder Unit

a) Handling the feed roller

The feed roller is a functionally important part. Therefore, be sure to note the following points when handling the roller.
- Do not hold the roller with one hand or warp its shape.
- Do not touch the roller surface (coated surface).
- Do not allow the roller to get scratched or marked.
- Hold the roller at two points; location D and one of the locations A, B, or C as shown in the figure below.



F-4-38

b) Action to take after replacing the feed roller encoder and feed roller
This printer as shipped has the feed roller eccentricity (that is, variations in the rate of paper feed from rotation to rotation) corrected for enhanced media feed accuracy. When the feed roller HP sensor or feed roller encoder and feed roller pertaining to the correction of eccentricity variations has been replaced, therefore, they should require adjustment.
Execute service mode under the following conditions to launch automatic adjustment:
Service mode: SERVICE MODE > ADJUST > PRINT PATTERN > LF TUNING
Media type: Glossy photo paper

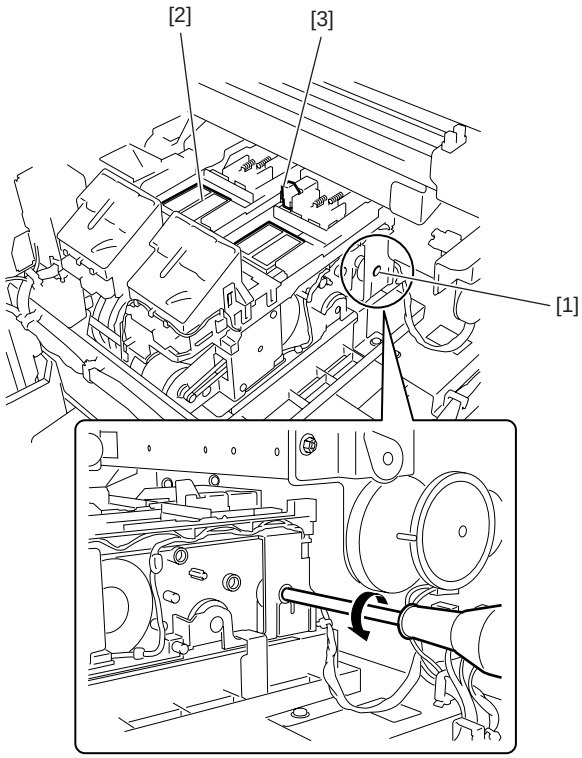
If adjustment cannot be done properly by selecting "SERVICE MODE > ADJUST > PRINT PATTERN > LF TUNING" (auto adjustment), carry out manual adjustment.

Service mode SERVICE MODE > ADJUST > PRINT PATTERN > LF TUNING2
Media type: Gloss photo paper
Check the printed pattern and enter values for adjustment.

4.3.9 Purge Unit

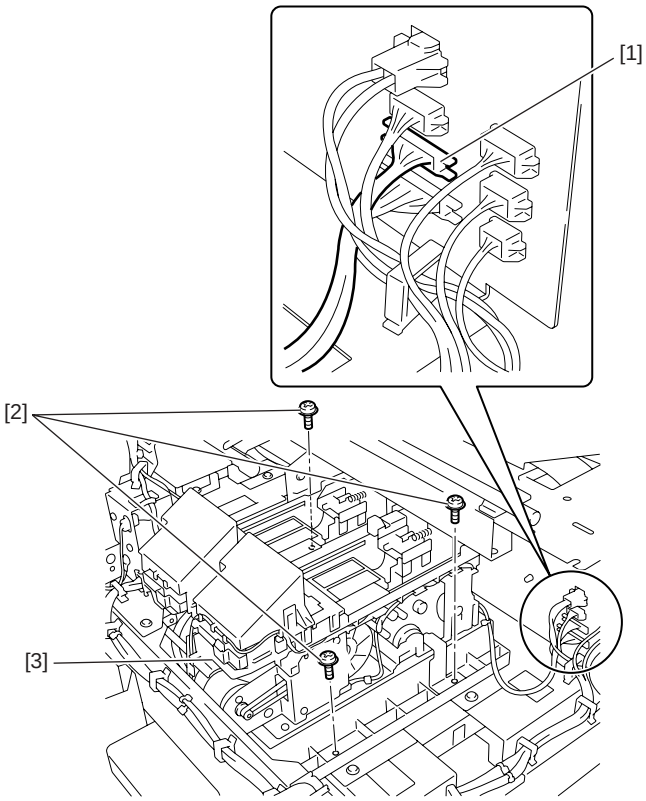
a) Removing the purge unit

1) Turn off the power and move the carriage to above the platen. If the carriage is locked at its home position, insert a Phillips screwdriver from the right side into hole [1] in the shaft of the lift unit in the purge unit and turn it counterclockwise. This will lower cap [2] and lock pin [3], allowing the carriage to be moved.



F-4-39

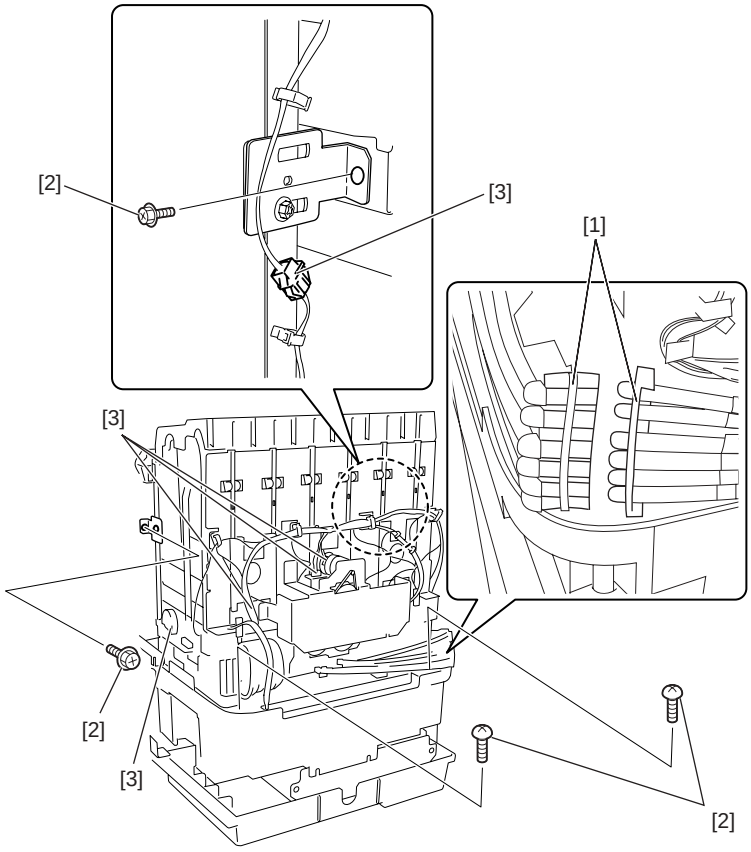
2) Remove connector [1] and three screws [2] and then remove purge unit [3].



F-4-40

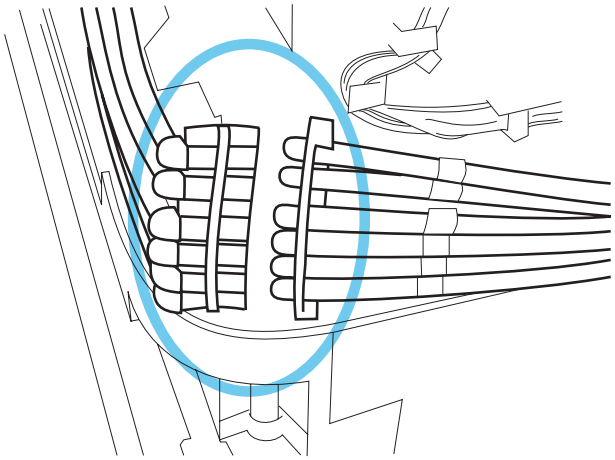
4.3.10 Ink Tank Unit

a) Removing ink tank units
1) Drain the ink. See Disassembly/Reassembly > Points to Note on Disassembly/Reassembly > Draining the ink.
2) Detach the joint [1] between the ink tube unit and ink tank unit.
3) Remove four screws [2] and five connectors [3] and then remove the ink tank unit.



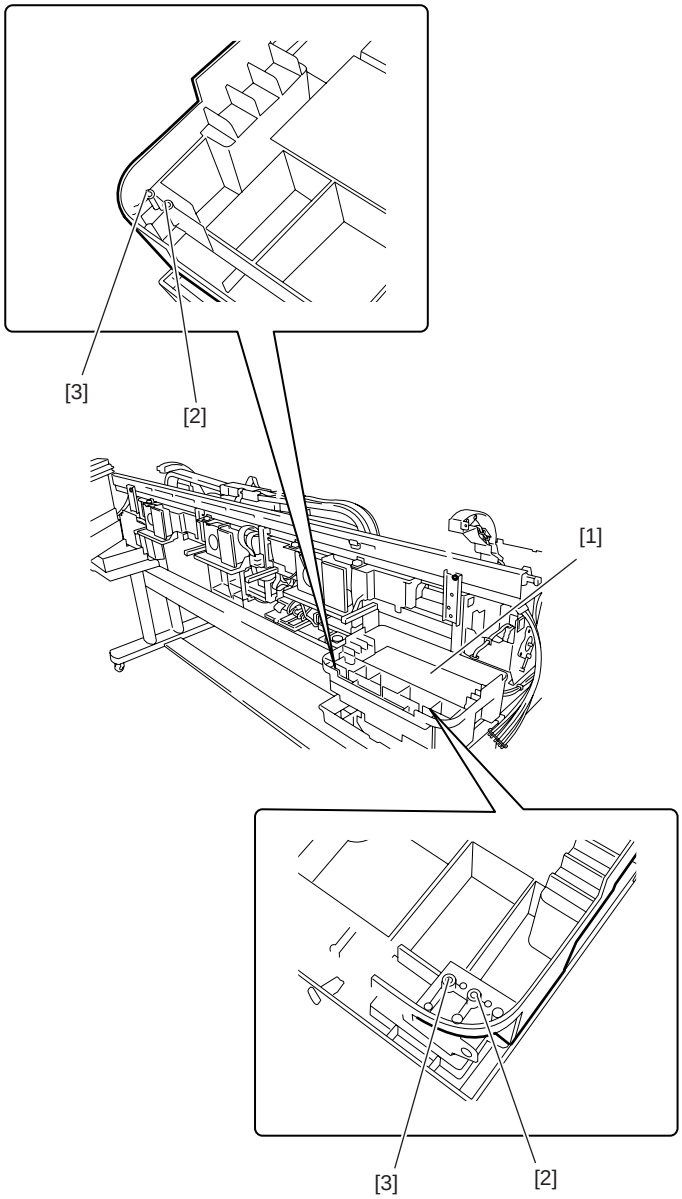
F-4-41

After detaching the joint between the ink tube unit and the ink tube of the ink tank unit, the joint might become easy to come off by the ink that has adhered to it. In that case, please wash the joint by alcohol and remove the adhering ink.



F-4-42

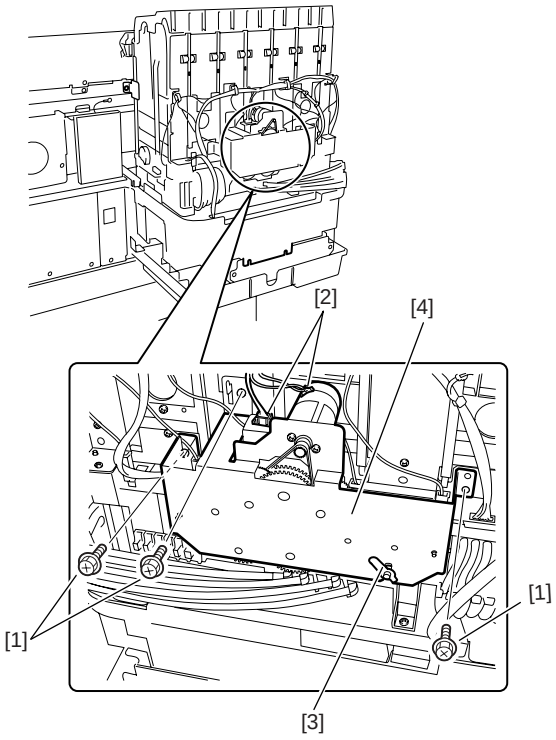
b) Reinstalling ink tank units
The left and right ink tank units are installed to different positions at ink supply mount unit [1].
Install the right ink tank unit at screw position [2].
Install the left ink tank unit at screw position [3].
(Installing position of each ink tank units are inner side of the printer.)



F-4-43

c) Removing the valve motor unit

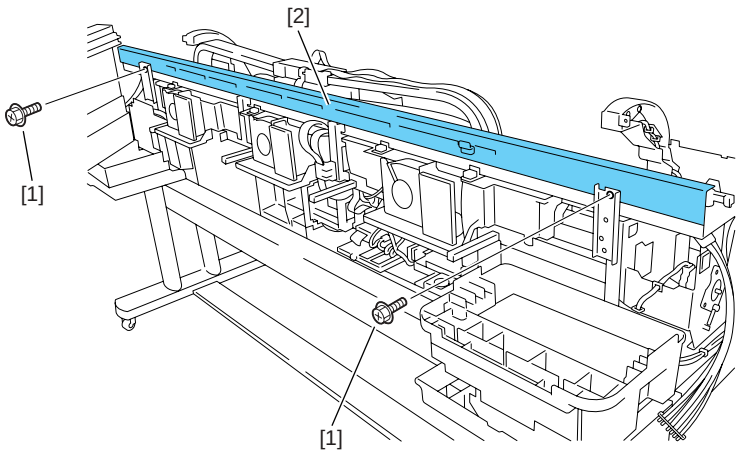
1) To remove the valve motor unit, remove the ink tank cover unit.
2) Remove three screws [1], two connectors [2] and bearing [3], and then remove valve motor unit [4].



F-4-44

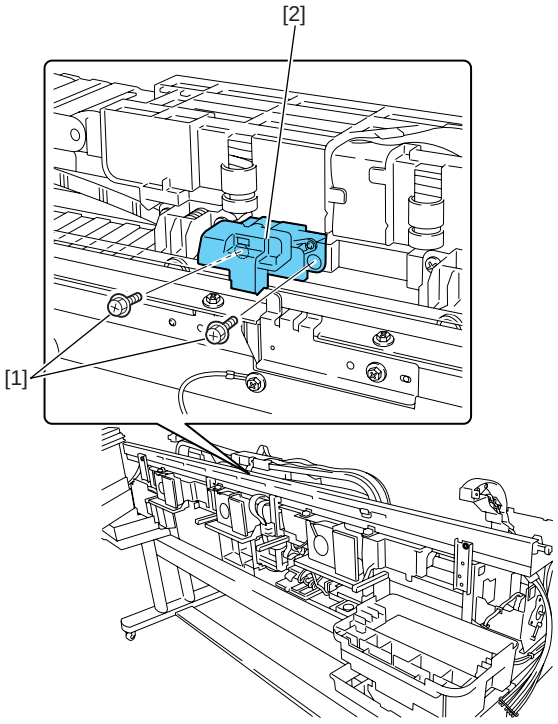
4.3.11 Linear Encoder

a) Removing the linear encoder
1) Move the carriage to above the platen.
2) Remove two screws [1] and upper rear stay [2].



F-4-45

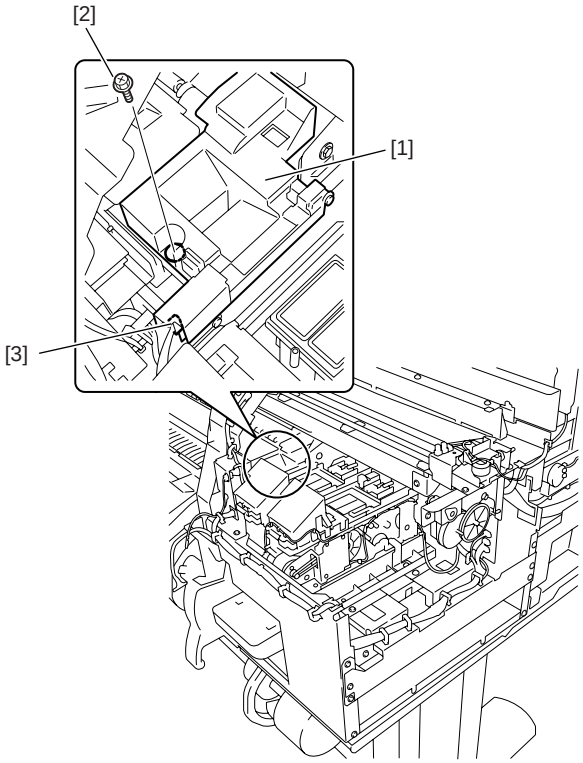
3) Remove two screws [1] and linear encoder [2].



F-4-46

4.3.12 Head Management Sensor

a) Removing the head management sensor
1) To remove head management sensor [1], remove screw [2] and disconnect connector [3].



F-4-47

b) Action to take after replacing the head management sensor
Because the distance between the head management sensor and the carriage unit is varied from one unit to another, the printer has its optical axis corrected to adjust the non-discharging nozzle detection position prior to shipment. When the head management sensor carriage unit has been replaced, it should require adjustment. Execute service mode under the following conditions:
SERVICE MODE > ADJUST > NOZZLE CHK POS.

4.3.13 PCBs

Do not replace the main controller PCB and the maintenance cartridge relay PCB (ROM board) at the same time.
Both PCBs hold vital information, such as settings and a carriage drive time. Before either PCB is replaced, such information is temporarily saved through internal communication with the other PCB and is automatically written to the new PCB when it is installed. For this reason, the two PCBs cannot be replaced at the same time. To replace both PCBs, work in order of (a) > (b).
When the main controller PCB and maintenance cartridge relay PCB have been replaced with service parts, check that the latest version of firmware is installed in them.
If not, upgrade the firmware to the latest version.

Reference:
For instruction on how to update the main controller, refer to "TROUBLESHOOTING" > "Version Up".

a) Replacing the maintenance cartridge relay PCB (ROM board)
1) Turn off the power and disconnect the power plug.
2) Replace the maintenance cartridge relay PCB.
3) Reconnect the power plug and turn on the power while pressing the [Load] and [Navigate] keys. (Start the printer in PCB replacement mode.)
4) Release the key, but not before making sure that "Initializing" appears on the display. (The message lamp lights when printer enters PCB replacement mode.)
5) Wait until "REPLACE MODE" appears on the display.
6) Select MC BOARD and press the [OK] key.
7) Turn off the power, but not before making sure that "Power off" appears on the display.
8) Turn on the power.
9) Check the firmware version. If the firmware is not the latest version, upgrade the firmware to the latest version.

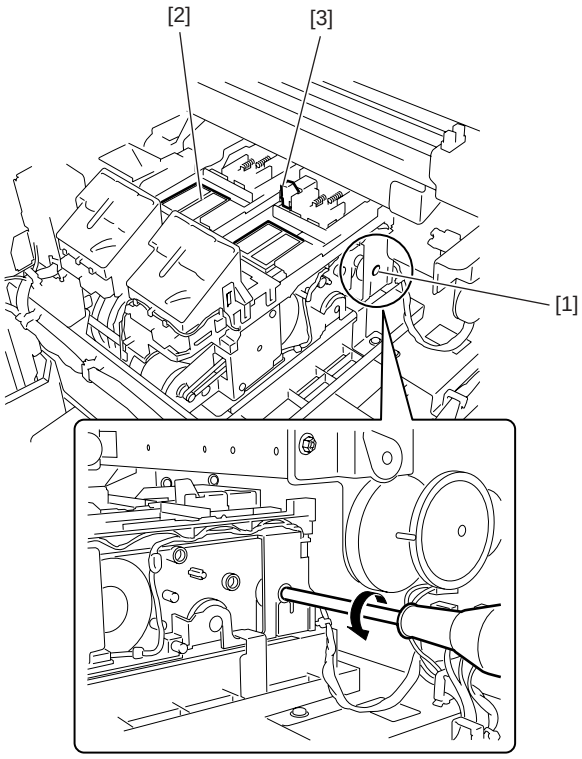
b) Replacing the main controller PCB
1) Turn off the power and disconnect the power plug.
2) Replace the main controller PCB.
3) Reconnect the power plug and turn on the power while pressing the [Load] and [Navigate] keys. (Start the printer in PCB replacement mode.)
4) Release the key, but not before making sure that "Initializing" appears on the display. (The message lamp lights when printer enters PCB replacement mode.)
5) Wait until "REPLACE MODE" appears on the display.
6) Select CPU BOARD and press the [OK] key.
7) Turn off the power, but not before making sure that "Power off" appears on the display.
8) Turn on the power.
9) Check the firmware version. If the firmware is not the latest version, upgrade the firmware to the latest version.

4.3.14 Opening the Cap/Moving the Wiper Unit

This section explains how to open the cap and ink supply valve.
To move the carriage with the power off, you need to release the carriage lock pin and cap.

a) Opening the Cap/Releasing the Carriage Lock Pin by service mode
After entering the service mode, execute the following mode.
Service mode: SERVICE MODE > FUNCTION > CR UNLOCK

b) Opening the Cap/Releasing the Carriage Lock Pin/Moving the Wiper Unit manually
1) Remove right circle cover (L), right circle cover (S), right side cover and upper right cover.
2) Insert a Phillips screwdriver from the right side into hole [1] in the shaft of the lift unit in the purge unit and turn it counterclockwise. This will lower cap [2] and lock pin [3], allowing the carriage to be moved.
The wiper unit will move in sync with the motion of the cap and lock pin.

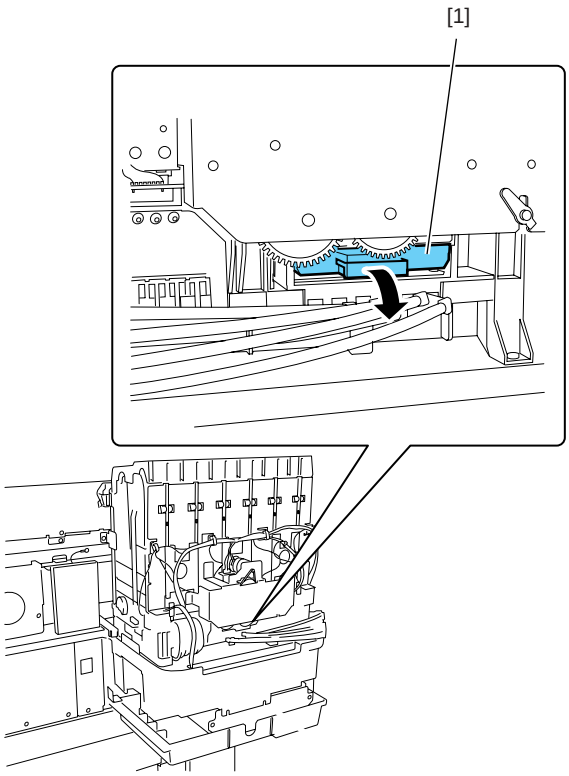


F-4-48

4.3.15 Opening and closing ink supply valves

a) Opening and closing ink supply valves

1) Remove the ink tank cover unit.
2) Press valve lever [1] with a finger to open the ink supply valve.



F-4-49

- If the printhead fixer lever is released with the ink supply valve to an ink tube open while the tube is filled with an ink, the ink in the tube could flow backward to the ink tank unit, leaking through the hollow needle in the ink tank.
- If an ink supply valve remains open, as on occurrence of an ink supply valve open/close error, remove the valve motor unit and (see Disassembly/Reassembly > Points to Note on Disassembly/Reassembly > Ink Tank Units) and close the ink supply valve.

4.3.16 Draining the ink

There are two ways to drain the ink passage of inks: automatic and manual.

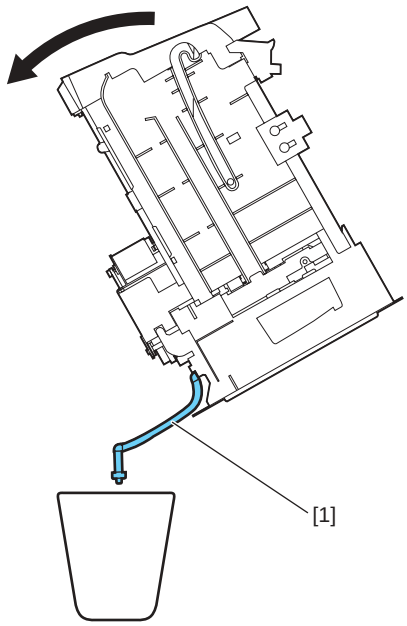
⚠
Be sure to drain the ink from the ink passage to prevent ink leakage before disassembling any component of the ink passage or reshipping the printer.

1. Automatic Ink Drain
Execute Automatic Ink Drain by selecting [Set/Adj. Menu] > [Prep.MovePrinter] from the main menu.

⚠
Execute Automatic Ink Drain once again if the printer shuts down due to a power failure or any other trouble before the operation completes.

2. Manual ink drainage
Drain the ink passage of inks manually if any electrical component in the printer fails or firmware malfunctions or if the printer fails to be powered on.
1) Remove right circle cover (L), right circle cover (S), right side covers, left/ right the ink tank cover units. See Disassembly/Reassembly > Points to Note on Disassembly/Reassembly > External Covers.
2) Remove the ink tanks.
3) Move the carriage to above the platen. See Disassembly/Reassembly > Points to Note on Disassembly/Reassembly > Opening the caps and moving the wiper unit.
4) Release the printhead fixer lever.
5) Open the ink supply valves to allow the inks to flow into the subtanks.

3. Draining the ink in subtanks
1) Remove the ink tank units. See Disassembly/Reassembly > Points to Note on Disassembly/Reassembly > Ink Tank Unit.
2) Open the ink supply valve. See Disassembly/Reassembly > Points to Note on Disassembly/Reassembly > Opening and closing ink supply valves.
3) Drain the ink in the subtank from the ink tube [1] to the container while inclining the ink tank unit to the rear slowly.



F-4-50

4.4 Applying the Grease

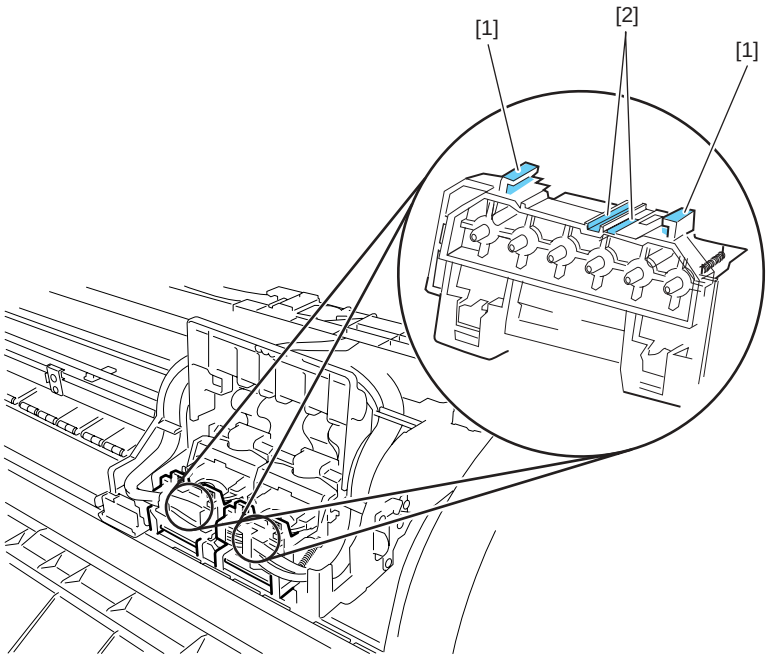
4.4.1 Applying the Grease

Some parts require application of grease when replaced. Apply the grease(special tool) listed below.
Smear the grease lightly and evenly with a flat brush or the like.
For the printer disassembly/reassembly method, refer to "DISASSEMBLY/REASSEMBLY" and "parts catalog".

Do not apply the grease to locations in which not designated grease may cause poor print quality. Take particular care that grease do not get onto the wiper, cap, carriage shaft and the linear scale.

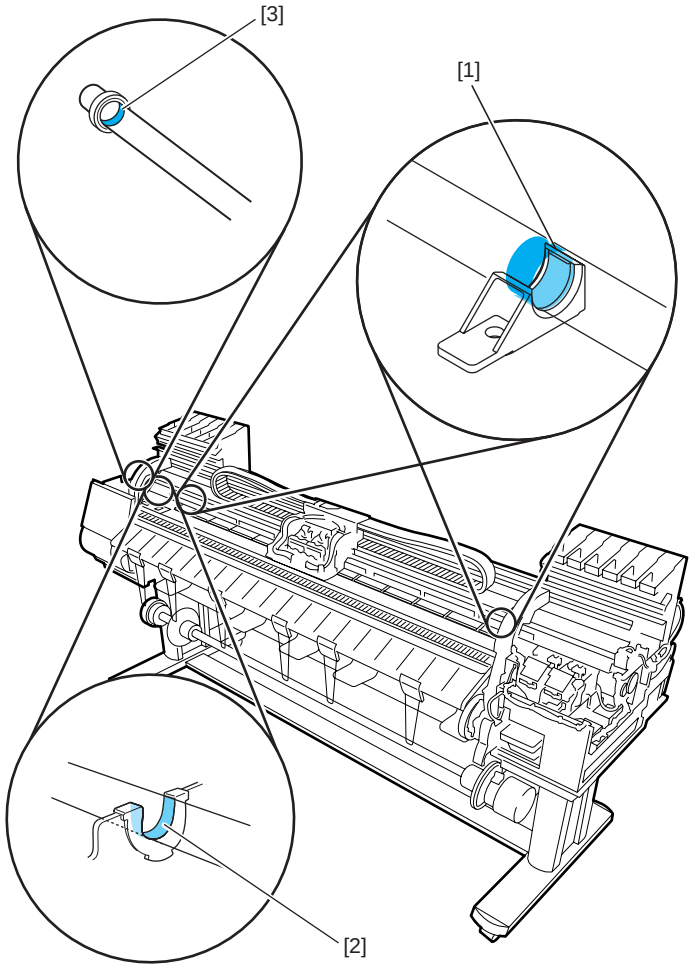
No.	Location	Grease	Quantity	Remarks
1	The joint base rail and rib of carriage unit	FLOIL G-5000H	Smear the grease lightly.	
2	Two feed roller backup	FLOIL G-5000H	Approx. 12mg	Don't apply to central backup with bearing.
	Bushing	FLOIL G-5000H	Smear the grease lightly.	
3	Feed roller bearing	FLOIL G-5000H	Approx. 24mg	Apply if remove bearing from a feed roller.
4	Pinch roller release cam three points x 10 parts	FLOIL G-5000H	Smear the grease lightly.	
5	Upper cover stay shaft hole	FLOIL G-5000H	Approx. 24mg	
	The gear shaft of the upper cover stay gear	FLOIL G-5000H	Approx. 24mg	
	Upper cover stay shaft end	FLOIL G-5000H	Approx. 24mg	
	The gear tooth face of upper cover stay	FLOIL G-5000H	Smear the grease lightly.	

1. The joint base rail [1] and the rib [2] of the carriage unit.



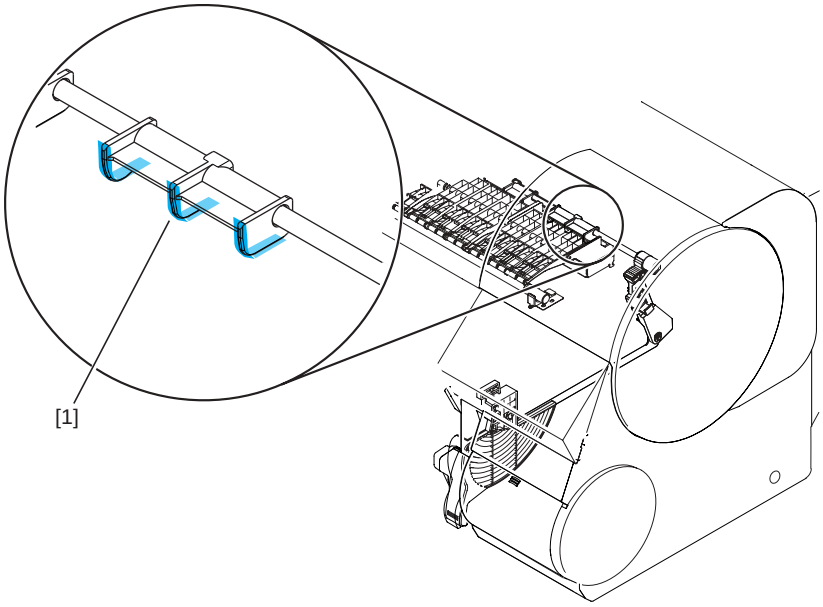
F-4-51

2. Two feed roller backup [1]/ bushing [2]
3. Feed roller bearing [3]



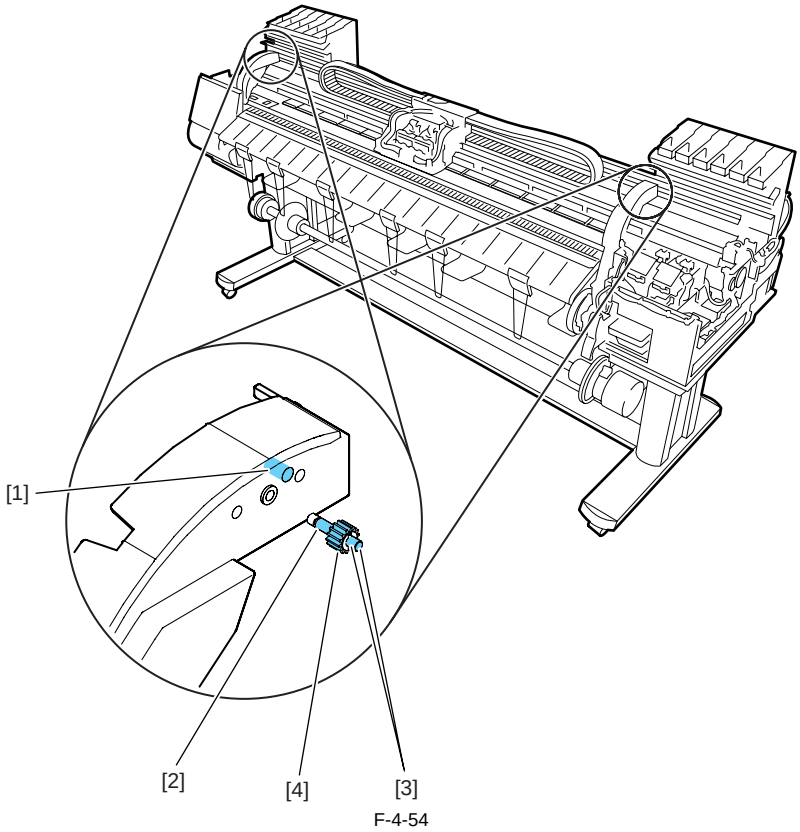
F-4-52

4. Pinch roller release cam [1] three points x 10 parts



F-4-53

5. Upper cover stay shaft hole [1]/ gear shaft [2]/ shaft end [3]/ gear tooth face [4]



F-4-54

4.5 Adjustment and Setup Items

4.5.1 Adjustment Item List

The following adjustment procedures need to be performed when parts have been replaced or removed and then reinstalled:

Adjustment item	Adjustment timing
Multi sensor recalibration	Multi sensor replacement/removal
	Carriage unit replacement/removal
Adjusting feed roller eccentricity	Feed roller
	Feed roller encoder
Head management sensor recalibration	Head management sensor replacement/removal
	Carriage unit replacement/removal
Carriage motor recalibration	Carriage unit replacement/removal
	Carriage motor replacement/removal
	Carriage belt replacement/removal

4.5.2 Procedure after Replacing the Carriage Unit or Multi Sensor

a) Note on replacing the carriage unit and the multi sensor
- The multi sensor reference plate(QL2-8099: MOUNT, SENSOR ADJUSTING) must be replaced at the same time whenever the carriage or the multi sensor is being replaced.

b) Multi Sensor Recalibration
Because the distance between the multi sensor (in the carriage unit) and the nozzles (in each printhead) is varied from one unit to another, the printer has its optical axis corrected and paper gap adjustment sensor gain and calibration adjusted prior to shipment. When the carriage unit or multi sensor has been replaced, they should require adjustment.

Execute service mode under the following conditions to launch automatic adjustment:

1) Optical axis correction
- Service mode : SERVICE MODE > ADJUST > PRINT PATTERN > OPTICAL AXIS
Media type : Photo glossy paper
Media size : Media having a width equal toor larger then that of A2-size paper

2) Paper gap adjustment
- Service mode: SERVICE MODE > ADJUST > GAP CALIB.

c) Carriage Motor Adjustment
- After the carriage and carriage motor and carriage belt and linear encoder sensor has been removed or replaced, execute the following service mode.
Service mode: SERVICE MODE > ADJUST > CR MOTOR COG

4.5.3 Procedure after Replacing the Feed Roller or Feed Roller Encoder

Feed roller eccentricity is factory-adjusted (correction of variation in the paper feed amount per rotation). It is necessary to adjust feed roller eccentricity after replacing the feed roller encoder or feed roller.
In the service mode, perform automatic adjustment of feed roller eccentricity.

Service mode : SERVICE MODE > ADJUST > PRINT PATTERN > LF TUNING
Media type : Photo glossy paper

If adjustment cannot be done properly by selecting "SERVICE MODE > ADJUST > PRINT PATTERN > LF TUNING" (auto adjustment), carry out manual adjustment.

Service mode SERVICE MODE > ADJUST > PRINT PATTERN > LF TUNING2
Media type: Gloss photo paper
Check the printed pattern and enter values for adjustment.

4.5.4 Procedure after Replacing the Head Management Sensor

Since the distance between the head management sensor and the carriage unit varies among printers, the optical axis is factory-adjusted to adjust the non-discharging detection position. When you have replaced the head management sensor or performed assembly/reassembly of surrounding parts that can change the distance between the head management sensor and the carriage unit, readjustment is required
Perform the readjustment in the service mode.

Service mode : SERVICE MODE > ADJUST > NOZZLE CHK POS.

Chapter 5 MAINTENANCE

Contents

5.1 Periodic Replacement Parts

5.1.1 Periodic Replacement Parts

Level	Periodic Replacement Part
User	None
Service Personnel	None

5.2 Consumable Parts

5.2.1 Consumable Parts

	Consumables				Service Mode	
	Name	Part number	Q'ty	Life sheets/ A0	PARTS xx	States (Error Code)
Service	MAINTENANCE KIT Wia	QY6-1528	1	20000	Wia	
	MAINTENANCE KIT CR	QY6-1531	1	20000	CR1/CR4	
	WASTE INK ABSORBER UNIT	QL2-2110	1	20000	Wia-1	OK/W1/E146-4001
	WASTE INK ABSORBER UNIT (L)	QL2-2108	2	20000	Wia-3/Wia-4	
	WASTE INK ABSORBER UNIT (S)	QL2-1650	1	20000	Wia-5	
	SUCTION FAN UNIT	QM3-3069	1	20000	Wia-6	
	DUCT	QL2-1663	1	20000		
	CARRIAGE UNIT	QM4-8199	1	20000	CR-1/CR-2/ CR-3	OK/W1/W2
	MOUNT, SENSOR ADJUSTING	QL2-8099	1	20000	CR-1/CR-2/ CR-3/CR-5	
	SCALE, LINEAR	QC3-1877	1	25000	CR-2	
	TUBE UNIT	QM3-9943	1	20000	CR-4	OK/W1/E144-4047
	MULTI SENSOR UNIT	QM4-8018	1	20000	CR-5	OK/W1/W2
					MS-1	
	PURGE UNIT	QM3-7018	1	25000	PG-1	OK/W1/E141-4046
	HEAD MANAGEMENT SENSOR	QM3-1056	1	50000	HMa-1	OK/W1/W2
	MOTOR, CARRIAGE	QK1-2868	1	28000	PL-1	
	FEED MOTOR ASS'Y	QM4-8113	1	50000	PS-1	
	FAN UNIT	QM3-7025	2	50000	Mi-1	OK/W1/E146-4001
User	See "Product Overview> Features> Consumables"					

After supplies have been replaced, execute [INITIALIZE] > [PARTS COUNTER] > [PARTS xx] in service mode to initialize (clear) the parts counter information.

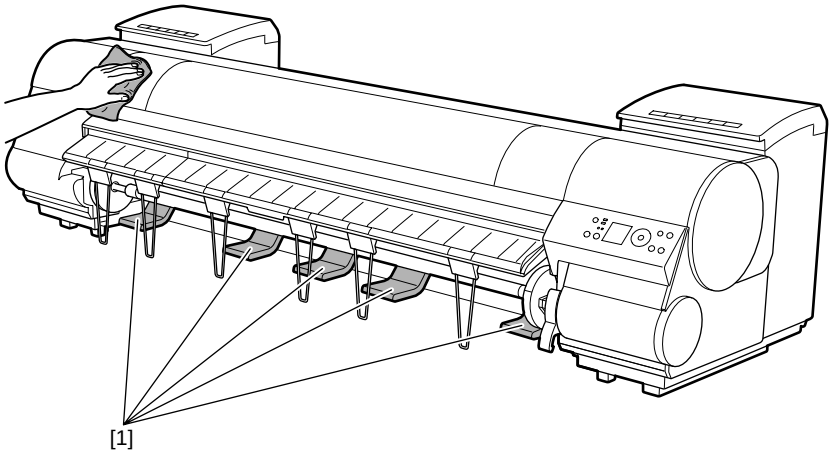
5.3 Periodic Maintenance

5.3.1 Periodic Maintenance

Level	Periodic maintenance
User	Cleaning of ink mist and other substances(about once each month
Service personnel	None

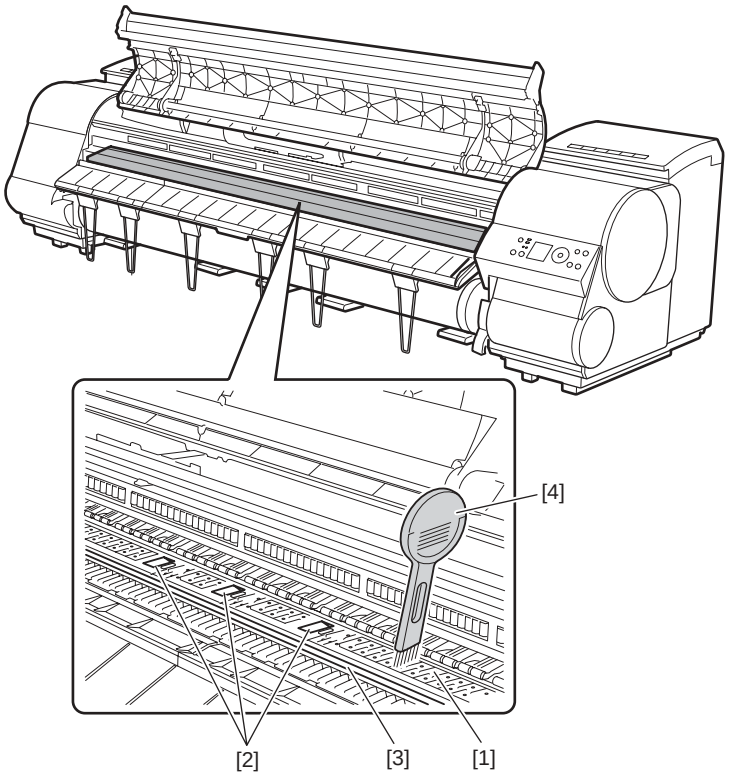
a) Printer cleaning
To keep up with print quality and prevent troubles, clean the printer about once each month.

1) Using a damp cloth that you have wrung out completely, wipe away any dirt or paper dust from the Paper Feed Slot [1], power cord plug, and so on. Dry these parts with a dry cloth.



F-5-1

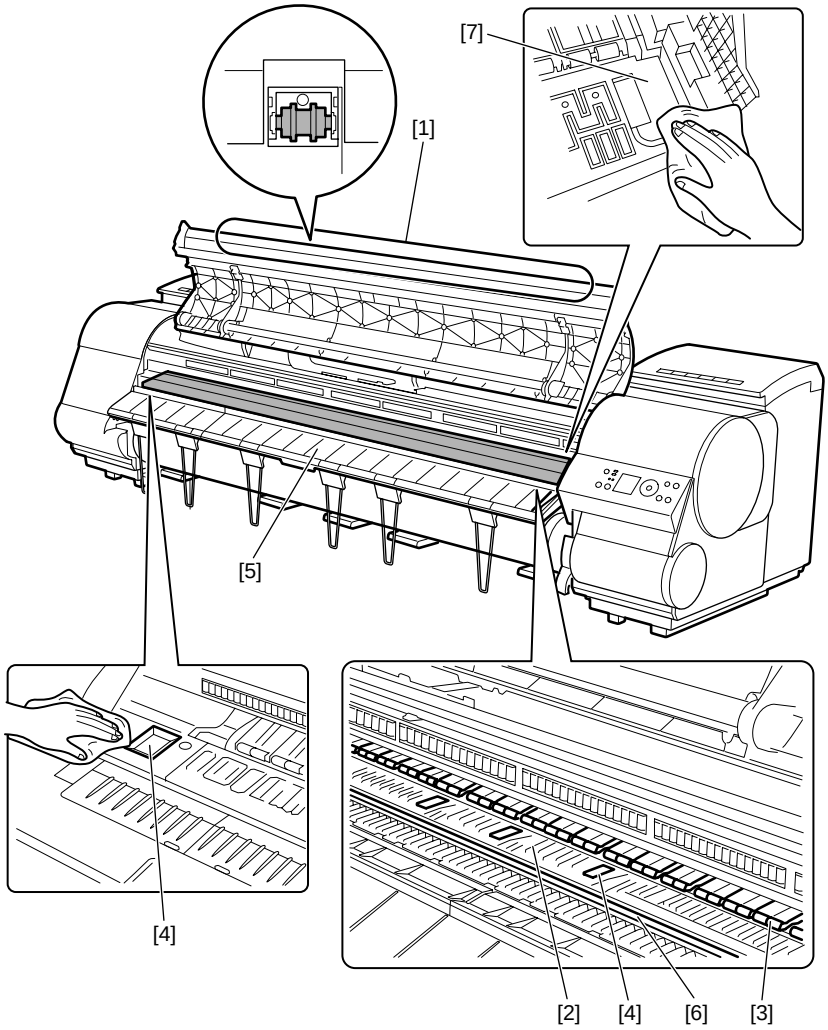
2) Open the Top Cover.
3) If paper dust has accumulated in the Vacuum holes on the Platen [1], the Borderless Printing Ink Grooves [2], or cutter guide [3], use the included Cleaning Brush [4] to wipe it away.



F-5-2

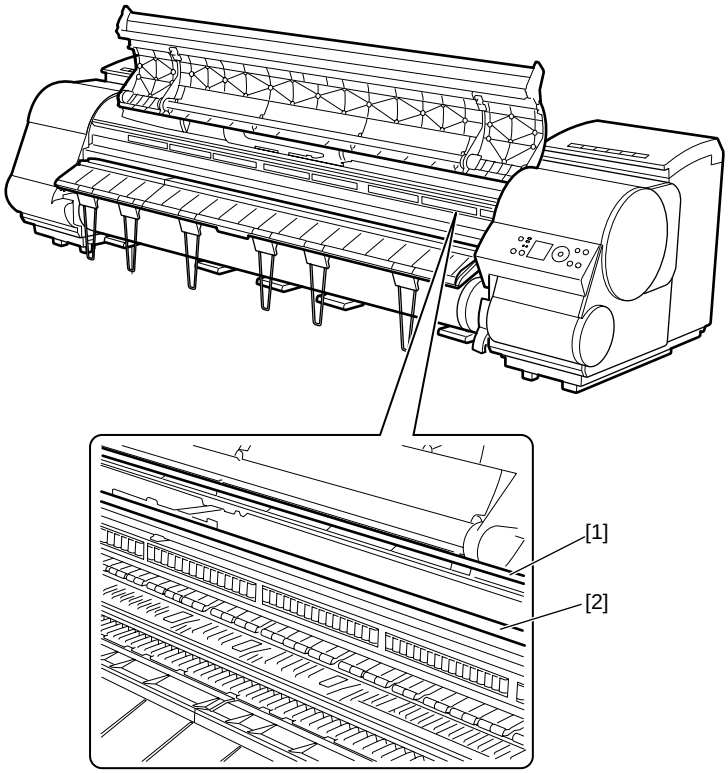
MEMO:
If the Cleaning Brush is dirty, rinse it in water.

4) Using a damp cloth that you have wrung out completely, wipe inside the Top Cover to clean it. Wipe away any ink residue on the Top Cover Roller [1], all over the Platen [2], the Pinch Roller Unit [3], the Borderless Printing Ink Grooves [4], the Ejection Guide [5], the cutter guide [6], the maintenance-jet tray [7], and so on.



F-5-3

- Do not dry the interiors of the top cover with a dry cloth. Electrostatic charges could make the internal components susceptible to dirt, resulting in degraded print quality.
- Do not use flammable solvents, such as thinner and benzine, on the printer. Solvents coming into contact with any electrical parts inside the printer could result in fires or electrical shock hazards.
- Do not touch linear scale [1] and carriage shaft [2].



F-5-4

Chapter 6 TROUBLESHOOTING

Contents

6.1 Troubleshooting

6.1.1 Outline

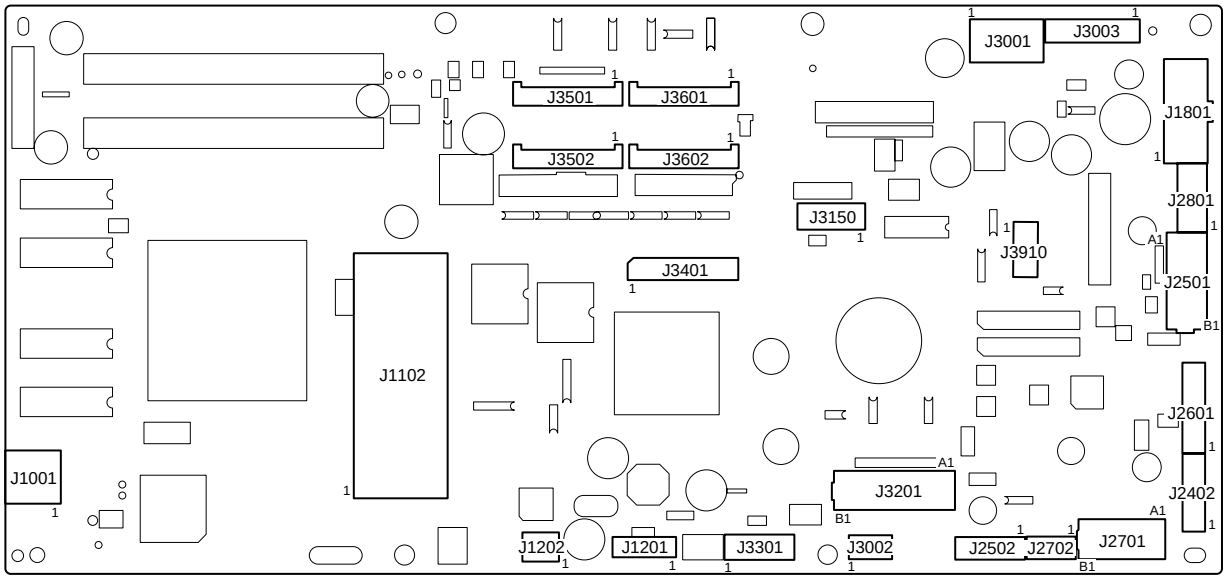
6.1.1.1 Outline of Troubleshooting

1. Outline
Troubles subject to troubleshooting are classified into those shown on the display (warning, error, and service call) and those not shown on the display.
The code of warning and error is shown by combining alphanumeric characters of eight digits and four digits.
The code of service call error is shown by the initial character of "E" and combining alphanumeric characters of three digits and four digits.
No code number is displayed when a warning occurs. Selecting [SERVICE MODE] > [DISPLAY] > [WARNING] in service mode allows you to check the warning log.

2. Precautions for Troubleshooting
1) Check the environmental conditions and the media used for printing.
2) Before performing troubleshooting, make sure that all connectors and cables are connected properly.
3) When servicing the printer with the external cover removed and the AC power supplied, be extremely careful to avoid electric shock and shorting electrical devices.
4) In the following sections, the troubleshooting steps are described such that the component related to the most probable cause of the problem will be repaired or replaced first, being followed by components with less problem probability. If multiple components have the same problem probability, the steps are described beginning with the easiest one.
After performing each step, check to see if the problem has been resolved by making test prints. If the problem persists, proceed to the next step.
5) After completion of the troubleshooting, check that all connectors and cables have been reconnected and screws have been tightened firmly.
6) Whenever you have performed replacement or repair services, make test prints to check whether the problem has been resolved.

6.2 Location of Connectors and Pin Arrangement

6.2.1 Main controller PCB



F-6-1

T-6-1

J1001			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	VBUS	IN	USB VBUS(+5V)
2	D-	IN/OUT	USB data(-)
3	D+	IN/OUT	USB data(+)
4	AGND	-	USB GND
5	FGND	-	GND (Connector shell)
6	FGND	-	GND (Connector shell)

T-6-2

J1102			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	GND	-	GND
3	GND	-	GND
4	+3.3V	OUT	Power supply(+3.3V)
5	+3.3V	OUT	Power supply(+3.3V)
6	+3.3V	OUT	Power supply(+3.3V)
7	+3.3V	OUT	Power supply(+3.3V)
8	+3.3V	OUT	Power supply(+3.3V)

J1102			
Pin Number	**Signal name**	**IN/OUT**	**Function**
9	+3.3V	OUT	Power supply(+3.3V)
10	N.C.	-	N.C.
11	GND	-	GND
12	/PME	IN	Power management enable signal
13	/INTA	IN	Interrupt signal
14	GND	-	GND
15	/RST	OUT	PCI Reset signal
16	CLK	OUT	PCI Clock signal
17	/GNT	OUT	Ground signal
18	GND	-	GND
19	/REQ	IN	Request signal
20	AD31	IN/OUT	Address and data signal
21	AD30	IN/OUT	Address and data signal
22	AD29	IN/OUT	Address and data signal
23	AD28	IN/OUT	Address and data signal
24	GND	-	GND
25	AD27	IN/OUT	Address and data signal
26	AD26	IN/OUT	Address and data signal
27	AD25	IN/OUT	Address and data signal
28	AD24	IN/OUT	Address and data signal
29	/CBE3	IN/OUT	Bus command and byte enable signal
30	IDSEL	OUT	Inisharaization device select signal
31	GND	-	GND
32	GND	-	GND
33	AD23	IN/OUT	Address and data signal
34	AD22	IN/OUT	Address and data signal
35	AD21	IN/OUT	Address and data signal
36	AD20	IN/OUT	Address and data signal
37	GND	-	GND
38	AD19	IN/OUT	Address and data signal
39	AD18	IN/OUT	Address and data signal
40	AD17	IN/OUT	Address and data signal
41	AD16	IN/OUT	Address and data signal
42	/CBE2	OUT	Bus command and byte enable signal
43	GND	-	GND
44	/FRAME	IN/OUT	Cycle frame signal
45	/IRDY	IN/OUT	Initiator ready signal
46	/TRDY	IN/OUT	Target ready signal
47	/DEVSEL	IN/OUT	Device select signal
48	GND	-	GND
49	/STOP	IN/OUT	Stop signal
50	/LOCK	IN/OUT	Lock signal
51	/PERP	IN/OUT	Parity error signal
52	/SERR	IN/OUT	System error signal
53	PAR	IN/OUT	Parity signal
54	/CBE1	IN/OUT	Bus command and byte enable signal
55	GND	-	GND
56	GND	-	GND
57	AD15	IN/OUT	Address and data signal
58	AD14	IN/OUT	Address and data signal
59	AD13	IN/OUT	Address and data signal
60	AD12	IN/OUT	Address and data signal
61	GND	-	GND
62	AD11	IN/OUT	Address and data signal
63	AD10	IN/OUT	Address and data signal
64	AD9	IN/OUT	Address and data signal
65	AD8	IN/OUT	Address and data signal
66	/CBE0	IN/OUT	Bus command and byte enable signal
67	GND	-	GND
68	AD7	IN/OUT	Address and data signal
69	AD6	IN/OUT	Address and data signal
70	AD5	IN/OUT	Address and data signal
71	AD4	IN/OUT	Address and data signal
72	GND	-	GND
73	AD3	IN/OUT	Address and data signal

J1102			
Pin Number	**Signal name**	**IN/OUT**	**Function**
74	AD2	IN/OUT	Address and data signal
75	AD1	IN/OUT	Address and data signal
76	AD0	IN/OUT	Address and data signal
77	GND	-	GND
78	HDD_LED	-	N.C.
79	+5V	OUT	Power supply(+5V)
80	+5V	OUT	Power supply(+5V)
81	+5V	OUT	Power supply(+5V)
82	+3.3V	OUT	Power supply(+3.3V)
83	+3.3V	OUT	Power supply(+3.3V)
84	+3.3V	OUT	Power supply(+3.3V)
85	GND	-	GND
86	GND	-	GND
87	GND	-	GND
88	GND	-	GND

T-6-3

J1201			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	TXP	OUT	Transmission Data
3	TXN	OUT	Transmission Data
4	GND	-	GND
5	RXN	IN	Receive Data
6	RXP	IN	Receive Data
7	GND	-	GND

T-6-4

J1202			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	DASPN	IN	Access signal
2	+5V	IN	Power supply(+5V)
3	GND	-	GND

T-6-5

J1801			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	RGV20(+5V)	IN	Power supply(+5V)
2	RGV20(+5V)	IN	Power supply(+5V)
3	RGV20(+5V)	IN	Power supply(+5V)
4	GND	-	GND
5	GND	-	GND
6	GND	-	GND
7	VM	IN	Power supply(+32V)
8	VM	IN	Power supply(+32V)
9	VMGND	-	GND
10	VMGND	-	GND
11	VM_ENB	OUT	VM enable signal
12	AFCONT	OUT	Normal/Power saving switch signal

T-6-6

J2402			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	INKBENM2_AM	OUT	Left valve motor drive signal AM
2	INKBENM2_AP	OUT	Left valve motor drive signal AP
3	SNS3V	OUT	Power supply(+3.3V)
4	GND	-	GND
5	/INKBEN_OPEN_L	IN	Left valve open/close detection sensor output signal
6	/TANK_COVER_L	IN	Left ink tank cover switch output signal
7	GND	-	GND
8	SNS3V	OUT	Power supply(+3.3V)
9	GND	-	GND
10	/INKBEN_CAM_L	IN	Left ink tank agitation cam sensor output signal

J2402			
Pin Number	**Signal name**	**IN/OUT**	**Function**
11	N.C	-	N.C

T-6-7

J2501			
Pin Number	**Signal name**	**IN/OUT**	**Function**
A1	N.C	-	N.C
A2	N.C	-	N.C
A3	N.C	-	N.C
A4	SNS3V	OUT	Power supply(+3.3V)
A5	GND	-	GND
A6	/CR_HP	IN	Lift cam sensor output signal
A7	OUT_LIFTM_VM	OUT	Power supply
A8	OUT_LIFTM0_A	OUT	Lift motor drive signal A
A9	OUT_LIFTM2_AX_N0	OUT	Lift motor drive signal AX
A10	OUT_LIFTM1_B	OUT	Lift motor drive signal B
A11	OUT_LIFTM3_BX_N1	OUT	Lift motor drive signal BX
A12	/ATUKAIJO_IN	IN	Pressure release switch output signal
A13	GND	-	GND
B1	PUMPM1_AM	OUT	Purge motor drive signal AM
B2	PUMPM1_AP	OUT	Purge motor drive signal AP
B3	GND	-	GND
B4	PUMPR_ENCA	IN	Pump encoder sensor output signal A
B5	SNS5V	OUT	Power supply(+5V)
B6	PUMPR_ENCB	IN	Pump encoder sensor output signal B
B7	SNS3V	OUT	Power supply(+3.3V)
B8	GND	-	GND
B9	/CONTROL_CAM_R	IN	Pump cam sensor output signal
B10	GND	-	GND
B11	/MEDIA_R	IN	Media sensor output signal
B12	SNS5V	OUT	Power supply(+5V)
B13	N.C	-	N.C

T-6-8

J2502			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	INKBENM1_AM	OUT	Right valve motor drive signal AM
2	INKBENM1_AP	OUT	Right valve motor drive signal AP
3	SNS3V	OUT	Power supply(+3V)
4	GND	-	GND
5	/INKBEN_OPEN_R	IN	Right valve open/close detection sensor output signal
6	/TANK_COVER_R	IN	Right ink tank cover switch output signal
7	GND	-	GND
8	SNS3V	OUT	Power supply(+3V)
9	GND	-	GND
10	/INKBEN_CAM_R	IN	Right ink tank agitation cam sensor output signal

T-6-9

J2601			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	POWER_ON	IN	Power switch signal
2	GND	-	GND
3	RGV20(+5V)	OUT	Power supply(+5V)
4	BUZZER	OUT	Buzzer control signal
5	PDO	OUT	Panel IC control signal
6	RGV29(+5V)	OUT	Power supply(+5V)
7	PDI	OUT	Panel IC data signal
8	HDD_LED	OUT	HDD lamp control signal
9	/PRESET	OUT	Panel reset signal
10	GND	-	GND
11	PCK	OUT	Panel IC clock signal
12	PANEL_5V	OUT	Power supply(+5V)
13	/PCS	OUT	Panel IC chip select signal

T-6-10

J2701			
Pin Number	**Signal name**	**IN/OUT**	**Function**
A1	GND	-	GND
A2	LF_ENCB	IN	Feed roller encoder sensor output signal B
A3	LF_ENC_+5V	OUT	Power supply(+5V)
A4	LF_ENCA	IN	Feed roller encoder sensor output signal A
A5	SNS3V	OUT	Power supply(+3.3V)
A6	GND	-	GND
A7	/LF_HP	IN	Feed roller HP sensor output signal
A8	N.C	-	N.C
A9	N.C	-	N.C
A10	N.C	-	N.C
A11	N.C	-	N.C
B1	VM_26V	OUT	Power supply(+26V)
B2	KYUINFAN_ALARM_IN	IN	Suction fan alarm signal
B3	KYUINFAN_PWM_ON	OUT	Suction fan duty control signal
B4	GND	-	GND
B5	VM_26V	OUT	Power supply(+26V)
B6	MISTFAN_R_ALARM	IN	Mist fan(R) alarm signal
B7	GND	-	GND
B8	MISTFAN_VM_26V	OUT	Power supply(+26V)
B9	MISTFAN_L_ALARM	IN	Mist fan(L) alarm signal
B10	GND	-	GND
B11	N.C	-	N.C

T-6-11

J2702			
Pin Number	**Signal name**	**IN/OUT**	**Fuction**
1	VM 26V	OUT	Power supply(+26V)
2	/DCOVER_SOL_L	OUT	Upper cover lock solenoid(L) drive signal
3	VM 26V	OUT	Power supply(+26V)
4	/DCOVER_SOL_R	OUT	Upper cover lock solenoid(R) drive signal
5	N.C	-	N.C
6	N.C	-	N.C

T-6-12

J2801			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	OUT_LFSP_A	OUT	Feed motor drive signal A
2	OUT_LFSP_VM	OUT	Power supply(+32V)
3	OUT_LFSP_AB	OUT	Feed motor drive signal AB
4	OUT_LFSP_BB	OUT	Feed motor drive signal BB
5	OUT_LFSP_VM	OUT	Power supply(+32V)
6	OUT_LFSP_B	OUT	Feed motor drive signal B

T-6-13

J3001			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	RGV18(VM_CR)	IN	Upper cover lock switch output signal
2	-	-	-
3	-	-	-
4	RGV16(VM)	OUT	Power supply(+32v)

T-6-14

J3002			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	TH	IN	Thermister output signal
2	GND	-	GND
3	Vout	IN	Temperature/humidity sensor output signal
4	+5V	OUT	Power supply(+5v)

T-6-15

J3003			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	/MAKITORI_UNIT	IN	Media take-up paper detection sensor
2	/MAKITORI_LOCK_SENS	IN	Media take-up on/off sensor output signal
3	/MAKITORI_VCC_ON	OUT	Power supply ON signal
4	MAKITORI_VM_ON	OUT	Power supply(+26V)
5	/MAKITORI_ENB	OUT	Media take-up drive enable signal
6	PHOTO_SENS_OUT	IN	Media take-up paper detection sensor output signal
7	VM_26V	OUT	Power supply(+26V)
8	VM_26V	OUT	Power supply(+26V)
9	VMGND	-	GND
10	VMGND	-	GND
11	+5V	OUT	Power supply(+5V)
12	N.C.	-	N.C
13	N.C.	-	N.C
14	N.C.	-	N.C

T-6-16

J3150			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	IN 3+	IN	Hole sensor input signal 3+
2	IN 3-	IN	Hole sensor input signal 3-
3	IN 1-	IN	Hole sensor input signal 1-
4	IN 2+	IN	Hole sensor input signal 2+
5	IN 1+	IN	Hole sensor input signal 1+
6	IN 2-	IN	Hole sensor input signal 2-
7	VM_GND	-	GND
8	+5V	OUT	Power supply (+5V)
9	OUT B	OUT	Motor output signal B
10	OUT B	OUT	Motor output signal B
11	OUT A	OUT	Motor output signal A
12	OUT A	OUT	Motor output signal A
13	OUT C	OUT	Motor output signal C
14	OUT C	OUT	Motor output signal C

T-6-17

J3201			
Pin Number	**Signal name**	**IN/OUT**	**Function**
A1	TANK_CLK	OUT	Ink tank clock signal
A2	GND	-	GND
A3	OUT_TANK_DAT2	IN/OUT	Ink tank data signal 2
A4	TANK_+3.3V	OUT	Power supply(+3.3V)
A5	OUT_TANK_DAT1	IN/OUT	Ink tank data signal 1
A6	OUT_TANK_DAT0	IN/OUT	Ink tank data signal 0
A7	GND	-	GND
A8	OUT_INK_DETECT0	IN	Ink detection sensor output signal 0
A9	OUT_INK_DETECT1	IN	Ink detection sensor output signal 1
A10	OUT_INK_DETECT2	IN	Ink detection sensor output signal 2
A11	OUT_TANK_DAT5	IN/OUT	Ink tank data signal 5
A12	OUT_TANK_DAT4	IN/OUT	Ink tank data signal 4
A13	OUT_TANK_DAT3	IN/OUT	Ink tank data signal 3
A14	OUT_INK_DETECT3	IN	Ink detection sensor output signal 3
A15	OUT_INK_DETECT4	IN	Ink detection sensor output signal 4
A16	OUT_INK_DETECT5	IN	Ink detection sensor output signal 5
A17	GND	-	GND
B1	TANK_CLK	OUT	Ink tank clock signal
B2	GND	-	GND
B3	OUT_TANK_DAT8	IN/OUT	Ink tank data signal 8
B4	TANK_+3.3V	OUT	Power supply(+3.3V)
B5	OUT_TANK_DAT7	IN/OUT	Ink tank data signal 7
B6	OUT_TANK_DAT6	IN/OUT	Ink tank data signal 6
B7	GND	-	GND
B8	OUT_INK_DETECT6	IN	Ink detection sensor output signal 6
B9	OUT_INK_DETECT7	IN	Ink detection sensor output signal 7
B10	OUT_INK_DETECT8	IN	Ink detection sensor output signal 8

J3201			
Pin Number	**Signal name**	**IN/OUT**	**Function**
B11	OUT_TANK_DAT11	IN/OUT	Ink tank data signal 11
B12	OUT_TANK_DAT10	IN/OUT	Ink tank data signal 10
B13	OUT_TANK_DAT9	IN/OUT	Ink tank data signal 9
B14	OUT_INK_DETECT9	IN	Ink detection sensor output signal 9
B15	OUT_INK_DETECT10	IN	Ink detection sensor output signal 10
B16	OUT_INK_DETECT11	IN	Ink detection sensor output signal 11
B17	n.c	-	n.c

T-6-18

J3301			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	MENT_SDA	IN/OUT	Maintenance cartridge ROM control signal (data)
2	MENT_SCL	IN/OUT	Maintenance cartridge ROM control signal (clock)
3	GND	-	GND
4	+3.3V	OUT	Power supply (+3.3V)
5	GND	-	GND
6	/FUTO_CLMP	OUT	Head management sensor clamp signal
7	/FUTO_ON	OUT	Head management sensor ON signal
8	SNS5V	OUT	Power supply(+5V)
9	/FUTO_CMP	IN	Head management sensor ink detection signal

T-6-19

J3401			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	VMGND	-	GND
2	VMGND	-	GND
3	VMGND	-	GND
4	VH_MONI1	IN	VH controll signal 1
5	VH_MONI3	IN	VH controll signal 3
6	VMGND	-	GND
7	VM_26V	OUT	Power supply(+26V)
8	GND	-	GND
9	+3.3V	OUT	Power supply(+3.3V)
10	+3.3V	OUT	Power supply(+3.3V)
11	GND	-	GND
12	SNS5V	OUT	Power supply(+5V)
13	SNS5V	OUT	Power supply(+5V)
14	VM	OUT	Power supply(+32V)
15	VM	OUT	Power supply(+32V)
16	VM	OUT	Power supply(+32V)
17	VM	OUT	Power supply(+32V)
18	VM	OUT	Power supply(+32V)
19	VM	OUT	Power supply(+32V)
20	VM	OUT	Power supply(+32V)
21	VM	OUT	Power supply(+32V)
22	VMGND	-	GND
23	VMGND	-	GND
24	VMGND	-	GND
25	VMGND	-	GND

T-6-20

J3501			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	H1-C-DATA-4-OD_OUT	OUT	Odd head(L) data signal 4(C)
3	GND	-	GND
4	H1-A-DATA-1-OD_OUT	OUT	Odd head(L) data signal 1(A)
5	GND	-	GND
6	H1-B-HE-2_B	OUT	Head(L) heat enable signal 2(B)
7	GND	-	GND
8	H0-D-DATA-7-OD_B	OUT	Odd head(R) data signal 7(D)
9	GND	-	GND
10	H0-E-HE-8_B	OUT	Head(R) heat enable signal 8(E)
11	GND	-	GND

J3501			
Pin Number	**Signal name**	**IN/OUT**	**Function**
12	H0-E-DATA-8-OD_B	OUT	Odd head(R) data signal 8(E)
13	GND	-	GND
14	H0-F-DATA-10-OD	OUT	Odd head(R) data signal 10(F)
15	GND	-	GND
16	H0-E-DATA-9-OD_B	OUT	Odd head(R) data signal 9(E)
17	GND	-	GND
18	H0-F-HE-10_B	OUT	Head(R) heat enable signal 10(F)
19	GND	-	GND
20	H0-F-DATA-11-OD	OUT	Odd head(R) data signal 11(F)
21	GND	-	GND
22	H0-F-HE-11_B	OUT	Head(R) heat enable signal 11(F)
23	GND	-	GND
24	H0-F-DATA-11-EV_B	OUT	Even head(R) data signal 11(F)
25	GND	-	GND
26	H0-F-DATA-10-EV_B	OUT	Even head(R) data signal 10(F)
27	GND	-	GND
28	H0-E-HE-9_B	OUT	Head(R) heat enable signal 9(E)
29	GND	-	GND
30	H0-E-DATA-9-EV_B	OUT	Even head(R) data signal 9(E)
31	GND	-	GND
32	H-DASH_LICC2_B	OUT	Head analogue switch A/D trigger signal
33	GND	-	GND
34	H0-A-DATA-0-OD_B	OUT	Odd head(R) data signal 0(A)
35	GND	-	GND
36	H0-A-DATA-1-OD_B	OUT	Odd head(R) data signal 1(A)
37	GND	-	GND
38	H0-B-HE-2_B	OUT	Head(R) heat enable signal 2(B)
39	GND	-	GND
40	H0-B-DATA-2-OD_B	OUT	Odd head(R) data signal 2(B)
41	GND	-	GND
42	H0-B-DATA-3-OD_B	OUT	Odd head(R) data signal 3(B)
43	GND	-	GND
44	H0-C-HE-4_B	OUT	Head(R) heat enable signal 4(C)
45	GND	-	GND
46	H0-C-DATA-4-OD_B	OUT	Odd head(R) data signal 4(C)
47	GND	-	GND
48	H0-A-HE-0_B	OUT	Head(R) heat enable signal 0(A)
49	GND	-	GND
50	VHT_MONI	IN	VHT controll signal

T-6-21

J3502			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	H0-E-DATA-8-EV_B	OUT	Even head(R) data signal 8(E)
3	OUT_ENB	OUT	Head data enable signal
4	H0-D-HE-7_B	OUT	Head(R) heat enable signal 7(D)
5	GND	-	GND
6	H0-D-DATA-7-EV_B	OUT	Even head(R) data signal 7(D)
7	GND	-	GND
8	H0-D-DATA-6-EV_B	OUT	Even head(R) data signal 6(D)
9	GND	-	GND
10	H0-D-DATA-6-OD_B	OUT	Odd head(R) data signal 6(D)
11	GND	-	GND
12	H0-D-HE-6_B	OUT	Head(R) heat enable signal 6(D)
13	GND	-	GND
14	H0-C-HE-5_B	OUT	Head(R) heat enable signal 5(C)
15	GND	-	GND
16	H0-C-DATA-5-OD_B	OUT	Odd head(R) data signal 5(C)
17	GND	-	GND
18	H0-DSOUT2	OUT	Head(R) temperature output signal 2
19	GND	-	GND
20	H0-DSOUT1	OUT	Head(R) temperature output signal 1
21	GND	-	GND
22	H0-DLD_LICC2	OUT	Head(R) analogue switch latch signal

J3502			
Pin Number	**Signal name**	**IN/OUT**	**Function**
23	H0-DATA_LICC2	OUT	Head(R) analogue switch data signal
24	H0-DASLK_LICC2	OUT	Head(R) analogue switch clock signal
25	GND	-	GND
26	H0_CLK_B	OUT	Head(R) clock signal
27	GND	-	GND
28	H0_LT_B	OUT	Head(R) latch signal
29	GND	-	GND
30	H0-C-DATA-5-EV_B	OUT	Even head(R) data signal 5(C)
31	GND	-	GND
32	LIFT_CAM_IN	IN	Lift cam sensor output signal
33	GND	-	GND
34	H0-B-HE-3_B	OUT	Head(R) heat enable signal 3(B)
35	GND	-	GND
36	H0-C-DATA-4-EV_B	OUT	Even head(R) data signal 4(C)
37	GND	-	GND
38	H0-B-DATA-3-EV_B	OUT	Even head(R) data signal 3(B)
39	GND	-	GND
40	H0-B-DATA-2-EV_B	OUT	Even head(R) data signal 2(B)
41	GND	-	GND
42	H0-A-DATA-1-EV_B	OUT	Even head(R) data signal 1(A)
43	GND	-	GND
44	H0-A-HE-1_B	OUT	Head(R) heat enable signal 1(A)
45	GND	-	GND
46	H0-A-DATA-0-EV_B	OUT	Even head(R) data signal 0(A)
47	GND	-	GND
48	VH_CHARGE0	OUT	VH leakage detection ON/OFF signal 0
49	VH_CHARGE1	OUT	VH leakage detection ON/OFF signal 1
50	GND	-	GND

T-6-22

J3601			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	ENCODER_B	IN	Carriage encoder output signal B
3	ENCODER_A	IN	Carriage encoder output signal A
4	/CR_COVER	IN	Carriage cover sensor output signal
5	GND	-	GND
6	H-DASH_LICC2_B	OUT	Head analogue switch A/D trigger signal
7	GND	-	GND
8	H1-D-DATA-7-OD_B	OUT	Odd head(R) data signal 7(D)
9	GND	-	GND
10	/H1-E-HE-8_B	OUT	Head(R) heat enable signal 8(E)
11	GND	-	GND
12	H1-E-DATA-8-OD_B	OUT	Odd head(R) data signal 8(E)
13	GND	-	GND
14	H1-F-DATA-10-OD_B	OUT	Odd head(R) data signal 10(F)
15	GND	-	GND
16	H1-E-DATA-9-OD_B	OUT	Odd head(R) data signal 9(E)
17	GND	-	GND
18	/H1-F-HE-10_B	OUT	Head(R) heat enable signal 10(F)
19	GND	-	GND
20	/H1-F-DATA-11-OD_B	OUT	Odd head(R) data signal 11(F)
21	GND	-	GND
22	H1-F-HE-11_B	OUT	Head(R) heat enable signal 11(F)
23	GND	-	GND
24	H1-F-DATA-11-EV_B	OUT	Even head(R) data signal 11(F)
25	GND	-	GND
26	H1-F-DATA-10-EV_B	OUT	Even head(R) data signal 10(F)
27	GND	-	GND
28	/H1-E-HE-9_B	OUT	Head(R) heat enable signal 9(E)
29	GND	-	GND
30	H1-E-DATA-9-EV_B	OUT	Even head(R) data signal 9(E)
31	GND	-	GND
32	VH_DIS	OUT	VH selection signal
33	H1-DASLK_LICC2	OUT	Head(R) analogue switch clock signal

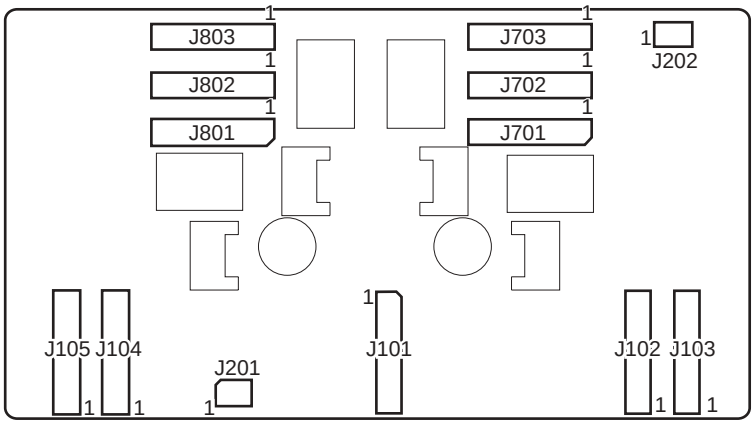
J3601			
Pin Number	**Signal name**	**IN/OUT**	**Function**
34	H1-DLD_LICC2	OUT	Head(R) analogue switch latch signal
35	H1-DATA_LICC2	OUT	Head(R) analogue switch data signal
36	PWLED2_ON	OUT	Multi sensor LED2 drive signal
37	PWLED1_ON	OUT	Multi sensor LED1 drive signal
38	PWLED3_ON	OUT	Multi sensor LED3 drive signal
39	H3V_ON	OUT	Power supply
40	MLT_SENS_1IN	IN	Multi sensor signal 1
41	MLT_SENS_2IN	IN	Multi sensor signal 2
42	PWLED4_ON	OUT	Multi sensor LED4 drive signal
43	GND	-	GND
44	H1-B-DATA-2-OD_B	OUT	Odd head(R) data signal 2(B)
45	GND	-	GND
46	H1-B-DATA-3-OD_B	OUT	Odd head(R) data signal 1(B)
47	GND	-	GND
48	/H1-C-HE-4_B	OUT	Head(R) heat enable signal 4(C)
49	GND	-	GND
50	GND	-	GND

T-6-23

J3602			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	IO-ASIC_SCL_B	IN/OUT	Head ROM controll signal(clock)
3	IO-ASIC_SDA	IN/OUT	Head ROM controll signal(data)
4	GND	-	GND
5	H1-DSOUT1	OUT	Head temperature output signal 1
6	H1-DSOUT2	OUT	Head temperature output signal 2
7	GND	-	GND
8	H1-E-DATA-8-EV_B	OUT	Even head(L) data signal 8(E)
9	GND	-	GND
10	/H1-D-HE-7_B	OUT	Head(L) heat enable signal 7(D)
11	GND	-	GND
12	H1-D-DATA-7-EV_B	OUT	Even head(L) data signal 7(D)
13	GND	-	GND
14	H1-D-DATA-6-EV_B	OUT	Even head(L) data signal 6(D)
15	GND	-	GND
16	H1-D-DATA-6-OD_B	OUT	Odd head(L) data signal 6(D)
17	GND	-	GND
18	/H1-D-HE-6_B	OUT	Head(L) heat enable signal 6(D)
19	GND	-	GND
20	/H1-C-HE-5_B	OUT	Head(L) heat enable signal 5(C)
21	GND	-	GND
22	H1-C-DATA-5-OD_B	OUT	Odd head(L) data signal 5(C)
23	GND	-	GND
24	H1_CLK	OUT	Head(L) clock signal
25	GND	-	GND
26	/H1_LT_B	OUT	Head(L) latch signal
27	GND	-	GND
28	H1-C-DATA-5-EV_B	OUT	Even head(L) data signal 5(C)
29	GND	-	GND
30	/H1-B-HE-3_B	OUT	Head(L) heat enable signal 3(B)
31	GND	-	GND
32	H1-C-DATA-4-EV_B	OUT	Even head(L) data signal 4(C)
33	GND	-	GND
34	H1-B-DATA-3-EV_B	OUT	Even head(L) data signal 3(B)
35	GND	-	GND
36	H1-B-DATA-2-EV_B	OUT	Even head(L) data signal 2(B)
37	GND	-	GND
38	H1-A-DATA-1-EV_B	OUT	Even head(L) data signal 1(A)
39	GND	-	GND
40	/H1-A-HE-1_B	OUT	Head(L) heat enable signal 1(A)
41	GND	-	GND
42	H1-A-DATA-0-EV_B	OUT	Even head(L) data signal 0(A)
43	GND	-	GND
44	/H1-A-HE-0_B	OUT	Head(L) heat enable signal 0(A)

J3602			
Pin Number	**Signal name**	**IN/OUT**	**Function**
45	GND	-	GND
46	H1-A-DATA-0-OD_B	OUT	Odd head(L) data signal 0(A)
47	GND	-	GND
48	VHT_ENB	OUT	VHT enable signal
49	HV_ENB	OUT	HV enable signal
50	FFC_SLANT_DET_SNS	-	-

6.2.2 Carriage relay PCB



F-6-2

T-6-24

J101			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	VMGND	-	GND
2	VMGND	-	GND
3	VMGND	-	GND
4	VMGND	-	GND
5	VM	OUT	Power supply(+32V)
6	VM	OUT	Power supply(+32V)
7	VM	OUT	Power supply(+32V)
8	VM	OUT	Power supply(+32V)
9	VM	OUT	Power supply(+32V)
10	VM	OUT	Power supply(+32V)
11	VM	OUT	Power supply(+32V)
12	VM	OUT	Power supply(+32V)
13	SNS5V	OUT	Power supply(+5V)
14	SNS5V	OUT	Power supply(+5V)
15	GND	-	GND
16	+3.3V	OUT	Power supply(+3.3V)
17	+3.3V	OUT	Power supply(+3.3V)
18	GND	-	GND
19	VM_26V	OUT	Power supply(+26V)
20	VMGND	-	GND
21	VH_MONI3	IN	VH controll signal 3
22	VH_MONI1	IN	VH controll signal 1
23	VMGND	-	GND
24	VMGND	-	GND
25	VMGND	-	GND

T-6-25

J102			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	GND	-	GND
3	/H1-C-HE-4_B	OUT	Head(R) heat enable signal 4(C)
4	GND	-	GND
5	H1-B-DATA-3-OD_B	OUT	Odd head(R) data signal 1(B)
6	GND	-	GND
7	H1-B-DATA-2-OD_B	OUT	Odd head(R) data signal 2(B)
8	GND	-	GND
9	PWLED4_ON	OUT	Multi sensor LED4 drive signal
10	MLT_SENS_2IN	IN	Multi sensor signal 2
11	MLT_SENS_1IN	IN	Multi sensor signal 1
12	H3V_ON	OUT	Power supply
13	PWLED3_ON	OUT	Multi sensor LED3 drive signal
14	PWLED1_ON	OUT	Multi sensor LED1 drive signal
15	PWLED2_ON	OUT	Multi sensor LED2 drive signal
16	H1-DATA_LICC2	OUT	Head(R) analogue switch data signal

J102			
Pin Number	**Signal name**	**IN/OUT**	**Function**
17	H1-DLD_LICC2	OUT	Head(R) analogue switch latch signal
18	H1-DASLK_LICC2	OUT	Head(R) analogue switch clock signal
19	VH_DIS	OUT	VH selection signal
20	GND	-	GND
21	H1-E-DATA-9-EV_B	OUT	Even head(R) data signal 9(E)
22	GND	-	GND
23	/H1-E-HE-9_B	OUT	Head(R) heat enable signal 9(E)
24	GND	-	GND
25	H1-F-DATA-10-EV_B	OUT	Even head(R) data signal 10(F)
26	GND	-	GND
27	H1-F-DATA-11-EV_B	OUT	Even head(R) data signal 11(F)
28	GND	-	GND
29	H1-F-HE-11_B	OUT	Head(R) heat enable signal 11(F)
30	GND	-	GND
31	/H1-F-DATA-11-OD_B	OUT	Odd head(R) data signal 11(F)
32	GND	-	GND
33	/H1-F-HE-10_B	OUT	Head(R) heat enable signal 10(F)
34	GND	-	GND
35	H1-E-DATA-9-OD_B	OUT	Odd head(R) data signal 9(E)
36	GND	-	GND
37	H1-F-DATA-10-OD_B	OUT	Odd head(R) data signal 10(F)
38	GND	-	GND
39	H1-E-DATA-8-OD_B	OUT	Odd head(R) data signal 8(E)
40	GND	-	GND
41	/H1-E-HE-8_B	OUT	Head(R) heat enable signal 8(E)
42	GND	-	GND
43	H1-D-DATA-7-OD_B	OUT	Odd head(R) data signal 7(D)
44	GND	-	GND
45	H-DASH_LICC2_B	OUT	Head analogue switch A/D trigger signal
46	GND	-	GND
47	/CR_COVER	IN	Carriage cover sensor output signal
48	ENCODER_A	IN	Carriage encoder output signal A
49	ENCODER_B	IN	Carriage encoder output signal B
50	GND	-	GND

T-6-26

J103			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	FFC_SLANT_DET_SNS	-	-
2	HV_ENB	OUT	HV enable signal
3	VHT_ENB	OUT	VHT enable signal
4	GND	-	GND
5	H1-A-DATA-0-OD_B	OUT	Odd head(L) data signal 0(A)
6	GND	-	GND
7	/H1-A-HE-0_B	OUT	Head(L) heat enable signal 0(A)
8	GND	-	GND
9	H1-A-DATA-0-EV_B	OUT	Even head(L) data signal 0(A)
10	GND	-	GND
11	/H1-A-HE-1_B	OUT	Head(L) heat enable signal 1(A)
12	GND	-	GND
13	H1-A-DATA-1-EV_B	OUT	Even head(L) data signal 1(A)
14	GND	-	GND
15	H1-B-DATA-2-EV_B	OUT	Even head(L) data signal 2(B)
16	GND	-	GND
17	H1-B-DATA-3-EV_B	OUT	Even head(L) data signal 3(B)
18	GND	-	GND
19	H1-C-DATA-4-EV_B	OUT	Even head(L) data signal 4(C)
20	GND	-	GND
21	/H1-B-HE-3_B	OUT	Head(L) heat enable signal 3(B)
22	GND	-	GND
23	H1-C-DATA-5-EV_B	OUT	Even head(L) data signal 5(C)
24	GND	-	GND
25	/H1_LT_B	OUT	Head(L) latch signal
26	GND	-	GND
27	H1_CLK	OUT	Head(L) clock signal

J103			
Pin Number	**Signal name**	**IN/OUT**	**Function**
28	GND	-	GND
29	H1-C-DATA-5-OD_B	OUT	Odd head(L) data signal 5(C)
30	GND	-	GND
31	/H1-C-HE-5_B	OUT	Head(L) heat enable signal 5(C)
32	GND	-	GND
33	/H1-D-HE-6_B	OUT	Head(L) heat enable signal 6(D)
34	GND	-	GND
35	H1-D-DATA-6-OD_B	OUT	Odd head(L) data signal 6(D)
36	GND	-	GND
37	H1-D-DATA-6-EV_B	OUT	Even head(L) data signal 6(D)
38	GND	-	GND
39	H1-D-DATA-7-EV_B	OUT	Even head(L) data signal 7(D)
40	GND	-	GND
41	/H1-D-HE-7_B	OUT	Head(L) heat enable signal 7(D)
42	GND	-	GND
43	H1-E-DATA-8-EV_B	OUT	Even head(L) data signal 8(E)
44	GND	-	GND
45	H1-DSOUT2	OUT	Head temperature output signal 2
46	H1-DSOUT1	OUT	Head temperature output signal 1
47	GND	-	GND
48	IO-ASIC_SDA	IN/OUT	Head ROM controll signal(data)
49	IO-ASIC_SCL_B	IN/OUT	Head ROM controll signal(clock)
50	GND	-	GND

T-6-27

J104			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	VHT_MONI	IN	VHT controll signal
2	GND	-	GND
3	H0-A-HE-0_B	OUT	Head(R) heat enable signal 0(A)
4	GND	-	GND
5	H0-C-DATA-4-OD_B	OUT	Odd head(R) data signal 4(C)
6	GND	-	GND
7	H0-C-HE-4_B	OUT	Head(R) heat enable signal 4(C)
8	GND	-	GND
9	H0-B-DATA-3-OD_B	OUT	Odd head(R) data signal 3(B)
10	GND	-	GND
11	H0-B-DATA-2-OD_B	OUT	Odd head(R) data signal 2(B)
12	GND	-	GND
13	H0-B-HE-2_B	OUT	Head(R) heat enable signal 2(B)
14	GND	-	GND
15	H0-A-DATA-1-OD_B	OUT	Odd head(R) data signal 1(A)
16	GND	-	GND
17	H0-A-DATA-0-OD_B	OUT	Odd head(R) data signal 0(A)
18	GND	-	GND
19	H-DASH_LICC2_B	OUT	Head analogue switch A/D trigger signal
20	GND	-	GND
21	H0-E-DATA-9-EV_B	OUT	Even head(R) data signal 9(E)
22	GND	-	GND
23	H0-E-HE-9_B	OUT	Head(R) heat enable signal 9(E)
24	GND	-	GND
25	H0-F-DATA-10-EV_B	OUT	Even head(R) data signal 10(F)
26	GND	-	GND
27	H0-F-DATA-11-EV_B	OUT	Even head(R) data signal 11(F)
28	GND	-	GND
29	H0-F-HE-11_B	OUT	Head(R) heat enable signal 11(F)
30	GND	-	GND
31	H0-F-DATA-11-OD	OUT	Odd head(R) data signal 11(F)
32	GND	-	GND
33	H0-F-HE-10_B	OUT	Head(R) heat enable signal 10(F)
34	GND	-	GND
35	H0-E-DATA-9-OD_B	OUT	Odd head(R) data signal 9(E)
36	GND	-	GND
37	H0-F-DATA-10-OD	OUT	Odd head(R) data signal 10(F)
38	GND	-	GND

J104			
Pin Number	**Signal name**	**IN/OUT**	**Function**
39	H0-E-DATA-8-OD_B	OUT	Odd head(R) data signal 8(E)
40	GND	-	GND
41	H0-E-HE-8_B	OUT	Head(R) heat enable signal 8(E)
42	GND	-	GND
43	H0-D-DATA-7-OD_B	OUT	Odd head(R) data signal 7(D)
44	GND	-	GND
45	H1-B-HE-2_B	OUT	Head(L) heat enable signal 2(B)
46	GND	-	GND
47	H1-A-DATA-1-OD_OUT	OUT	Odd head(L) data signal 1(A)
48	GND	-	GND
49	H1-C-DATA-4-OD_OUT	OUT	Odd head(L) data signal 4(C)
50	GND	-	GND

T-6-28

J105			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	VH_CHARGE1	OUT	VH leakage detection ON/OFF signal 1
3	VH_CHARGE0	OUT	VH leakage detection ON/OFF signal 0
4	GND	-	GND
5	H0-A-DATA-0-EV_B	OUT	Even head(R) data signal 0(A)
6	GND	-	GND
7	H0-A-HE-1_B	OUT	Head(R) heat enable signal 1(A)
8	GND	-	GND
9	H0-A-DATA-1-EV_B	OUT	Even head(R) data signal 1(A)
10	GND	-	GND
11	H0-B-DATA-2-EV_B	OUT	Even head(R) data signal 2(B)
12	GND	-	GND
13	H0-B-DATA-3-EV_B	OUT	Even head(R) data signal 3(B)
14	GND	-	GND
15	H0-C-DATA-4-EV_B	OUT	Even head(R) data signal 4(C)
16	GND	-	GND
17	H0-B-HE-3_B	OUT	Head(R) heat enable signal 3(B)
18	GND	-	GND
19	LIFT_CAM_IN	IN	Lift cam sensor output signal
20	GND	-	GND
21	H0-C-DATA-5-EV_B	OUT	Even head(R) data signal 5(C)
22	GND	-	GND
23	H0_LT_B	OUT	Head(R) latch signal
24	GND	-	GND
25	H0_CLK_B	OUT	Head(R) clock signal
26	GND	-	GND
27	H0-DASLK_LICC2	OUT	Head(R) analogue switch clock signal
28	H0-DATA_LICC2	OUT	Head(R) analogue switch data signal
29	H0-DLD_LICC2	OUT	Head(R) analogue switch latch signal
30	GND	-	GND
31	H0-DSOUT1	OUT	Head(R) temperature output signal 1
32	GND	-	GND
33	H0-DSOUT2	OUT	Head(R) temperature output signal 2
34	GND	-	GND
35	H0-C-DATA-5-OD_B	OUT	Odd head(R) data signal 5(C)
36	GND	-	GND
37	H0-C-HE-5_B	OUT	Head(R) heat enable signal 5(C)
38	GND	-	GND
39	H0-D-HE-6_B	OUT	Head(R) heat enable signal 6(D)
40	GND	-	GND
41	H0-D-DATA-6-OD_B	OUT	Odd head(R) data signal 6(D)
42	GND	-	GND
43	H0-D-DATA-6-EV_B	OUT	Even head(R) data signal 6(D)
44	GND	-	GND
45	H0-D-DATA-7-EV_B	OUT	Even head(R) data signal 7(D)
46	GND	-	GND
47	H0-D-HE-7_B	OUT	Head(R) heat enable signal 7(D)
48	OUT_ENB	OUT	Head data enable signal
49	H0-E-DATA-8-EV_B	OUT	Even head(R) data signal 8(E)

J105			
Pin Number	**Signal name**	**IN/OUT**	**Function**
50	GND	-	GND

T-6-29

J201			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	ENCODER_B	IN	Linear encoder sensor output signal B
2	GND	-	GND
3	ENCODER_A	IN	Linear encoder sensor output signal A
4	SNS_5V	OUT	Power supply(+5V)

T-6-30

J202			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	SNS_5V	OUT	Power supply(+5V)
2	GND	-	GND
3	/CRCOVER	IN	Carriage cover sensor output signal

T-6-31

J701			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	H3V	OUT	Power supply
2	VH1_FB	IN	VH1 feed back voltage
3	VH1	OUT	Power supply
4	VH1	OUT	Power supply
5	VH1	OUT	Power supply
6	VH1	OUT	Power supply
7	VH1	OUT	Power supply
8	VH1	OUT	Power supply
9	GND	-	GND
10	GND	-	GND
11	GND	-	GND
12	GND	-	GND
13	GND	-	GND
14	GND	-	GND
15	GND	-	GND
16	VH2	OUT	Power supply
17	VH2	OUT	Power supply
18	VH2	OUT	Power supply
19	VH2	OUT	Power supply
20	VH2	OUT	Power supply
21	VH2	OUT	Power supply
22	VH2_FB	IN	VH2 feed back voltage
23	VHT	OUT	Power supply
24	GND	-	GND
25	GND	-	GND

T-6-32

J702			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	GND	-	GND
3	GND	-	GND
4	H1-B-DATA-3-EV	OUT	Even head(L) data signal 3(B)
5	GND	-	GND
6	/H1-B-HE-3	OUT	Head(L) heat enable signal 3(B)
7	GND	-	GND
8	H1-C-DATA-4-EV	OUT	Even head(L) data signal 4(C)
9	GND	-	GND
10	H1-C-DATA-5-EV	OUT	Even head(L) data signal 5(C)
11	GND	-	GND
12	/H1-C-HE-5	OUT	Head(L) heat enable signal 5(C)
13	GND	-	GND
14	H1-C-DATA-5-OD	OUT	Odd head(L) data signal 5(C)

J702			
Pin Number	**Signal name**	**IN/OUT**	**Function**
15	GND	-	GND
16	H1-D-DATA-7-OD	OUT	Odd head(L) data signal 7(D)
17	GND	-	GND
18	H1-D-DATA-6-OD	OUT	Odd head(L) data signal 6(D)
19	GND	-	GND
20	/H1-D-HE-6	OUT	Head(L) heat enable signal 6(D)
21	GND	-	GND
22	H1-D-DATA-6-EV	OUT	Even head(L) data signal 6(D)
23	GND	-	GND
24	H1-D-DATA-7-EV	OUT	Even head(L) data signal 7(D)
25	GND	-	GND
26	/H1-D-HE-7	OUT	Head(L) heat enable signal 7(D)
27	GND	-	GND
28	H1-E-DATA-8-EV	OUT	Even head(L) data signal 8(E)
29	GND	-	GND
30	H1-E-DATA-9-EV		Even head(L) data signal 9(E)
31	GND	-	GND
32	/H1-E-HE-9	OUT	Head(L) heat enable signal 9(E)
33	GND	-	GND
34	H1-F-DATA-10-EV	OUT	Even head(L) data signal 10(F)
35	GND	-	GND
36	H1-F-DATA-11-EV	OUT	Even head(L) data signal 11(F)
37	GND	-	GND
38	/H1-F-HE-11	OUT	Head(L) heat enable signal 11(F)
39	GND	-	GND
40	H1-F-DATA-11-OD	OUT	Odd head(L) data signal 11(F)
41	GND	-	GND
42	H1-F-DATA-10-OD	OUT	Odd head(L) data signal 10(F)
43	GND	-	GND
44	/H1-F-HE-10	OUT	Head(L) heat enable signal 10(F)
45	GND	-	GND
46	H1-E-DATA-9-OD	OUT	Odd head(L) data signal 9(E)
47	GND	-	GND
48	H1-E-DATA-8-OD	OUT	Odd head(L) data signal 8(E)
49	GND	-	GND
50	/H1-E-HE-8	OUT	Head(L) heat enable signal 8(E)

T-6-33

J703			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	GND	OUT	Power supply(+5V)
3	GND	-	GND
4	MLT_SENS_2IN	IN	Multi sensor signal 2
5	GND	-	GND
6	MLT_SENS_1IN	IN	Multi sensor signal 1
7	GND	-	GND
8	H1-C-DATA-4-OD	OUT	Odd head(L) data signal 4(C)
9	GND	-	GND
10	H1-C-HE-4	OUT	Head(L) heat enable signal 4(C)
11	GND	-	GND
12	H1-B-DATA-3-OD	OUT	Odd head(L) data signal 3(B)
13	GND	-	GND
14	H1-B-DATA-2-OD	OUT	Odd head(L) data signal 2(B)
15	GND	-	GND
16	H1-B-HE-2	OUT	Head(L) heat enable signal 2(B)
17	GND	-	GND
18	H1-A-DATA-1-OD	OUT	Odd head(L) data signal 1(A)
19	GND	-	GND
20	H1-A-DATA-0-OD	OUT	Odd head(L) data signal 0(A)
21	GND	-	GND
22	H1-A-HE-0	OUT	Head(L) heat enable signal 0(A)
23	GND	-	GND
24	H1-A-DATA-0-EV	OUT	Even head(L) data signal 0(A)
25	GND	-	GND

J703			
Pin Number	**Signal name**	**IN/OUT**	**Function**
26	H1-A-DATA-1-EV	OUT	Even head(L) data signal 1(A)
27	GND	-	GND
28	H1-A-HE-1	OUT	Head(L) heat enable signal 1(A)
29	GND	-	GND
30	H1-B-DATA-2-EV	OUT	Even head(L) data signal 2(B)
31	GND	-	GND
32	IO_ASIC_SDA	IN/OUT	Head ROM control signal(data)
33	GND	-	GND
34	IO_ASIC_SCL	OUT	Head ROM control signal(clock)
35	GND	-	GND
36	H1_LT	OUT	Head(L) latch signal
37	GND	-	GND
38	H1_CLK	OUT	Head(L) clock signal
39	GND	-	GND
40	H1-DSOUT1	IN	Head(L) temperature output signal 1
41	GND	-	GND
42	H1-DSOUT2	IN	Head(L) temperature output signal 2
43	GND	-	GND
44	H1-DLD_LICC2	OUT	Head(L) analogue switch latch signal
45	GND	-	GND
46	H1-DATA_LICC2	OUT	Head(L) analogue switch data signal
47	GND	-	GND
48	H1-DASLK_LICC2	OUT	Head(L) analogue switch clock signal
49	GND	-	GND
50	H-DASH_LICC2	OUT	Head analogue switch A/D trigger signal

T-6-34

J801			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	GND	-	GND
3	VH3_FB	IN	VH3 feed back voltage
4	VH3	OUT	Power supply
5	VH3	OUT	Power supply
6	VH3	OUT	Power supply
7	VH3	OUT	Power supply
8	VH3	OUT	Power supply
9	VH3	OUT	Power supply
10	GND	-	GND
11	GND	-	GND
12	GND	-	GND
13	GND	-	GND
14	GND	-	GND
15	GND	-	GND
16	GND	-	GND
17	VH4	OUT	Power supply
18	VH4	OUT	Power supply
19	VH4	OUT	Power supply
20	VH4	OUT	Power supply
21	VH4	OUT	Power supply
22	VH4	OUT	Power supply
23	VH4_FB	IN	VH4 feed back voltage
24	VHT	OUT	Power supply
25	H3V	OUT	Power supply

T-6-35

J802			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	H0-B-DATA-2-EV	OUT	Even head(R) data signal 2(B)
3	GND	-	GND
4	H0-B-DATA-3-EV	OUT	Even head(R) data signal 3(B)
5	GND	-	GND
6	H0-B-HE-3	OUT	Head(R) heat enable signal 3(B)

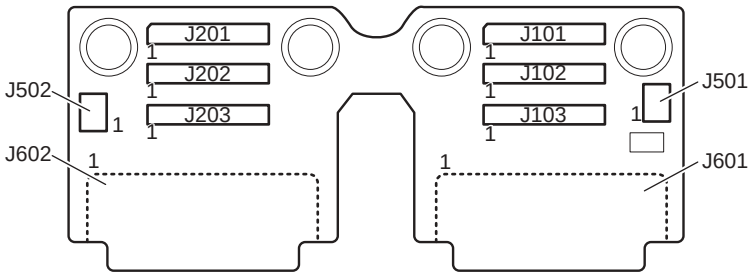
J802			
Pin Number	**Signal name**	**IN/OUT**	**Function**
7	GND	-	GND
8	H0-C-DATA-4-EV	OUT	Even head(R) data signal 4(C)
9	GND	-	GND
10	H0-C-DATA-5-EV	OUT	Even head(R) data signal 5(C)
11	GND	-	GND
12	H0-C-HE-5	OUT	Head(R) heat enable signal 5(C)
13	GND	-	GND
14	H0-C-DATA-5-OD	OUT	Odd head(R) data signal 5(C)
15	GND	-	GND
16	H0-D-DATA-7-OD	OUT	Odd head(R) data signal 7(D)
17	GND	-	GND
18	H0-D-DATA-6-OD	OUT	Odd head(R) data signal 6(D)
19	GND	-	GND
20	H0-D-HE-6	OUT	Head(R) heat enable signal 6(D)
21	GND	-	GND
22	H0-D-DATA-6-EV	OUT	Even head(R) data signal 6(D)
23	GND	-	GND
24	H0-D-DATA-7-EV	OUT	Even head(R) data signal 7(D)
25	GND	-	GND
26	H0-D-HE-7	OUT	Head(R) heat enable signal 7(D)
27	GND	-	GND
28	H0-E-DATA-8-EV	OUT	Even head(R) data signal 8(E)
29	GND	-	GND
30	H0-E-DATA-9-EV	OUT	Even head(R) data signal 9(E)
31	GND	-	GND
32	H0-E-HE-9	OUT	Head(R) heat enable signal 9(E)
33	GND	-	GND
34	H0-F-DATA-10-EV	OUT	Even head(R) data signal 10(F)
35	GND	-	GND
36	H0-F-DATA-11-EV	OUT	Even head(R) data signal 11(F)
37	GND	-	GND
38	H0-F-HE-11	OUT	Head(R) heat enable signal 11(F)
39	GND	-	GND
40	H0-F-DATA-11-OD	OUT	Odd head(R) data signal 11(F)
41	GND	-	GND
42	H0-F-DATA-10-OD	OUT	Odd head(R) data signal 10(F)
43	GND	-	GND
44	H0-F-HE-10	OUT	Head(R) heat enable signal 10(F)
45	GND	-	GND
46	H0-E-DATA-9-OD	OUT	Odd head(R) data signal 9(E)
47	GND	-	GND
48	H0-E-DATA-8-OD	OUT	Odd head(R) data signal 8(E)
49	GND	-	GND
50	H0-E-HE-8	OUT	Head(R) heat enable signal 8(E)

T-6-36

J803			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	SNS_5V	OUT	Power supply(+5V)
3	GND	-	GND
4	PWLED4	OUT	Multi sensor LED4 drive signal
5	GND	-	GND
6	PWLED3	OUT	Multi sensor LED3 drive signal
7	GND	-	GND
8	PWLED2	OUT	Multi sensor LED2 drive signal
9	GND	-	GND
10	PWLED1	OUT	Multi sensor LED1 drive signal
11	GND	-	GND
12	H0-DASH LICC2	OUT	Head analogue switch A/D trigger signal
13	GND	-	GND
14	H0-DLD_LICC2	OUT	Head(R) analogue switch latch signal
15	GND	-	GND
16	H0-DATA_LICC2	OUT	Head(R) analogue switch data signal
17	GND	-	GND

J803			
Pin Number	**Signal name**	**IN/OUT**	**Function**
18	H0-DASLK_LICC2	OUT	Head(R) analogue switch clock signal
19	GND	-	GND
20	H0-DSOUT1	IN	Head(R) temperature output signal 1
21	GND	-	GND
22	H0-DSOUT2	IN	Head(R) temperature output signal 2
23	GND	-	GND
24	H0-C-DATA-4-OD	OUT	Odd head(R) data signal 4(C)
25	GND	-	GND
26	H0-C-HE-4	OUT	Head(R) heat enable signal 4(C)
27	GND	-	GND
28	H0-B-DATA-3-OD	OUT	Odd head(R) data signal 3(B)
29	GND	-	GND
30	H0-B-DATA-2-OD	OUT	Odd head(R) data signal 2(B)
31	GND	-	GND
32	H0-B-HE-2	OUT	Head(R) heat enable signal 2(B)
33	GND	-	GND
34	H0-A-DATA-1-OD	OUT	Odd head(R) data signal 1(A)
35	GND	-	GND
36	H0-A-DATA-0-OD	OUT	Odd head(R) data signal 0(A)
37	GND	-	GND
38	H0-A-HE-0	OUT	Head(R) heat enable signal 0(A)
39	GND	-	GND
40	H0-A-DATA-0-EV	OUT	Even head(R) data signal 0(A)
41	GND	-	GND
42	H0-A-DATA-1-EV	OUT	Even head(R) data signal 1(A)
43	GND	-	GND
44	H0-A-HE-1	OUT	Head(R) heat enable signal 1(A)
45	GND	-	GND
46	H0_LT	OUT	Head(R) latch signal
47	GND	-	GND
48	H0_CLK	OUT	Head(R) clock signal
49	GND	-	GND
50	LIFT_CAM_IN	IN	Lift cam sensor output signal

6.2.3 Head relay PCB



F-6-3

T-6-37

J101			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	GND	-	GND
2	GND	-	GND
3	VHT12	IN	Power supply
4	VH2_FB	IN	VH2 feed back voltage
5	VH2	IN	Power supply
6	VH2	IN	Power supply
7	VH2	IN	Power supply
8	VH2	IN	Power supply
9	VH2	IN	Power supply
10	VH2	IN	Power supply
11	GND	-	GND
12	GND	-	GND
13	GND	-	GND
14	GND	-	GND
15	GND	-	GND
16	GND	-	GND
17	GND	-	GND
18	VH1	IN	Power supply
19	VH1	IN	Power supply
20	VH1	IN	Power supply
21	VH1	IN	Power supply
22	VH1	IN	Power supply
23	VH1	IN	Power supply
24	VH1_FB	IN	VH1 feed back voltage
25	H3V	IN	Power supply

T-6-38

J102			
Pin Number	**Siganal name**	**IN/OUT**	**Function**
1	H1-E-HE-8	IN	Head(L) heat enable signal 8(E)
2	GND	-	GND
3	H1-E-DATA-8-OD	IN	Odd head(L) data signal 8(E)
4	GND	-	GND
5	H1-E-DATA-9-OD	IN	Odd head(L) data signal 9(E)
6	GND	-	GND
7	H1-F-HE-10	IN	Head(L) heat enable signal 10(F)
8	VH2	-	GND
9	H1-F-DATA-10-OD	IN	Odd head(L) data signal 10(F)
10	GND	-	GND
11	H1-F-DATA-11-OD	IN	Odd head(L) data signal 11(F)
12	GND	-	GND
13	H1-F-HE-11	IN	Head(L) heat enable signal 11(F)
14	GND	-	GND
15	H1-F-DATA-11-EV	IN	Even head(L) data signal 11(F)
16	GND	-	GND
17	H1-F-DATA-10-EV	IN	Even head(L) data signal 10(F)
18	GND	-	GND
19	H1-E-HE-9	IN	Head(L) heat enable signal 9(E)
20	GND	-	GND
21	H1-E-DATA-9-EV	0	Even head(L) data signal 9(E)

J102			
Pin Number	**Siganal name**	**IN/OUT**	**Function**
22	GND	-	GND
23	H1-E-DATA-8-EV	IN	Even head(L) data signal 8(E)
24	GND	-	GND
25	H1-D-HE-7	IN	Head(L) heat enable signal 7(D)
26	GND	-	GND
27	H1-D-DATA-7-EV	IN	Even head(L) data signal 7(D)
28	GND	-	GND
29	H1-D-DATA-6-EV	IN	Even head(L) data signal 6(D)
30	GND	-	GND
31	H1-D-HE-6	IN	Head(L) heat enable signal 6(D)
32	GND	-	GND
33	H1-D-DATA-6-OD	IN	Odd head(L) data signal 6(D)
34	GND	-	GND
35	H1-D-DATA-7-OD	IN	Odd head(L) data signal 7(D)
36	GND	-	GND
37	H1-C-DATA-5-OD	IN	Odd head(L) data signal 5(C)
38	GND	-	GND
39	H1-C-HE-5	IN	Head(L) heat enable signal 5(C)
40	GND	-	GND
41	H1-C-DATA-5-EV	IN	Even head(L) data signal 5(C)
42	GND	-	GND
43	H1-C-DATA-4-EV	IN	Even head(L) data signal 4(C)
44	GND	-	GND
45	H1-B-HE-3	IN	Head(L) heat enable signal 3(B)
46	GND	-	GND
47	H1-B-DATA-3-EV	IN	Even head(L) data signal 3(B)
48	GND	-	GND
49	GND	-	GND
50	GND	-	GND

T-6-39

J103			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	H-DASH_LICC2	IN	Head analogue switch A/D trigger signal
2	GND	-	GND
3	H1-DASLK_LICC2	IN	Head(L) analogue switch clock signal
4	GND	-	GND
5	H1-DATA_LICC2	IN	Head(L) analogue switch data signal
6	GND	-	GND
7	H1-DLD_LICC2	IN	Head(L) analogue switch latch signal
8	VH2	-	GND
9	H1-DSOUT2	OUT	Head(L) temperature output signal 2
10	GND	-	GND
11	H1-DSOUT1	OUT	Head(L) temperature output signal 1
12	GND	-	GND
13	H1_CLK	IN	Head(L) clock signal
14	GND	-	GND
15	H1_LT	IN	Head(L) latch signal
16	GND	-	GND
17	IO_ASIC_SCL	IN/OUT	Head ROM control signal(clock)
18	GND	-	GND
19	IO_ASIC_SDA	IN/OUT	Head ROM control signal(data)
20	GND	-	GND
21	H1-B-DATA-2-EV	IN	Even head(L) data signal 2(B)
22	GND	-	GND
23	H1-A-HE-1	IN	Head(L) heat enable signal 1(A)
24	GND	-	GND
25	H1-A-DATA-1-EV	IN	Even head(L) data signal 1(A)
26	GND	-	GND
27	H1-A-DATA-0-EV	IN	Even head(L) data signal 0(A)
28	GND	-	GND
29	H1-A-HE-0	IN	Head(L) heat enable signal 0(A)
30	GND	-	GND
31	H1-A-DATA-0-OD	IN	Odd head(L) data signal 0(A)
32	GND	-	GND

J103			
Pin Number	**Signal name**	**IN/OUT**	**Function**
33	H1-A-DATA-1-OD	IN	Odd head(L) data signal 1(A)
34	GND	-	GND
35	H1-B-HE-2	IN	Head(L) heat enable signal 2(B)
36	GND	-	GND
37	H1-B-DATA-2-OD	IN	Odd head(L) data signal 2(B)
38	GND	-	GND
39	H1-B-DATA-3-OD	IN	Odd head(L) data signal 3(B)
40	GND	-	GND
41	H1-C-HE-4	IN	Head(L) heat enable signal 4(C)
42	GND	-	GND
43	H1-C-DATA-4-OD	IN	Odd head(L) data signal 4(C)
44	GND	-	GND
45	MLT_SENS_1IN	OUT	Multi sensor signal 1
46	GND	-	GND
47	MLT_SENS_2IN	OUT	Multi sensor signal 2
48	GND	-	GND
49	SNS5V	IN	Power supply(+5V)
50	GND	-	GND

T-6-40

J201			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	H3V	IN	Power supply
2	VHT34	IN	Power supply
3	VH4_FB	OUT	VH4 feed back voltage
4	VH4	IN	Power supply
5	VH4	IN	Power supply
6	VH4	IN	Power supply
7	VH4	IN	Power supply
8	VH2	IN	Power supply
9	VH4	IN	Power supply
10	GND	-	GND
11	GND	-	GND
12	GND	-	GND
13	GND	-	GND
14	GND	-	GND
15	GND	-	GND
16	GND	-	GND
17	VH3	IN	Power supply
18	VH3	IN	Power supply
19	VH3	IN	Power supply
20	VH3	IN	Power supply
21	VH3	IN	Power supply
22	VH3	IN	Power supply
23	VH3_FB	IN	VH3 feed back voltage
24	GND	-	GND
25	GND	-	GND

T-6-41

J202			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	H0-E-HE-8	IN	Head(R) heat enable signal 8(E)
2	GND	-	GND
3	H0-E-DATA-8-OD	IN	Odd head(R) data signal 8(E)
4	GND	-	GND
5	H0-E-DATA-9-OD	IN	Odd head(R) data signal 9(E)
6	GND	-	GND
7	H0-F-HE-10	IN	Head(R) heat enable signal 10(F)
8	VH2	-	GND
9	H0-F-DATA-10-OD	IN	Odd head(R) data signal 10(F)
10	GND	-	GND
11	H0-F-DATA-11-OD	IN	Odd head(R) data signal 11(F)
12	GND	-	GND
13	H0-F-HE-11	IN	Head(R) heat enable signal 11(F)

J202			
Pin Number	**Signal name**	**IN/OUT**	**Function**
14	GND	-	GND
15	H0-F-DATA-11-EV	IN	Even head(R) data signal 11(F)
16	GND	-	GND
17	H0-F-DATA-10-EV	IN	Even head(R) data signal 10(F)
18	GND	-	GND
19	H0-E-HE-9	IN	Head(R) heat enable signal 9(E)
20	GND	-	GND
21	H0-E-DATA-9-EV	IN	Even head(R) data signal 9(E)
22	GND	-	GND
23	H0-E-DATA-8-EV	IN	Even head(R) data signal 8(E)
24	GND	-	GND
25	H0-D-HE-7	IN	Head(R) heat enable signal 7(D)
26	GND	-	GND
27	H0-D-DATA-7-EV	IN	Even head(R) data signal 7(D)
28	GND	-	GND
29	H0-D-DATA-6-EV	IN	Even head(R) data signal 6(D)
30	GND	-	GND
31	H0-D-HE-6	IN	Head(R) heat enable signal 6(D)
32	GND	-	GND
33	H0-D-DATA-6-OD	IN	Odd head(R) data signal 6(D)
34	GND	-	GND
35	H0-D-DATA-7-OD	IN	Odd head(R) data signal 7(D)
36	GND	-	GND
37	H0-C-DATA-5-OD	IN	Odd head(R) data signal 5(C)
38	GND	-	GND
39	H0-C-HE-5	IN	Head(R) heat enable signal 5(C)
40	GND	-	GND
41	H0-C-DATA-5-EV	IN	Even head(R) data signal 5(C)
42	GND	-	GND
43	H0-C-DATA-4-EV	IN	Even head(R) data signal 4(C)
44	GND	-	GND
45	H0-B-HE-3	IN	Head(R) heat enable signal 3(B)
46	GND	-	GND
47	H0-B-DATA-3-EV	IN	Even head(R) data signal 3(B)
48	GND	-	GND
49	H0-B-DATA-2-EV	IN	Even head(R) data signal 2(B)
50	GND	-	GND

T-6-42

J203			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	LIFT_CAM_IN	OUT	Lift cam sensor output signal
2	GND	-	GND
3	H0_CLK	IN	Head(R) clock signal
4	GND	-	GND
5	H0_LT	IN	Head(R) latch signal
6	GND	-	GND
7	H0-A-HE-1	IN	Head(R) heat enable signal 1(A)
8	VH2	-	GND
9	H0-A-DATA-1-EV	IN	Even head(R) data signal 1(A)
10	GND	-	GND
11	H0-A-DATA-0-EV	IN	Even head(R) data signal 0(A)
12	GND	-	GND
13	H0-A-HE-0	IN	Head(R) heat enable signal 0(A)
14	GND	-	GND
15	H0-A-DATA-0-OD	IN	Odd head(R) data signal 0(A)
16	GND	-	GND
17	H0-A-DATA-1-OD	IN	Odd head(R) data signal 1(A)
18	GND	-	GND
19	H0-B-HE-2	IN	Head(R) heat enable signal 2(B)
20	GND	-	GND
21	H0-B-DATA-2-OD	IN	Odd head(R) data signal 2(B)
22	GND	-	GND
23	H0-B-DATA-3-OD	IN	Odd head(R) data signal 3(B)
24	GND	-	GND

J203			
Pin Number	**Signal name**	**IN/OUT**	**Function**
25	H0-C-HE-4	IN	Head(R) heat enable signal 4(C)
26	GND	-	GND
27	H0-C-DATA-4-OD	IN	Odd head(R) data signal 4(C)
28	GND	-	GND
29	H0-DSOUT2	OUT	Head(R) temperature output signal 2
30	GND	-	GND
31	H0-DSOUT1	OUT	Head(R) temperature output signal 1
32	GND	-	GND
33	H0-DASLK_LICC2	IN	Head(R) analogue switch clock signal
34	GND	-	GND
35	H0-DATA_LICC2	IN	Head(R) analogue switch data signal
36	GND	-	GND
37	H0-DLD_LICC2	IN	Head(R) analogue switch latch signal
38	GND	-	GND
39	H-DASH LICC2	IN	Head analogue switch A/D trigger signal
40	GND	-	GND
41	PWLED1_ON	IN	Multi sensor LED1 drive signal
42	GND	-	GND
43	PWLED2_ON	IN	Multi sensor LED2 drive signal
44	GND	-	GND
45	PWLED3_ON	IN	Multi sensor LED3 drive signal
46	GND	-	GND
47	PWLED4_ON	IN	Multi sensor LED4 drive signal
48	GND	-	GND
49	SNS_5V	IN	Power supply(+5V)
50	GND	-	GND

T-6-43

J501			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	MEM-3.3V	OUT	Power supply (+3.3V)
2	SNS-GND	-	GND
3	SCL	OUT	Multi sensor LED control signal (clock)
4	SDA	OUT	Multi sensor LED control signal (data)
5	GAP-Far	IN	GAP detection signal 1
6	GAP-Near	IN	GAP detection signal 2
7	COLOR-SNS	IN	Color detection signal
8	EDGE-SNS	IN	Media detection signal
9	SNS-GND	-	GND
10	VCC-5V	OUT	Power supply (+5V)
11	SNS-REF	OUT	Reference voltage signal (+3V)
12	LED-GND	-	GND

T-6-44

J502			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	SNS5V_0	OUT	Power supply(+5V)
2	GND	-	GND
3	LIFT_CAM_IN	IN	Lift cam sensor output signal

T-6-45

J601			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	VH2	OUT	Power supply
2	VH2	OUT	Power supply
3	VH2	OUT	Power supply
4	VHT12	OUT	Head transistor drive power supply
5	H1-F-DATA-10-EV	OUT	Even head(L) data signal 10(F)
6	IO_ASIC_SDA	IN/OUT	Head ROM control signal(data)
7	IO_ASIC_SCL	OUT	Head ROM control signal(clock)
8	VH2	OUT	Power supply
9	H1-C-DIA1	IN	Head(L) DI sensor signal 1(C)
10	H1-A-HE-1	OUT	Head(L) heat enable signal 1(A)
11	VH1	OUT	Power supply

J601			
Pin Number	**Signal name**	**IN/OUT**	**Function**
12	VH1	OUT	Power supply
13	VH1	OUT	Power supply
14	VH2	OUT	Power supply
15	VH2	OUT	Power supply
16	H1-E-DATA-9-OD	OUT	Odd head(R) data signal 9(E)
17	H1-F-HE-11	OUT	Head(L) heat enable signal 11(F)
18	H1-E-DIA1	IN	Head(L) DI sensor signal 1(E)
19	H1-D-DIA1	IN	Head(L) DI sensor signal 1(D)
20	H3V_1	OUT	Power supply
21	H3V_1	OUT	Power supply
22	H1-B-DATA-3-EV	OUT	Even head(L) data signal 3(B)
23	H1-A-DATA-0-EV	OUT	Even head(L) data signal 0(A)
24	H1-B-HE-2	OUT	Head(L) heat enable signal 2(B)
25	VH1	OUT	Power supply
26	VH1	OUT	Power supply
27	H1-D-DIA2	IN	Head(L) DI sensor signal 2(D)
28	H1-E-HE-8	OUT	Head(L) heat enable signal 8(E)
29	H1-E-DIA2	IN	Head(L) DI sensor signal 2(E)
30	H1-F-DIA2	IN	Head(L) DI sensor signal 2(F)
31	H1-E-HE-9	OUT	Head(L) heat enable signal 9(E)
32	H1-D-DATA-7-EV	OUT	Even head(L) data signal 7(D)
33	H1-D-HE-6	OUT	Head(L) heat enable signal 6(D)
34	H1-C-DATA-5-OD	OUT	Odd head(R) data signal 5(C)
35	H1-C-DATA-4-EV	OUT	Even head(L) data signal 4(C)
36	H1-A-DATA-1-EV	OUT	Even head(L) data signal 1(A)
37	H1-A-DIA2	IN	Head(L) DI sensor signal 2(A)
38	H1-B-DIA2	IN	Head(L) DI sensor signal 2(B)
39	H1-C-HE-4	OUT	Head(L) heat enable signal 4(C)
40	H1-D-DATA-7-OD	OUT	Odd head(R) data signal 7(D)
41	H1-E-DATA-8-OD	OUT	Odd head(R) data signal 8(E)
42	H1-F-HE-10	OUT	Head(L) heat enable signal 10(F)
43	H1-F-DATA-11-EV	OUT	Even head(L) data signal 11(F)
44	H1-E-DATA-8-EV	OUT	Even head(L) data signal 8(E)
45	H1-D-DATA-6-EV	OUT	Even head(L) data signal 6(D)
46	H1-C-DIA2	IN	Head(L) DI sensor signal 2(C)
47	H1-C-DATA-5-EV	OUT	Even head(L) data signal 5(C)
48	H1-B-DIA1	IN	Head(L) DI sensor signal 1(B)
49	H1-A-HE-0	OUT	Head(L) heat enable signal 0(A)
50	H1-B-DATA-2-OD	OUT	Odd head(R) data signal 2(B)
51	H1-B-DATA-3-OD	OUT	Odd head(R) data signal 3(B)
52	H1-C-DATA-4-OD	OUT	Odd head(R) data signal 4(C)
53	GND	-	GND
54	GND	-	GND
55	GND	-	GND
56	H1-F-DATA-11-OD	OUT	Odd head(R) data signal 11(F)
57	H1-E-DATA-9-EV	OUT	Even head(L) data signal 9(E)
58	GND	-	GND
59	H1-D-DATA-6-OD	OUT	Odd head(L) data signal 6(D)
60	H1-C-HE-5	OUT	Head(L) heat enable signal 5(C)
61	H1-B-HE-3	OUT	Head(L) heat enable signal 3(B)
62	H1-A-DIA1	IN	Head(L) DI sensor signal 1(A)
63	H1-A-DATA-1-OD	OUT	Odd head(R) data signal 1(A)
64	GND	-	GND
65	GND	-	GND
66	GND	-	GND
67	GND	-	GND
68	H1-F-DATA-10-OD	OUT	Odd head(R) data signal 10(F)
69	H1-F-DIA1	IN	Head(L) DI sensor signal 1(F)
70	H1-D-HE-7	OUT	Head(L) heat enable signal 7(D)
71	GND	-	GND
72	H1_CLK	OUT	Head(L) clock signal
73	H1_LT	OUT	Head(L) clock signal
74	H1-B-DATA-2-EV	OUT	Even head(L) data signal 2(B)
75	H1-A-DATA-0-OD	OUT	Odd head(R) data signal 0(A)
76	GND	-	GND

J601			
Pin Number	**Signal name**	**IN/OUT**	**Function**
77	GND	-	GND
78	GND	-	GND

T-6-46

J602			
Pin Number	**Signal name**	**IN/OUT**	**Function**
1	VH3	OUT	Power supply
2	VH3	OUT	Power supply
3	VH3	OUT	Power supply
4	VHT34	OUT	Power supply
5	H0-F-DATA-10-EV	OUT	Even head(R) data signal 10(F)
6	IO_ASIC_SDA	IN/OUT	Head ROM control signal(data)
7	IO_ASIC_SCL	OUT	Head ROM control signal(clock)
8	VH2	OUT	Power supply
9	H0-C-DIA1	IN	Head(R) DI sensor signal 1(C)
10	H0-A-HE-1	OUT	Head(R) heat enable signal 1(A)
11	VH3	OUT	Power supply
12	VH3	OUT	Power supply
13	VH3	OUT	Power supply
14	VH4	OUT	Power supply
15	VH4	OUT	Power supply
16	H0-E-DATA-9-OD	OUT	Odd head(R) data signal 9(E)
17	H0-F-HE-11	OUT	Head(R) heat enable signal 11(F)
18	H0-E-DIA1	IN	Head(R) DI sensor signal 1(E)
19	H0-D-DIA1	IN	Head(R) DI sensor signal 1(D)
20	H3V_0	OUT	Power supply
21	H3V_0	OUT	Power supply
22	H0-B-DATA-3-EV	OUT	Even head(R) data signal 3(B)
23	H0-A-DATA-0-EV	OUT	Even head(R) data signal 0(A)
24	H0-B-HE-2	OUT	Head(R) heat enable signal 2(B)
25	VH3	OUT	Power supply
26	VH3	OUT	Power supply
27	H0-D-DIA2	IN	Head(R) DI sensor signal 2(D)
28	H0-E-HE-8	OUT	Head(R) heat enable signal 8(E)
29	H0-E-DIA2	IN	Head(R) DI sensor signal 2(E)
30	H0-F-DIA2	IN	Head(R) DI sensor signal 2(E)
31	H0-E-HE-9	OUT	Head(R) heat enable signal 9(E)
32	H0-D-DATA-7-EV	OUT	Even head(R) data signal 7(D)
33	H0-D-HE-6	OUT	Head(R) heat enable signal 6(D)
34	H0-C-DATA-5-OD	OUT	Odd head(R) data signal 5(C)
35	H0-C-DATA-4-EV	OUT	Even head(R) data signal 4(C)
36	H0-A-DATA-1-EV	OUT	Even head(R) data signal 1(A)
37	H0-A-DIA2	IN	Head(R) DI sensor signal 2(A)
38	H0-B-DIA2	IN	Head(R) DI sensor signal 2(B)
39	H0-C-HE-4	OUT	Head(R) heat enable signal 4(C)
40	H0-D-DATA-7-OD	OUT	Odd head(R) data signal 7(D)
41	H0-E-DATA-8-OD	OUT	Odd head(R) data signal 8(E)
42	H0-F-HE-10	OUT	Head(R) heat enable signal 10(F)
43	H0-F-DATA-11-EV	OUT	Even head(R) data signal 11(F)
44	H0-E-DATA-8-EV	OUT	Even head(R) data signal 8(E)
45	H0-D-DATA-6-EV	OUT	Even head(R) data signal 6(D)
46	H0-C-DIA2	IN	Head(R) DI sensor signal 2(C)
47	H0-C-DATA-5-EV	OUT	Even head(R) data signal 5(C)
48	H0-B-DIA1	IN	Head(R) DI sensor signal 1(B)
49	H0-A-HE-0	OUT	Head(R) heat enable signal 0(A)
50	H0-B-DATA-2-OD	OUT	Odd head(R) data signal 2(B)
51	H0-B-DATA-3-OD	OUT	Odd head(R) data signal 3(B)
52	H0-C-DATA-4-OD	OUT	Odd head(R) data signal 4(C)
53	GND	-	GND
54	GND	-	GND
55	GND	-	GND
56	H0-F-DATA-11-OD	OUT	Odd head(R) data signal 11(F)
57	H0-E-DATA-9-EV	OUT	Even head(R) data signal 9(E)
58	GND	-	GND
59	H0-D-DATA-6-OD	OUT	Odd head(R) data signal 6(D)

J602			
Pin Number	**Signal name**	**IN/OUT**	**Function**
60	H0-C-HE-5	OUT	Head(R) heat enable signal 5(C)
61	H0-B-HE-3	OUT	Head(R) heat enable signal 3(B)
62	H0-A-DIA1	IN	Head(R) DI sensor signal 1(A)
63	H0-A-DATA-1-OD	OUT	Odd head(R) data signal 1(A)
64	GND	-	GND
65	GND	-	GND
66	GND	-	GND
67	GND	-	GND
68	H0-F-DATA-10-OD	OUT	Odd head(R) data signal 10(F)
69	H0-F-DIA1	IN	Head(R) DI sensor signal 1(F)
70	H0-D-HE-7	OUT	Head(R) heat enable signal 7(D)
71	GND	-	GND
72	H0_CLK	OUT	Head(R) clock signal
73	H0_LT	OUT	Head(R) latch signal
74	H0-B-DATA-2-EV	OUT	Even head(R) data signal 2(B)
75	H0-A-DATA-0-OD	OUT	Odd head(R) data signal 0(A)
76	GND	-	GND
77	GND	-	GND
78	GND	-	GND

6.3 Version Up

6.3.1 Firmware Update Tool

Use of the following tools allows you to update the firmware of the main controller incorporated in the printer from the computer.

- imagePROGRAF Firmware Update Tool (for user)
- L Printer Service Tool (for service)

1. imagePROGRAF Firmware Update Tool
The imagePROGRAF Firmware Update Tool is the tool for user.

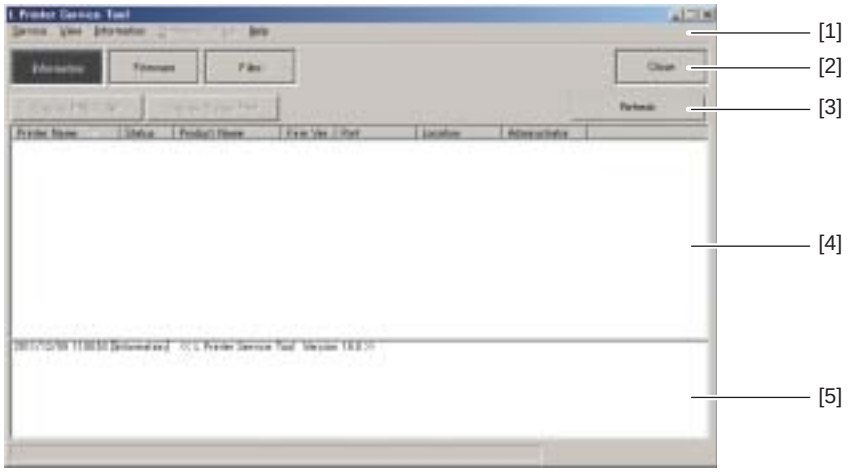
Procedure:
1) Start the imagePROGRAF Firmware Update Tool.
2) Make sure that the printer is the online mode.
3) Transfer the firmware data to the printer according to the instructions shown on the LCD of the operation panel.
4) The message shown on the LCD of the operation panel changes and the firmware is updated automatically.
5) After having updated the firmware, the computer will restart.

Connection method with the computer:
USB, Network

2. L Printer Service Tool
This tool has the following functions.
- The update function of the printer firmware
- The display function of the printer information

Connection method with the computer:
USB, Network

a) Screen description

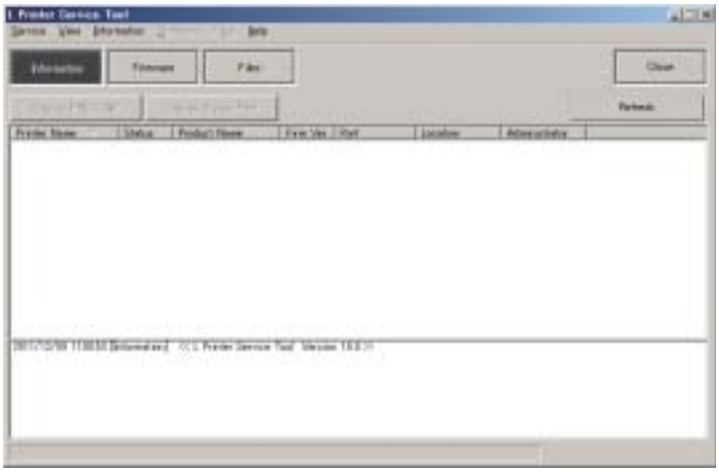


F-6-4

[1] Main menu
Choose the menu to execute.
[2] Main menu button
Choose the menu to execute between the [Information] and the [Firmware] and the [Files].
[3] Sub menu button
The sub menu button is displayed according to the menu choosed by main menu or main menu button.
[4] Printer information area
The information of the printer connected with computer is shown according to the choosed menu.
[5] Message area
The message of executed menu is shown. And the message is saved as the text file when choosing the "[Service]-[Save Message]" of the main menu.

b) Operation
1) Showing the information of the printer
The data of PRINT INF or status print is shown.

(1) Choose the [Information] of the main menu button or the "[Service]-[Information]" of the main menu.



F-6-5

(2) Choose the printer from the list shown to the printer information area.

MEMO:
- The list is refreshed when choosing the [Refresh] of the sub menu button or the "[View]-[Refresh]" of the main menu.
- The printer is searched according to the setting of the [Specify Search Range] dialogue box after choosing the "[View]-[Specify Search Range]" of the main menu to display the dialogue box. The five IP addresses at the maximum can register when searching by the IP address.

F-6-6

(3)-1 Choose the [Display PRINT INF] of the sub menu button or the "[Information]-[Display PRINT INF]" of the main menu when showing the PRINT INF.
- The data of PRINT INF is shown by the appointed application software.

(3)-2 Choose the [Display Status Print] of the sub menu button or the "[Information]-[Display Status Print]" of the main menu when showing the Status Print.
- The data of Status Print is shown by the appointed application software.

MEMO:
- The application software used to show the data and the folder used to store the files can change by the "[Service]-[Setup]" of the main menu.

F-6-7

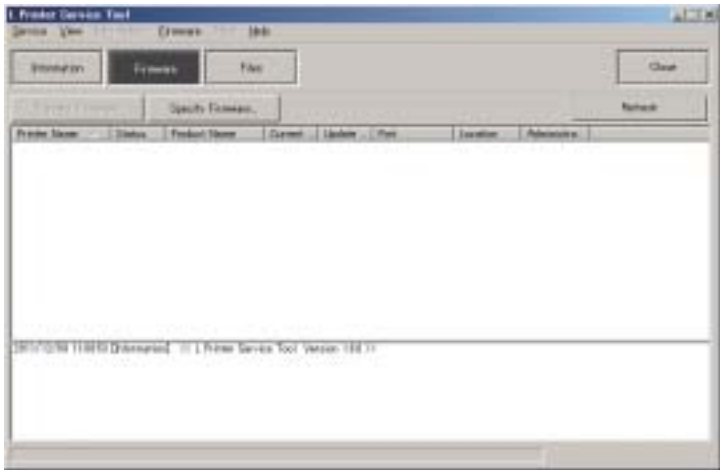
[1] This menu can change the folder used to store the file.
[2] This menu can change the application software used to show the data.

- The printer name can add by the "[Service]-[Add Printer]" of the main menu.

F-6-8

2) Updating the firmware of the printer
The firmware of printer can update according to the following procedure.

(1) Choose the [Firmware] of the main menu button or the "[Service]-[Firmware]" of the main menu.



F-6-9

(2) Choose the printer to update from the list of the printer shown to the printer information area.

MEMO:
- The printer list is refreshed when choosing the [Refresh] of the sub menu button or the "[View]-[Refresh]" of the main menu.
- The printer is searched according to the setting of the [Specify Search Range] dialogue box after choosing the "[View]-[Specify Search Range]" of the main menu to display the dialogue box. The five IP addresses at the maximum can register when searching by the IP address.

F-6-10

(3) Choose the [Specify Firmware] of the sub menu button or the "[Firmware]-[Specify Firmware]" of the main menu.
Specify the folder stored the file by the [Specify Firmware Folder] of the [Specify Firmware] dialogue box or specify the file by the [Specify Firmware File] of the dialogue box.

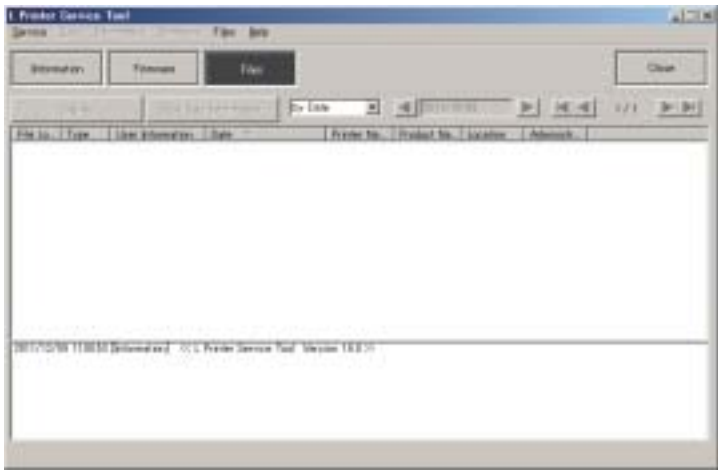
F-6-11

(4) Make sure that the printer is the online mode or the download mode.
The firmware of the printer is updated when choosing the [Transfer Firmware] of the sub menu button or the "[Firmware]-[Transfer Firmware]" of the main menu.

MEMO:
The Printer becomes the force transfer mode when choosing the "[Firmware]-[Force Transfer Mode]" of the main menu. Thereby, you can choose the [Transfer Firmware] without concerning the status of the printer.

3) Managing the information of the printer
The list of the PRINT INF or the status print gotten according to the procedure of "1) Showing the information of the printer" can manage.

(1) Choose the [Files] of the main menu button or the "[Service]-[Files]" of the main menu.
- The list of the PRINT INF or the status print gotten so far is shown in the printer information area.



F-6-12

(2) Choose the [Display] of the sub menu button or the "[Files]-[Display]" of the main menu after selecting the list that want to show in the printer information area.
The multiple selection from the lists is possible.
- The data of the selected PRINT INF or status print is shown.

MEMO:
- The user information can set to the list after choosing the [Input User Information] of the sub menu button or the "[Files]-[Input User Information]" of the main menu. The input of max 511 characters is possible.
- In case of deleting the list, choose the "[Files]-[Delete Files]" of main menu after selecting the list which want to delete from the printer information area.

6.4 Service Tools

6.4.1 Tool List

T-6-47

General-purpose tools	Application
Long phillips scerewdriver	Inserting and removing screw
Phillips scerewdriver	Inserting and removing screw
Flat-head screwdriver	Removing the E-ring
Needle-nose pliers	Inserting and removing the spring parts
Hex key wrench	Inserting and removing hexagonal screws
Flat brush	Applying grease
Lint free paper	Wiping off ink
Rubber gloves	Preventing ink stains

T-6-48

Special-purpose tools	Application
Grease FLOIL G-5000H (FY9-6022)	Applying to specified locations
Cover Switch Tool (QY9-0103)	Pressing the cover switch

Chapter 7 SERVICE MODE

Contents

7.1 Service Mode

7.1.1 Service Mode Operation

a) How to enter the Service mode
Enter service mode according to the following procedure:

1) Turn off the printer power.
2) Turn on the power while pressing the [Load] key and [Navigate] key.
 * Keep pressing the above keys until "Initializing" is displayed.
3) "S" appears at the top right of the display.
4) Press the ◄ key or ► key to choose the [Set./Adj. Menu] and press the [OK] key.
 "SERVICE MODE" appears in the menu list and the MESSAGE LED flashes.
5) Press the ▲ key or ▼key to choose "SERVICE MODE" and press the [OK] key.
 * Service mode is added to the [Set./Adj. Menu]. Service mode can be entered even when an error occurs (an error message is displayed) by turning off the power once and then pressing the above keys.

b) How to exit the Service mode
Turn off the printer.

c) Key operation in the service mode
- Selecting menus and paremeters: ◄ or ► key
- Going to the next lower-level menu: ▼ key
- Going to the previous higher-level menu: ▲ key
- Determining a selected menu or parameter:[OK] key

7.1.2 Map of the Service Mode

The hierarchy of menus and parameters in the Service Mode is as shown below.

First Level	Second Level	Third Level	Fourth Level	Fifth Level	Sixth Level
DISPLAY	PRINTINF	YES/NO	: Select YES to print		
	SYSTEM	S/N			
		TYPE			
		LF TYPE			
		TMP			
		RH			
		SIZE LF			
		SIZE LF			
		SIZE CR			
		SIZE CR			
		AFTER INST			
	HEAD	S/N L			
		S/N R			
		LOT L			
		LOT R			
	INK	PC			

		BK			
	WARNING	01			

		20			
	ERROR	01			

		20			
	JAM	01	1:		

			4:		

		05	1:		

			4:		
	INK CHECK	0 0 0 0 0 0 0 0			
I/O DISPLAY	I/O DISPLAY 1				
	I/O DISPLAY 2				
	I/O DISPLAY 3				

First Level	Second Level	Third Level	Fourth Level	Fifth Level	Sixth Level
ADJUST	PRINT PATTERN	NOZZLE 1	: Press the [OK] button to execute		
		OPTICAL AXIS	: Press the [OK] button to execute		
		LF TUNING			
		LF TUNIG 2			
	HEAD ADJ.	MANUAL HEAD ADJ	EXTENSION	: Press the [OK] button to execute	
			DETAIL	: Press the [OK] button to execute	
			BASIC	: Press the [OK] button to execute	
		ADJ. SETTING	A	A-1	: Adjustment value entry

				A-96	: Adjustment value entry

			F	F-1	: Adjustment value entry
				F-2	: Adjustment value entry
			SAVE SETTINGS	YES/NO	
		RESET SETTINGS	YES/NO		
	NOZZLE CHECK POS.	YES/NO			
	GAP CALIB.	YES/NO			
	CHANGE LF TYPE	0/1			
	ROUGH	EXCUTE	YES/NO		
	AUTO REG	EXCUTE	YES/NO		
	CR REG	EXCUTE	YES/NO		
		RESET	YES/NO		
	CR MOTOR COG	YES/NO			
	MARGIN ADJ	TOP MARGIN ADJ	-2.0 to 2.0		
		BTM MARGIN ADJ	-2.0 to 2.0		
		PRINT PATTERN	YES/NO		

First Level	Second Level	Third Level	Fourth Level	Fifth Level
FUNCTION	CR UNLOCK	YES/NO		
	CR LOCK	YES/NO		
	PG CHECK	YES/NO		
	CR AUTO SCAN	YES/NO		
	CR SCAN COUNT	1	: Press the [OK] button to set	

		30	: Press the [OK] button to set	
	CR SCAN SIZE	1	: Press the [OK] button to set	

		5	: Press the [OK] button to set	
	CR SCAN SPEED	1	: Press the [OK] button to set	

		5	: Press the [OK] button to set	
	OPT SENS OUTPUT	YES	OUTPUT0	

			OUTPUT6	
		NO		
	NOZZLE CHK	YES/NO		
	NOZZLE INF	PC		

		BK		
	MEMORY CHK	DDR	YES/NO	
		EEP	YES/NO	
	HEAD CNT CHK	YES/NO		
REPLACE	L & R PRINTHEADS	YES/NO		

First Level	Second Level	Third Level	Fourth Level	Fifth Level
COUNTER	PRINTER	LIFE TTL		
		LIFE ROLL		
		LIFE CUTSHEET		
		LIFE A		

		LIFE F		
		POWER ON		
		W-INK		
		CUTTER		
		WIPE		
		SLEEP ON		
	CARRIAGE	PRINT		
		DRIVE		
		CR COUNT		
		CR DIST.		
		PRINT COUNT		
	PURGE	CLN-A-1		
		CLN-A-2		
		CLN-A-3		
		CLN-A-6		
		CLN-A-7		
		CLN-A-10		
		CLN-A-11		
		CLN-A-15		
		CLN-A-16		
		CLN-A-17		
		CLN-A-TTL		
		CLN-M-1		
		CLN-M-4		
		CLN-M-5		
		CLN-M-6		
		CLN-M-TTL		
	CLEAR	CLR-INK CONSUME		
		CLR-MTC EXC.		
		CLR-HEAD L EXC.		
		CLR-HEAD R EXC.		
		CLR Wia-1 EXC.		
		CLR Wia-3 EXC.		
		CLR Wia-4 EXC.		
		CLR Wia-5 EXC.		
		CLR Wia-6 EXC.		
		CLR CR-1 EXC.		
		CLR CR-2 EXC.		
		CLR CR-3 EXC.		
		CLR CR-4 EXC.		
		CLR CR-5 EXC.		
		CLR PG-1 EXC.		
		CLR HMa-1 EXC.		
		CLR MT-1 EXC.		
		CLR PL-1 EXC.		
		CLR Mi-1 EXC.		
		CLR MS-1 EXC.		
		CLR-FACTORY CNT.		

First Level	Second Level	Third Level	Fourth Level	Fifth Level
COUNTER	EXCHANGE	MTC EXC.		
		HEAD L EXC.		
		HEAD R EXC.		
		BOARD EXC.(M/B)		
		Wia-1 EXC.		
		Wia-3 EXC.		
		Wia-4 EXC.		
		Wia-5 EXC.		
		Wia-6 EXC.		
		CR-1 EXC.		
		CR-2 EXC.		
		CR-3 EXC.		
		CR-4 EXC.		
		CR-5 EXC.		
		PG-1 EXC.		
		HMa-1 EXC.		
		MT-1 EXC.		
		PL-1 EXC.		
		Mi-1 EXC.		
		MS-1 EXC.		
	DETAIL-CNT	MOVE PRINTER		
		N-INK CHK(PC)		

		N-INK CHK(BK)		
		MEDIACONFIG-CNT		

First Level	Second Level	Third Level	Fourth Level	Fifth Level
COUNTER	INK-USE1	INK-USE1(PC)		

		INK-USE1(BK)		
		INK-USE1(TTL)		
		LINK-USE1(PC)		

		LINK-USE1(BK)		
		LINK-USE1(TTL)		
		SINK-USE1(PC)		

		SINK-USE1(BK)		
		SINK-USE1(TTL)		
		N-INK-USE1(PC)		

		N-INK-USE1(BK)		
		N-INK-USE1(TTL)		
	INK-USE2	INK-USE2(PC)		

		INK-USE2(BK)		
		INK-USE2(TTL)		
		N-INK-USE2(PC)		

		N-INK-USE2(BK)		
		N-INK-USE2(TTL)		
	INK-EXC	INK-EXC(PC)		

		INK-EXC(BK)		
		INK-EXC(TTL)		
		N-INK-EXC(PC)		

		N-INK-EXC(BK)		
		N-INK-EXC(TTL)		

First Level	Second Level	Third Level	Fourth Level	Fifth Level
COUNTER	MEDIA 1	NAME		
		TTL		
		TTL		
		ROLL		
		ROLL		
		CUTSHEET		
		CUTSHEET		

	MEDIA 7	NAME		
		TTL		
		TTL		
		ROLL		
		ROLL		
		CUTSHEET		
		CUTSHEET		
	MEDIA OTHER	NAME		
		TTL		
		TTL		
		ROLL		
		ROLL		
		CUTSHEET		
		CUTSHEET		
	MEDIASIZE1 ROLL	P-SQ 44-60		
		P-SQ 44-60		
		P-SQ 36-44		
		P-SQ 36-44		
		P-SQ 24-36		
		P-SQ 24-36		
		P-SQ 17-24		
		P-SQ 17-24		
		P-SQ -17		
		P-SQ -17		
		P-CNT 44-60		
		P-CNT 36-44		
		P-CNT 24-36		
		P-CNT 17-24		
		P-CNT -17		
	MEDIASIZE2 ROLL	D-SQ 44-60		
		D-SQ 44-60		
		D-SQ 36-44		
		D-SQ 36-44		
		D-SQ 24-36		
		D-SQ 24-36		
		D-SQ 17-24		
		D-SQ 17-24		
		D-SQ -17		
		D-SQ -17		
		D-CNT 44-60		
		D-CNT 36-44		
		D-CNT 24-36		
		D-CNT 17-24		
		D-CNT -17		

First Level	Second Level	Third Level	Fourth Level	Fifth Level
COUNTER	MEDIASIZE1 CUT	P-SQ 44-60		
		P-SQ 44-60		
		P-SQ 36-44		
		P-SQ 36-44		
		P-SQ 24-36		
		P-SQ 24-36		
		P-SQ 17-24		
		P-SQ 17-24		
		P-SQ -17		
		P-SQ -17		
		P-CNT 44-60		
		P-CNT 36-44		
		P-CNT 24-36		
		P-CNT 17-24		
		P-CNT -17		
	MEDIASIZE2 CUT	D-SQ 44-60		
		D-SQ 44-60		
		D-SQ 36-44		
		D-SQ 36-44		
		D-SQ 24-36		
		D-SQ 24-36		
		D-SQ 17-24		
		D-SQ 17-24		
		D-SQ -17		
		D-SQ -17		
		D-CNT 44-60		
		D-CNT 36-44		
		D-CNT 24-36		
		D-CNT 17-24		
		D-CNT -17		
	HEAD DOT CNT. 1	PC1		

		BK		
		TTL		
	HEAD DOT CNT. 2	PC1		

		BK		
		TTL		
	PARTS CNT.	COUNTER Wia-1	OK/W1/W2/E	
			1:00	
			2:00	
			3:00	
			4:00	

		COUNTER MS-1	OK/W1/W2/E	
			1:00	
			2:00	
			3:00	
			4:00	

First Level	Second Level	Third Level	Fourth Level	Fifth Level	Sixth Level
SETTING	Pth	ON/OFF			
	RTC	DATE	yyyy/mm/dd		
		TIME	hh:mm		
	PV AUTO JUDGE	ON/OFF			
	NETWORK	CERTIFICATE	CA-CERTIFICATE	VALIDITY	yyyy/mm/dd
	E-RDS	E-RDS SWITCH	ON/OFF		
		UGW-ADDRESS	http://XXX		
		UGW-PORT	XXXXX		
		COM-TEST	YES		
		COM-LOG			
	HEAD DOT INF	ON/OFF			
INITIALIZE	WARNIG	: Press the [OK] button to clear			
	ERROR	: Press the [OK] button to clear			
	JAM	: Press the [OK] button to clear			
	ADJUST	: Press the [OK] button to clear			
	W-INK	: Press the [OK] button to clear			
	CARRIAGE	: Press the [OK] button to clear			
	PURGE	: Press the [OK] button to clear			
	INK-USE CNT	: Press the [OK] button to clear			
	W-INK-CHG CNT	: Press the [OK] button to clear			
	HEAD-CHG L CNT	: Press the [OK] button to clear			
	HEAD-CHG R CNT	: Press the [OK] button to clear			
	HDD BOX PASS.	ALL FOLDERS	: Press the [OK] button to clear		
		FOLDER 1	: Press the [OK] button to clear		

		FOLDER 29	: Press the [OK] button to clear		
	PARTS-CHG CNT	PARTS Wia ALL	: Press the [OK] button to clear		

		PARTS MS-1	: Press the [OK] button to clear		
	PARTS COUNTER	PARTS Wia ALL	: Press the [OK] button to clear		

		PARTS MS-1	: Press the [OK] button to clear		
	USER SETTEING	YES/NO			
	CA-KEY	YES/NO			
	ERDS-DAT	YES/NO			
	JOB LOG	YES/NO			

7.1.3 Details of Service Mode

This section provides details of the Service mode menu.

a) DISPLAY
Displays and prints the printer information.

1) PRINF INF
Prints adjustment values in the User menu, [DISPLAY] and [COUNTER] parameters on A4-size or lager paper.
When roll media is used, the layout is optimized according to the media width.

2) SYSTEM
Displays the printer information shown below.

Display	Description	Unit
S/N	Serial number of printer	-
TYPE	Type setting on main controller PCB * iPF8400S/8410S are represented by 44".	-
LF TYPE	Feed roller type: 0 or 1	-
TMP	Ambient temperature	centigrade degrees
RH	Ambient humidity	%
SIZE LF	Detected size of loaded media (feed direction) 0 is always detected for the roll media.	mm/inch
SIZE CR	Detected size of loaded media (carriage scan direction)	mm/inch
AFTER INST.	Number of days since initial installation	Days

3) HEAD
Displays the following EEPROM information of the printhead.

Display	Description
S/N R	Serial number of printhead R
S/N L	Serial number of printhead L
LOT R	Lot number of printhead R
LOT L	Lot number of printhead L

4) INK
Displays the numbers of days passed since installation of the following ink tanks.

Display	Description	Unit
BK	Number of days passed since the BK ink tank was installed	Day(s)
MBK	Number of days passed since the MBK ink tank was installed	Day(s)
C	Number of days passed since the C ink tank was installed	Day(s)
M	Number of days passed since the M ink tank was installed	Day(s)
Y	Number of days passed since the Y ink tank was installed	Day(s)
PC	Number of days passed since the PC ink tank was installed	Day(s)
PM	Number of days passed since the PM ink tank was installed	Day(s)
GY	Number of days passed since the GY ink tank was installed	Day(s)

5) WARNING
Displays the warning history (up to 20 events). The newest event has the smallest history number.

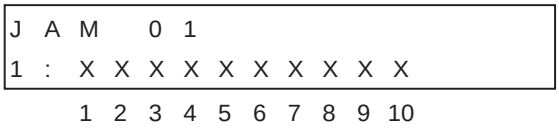
6) ERROR
Displays the error history (up to 20 events). The newest event has the smallest history number.

7) JAM
Displays log of jams that have occurred (up to five events). The newest event has the smallest history number.

Indicates the date and time of jam and error code. "0000" is displayed if there is no log.

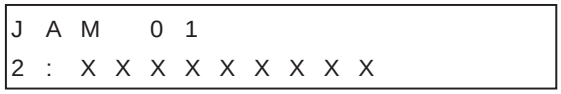
F-7-1

Press the ▼ key to display detail information.
Press the ◄ key or ► key to navigate among detail information display 1 to 4.
Detail information display 1



F-7-2

Detail information display 2

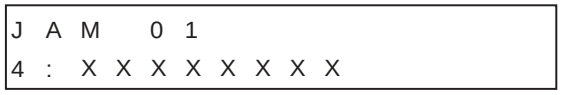


F-7-3

Detail information display 3

F-7-4

Detail information display 4



F-7-5

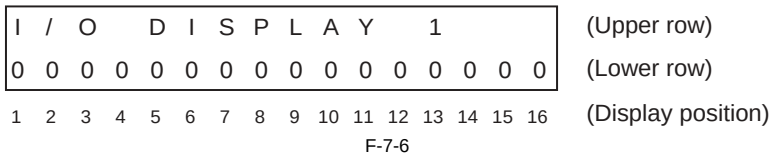
Display	Description	LCD display contents
1	Jam type	1:Carriage error, 2:Jam, 3:Feed failure (delay), 4:Cut failure, *:Unknown
2	Media	1:Roll media, 2:Cut sheet (manual feed from top), 3:Cut sheet (manual feed from front), 4:Cassette, *:Unknown
3	Jam timing	1:Feed, 2:Print, 3:Eject, *:Unknown
4	Media width detection	1:ON, 2:OFF, *:Unknown
5	Head height	0:SL (1.2mm), 1:L (1.4mm), 2:M1 (1.8mm), 3:M2 (2.0mm), 4:M3 (2.2mm), 5:H (2.6mm), *:Unknown
6	(Not Used)	-
7	Cut mode setting	1:User cut, 2:Eject cut, 3:Auto cut, *:Unknown
8	Environment	Display Media Information Tool's environment settings A to F according to Temperature/Humidity Detection Sensor 0: A, 1:B, 2:C, 3:D, 4:E, 5:F, *:Unknown
9	Borderless printing setting	1:Bordered printing, 2:Borderless printing, *:Unknown
10	(Not Used)	-
11	Print mode	Display print mode, *:Unknown
12	Media width	Display media width, *:Unknown
13	Media name	Display media name, *:Unknown

8) INK CHECK
Displays the number of times the remaining ink level detection function was turned off, to accommodate refilled ink cartridges in the order of PC, C, BK, MBK, Y, M, PM and GY.
0: Never
1: Executed at least once

b) I/O DISPLAY
The status of each sensor and switch is shown in the display.

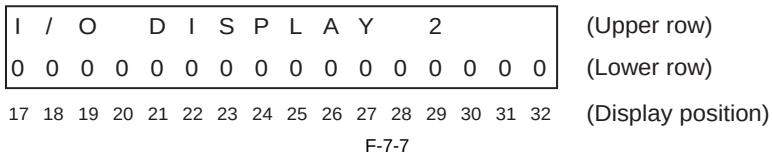
Sensor and switch status is shown in the display.
ON = 1
OFF or not used = 0

Screen 1



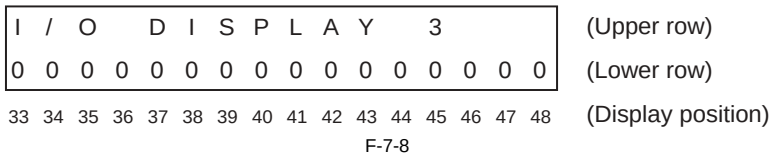
F-7-6

Screen 2



F-7-7

Screen 3



F-7-8

Screen 1, Screen 2 and Screen 3 are selectable with the ◄ and ► keys.
These screens display the associated sensor status as listed in the table below.

Display position	Sensor name	LCD display contents
1	Pump Cam Sensor	0: Sensor ON, 1: Sensor OFF
2	Valve open/closed detection sensor (R)	0: Sensor ON, 1: Sensor OFF
3	Agitation cam sensor (L)	0: Sensor ON, 1: Sensor OFF
4	Agitation cam sensor (R)	0: Sensor ON, 1: Sensor OFF
5	(Not Used)	-
6	Lift cam sensor	0: Sensor ON, 1: Sensor OFF
7	Feed roller HP sensor	0: Sensor ON, 1: Sensor OFF
8	Upper cover lock switch	0: Cover open, 1: Cover close
9	Carriage cover sensor	0: Cover open, 1: Cover close
10	Ink tank cover switch (R)	0: Cover open, 1: Cover close
11	Ink tank cover switch (L)	0: Cover open, 1: Cover close
12	(Not Used)	-
13	(Not Used)	-
14	(Not Used)	-
15	(Not Used)	-
16	(Not Used)	-
17	(Not Used)	-
18	(Not Used)	-
19	(Not Used)	-
20	(Not Used)	-
21	(Not Used)	-
22	Carriage HP sensor	0: Sensor ON, 1: Sensor OFF
23	Pressure release switch	0: Realeased, 1:Pressured
24	Media sensor	0: No media, 1: Media loaded
25	(Not Used)	-
26	(Not Used)	-
27	(Not Used)	-
28	Media take-up unit detection	0: Undetected, 1: Detected
29	Media take-up sensor input signal	0: LO, 1: HI
30	Valve open/closed detection sensor (L)	0: Sensor ON, 1: Sensor OFF
31	(Not Used)	-
32	(Not Used)	-
33	(Not Used)	-
34	(Not Used)	-
35	(Not Used)	-
36	(Not Used)	-
37	(Not Used)	-
38	(Not Used)	-
39	(Not Used)	-
40	(Not Used)	-
41	(Not Used)	-
42	(Not Used)	-
43	(Not Used)	-
44	(Not Used)	-
45	Flexible cable connection detection (J3501, J3502, J3601, J3602)	0: Connection, 1: Disconnection
46	(Not Used)	-
47	(Not Used)	-
48	(Not Used)	-

c) ADJUST
Performs adjustments and prints the adjustment and check patterns necessary for adjusting the printer parts.

1) PRINT PATTERN

Display	Description
NOZZLE 1	Prints the nozzle check pattern by single direction/ single pass without using the non-discharging back up. It is used to check for the non-discharging nozzles. - Media size: A4 - Media type: any
OPTICAL AXIS	Prints the pattern and adjusts the optical axis of the multi sensor. For details, refer to "Disassembly/Reassembly" > "Adjustment and Setup Items" > "Procedure after replacing the carriage unit or multi sensor". - Media type: photo glossy paper
LF TUNING	Carry out automatic correction of eccentricity of the feed roller. For more details, refer to "Disassembly/Reassembly" > "Adjustment and Setup Items" > "Procedure after replacing the feed roller and reed roller encoder". - The media type is "gloss photo paper".
LF TUNING 2	Carry out manual correction of eccentricity of the feed roller. For more details, refer to "Disassembly/Reassembly" > "Adjustment and Setup Items" > "Procedure after replacing the feed roller and reed roller encoder". - The media type is "gloss photo paper".

2) HEAD ADJ.
Set or initialize the registration adjustment values of each printheads.

Display			Description
MANUAL HEAD ADJ	EXTENSION		Prints the detail patterns for the manual head adjustment at CR SCAN SPEED 2 (25inch/sec [high printing mode]). After printing, the mode will change to [ADJ. SETTING]. Check the printed patterns and input the set values. Try adjustment in this mode if vertical lines are warped or colors are out of alignment when the printer driver option "High-Precision Printing" or "Priority on dot placement accuracy" is selected.
	DETAIL		Prints the detail patterns for the manual head adjustment at CR SCAN SPEED 3 and 4 (33.3, 40inch/sec). After printing, the mode will change to [ADJ. SETTING]. Check the printed patterns and input the set values. Try adjustment in this mode if "BASIC" does not improve printing.
	BASIC		Prints the basic patterns for the manual head adjustment at CR SCAN SPEED 1 to 4 (12.5 to 40inch/sec). After printing, the mode will change to [ADJ. SETTING]. Check the printed patterns and input the set values.
ADJ. SETTING	A to F	A-1 to F-2	This mode is to input the registration adjustment values. It is possible to return the values to the former one by printing the status print before changing the value.
	SAVE SETTINGS		Save the registration adjustment values that has been input.
RESET SETTINGS			Initialize the registration adjustment values (to 0).

3) NOZZLE CHECK POS.
This mode is for adjusting the optical axis of the head management sensor. For details, refer to "Disassembly/Reassembly" > "Adjustment and Setup Items" > "Procedure after replacing the head management sensor".

4) GAP CLIB.
This mode measures the gap between the printhead and media by using the multi sensor and corrects the calibration value.

5) CHANGE LF TYPE
Change the type of the feed roller.
0: Old feed roller
1: New feed roller

6) ROUGH
Prints the pattern for auto head adjustment and adjust it (rough adjustment).

7) AUTO REG
Prints the pattern for auto head adjustment and adjust it.

8) CR REG
Executes automatic head adjustment.
Make this adjustment if the resistration remains partially misregistered after user-mode head adjustment.
EXECUTE: Execute automatic head adjustment.
RESET: Reset the resistration adjustment value (0).

- Applicable media size is A2 (17inch) or larger.
- Applicable media type is photo glossy paper.

If an error message appears when performing CR REG, check the following.
Replace the multi sensor if the error reoccurs after checking and performing CR REG again.
<CHECK>
1. Check for non-discharging of the printhead and dirty media, and replace the printhead and/or media if necessary.
2. Perform [Head Cleaning A].
3. Perform [Head Posi. Adj.]-[Auto].

9) CR MOTOR COG
Adjust the carriage motor rotation.
Perform in the following cases:
- When removing/attaching or replacing the carriage or carriage belt.
- When replacing the carriage motor or linear encoder sensor.
- When there is excessive load on the carriage (such as when jamming)

If the following error message appears when performing CR MOTOR COG, check that carriage and carriage belt are installed properly and clean the rail shaft. If the error still occurs, replace the carriage motor.

F-7-9

10) MARGIN ADJ
This mode is to perform the fine adjustment of the leading and trailing edge margin.

Display	Description
TOP MARGIN ADJ	Set the fine adjustment value of leading edge margin. Range: -2.0 to 2.0mm (in 0.1mm increments)
BTM MARGIN ADJ	Set the fine adjustment value of trailing edge margin. Range: -2.0 to 2.0mm (in 0.1mm increments)
PRINT PATTERN	Print the pattern for checking the margin. After adjusting the margin, make sure of the margin by printing the pattern.

d) FUNCTION

1) CR UNLOCK
Unlocks the carriage.
When CR UNLOCK is performed, the carriage lock pin is lowered and the carriage can be moved.

2) CR LOCK
Locks the carriage.
When CR LOCK is performed, the carriage lock pin is raised and the carriage is locked.

3) PG CHECK
Initializes the purge unit.

4) CR AUTO SCAN
The carriage scans.
When CR AUTO SCAN is performed, the carriage scans with the count, width, and speed set with CR SCAN COUNT/CR SCAN SIZE/CR SCAN SPEED.

5) CR SCAN COUNT
Sets the number of scans (1 to 30) to be performed with CR AUTO SCAN.
Default:1

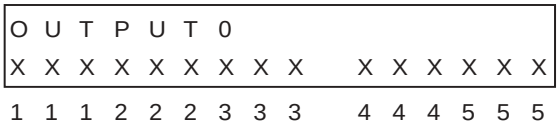
6) CR SCAN SIZE
Sets the scan width to be performed with CR AUTO SCAN.
1:A4, 2:17inch, 3:24inch, 4:36inch, 5:44inch
Default:5

7) CR SCAN SPEED
Sets the speed of the scan to be performed with CR AUTO SCAN.
1:12.5, 2:25.0, 3:33.3, 4:40.0 (Unit: inch/sec)
Default:1

MEMO:
The settings made with CR SCAN COUNT, CR SCAN SIZE, CR SCAN SPEED are reset to default when the power is reset.

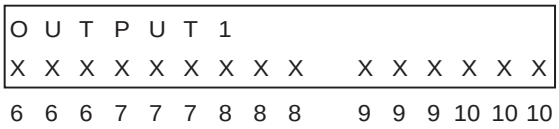
8) OPT SENS OUTPUT
Displays the values (analog value) multi sensor detected from the media.
You can confirm the amount of margin the media has with the values read with the multi sensor and the status of the multi sensor by comparing the values with the threshold.

Press the ◄ key or ► key to navigate among OUTPUT 0 to 6 windows.
OUTPUT 0



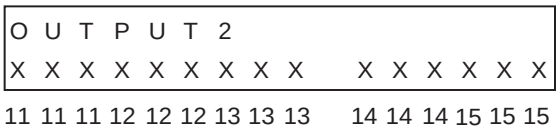
F-7-10

OUTPUT 1



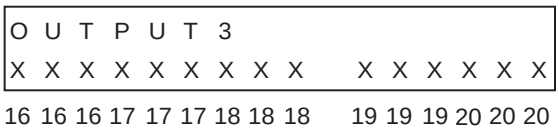
F-7-11

OUTPUT 2



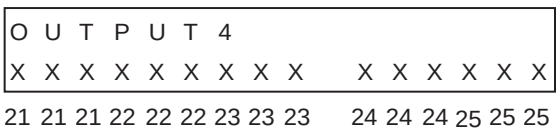
F-7-12

OUTPUT 3



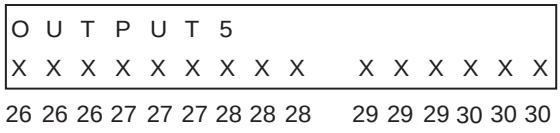
F-7-13

OUTPUT 4



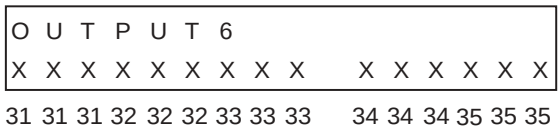
F-7-14

OUTPUT 5



F-7-15

OUTPUT 6



F-7-16

Display position	Description
1	Media edge (diffuse reflection) media output (including outside light)
2	Media edge (diffuse reflection) outside light output (when LED is OFF)
3	Media edge (diffuse reflection) platen output (excluding outside light)
4	Media edge (diffuse reflection) gain
5	Media edge (diffuse reflection) current value (Unit: X10mA)
6	Media edge (regular reflection) media output (including outside light)
7	Media edge (regular reflection) outside light output (when LED is OFF)
8	Media edge (regular reflection) platen output (excluding outside light)
9	Media edge (regular reflection) gain
10	Media edge (regular reflection) current value (Unit: X10mA)
11	GAP_Far media output (including outside light)
12	GAP_Far outside light output (when LED is OFF)
13	GAP_Far platen output (excluding outside light)
14	GAP_Far gain
15	GAP_Far current value (Unit: X10mA)
16	GAP_Near media output (including outside light)
17	GAP_Near outside light output (when LED is OFF)
18	GAP_Near platen output (excluding outside light)
19	GAP_Near gain
20	GAP_Near current value (Unit: X10mA)
21	Density (red) media output (including outside light)
22	Density (red) outside light output (when LED is OFF)
23	Density (red) platen output (excluding outside light)
24	Density (red) gain
25	Density (red) current value (Unit: X10mA)
26	Density (green) media output
27	Density (green) outside light output (including outside light)
28	Density (green) platen output (excluding outside light)
29	Density (green) gain
30	Density (green) current value (Unit: X10mA)
31	Density (blue) media output (including outside light)
32	Density (blue) outside light output (when LED is OFF)
33	Density (blue) platen output (excluding outside light)
34	Density (blue) gain
35	Density (blue) current value (Unit: X10mA)

MEMO:
- Displays all "?" if "GAP CALIB" is not performed.
- If the value exceeds 1000, 999 is displayed.

1. Checking "OUTPUT 0" and "OUTPUT 1" when media (excluding clear film) is fed
[Check 1]
Check whether the multi sensor performance has degraded or whether the media is compatible with the multi sensor.

When "Media edge (diffuse reflection) gain" and "Media edge (diffuse reflection) current value" are maximum values and "Media edge (diffuse reflection) media output" is 186 or less, an error occurs.
Maximum value of "Media edge (diffuse reflection)" gain: 255
Maximum value of "Media edge (diffuse reflection)" current value: 320

When the multi sensor and media are normal, the following values are displayed:

	Media edge (diffuse reflection) gain	**Media edge (diffuse reflection) current value**	**Media edge (diffuse reflection) media output**
Plain paper	About 10-35	About 200	About 500-600
Glossy paper	About 8-25		
Tracing paper	About 30-100		

[Check 2]
Check whether the multi sensor performance has degraded or whether the media is compatible with the multi sensor.

When the difference between "Media edge (diffuse reflection) gain" and "Media edge (diffuse reflection) platen output" is 100 or less, an error occurs.
When the multi sensor and media are normal, the difference is about 300-600.

[Check 3]
Check the effect of external diffuse light.

When the difference between "Media edge (diffuse reflection) external light output" and "Media edge (diffuse reflection) platen output" is 500 or more, the effect of diffuse light is judged as being great.
When the effect is normal, the difference is about 50-300.

[Check 4]
Check whether the media is compatible.

When the result of "Media edge (regular reflection) gain"x"Media edge (regular reflection) current value" is five times as large as the result of "Media edge (diffuse reflection) gain"x"Media edge (diffuse reflection) current value", the media is judged as being incompatible with the multi sensor.
If the media is compatible, the result is about 0.5 to 1.5 times for plain/glossy paper; about 1-3 times for tracing paper.

[Check 5]
Check whether the media is compatible.

When the result of "Media edge (diffuse reflection) gain"x"Media edge (diffuse reflection) current value" is in one of the following, the media may be incompatible with the multi sensor.
- Nine or more times as large as that of plain paper (normally, 2000-7000)
- Ten or more times as large as that of glossy paper (normally, 1600-5000)
- Three or more times as large as that of tracing paper (normally, 6000-20000)

2. Checking "OUTPUT 0" when clear film is fed

[Check 1]
Check whether the multi sensor performance has degraded or whether the media is compatible.

When the "Media edge (regular reflection) gain" and "Media edge (regular reflection) current value" are maximum values and "Media edge (regular reflection) media output" is 186 or less, an error occurs.
Maximum value of "media edge (regular reflection)" gain: 255
Maximum value of "media edge (regular reflection)" current value: 320

When the multi sensor and media are normal, the following values are displayed:

	Media edge (regular reflection) gain	**Media edge (regular reflection) current value**	**Media edge (regular reflection) media output**
Clear film	About 10-60	About 200	About 500-600

[Check 2]
Check whether the multi sensor performance has degraded or whether the media is compatible.

When the difference between "Media edge (regular reflection) gain" and "Media edge (regular reflection) platen output" is 100 or less, an error occurs.
When the multi sensor and media are normal, the difference is about 250-500.

[Check 3]
Check the effect of external diffuse light.

When the difference between "Media edge (regular reflection) external light output" and "Media edge (regular reflection) platen output" is 500 or more, the effect of diffuse light is judged as being great.
When the effect is normal, the difference is about 50-300.

3. Checking "OUTPUT 2/OUTPUT 3" and "OUTPUT 4/OUTPUT 5/OUTPUT 6"

[Check 1]
Check whether the multi sensor performance has degraded or whether the media is compatible.

When "GAP gain" and "GAP current value" are maximum values and "GAP media output" is 93 or less, an error occurs.
Maximum value of "GAP gain": 255
Maximum value of "GAP current value": 320

When the multi sensor and media are normal, "GAP gain" is about 30-250; "GAP current value" is about 200.

[Check 2]
Check whether the multi sensor performance has degraded or whether the media is compatible.

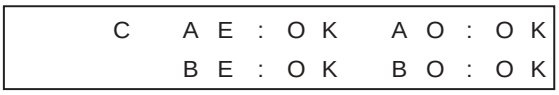
When "Density gain" and "Density current value" are maximum values and "Density media output" is 168 or less, an error occurs.
Maximum value of "Density gain": 255
Maximum value of "Density current value": 245

When the multi sensor performance and media are normal, "Density gain" is about 5-100; "Density current value" is about 200.

9) NOZZLE CHK
Checks for non-discharging nozzle with head management sensor.

10) NOZZLE INF
Displays the result of non-discharging nozzle check performed with "NOZZLE CHECK" by nozzle row of each ink color.

- Press the ◄ key or ► key to switch the ink color.
- AE:A-EVEN row, AO:A-ODD row, BE:B-EVEN row, BO:B-ODD row



F-7-17

11) MEMORY CHK

Display	Description
DDR	Checks the DDR-SDRAM mounted on the Main Controller PCB.
EEP	Checks the EEPROM.

12) HEAD CNT CHK
Confirms the contact status of the printhead.

e) REPLACE
1) L&R PRINTHEADS
Replaces printheads L and R.

f) COUNTER
Displays the life (operation frequency and time) of each unit, print counts for each media type, and else.
The count values can be printed from [PRINT INF].

1) PRINTER: Counters related to product life

Display	Description	Unit
LIFE TTL	Cumulative number of printed media (equivalent of A4)	sheets
LIFE ROLL	Cumulative number of printed roll media (equivalent of A4)	sheets
LIFE CUTSHEET	Cumulative number of printed cut sheets (equivalent to A4)	sheets
LIFE A-F	Cumulative number of printed media for environments A to F	sheets
POWER ON	Cumulative power-on time (excluding the sleep time)	Hours
W-INK	Remaining capacity of the maintenance cartridge	%
CUTTER	Number of cutting operations (count as 1 by moving back and forth)	Times
WIPE	Number of wiping operations	Times
SLEEP ON	Cumulative sleep-on time	Hours

2) CARRIAGE: Counters related to carriage unit

Display	Description	Unit
PRINT	Cumulative printing time	Hours
DRIVE	Cumulative carriage moving time	Hours
CR COUNT	Cumulative carriage scan count (count as 1 by moving back and forth)	Times
CR DIST.	Cumulative carriage scan distance (count as 1 by moving 210mm)	Times
PRINT COUNT	Cumulative print end count (count as 1 by capping)	Times

3) PURGE: Counters related to purge unit

Display	Description	Unit
CLN-A-1	Cumulative number of automatic cleaning 1 (normal suction) operations	Times
CLN-A-2	Cumulative number of automatic cleaning 2 (ink level adjusting) operations	Times
CLN-A-3	Cumulative number of automatic cleaning 3 (initial filling) operations	Times
CLN-A-6	Cumulative number of automatic cleaning 6 (strong normal suction) operations	Times
CLN-A-7	Cumulative number of automatic cleaning 7 (aging) operations	
CLN-A-10	Cumulative number of automatic cleaning 10 (ink filling after secondary transportation) operations	Times
CLN-A-11	Cumulative number of automatic cleaning 11 (ink filling after head replacement) operations	Times
CLN-A-15	Cumulative number of automatic cleaning 15 (dot count small suction) operations	Times
CLN-A-16	Cumulative number of automatic cleaning 16 (sedimented ink agitation) operations	Times
CLN-A-17	Cumulative number of automatic cleaning 17 (small suction) operations	Times
CLN-A-TTL	Total number of automatic cleaning operations	Times
CLN-M-1	Cumulative number of manual cleaning 1 (normal suction) operations	Times
CLN-M-4	Cumulative number of manual cleaning 4 (ink draining from head after head replacement) operations	Times
CLN-M-5	Cumulative number of manual cleaning 5 (ink draining from head and tube before transportation) operations	Times
CLN-M-6	Cumulative number of manual cleaning 6 (normal strong suction) operations	Times
CLN-M-TTL	Total number of manual cleaning operations	Times

4) CLEAR: Counters related to counter initialization

Display	Description	Unit	Remarks
CLR-INK CONSUME	Cumulative count of ink section consumption amount clearing	Times	
CLR-MTC EXC.	Cumulative count of maintenance cartridge replacement count clearing	Times	
CLR-HEAD L EXC.	Cumulative count of printhead L replacement count clearing	Times	
CLR-HEAD R EXC.	Cumulative count of printhead R replacement count clearing	Times	
CLR Wia-1 EXC.	Cumulative count of unit Wia-1 (waste ink box unit) replacement count clearing	Times	
CLR Wia-3 EXC.	Cumulative count of unit Wia-3 (platen ink box unit) replacement count clearing	Times	
CLR Wia-4 EXC.	Cumulative count of unit Wia-4 (platen ink box unit) replacement count clearing	Times	
CLR Wia-5 EXC.	Cumulative count of unit Wia-5 (platen ink box unit) replacement count clearing	Times	
CLR Wia-6 EXC.	Cumulative count of unit Wia-6 (suction fan unit) replacement count clearing	Times	
CLR CR-1 EXC.	Cumulative count of unit CR-1 (carriage unit bushing) replacement count clearing	Times	
CLR CR-2 EXC.	Cumulative count of unit CR-2 (linear encoder sensor/linear scale/shaft cleaner) replacement count clearing	Times	
CLR CR-3 EXC.	Cumulative count of unit CR-3 (carriage height changing cam) replacement count clearing	Times	
CLR CR-4 EXC.	Cumulative count of unit CR-4 (ink tube unit/flexible cable unit) replacement count clearing	Times	
CLR CR-5 EXC.	Cumulative count of unit CR-5 (multi sensor) replacement count clearing	Times	
CLR PG-1 EXC.	Cumulative count of unit PG-1 (purge unit) replacement count clearing	Times	
CLR HMa-1 EXC.	Cumulative count of unit HMa-1 (head management sensor) replacement count clearing	Times	
CLR MT-1 EXC.	Cumulative count of unit MT-1 (carriage motor) replacement count clearing	Times	
CLR PL-1 EXC.	Cumulative count of unit PL-1 (feed motor) replacement count clearing	Times	
CLR Mi-1 EXC.	Cumulative count of unit Mi-1 (mist fan) replacement count clearing	Times	
CLR MS-1 EXC.	Cumulative count of unit MS-1 (multi sensor) replacement count clearing	Times	Calibration error index, This counter synchronizes with CLR CR-5 EXC.
CLR-FACTORY CNT.	For factory	Times	

5) EXCHANGE: Counters related to parts replacement

Display	Description	Unit
MTC EXC.	Maintenance cartridge replacement count	Times
HEAD L EXC.	Printhead L replacement count	Times
HEAD R EXC.	Printhead R replacement count	Times
BOARD EXC.(M/B)	Main controller PCB replacement count	Times
Wia-1 EXC.	Wia-1 (waste ink box unit) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS Wia-1])	Times
Wia-3 EXC.	Wia-3 (platen ink box unit) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS Wia-3])	Times
Wia-4 EXC.	Wia-4 (platen ink box unit) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS Wia-4])	Times
Wia-5 EXC.	Wia-5 (platen ink box unit) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS Wia-5])	Times
Wia-6 EXC.	Wia-6 (suction fan unit) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS Wia-6])	Times
CR-1 EXC.	CR-1 (carriage unit bushing) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS CR-1])	Times
CR-2 EXC.	CR-2 (linear encoder sensor/linear scale/shaft cleaner) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS CR-2])	Times
CR-3 EXC.	CR-3 (carriage height changing cam) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS CR-3])	Times
CR-4 EXC.	CR-4 (ink tube unit/flexible cable unit) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS CR-4])	Times
CR-5 EXC.	CR-5 (multi sensor) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS CR-5])	Times
PG-1 EXC.	PG-1 (purge unit) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS PG-1])	Times
HMa-1 EXC.	HMa-1 (head management sensor) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS HMa-1])	Times
MT-1 EXC.	MT-1 (carriage motor) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS MT-1])	Times
PL-1 EXC.	PL-1 (feed motor) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS PL-1])	Times
Mi-1 EXC.	Mi-1 (mist fan) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS Mi-1])	Times
MS-1 EXC.	MS-1 (multi sensor) replacement count (Count of executing [INITIALIZE] > [PARTS COUNTER] > [PARTS MS-1])	Times

6) DETAIL-CNT: Other counters

Display	Description	Unit
MOVE PRINTER	Number of times "Prep.MovePrinter" on Main menu is executed.	Times
N-INKCHK(XX)	XX: Ink color Count of turning off the ink remaining level detection for each color	Times
MEDIACONFIG-CNT	Count of media registered by media editor	Times

7) INK-USE1: Counters related to ink consumption

Display	Description	Unit
INK-USE1(XX)	XX: Ink color Cumulative consumption amount of generic ink	ml
INK-USE1(TTL)	Total amount of cumulative consumption of generic ink	ml
LINK-USE1(XX)	XX: Ink color Cumulative consumption amount of generic large ink	ml
LINK-USE1(TTL)	Total amount of cumulative consumption of generic large ink	ml
SINK-USE1(XX)	XX: Ink color Cumulative consumption amount of generic small ink	ml
SINK-USE1(TTL)	Total amount of cumulative consumption of generic small ink	ml
N-INK-USE1(XX)	XX: Ink color Cumulative consumption amount of refilled ink	ml
N-INK-USE1(TTL)	Total amount of cumulative consumption of refilled ink	ml

8) INK-USE2: Counters related to ink consumption

Display	Description	Unit
INK-USE2(XX)	XX: Ink color Consumption amount of generic ink of the currently installed ink tank.	ml
INK-USE2(TTL)	Total consumption amount of generic ink of the currently installed ink tanks	ml
N-INK-USE2(XX)	XX: Ink color Consumption amount of refilled ink of the currently installed ink tank	ml
N-INK-USE2(TTL)	Total consumption amount of refilled ink of the currently installed ink tanks	ml

9) INK-EXC: Counters related to ink tank replacement

Display	Description	Unit
INK-EXC(XX)	XX: Ink color Cumulative count of generic ink tank replacement	ml
INK-EXC(TTL)	Total amount of cumulative count of generic ink tank replacement	ml
N-INK-EXC(XX)	XX: Ink color Cumulative count of refilled ink tank replacement	ml
N-INK-EXC(TTL)	Total amount of cumulative count of refilled ink tank replacement	ml

10) MEDIA x (x: 1 to 7): Counters related to media
One to seven media types are displayed individually in order with large cumulative print area.

Display	Description	Unit
NAME	Media type	-
TTL	Total amount of cumulative print area of roll media and cut sheet (metric)	Sq.m
TTL	Total amount of cumulative print area of roll media and cut sheet (inch)	Sq.f
ROLL	Cumulative print area of roll media (metric)	Sq.m
ROLL	Cumulative print area of roll media (inch)	Sq.f
CUT SHEET	Cumulative print area of cut sheet (metric)	Sq.m
CUT SHEET	Cumulative print area of cut sheet (inch)	Sq.f

11) MEDIA OTHER: Counters related to media
Displays the total amount of cumulative print area of the other media type than the above-mentioned.

Display	Description	Unit
NAME	Media type	-
TTL	Total amount of cumulative print area of roll media and cut sheet (metric)	Sq.m
TTL	Total amount of cumulative print area of roll media and cut sheet (inch)	Sq.f
ROLL	Cumulative print area of roll media (metric)	Sq.m
ROLL	Cumulative print area of roll media (inch)	Sq.f
CUT SHEET	Cumulative print area of cut sheet (metric)	Sq.m
CUT SHEET	Cumulative print area of cut sheet (inch)	Sq.f

12) MEDIASIZE1 ROLL: Counters related to roll media printing

Display	Description	Unit
P-SQ 44-60	Cumulative print area of paper equal to or larger than 44 inches but less than 60 inches (physical size)	m2/Sq.f
P-SQ 36-44	Cumulative print area of paper equal to or larger than 36 inches but less than 44 inches (physical size)	m2/Sq.f
P-SQ 24-36	Cumulative print area of paper equal to or larger than 24 inches but less than 36 inches (physical size)	m2/Sq.f
P-SQ 17-24	Cumulative print area of paper equal to or larger than 17 inches but less than 24 inches (physical size)	m2/Sq.f
P-SQ -17	Cumulative print area of paper less than 17 inches (physical size)	m2/Sq.f
P-CNT 44-60	Cumulative number of sheets of A4-equivalent paper equal to or larger than 44 inches but less than 60 inches (physical size)	sheets
P-CNT 36-44	Cumulative number of sheets of A4-equivalent paper equal to or larger than 36 inches but less than 44 inches (physical size)	sheets
P-CNT 24-36	Cumulative number of sheets of A4-equivalent paper equal to or larger than 24 inches but less than 36 inches (physical size)	sheets
P-CNT 17-24	Cumulative number of sheets of A4-equivalent paper equal to or larger than 17 inches but less than 24 inches (physical size)	sheets
P-CNT -17	Cumulative number of sheets of A4-equivalent paper less than 17 inches (physical size)	sheets

13) MEDIASIZE2 ROLL: Counters related to roll media printing

Display	Description	Unit
D-SQ 44-60	Cumulative print area of paper equal to or larger than 44 inches but less than 60 inches (data size)	m2/Sq.f
D-SQ 36-44	Cumulative print area of paper equal to or larger than 36 inches but less than 44 inches (data size)	m2/Sq.f
D-SQ 24-36	Cumulative print area of paper equal to or larger than 24 inches but less than 36 inches (data size)	m2/Sq.f
D-SQ 17-24	Cumulative print area of paper equal to or larger than 17 inches but less than 24 inches (data size)	m2/Sq.f
D-SQ -17	Cumulative print area of paper less than 17 inches (data size)	m2/Sq.f
D-CNT 44-60	Cumulative number of sheets of A4-equivalent paper equal to or larger than 44 inches but less than 60 inches (data size)	sheets
D-CNT 36-44	Cumulative number of sheets of A4-equivalent paper equal to or larger than 36 inches but less than 44 inches (data size)	sheets
D-CNT 24-36	Cumulative number of sheets of A4-equivalent paper equal to or larger than 24 inches but less than 36 inches (data size)	sheets
D-CNT 17-24	Cumulative number of sheets of A4-equivalent paper equal to or larger than 17 inches but less than 24 inches (data size)	sheets
D-CNT -17	Cumulative number of sheets of A4-equivalent paper less than 17 inches (data size)	sheets

14) MEDIASIZE1 CUT: Counters related to cut sheet printing

Display	Description	Unit
P-SQ 44-60	Cumulative print area of paper equal to or larger than 44 inches but less than 60 inches (physical size)	m2/Sq.f
P-SQ 36-44	Cumulative print area of paper equal to or larger than 36 inches but less than 44 inches (physical size)	m2/Sq.f
P-SQ 24-36	Cumulative print area of paper equal to or larger than 24 inches but less than 36 inches (physical size)	m2/Sq.f
P-SQ 17-24	Cumulative print area of paper equal to or larger than 17 inches but less than 24 inches (physical size)	m2/Sq.f
P-SQ -17	Cumulative print area of paper less than 17 inches (physical size)	m2/Sq.f
P-CNT 44-60	Cumulative number of sheets of A4-equivalent paper equal to or larger than 44 inches but less than 60 inches (physical size)	sheets
P-CNT 36-44	Cumulative number of sheets of A4-equivalent paper equal to or larger than 36 inches but less than 44 inches (physical size)	sheets
P-CNT 24-36	Cumulative number of sheets of A4-equivalent paper equal to or larger than 24 inches but less than 36 inches (physical size)	sheets
P-CNT 17-24	Cumulative number of sheets of A4-equivalent paper equal to or larger than 17 inches but less than 24 inches (physical size)	sheets
P-CNT -17	Cumulative number of sheets of A4-equivalent paper less than 17 inches (physical size)	sheets

15) MEDIASIZE2 CUT: Counters related to cut sheet printing

Display	Description	Unit
D-SQ 44-60	Cumulative print area of paper equal to or larger than 44 inches but less than 60 inches (data size)	m2/Sq.f
D-SQ 36-44	Cumulative print area of paper equal to or larger than 36 inches but less than 44 inches (data size)	m2/Sq.f
D-SQ 24-36	Cumulative print area of paper equal to or larger than 24 inches but less than 36 inches (data size)	m2/Sq.f
D-SQ 17-24	Cumulative print area of paper equal to or larger than 17 inches but less than 24 inches (data size)	m2/Sq.f
D-SQ -17	Cumulative print area of paper less than 17 inches (data size)	m2/Sq.f
D-CNT 44-60	Cumulative number of sheets of A4-equivalent paper equal to or larger than 44 inches but less than 60 inches (data size)	sheets
D-CNT 36-44	Cumulative number of sheets of A4-equivalent paper equal to or larger than 36 inches but less than 44 inches (data size)	sheets
D-CNT 24-36	Cumulative number of sheets of A4-equivalent paper equal to or larger than 24 inches but less than 36 inches (data size)	sheets
D-CNT 17-24	Cumulative number of sheets of A4-equivalent paper equal to or larger than 17 inches but less than 24 inches (data size)	sheets
D-CNT -17	Cumulative number of sheets of A4-equivalent paper less than 17 inches (data size)	sheets

16) HEAD DOT CNT.1: Counter related to dot count

Display	Description	Unit
XX	XX: Ink color Dot counts of each colors of the currently installed printhead	(x 1,000,000) dots
TTL	Total dot counts of each colors of the currently installed printhead	(x 1,000,000) dots

17) HEAD DOT CNT.2: Counter related to dot count

Display	Description	Unit
XX	XX: Ink color Cumulative dot counts of each colors	(x 1,000,000) dots
TTL	Total cumulative dot counts of each colors	(x 1,000,000) dots

18) PARTS CNT. : Counter related to consumable parts

F-7-18

The displays are selectable with the ◄ and ► keys.
Counter of the consumable part (current)

F-7-19

Life of the consumable part

F-7-20

Use rate until part replacement

F-7-21

Counter of the consumable part (accumulate)

F-7-22

Display		Description	Unit
COUNTER xx-x		xx-x: Unit number of consumable parts (For detail, refer to "Maintenance and Inspection" > "Consumable Parts") Display the status (aa) and the days passed since the counter (bbbb) resetting. - Status OK: Use rate (until part replacement) of all consumable parts included in each unit are below 90%. W1: Use rate (until part replacement) of either of the consumable parts included in each unit has reached 90% or more. W2: Use rate (until part replacement) of either of the consumable parts included in each unit has reached 100%, but no need to stop the printer. E : Use rate (until part replacement) of either of the consumable parts included in each unit has reached 100%, and the printer needs to be stopped.	Days
	1:	Unit number of consumable parts Counter of the consumable part (current)	
	2:	Life of the consumable part	
	3:	Use rate until part replacement	%
	4:	Counter of the consumable part (accumulate)	

g) SETTING
Make various settings.

1) Pth
Turn on or off the head pulse rank control function.
Default: OFF

2) RTC
Set RTC (real time clock) after replacing the lithium battery on the main controller PCB.

Display		Description
DATE	yyyy/mm/dd	Set date
TIME	hh:mm	Set time

3) PV AUTO JUDGE
Sets ink saver mode.
Default: OFF

4) NETWORK
See "e-maintenance/imageWARE Remote" for detail.

5) E-RDS
See "e-maintenance/imageWARE Remote" for detail.

6) HEAD DOT INF
Select whether to display the message as the result of non-discharging nozzle detection or not.
Default: ON

Number of non-discharging nozzle (nozzle/2,560-nozzles)	ON	OFF
0-99	Displays a message to check the printing.	-
100-319	Displays a message to check the head.	-
320 or more	Displays a message to replace the head.	

h) INITIALIZE
Clear the [DISPLAY] histories, [ADJUST] settings, [COUNTER] values, and other parameters.

Display		Description
WARNING		Initialize the history of WARNING. (All displayed contents of [DISPLAY] > [WARNING] will be initialized.)
ERROR		Initialize the history of ERROR. (All displayed contents of [DISPLAY] > [ERROR] will be initialized.)
JAM		Initialize the history of JAM. (All displayed contents of [DISPLAY] > [JAM] will be initialized.)
ADJUST		Initialize the value of band adjustment (by user) and head adjustment. The automatically adjusted value will not be initialized.
W-INK		Initialize the remaining capacity (%) of the maitenance cartridge. (Clear [COUNTER] > [PRINTER] > [W-INK])
CARRIAGE		Initialize the counter related to carriage unit. (Clear [COUNTER] > [CARRIAGE])
PURGE		Initialize the counter related to purge unit. (Clear [COUNTER] > [PURGE])
INK-USE CNT		Initialize the consumption amount of ink. (Clear [COUNTER] > [INK-USE2], and count up [COUNTER] > [CLEAR] > [CLR-INK CONSUME])
W-INK-CHG CNT		Initialize the maintenance cartridge replacement frequency. (Clear [COUNTER] > [EXCHANGE] > [MTC EXC.], and count up [COUNTER] > [CLEAR] > [CLR-MTC EXC.])
HEAD-CHG L CNT		Initialize the printhead L replacement frequency. (Clear [COUNTER] > [EXCHANGE] > [HEAD L EXC.], and count up [COUNTER] > [CLEAR] > [CLR-HEAD L EXC.])
HEAD-CHG R CNT		Initialize the printhead R replacement frequency. (Clear [COUNTER] > [EXCHANGE] > [HEAD R EXC.], and count up [COUNTER] > [CLEAR] > [CLR-HEAD R EXC.])
HDD BOX PASS.	ALL FOLDERS	Initialize the BOX password of all folders of the hard disk drive to factory default.
	FOLDER xx	Initialize the BOX password of FOLDER xx of the hard disk drive to factory default.
PARTS-CHG CNT	PARTS xx-x	xx-x: Unit number of consumable parts (For details, refer to "Maintenance and Inspection" > "Consumable Parts") Initialize the consumable part replacement frequency. (Clear [COUNTER] > [EXCHANGE] > [xx-x EXC], and count up [COUNTER] > [CLEAR] > [CLR xx-x EXC.])
PARTS COUNTER	PARTS xx-x	xx-x: Unit number of consumable parts (For details, refer to "Maintenance and Inspection" > "Consumable Parts") Initialize the counter amount of the consumable parts. (Clear [COUNTER] > [PARTS CNT.] > [COUNTER xx-x]) * After replacing the consumable part, be sure to execute this menu.
USER SETTING		Initializes the user menu. Same as executing the following mode in the user menu. -[Set./Adj. Menu]-[System Setup]-[Reset PaprSetngs] -[Set./Adj. Menu]-[Interface Setup]-[Return Defaults]
CA-KEY		See "e-maintenance/imageWARE Remote" for detail.
ERDS-DAT		See "e-maintenance/imageWARE Remote" for detail.
JOB LOG		Initialize the history of JOB LOG.

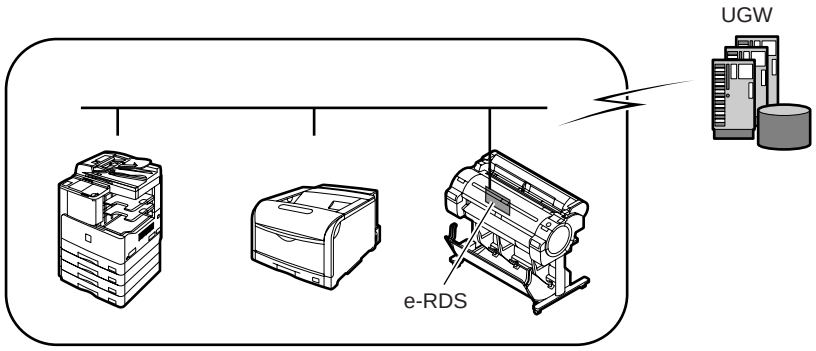
7.1.4 e-Maintenance/imageWARE Remote

1. Overview
The e-Maintenance/imageWARE Remote system allows a customer's device information and status to be monitored via the Internet on a server called the UGW (Universal Gateway) Server.

The following device information/ statuses can be monitored.
- Service mode counters
- Parts counters
- Mode counters
- Firmware information
- Service call errors log
- Jam log
- Alarm log
- Alert change statuses (Toner/ ink low/ out, etc.)

Device monitor information above is sent by the e-RDS (embedded Remote Diagnostic System), which is embedded in the devices.

Further, as the above is all customer information, https SOAP protocol is used for communication between the UGW and the device, providing enhanced security (SSL client communication)



F-7-23

2. Feature and benefits
Device (e-RDS) embedded with network module can realize a front-end processing of the e-Maintenance/imageWARE Remote system without attaching an extra hardware equipment.
The e-Maintenance/imageWARE Remote system can be implemented without imposing a burden on the users.

3. Settings procedures
3.1 Advance preparations
To monitor the device with e-Maintenance/imageWARE Remote, the following settings are required.

1) Advance confirmation
Check with the UGW administrator whether the printer to be connected to the e-Maintenance/imageWARE remotely has been registered in the UGW.

2) Advance preparations
Interview the user's system administrator in advance to find out the following information about the network.

Information item -1
IP address setting methods
Check whether automatic setting or manual setting is to be used, and confirm the information below.
- Automatic setting: (DHCP, RARP, BOOTP) (ON/OFF selection)
or
- Manual setting: IP address, subnet mask and gateway address to be set

Information item -2
Is there a DNS server in use?
If there is a DNS server in use, find out the following.
- Primary DNS server address
- Secondary DNS server address (optional)

Information item -3
Is there a proxy server?
If there is a proxy server in use, find out the following.
- Proxy server address
- Port number connected to proxy server

Information item -4
Is proxy server authentication required?
If proxy server authentication is required, find out the following.
- User name and password required for proxy authentication

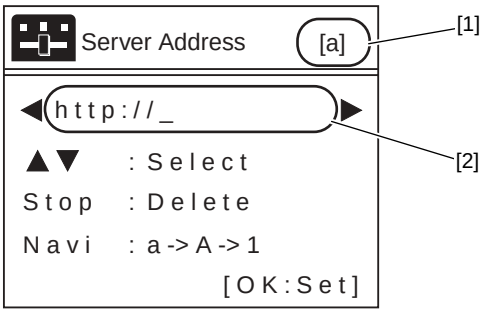
3) Network settings
Make the network settings based on the information obtained in "2) Advance preparations."
Network settings are made in user mode. Therefore, it is assumed that the user has already set it. However, there are a few cautions as described below, and if necessary, there may be cases in which the service technicians do it after obtaining an approval from user.

Caution point -1
Proxy server settings
Proxy server settings cannot be made in "Remote UI". Enter from the operation panel menu. In addition, the operation panel menu items for proxy server only appear when e-RDS functions are enabled. Therefore, when you make proxy server settings, turn the "E-RDS SWITCH" setting to "ON" as described in later sections beforehand.

Caution point -2
Validate the settings (restart the printer)

The server address settings are activated only after you restart the printer. Make sure you always restart the printer after changing server address settings.

(1) How to enter Proxy server address

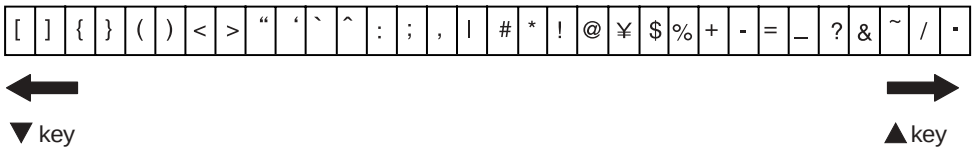


F-7-24

[1] Display to show enter mode
a: Small alphabet letter
A: Capital alphabet letter
1: Numerical character
[2] URL entry field (128 one-byte characters)

- Following symbols exist in each enter mode. (When you press the ▲ key, characters on the right hand side will appear.)
[a] Small alphabet letter mode: [Symbol] abcdefghijklmnopqrstuvwxyz
[A] Capital alphabet letter mode: [Symbol] ABCDEFGHIJKLMNOPQRSTUVWXYZ
[1] Numerical character mode: [Symbol] 1234567890

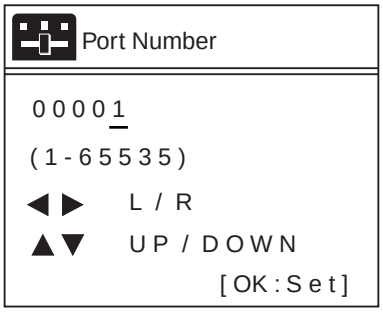
- [Symbol] appears in the following order.



F-7-25

- Within the URL entry field, you can use the ▲ or ▼ key to select a character, and the ◄ or ► key to move the cursor.
- The Stop key has the Delete function when there is a character at the cursor position. (The character at the position of the cursor is deleted, moving all following characters one position toward freed place.)
If there is no character at the cursor position, it has the Backspace function. (The character at the left of the cursor is deleted, moving the cursor.)
- When you move the cursor to a position of a character and press the ▲ or ▼ key, you can insert characters.
(The character at the cursor position is moved to the right, and a new character is inserted.
- You can select the enter mode with the Navi key. (The default setting is small alphabet letter.)

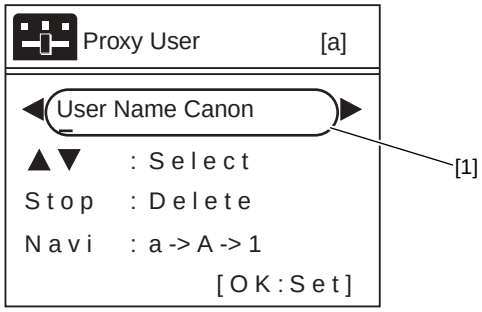
(2) How to enter port number



F-7-26

- Possible to set between 1 and 65535 (The default display is 1).
- The top digit can be selected between 0 and 6. Other digits can be selected between 0 and 9.
- When OK key is pressed, and the value is over 65535, it is fixed on 65535.
- When OK key is pressed, and the value is 0, it is fixed on 1.

(3) How to enter user name

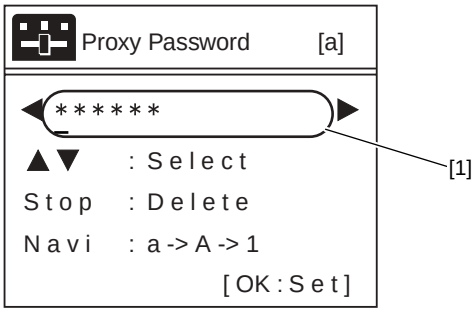


F-7-27

[1] Entry filed (24 one-byte characters)

- It is the same as the entering method of proxy server address.

(4) How to enter password



F-7-28

[1] Entry filed (24 one-byte characters)

- If a password has already been set, when you press the ▲ or ▼ key at any cursor position, all the "*" will disappear and the first letter will be entered as the first character.
- Entered characters are visible until you press OK key. Once entering into the menu again, they will be changed to "*".
- Other information is the same as the entering method of proxy server address.

3.2 e-RDS settings

1) Enter the service mode.
- Turn off the printer power.
- Turn on the power while pressing the [Load] key and [Navigate] key.
  * Keep pressing the above keys until "Initializing" is displayed.
- "S" appears at the top right of the display.
- Press the ◄ or ► key to choose the [Set./Adj. Menu]and press the [OK] key.
  * "SERVICE MODE" appears in the menu list and the MESSAGE LED flashes.
- Press the ▲ key or ▼ key to choose "SERVICE MODE" and press the [OK] key.

2) Set the following e-RDS setting items No.1-4.
(If the result of the communication test (COM-TEST) is "NG", execute setting items No.5-6 to solve the problem.)

No.	Item	Type	Description
1	E-RDS SWITCH	2 bytes	OFF : Disable/ ON : Enable e-Maintenance/ imageWARE Remote system to send device information, meter data, and error statuses to the UGW. Default value is OFF (not in use)
2	UGW-ADDRESS	129 bytes (NULL included, SJIS not allowed)	The UGW address by default : https://a01---. The complete address is not provided in this document for security reason.
3	UGW-PORT	4 bytes	The UGW Port Number by default : 443 Validation : 1-65535
4	COM-TEST		To perform Communication test with UGW and set "OK!"/ "NG!" as the result.
5	COM-LOG		Detailed communication data log Switches to display time when error occurred, error code, and error data up to now. Max 30 loggings retained. Max 128 characters (not containing NULL) for Error information.
6	ERDS-DAT		Initialize e-RDS setting data

3.3 Service Mode Menu Tree

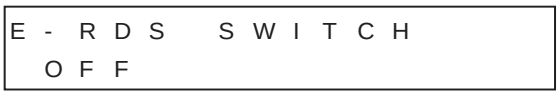
First Level	Second Level	Third Level	Fourth Level	Fifth Level	Sixth Level
DISPLAY					
I/O DISPLAY					
ADJUST					
FUNCTION					
REPLACE					
COUNTER					
SETTEING	Pth				
	RTC				
	PV AUTO JUDGE				
	NETWORK	CERTIFICATE	CA-CERTIFICATE	VALIDITY:*1	yyyy/mm/dd
	E-RDS	E-RDS SWITCH:*1	ON/OFF		
		UGW-ADDRESS:*1	http://XXX		
		UGW-PORT:*1	XXXXX		
		COM-TEST:*1	YES		
		COM-LOG:*1			
	HEAD DOT INF				
INITIALIZE	WARNING				
	ERROR				
	JAM				
	ADJUST				
	W-INK				
	CARRIAGE				
	PURGE				
	INK-USE CNT				
	W-INK-CHG CNT				
	HEAD-CHG CNT				
	HDD BOX PASS				
	PARTS-CHG CNT				
	PARTS COUNTER				
	USER SETTEING				
	CA-KEY:*1	YES/NO			
	ERDS-DAT:*1	YES/NO			
	JOB LOG	YES/NO			

* Press ► key to move to the next menu of the same layer, and press ▼ key to move to the menu of one layer deeper.
* The menus shown in '*1' are the e-RDS-related menus.

3.4 e-RDS Related Setting Details
1) e-RDS's Operation Mode [E-RDS SWITCH]

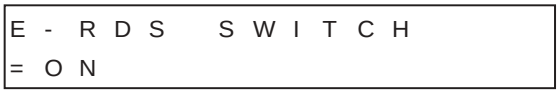
In service mode, referring to the "Service Mode Menu Tree", go to [E-RDS SWITCH] menu using ► key and ▼ key.

(1) Choose between [ON] or [OFF] using the ◄ and ► keys.



F-7-29

(2) Press [OK] key to determine the operation mode and go back to the previous screen.



F-7-30

- When the operation mode is determined, "=" will be displayed.
- OFF: When it is set to [OFF], e-RDS is not used. Default value is OFF.
- ON: When it is set to [ON], e-RDS is used.

2) UGW Address [UGW-ADDRESS] and UGW port [UGW-PORT]

Usually, the default values set in advance are used for the setting value of [UGW-ADDRESS] and [UGW-PORT]. Unless there is a special instruction, the default value should not be changed. If it should be changed, the communication with UGW may have an error. If [UGW-ADDRESS] and [UGW-PORT] are changed, the new setting will be enabled after power OFF/ON.
Therefore, usually, the setup is not necessary.
* If you change under a special instruction, perform the following procedure.

(1) Setting address for UGW

- In service mode, referring to the "Service Mode Menu Tree", go to [UGW-ADDRESS] menu using ▶ key and ▼ key.

F-7-31

- Press ▼ key to enter the Setup Mode. (A character indicating the input mode (in the upper right corner of the screen) and the cursor are displayed.)
  Enter UGW address (URL).

F-7-32

Display to indicate an input mode
A: Alphabet capital letter
a: Alphabet small letter
1: Numerical character
- The cursor is shown at the first letter.
- Use ▲ and ▼ keys to select characters to enter.
- Press [Back] key to cancel what you entered and go back to the previous screen.
- Press [OK] key to determine what you entered and go back to the previous screen.

(2) Setting up the GW Port Number

- In service mode, referring to the "Service Mode Menu Tree", go to [UGW-PORT] menu using ▶ key and ▼ key.

F-7-33

- Press ▼ key to enter the Setup Mode. (A cursor is displayed.)
  Enter a port number.

F-7-34

- Use ▲ and ▼ keys to select characters to enter.
- Press [Back] key to cancel what you entered and go back to the previous screen.
- Press [OK] key to determine what you entered and go back to the previous screen.

* The actual setting value of UGW address [UGW-ADDRESS] and UGW port [UGW-PORT] are categorized as confidential information, so they are not described in this manual.

3) Communication Test [COM-TEST]

(1) In service mode, referring to the "Service Mode Menu Tree", go to [COM-TEST] menu using ▶ key and ▼ key.

F-7-35

(2) Press [OK] key to start the test. ("=" is displayed at the start of the test.)

F-7-36

(3) During the communication test, "CHECK NOW" is displayed.

F-7-37

- Once the communication test is started, it cannot be cancelled.(Other operation won't be accepted until the result is obtained.)

(4) If the communication test was successful, "CHECK RSLT:OK" is displayed.

F-7-38

- Press ▲ key to exit this operation mode and go back to the top of [COM-TEST] menu.

(5) If the communication test was failed, "CHECK RSLT:NG" is displayed.

F-7-39

- Press ▲ key to exit this operation mode and go back to the top of [COM-TEST] menu.
- If you cannot obtain the result after 30 seconds from the start of a communication test, the test is considered failed and the same screen will appear.

* When the communication test was successful, it is necessary to take the interval of 5 minutes before performing the next communication test.

4) Communication Log [COM-LOG]

Communication Error Information/Detailed Communication Error Information can be displayed on the screen at the time of a communication error with the Service Center (including proxy server error). When a communication error occurs, you can refer to this information to study how to deal with the problem.

* For the countermeasure corresponding to each Communication Error Information or Detailed Communication Error Information, see the list of error message in "4. Troubleshoot".

(1) In service mode, referring to the "Service Mode Menu Tree", go to [COM-LOG] menu using ► key and ▼ key.

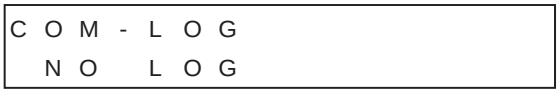
F-7-40

(2) Press ▼ key, and communication error information is displayed. On the upper line of the LCD, a log number (01-30) and an error code are shown; on the bottom line, an occurrence date and time of the error is shown.

F-7-41

- COM-LOG information can be saved up to 30 cases.
- Use Right and Left keys to change logs to display.
- Logs are displayed in the sequence of the time of occurrence. (Log number 1 is the latest log.)
- Press ▲ key to exit this operation mode and go back to the top of [COM-LOG] menu.

* If the Communication Error Information is not saved, the screen below will appear.

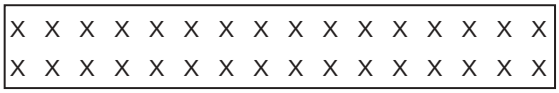


F-7-42

- Press ▲ key to exit the communication error information screen and go back to the top of [COM-LOG] menu.

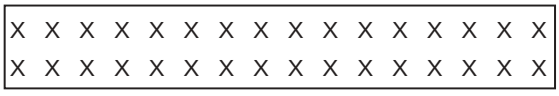
(3) Press ▼ key to display the Detailed Communication Error Information (maximum 128 characters).

1st-32nd characters of Detailed Communication Error Information are shown.



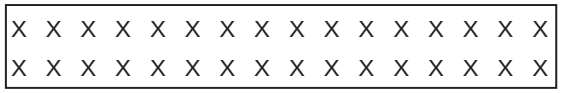
F-7-43

33rd-64th characters of Detailed Communication Error Information are shown.



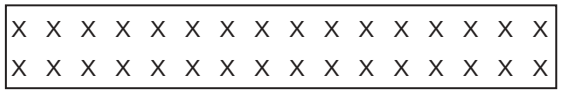
F-7-44

65th-96th characters of Detailed Communication Error Information are shown.



F-7-45

97th-128th characters of Detailed Communication Error Information are shown.



F-7-46

- Use ◄ and ► keys to move among Screen and Screen. (Detailed Communication Error Information can be made with maximum 128 characters, however, even if the information is made up with 1 to 96 characters, all Screens are still displayed.)
- Press ▲ key to exit the Detailed Communication Error Information screen and go back to the Communication Error Information screen.

* If Detailed Communication Error Information does not exist, the screen below will appear.

F-7-47

- Press ▲ key to exit the Detailed Communication Error Information screen and go back to the Communication Error Information screen.

5) Initializing the e-RDS setting [ERDS-DAT]
Usually, the setup is not necessary.
Use this procedure when you want to reset the e-RDS settings to the factory default.

(1) In service mode, referring to the "Service Mode Menu Tree", go to [ERDS-DAT] menu using ► key and ▼ key.

F-7-48

(2) Choose between YES/NO using ◄ and ► keys, and press [OK] key to set.

F-7-49

- Press [OK] key, and "=" will appear and the initializing process will begin.

[NO]: Do not initialize the e-RDS setting. Default value is [NO].
[YES]: Initialize the e-RDS setting.

6) Displaying the CA Certificate Information [VALIDITY]
For the secure communication between the device (e-RDS) and the UGW, an authentication technology from a certification authority is used. A license has been issued from the certification authority. For this reason, the devices are shipped with the CA (Certificate Authority) certificate enabled in advance to prove the license obtained.

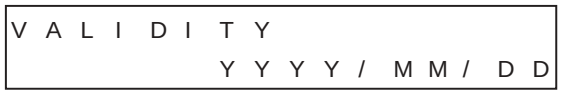
Therefore, usually, the setup is not necessary.

To confirm that this CA certificate is valid or how long it will be valid, you can display the expiration date of the CA certificate information.

(1) In service mode, referring to the "Service Mode Menu Tree", go to [VALIDITY] menu using ► key and ▼ key.

F-7-50

(2) Press ▼ key, and the expiration date of the CA certificate will be displayed.



F-7-51

- Press ▲ key to exit the CA certificate expiration date display screen and go back to the top of [VALIDITY] menu.

* If the CA certificate is deleted, the screen below will appear.

F-7-52

- Press ▲ key to exit the CA certificate expiration date display screen and go back to the top of [VALIDITY] menu.

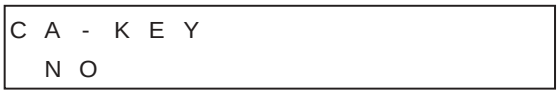
7) Deleting the CA Certificate [CA-KEY]

For the secure communication between the device (e-RDS) and the UGW, an authentication technology from a certification authority is used. A license has been issued from the certification authority. For this reason, the devices are shipped with the CA (Certificate Authority) certificate enabled in advance to prove the license obtained.
The device (e-RDS) uses this CA certificate to communicate with the UGW, thus CA must not be deleted.

Therefore, usually, the setup is not necessary.

* If you delete the CA certificate under a special instruction, perform the following procedure.

(1) In service mode, referring to the "Service Mode Menu Tree", go to [CA-KEY] menu using ► key and ▼ key.



F-7-53

(2) Choose between YES/NO using ◄ and ► keys, and press [OK] key to set.

F-7-54

- Press [OK] key, and "=" will appear and the initializing process will begin.

[NO]: Do not delete the CA certificate. Default value is [NO].
[YES]: Delete the CA certificate.

4. FAQ

No.	Question	Answer
Q1	Registration information of the device (E-RDS) is once deleted from the UGW server, and is re-registered after that. If a communication test is not carried out, then device information on UGW becomes invalid.	When registration of the device (e-RDS) is deleted from the UGW, the status will be changed to the communication test not completed because related information has lost from a database. Therefore, device information will also become invalid if that condition persists for seven days without carrying out the communication test. Hence, to avoid the invalid condition, carry out the communication test.
Q2	The communication test with the UGW server results NG!	The comunication test might become NG in the following cases. - 1. Name resolution was failed due to an incorrect host name or DNS server has been halted. - 2. Network cable is blocked off. Network cable is broken. - 3. Proxy server settings are not correct.
Q3	Could you describe the timing of data transmitting from the device (e-RDS) to the UGW, and what data size is sent to the UGW?	The schedule of data transmitting, and the start time are determined by settings in the UGW side. The timing is once per 16 hours by default, and counter data size is maximum 1400 bytes.
Q4	Can I turn the device power off during the device (e-RDS) operation?	While operating the device (e-RDS), the power of the printer and network equipment such as HUB must be ON. If power OFF is needed, do not leave it OFF for a long time. An error such as "Device is busy, try later"could occur if the power supply of network equipment is made prolonged OFF.

5. Troubleshooting

No.	Condition detected	Action
1	The communication test has failed.	Check network conditions such as proxy server settings and so on. - Check the communication log from COM-LOG. -> Execute "Remedy" in the "Error message list". - Check whether RGW-ADDRESS or RGW-PORT settings have changed.

6. Error message list
Details of the errors and their remedies are as described below.
(The meaning of server indicates the UGW in this section)

No.	Error Message	Cause	Remedy
1	SUSPEND: Communication test is not performed	E-RDS has been booted up (device reboot) with E-RDS SWITCH = ON but the communication test had not yet been performed.	Perform the communication test [COMTEST] in service mode.
2	Event Registration is Failed	Event Registration is Failed Processing (event processing) within the device has failed.	Turn the device OFF/ ON. If the error persists, replace the device system software (firmware). (Upgrade)
3	URL Scheme error (not https)	The header of the URL of the registered UGW is not in https format. A "https://" input error.	Check that the value of UGW-ADR has been entered correctly as https://a01---.
4	Server connection error	An UGW connection error. Displayed in the event of a TCP/IP communication fault.	Check the network-related settings according to "No.1: Communication test is not performed" in "Troubleshooting".
5	URL server specified is illegal	A URL different to that specified by the UGW has been set. An URL address setting error.	Check that the value of UGW-ADR has been entered correctly as https://a01---.
6	Proxy connection error	Cannot connect to proxy server. Displayed when unable to connect to proxy server.	Check proxy server address and re-enter if necessary.
7	Proxy authentication error	Displayed when the authentication to the proxy server has failed.	Check the user name and password required in order to login to the proxy, and re-enter if necessary.
8	Server certificate error	Device's route certificate is unavailable.	Reinstall the latest device system software (firmware). (Upgrade)
9	Server certificate expired	The route certificate registered with the device has expired.	Check that the device time and date are correctly set. If the device time and date are correct, upgrade to the latest system software (firmware).
10	Unknown error	Some other kind of communication error has occurred.	Try again after a period of time. If the same error occurs again, check the UGW status with the UGW administrator.
11	SOAP Fault	SOAP communication error has occurred.	Check that the value of UGW-PORT is 443.
12	Server response error (NULL)	A UGW response error (when UGW error code processing has failed). A HTTPS communication error.	Try again after a period of time. If the same error persists, check the UGW status with the UGW administrator.
13	Server response error (Hexadecimal) [Error detailed in the UGW]:*1	A UGW response error. Displayed when communication with UGW has been successful, but an error of some sort has prevented UGW from responding.	Check an error code (hexadecimal) returned from the UGW, then retry after a period of time.
14	Device internal error	An internal device error. An error due to the device side.	Switch the device OFF/ ON. Or, replace the device system software. (Upgrade)
15	Server schedule is invalid	During the communication test, there has been some kind of error in the schedule values passed from UGW.	When the error occurs, report the details to the support department. Then, after the UGW side has responded, retry the communication test.
16	Server response time out	UGW response time out. Due to network congestion, etc., the response from UGW does not come within the specified time.	If this error occurs when the communication test is being run, wait some time and rerun the test.
17	Server not found	There is a mistake in the UGW URL, and UGW cannot be accessed.	Check that the value of Service mode > E-RDS/RGW-ADR is https://a01---.
18	E-RDS switch is set OFF	E-RDS is disabled.	Set E-RDS SWITCH = ON, and run COM-TEST in service mode.
19	Server schedule is not exist	Server schedule does not exist. Blank schedule data has been received from UGW.	Check the device settings status with the UGW administrator.
20	Network is not ready, try later	Network-related settings have not been made for the device.	Make network-related settings properly for the device (printer).
21	URL error	A URL setting error. Non-URL text string entered in URL field.	Check that the value of UGW-ADR is https://a01---.
22	Proxy address resolution error	A proxy server address resolution error.	Check that the proxy server name is correct.
23	Server certificate verify error	The server certificate verification (URL check) error.	Check that the value of UGW-ADR is https://a01---.
24	Server address resolution error	UGW address resolution has failed.	Check that the value of UGW-ADR is https:// a01---.

*1:[Hexadecimal] indicates an error code returned from the UGW in hexadecimal.

7. Service cautions
After performing the following service actions, it is necessary to perform the resetting of the e-RDS.
Failure to do so will result that the counter transmitting value to the UGW may become unusual.

- System software (firmware) upgrade
- After replacing the main controller board, the following settings in service mode must not be changed unless there are specific instructions to do so. Changing these values will cause error in communication with the UGW.

(Initial values)
UGW-PORT: 443
UGW-ADDRESS: https://a01---.

7.1.5 Viewing PRINT INF

a) PRINT INF item detail
The details of each PRINT INF item displayed when performing [SERVICE MODE] > [DISPLAY] > [PRINTINF] are as follows:

Print item		Print content	Printed value
SYSTEM	S/N	Serial number of printer	characters/numerals of 8-byte
	TYPE	Type setting on main controller PCB	44
	LF TYPE	Feed roller type	0: old type roller 1: new type roller
	TMP	Ambient temperature	Unit: Centigrade degree
	RH	Ambient humidity	Unit: %
	SIZE LF	Detected size of loaded media (feed direction)	mm (0 is always detected for the roll media.)
	SIZE CR	Detected size of loaded media (carriage scan direction)	mm
	AFTER INST.	Number of days since initial installation	Unit: Day(s)
HEAD	S/N L	Serial number of printhead L	characters/numerals (8 digits)
	S/N R	Serial number of printhead R	characters/numerals (8 digits)
	LOT L	Lot number of printhead L	characters/numerals (8 digits)
	LOT R	Lot number of printhead R	characters/numerals (8 digits)
INK	BK, MBK, C, M, Y, PC, PM, GY	Number of days passed since the ink tank was installed	Unit: Days
WARNING	01 to 20	Warning history (up to 20 events)	Number: Lowest is the most recent Date: mm/dd Time: mm/ss Code: Last 4 digits Cumulative number of printed media (equivalent of A4)
ERROR	01 to 20	Error history (up to 20 events)	Number: Lowest is the most recent Date: mm/dd Time: mm/ss Code: Last 4 digits Cumulative number of printed media (equivalent of A4)

Print item		Print content	Printed value
JOB CONDITION	01-05	Job history (up to 5 events)	Number: Lowest is the most recent
	1	Print mode	1: [Image]-[Highest] (Image high-precision) 2: [Image]-[Highest] (Line dwawing and text high-precision) 3: [Image]-[Highest] 4: [Image]-[High] (Line dwawing and text high-precision) or [Line Drawing/Text]-[High] 5: [Image]-[High] 6: [Image]-[Standard] (Line dwawing and text high-precision) or [Line Drawing/Text]-[Standard] 7: [Image]-[Standard] 8: [Line Drawing/Text]-[Draft] 9: [Image]-[Draft] 10: [Image]-[Draft] (Economy) or [Office Document]-[Standard] 11: Exception mode
	2	Head height	a(n) - Description of "a" A: Automatic setting H: Fixed setting - Description of "n" 0: SL(1.2mm) 1: L(1.4mm) 2: M1(1.8mm) 3: M2(2.0mm) 4: M3(2.2mm) 5: H(2.6mm) *: Unknown
	3	Temperature and humidity	
	4	Media type	Display media name *: Unknown
	5	Printing date & time	
	6	Job name	Name stored to the HDD
	7	Registration condition	A: The gap used to the printing matches with the gap of inner registration adjustment value. B: The gap used to the printing don't match with the gap of inner registration adjustment value. C: There is no registration adjustment value.
HEAD ADJUSTMENT	01-05	Adjustment history (up to 5 events)	Number: Lowest is the most recent
	1	Adjustment type	manu: Manual adjustment auto(d): Automatic adjustment (detail) auto(s): Automatic adjustment (standard) auto(e): Automatic adjustment (expansion)
	2	Head height	a(n) - Description of "a" A: Automatic setting H: Fixed setting AE: Adjustment error (automatic setting) HE: Adjustment error (fixed setting) - Description of "m"(Gap1) and "n"(Gap2) 0: SL(1.2mm) 1: L(1.4mm) 2: M1(1.8mm) 3: M2(2.0mm) 4: M3(2.2mm) 5: H(2.6mm) -: Not executed *: Unknown
	3	Temperature and humidity	
	4	Media type	Display media name *: Unknown
	5	Printing date & time	
	6	Gap distance between head and media	

Print item		Print content	Printed value
JAM	01 to 05	JAM log (5 records)	Number: Lowest is the most recent Date: mm/dd Time: mm/ss Jam code
	1	Jam type	1: CR error 2: Jam 3: Feed failure (delay) 4: Cut failure *: Unknown
	2	Media format	1: Roll media 2: Cut sheet (manual feed from top) 3: Cut sheet (manual feed from front) 4: Cassette *: Unknown
	3	Jam timing	1: Feed 2: Print 3: Eject *: Unknown
	4	Width detection OFF mode	1: ON 2: OFF *: Unknown
	5	Head height	0: SL (1.2mm) 1: L (1.4mm) 2: M1 (1.8mm) 3: M2 (2.0mm) 4: M3 (2.2mm) 5: H (2.6mm) *: Unknown
	6	(Not Used)	
	7	Cut mode	1: User cut 2: Eject cut 3: Auto cut *: Unknown
	8	Media passing environment	0: A(temperature 15 to 25 degrees centigrade/humidity 40 to 60%) 1: B(temperature 25 to 30 degrees centigrade/humidity 40 to 60%) 2: C(temperature 15 to 30 degrees centigrade/humidity 10 to 40%) 3: D(temperature 15 to 30 degrees centigrade/humidity 60 to 80%) 4: E(temperature 15 to 30 degrees centigrade/humidity 0 to 10%, or 15 degrees centigrade or less and 30 degrees centigrade or more/humidity 0 to 50%[low humidity is out of guarantee.]) 5: F(temperature 15 to 30 degrees centigrade/humidity 80 to 100%, or 15 degrees centigrade or less and 30 degrees centigrade or more/humidity 50 to 100%[high humidity is out of guarantee.]) *: Unknown
	9	Borderless/Bordered	1: Bordered printing 2: Borderless printing *: Unknown
	10	(Not Used)	
	11	Print mode label No.	Display print mode *: Unknown
	12	Media width	Display media width (Unit: mm) *: Unknown
	13	Media type	Display media name *: Unknown
INK CHK	BK, MBK, C, M, Y, PC, PM, GY	Refill log Print whether disable remaining ink detection was previously set	0: Disable remaining ink detection was never set 1: Disable remaining ink detection was set at least once

Print item			Print content	Printed value
COUNTER	PRINTER	POWER ON	Cumulative power-on time	Unit: hours
		SLEEP ON	Cumulative sleep-on time	Unit: hours
		CUTTER	Number of cutting operations	Unit: times
		WIPE	Number of wiping operations	Unit: times
		W-INK	Remaining capacity of the maintenance cartridge	Unit: %
		PDL	Cumulative number of printed media according to PDL	GARO: xx sheets HP-GL/2: xx sheets
	CARRIAGE	PRINT	Cumulative printing time	Unit: hours
		DRIVE	Cumulative carriage moving time	Unit: hours
		CR-COUNT	Cumulative carriage scan count (count as 1 by moving back and forth)	Unit: times
		CR-DIST.	Cumulative carriage scan distance (count as 1 by moving 210mm)	Unit: times
		PRINT-COUNT	Cumulative print end count (count as 1 by capping)	Unit: times
	PURGE	CLN-A	Cumulative number of automatic cleaning operations	
		1	Cumulative number of automatic cleaning 1 (normal suction) operations	Unit: times
		2	Cumulative number of automatic cleaning 2 (ink level adjusting) operations	
		3	Cumulative number of automatic cleaning 3 (initial filling) operations	
		6	Cumulative number of automatic cleaning 6 (strong normal suction) operations	
		7	Cumulative number of automatic cleaning 7 (aging) operations	
		8	Cumulative number of automatic cleaning 8 (flashing) operations	
		10	Cumulative number of automatic cleaning 10 (ink filling after secondary transportation) operations	
		11	Cumulative number of automatic cleaning 11 (ink filling after head replacement) operations	
		15	Cumulative number of automatic cleaning 15 (dot count small suction) operations	
		16	Cumulative number of automatic cleaning 16 (sedimented ink agitation) operations	
		17	Cumulative number of automatic cleaning 17 (small suction) operations	
		TTL	Total number of automatic cleaning operations	
		CLN-M	Cumulative number of manual cleaning 1 operations	
		1	Cumulative number of manual cleaning 1 (normal suction) operations	Unit: times
		4	Cumulative number of manual cleaning 4 (ink draining from head after head replacement) operations	
		5	Cumulative number of manual cleaning 5 (ink draining from head and tube before transportation) operations	
		6	Cumulative number of manual cleaning 6 (normal strong suction) operations	
		TTL	Total number of manual cleaning operations	

Print item			Print content	Printed value
COUNTER	CLEAR	INK CONSUME	Cumulative count of ink section consumption amount clearing	Unit: times
		MTC EXC.	Cumulative count of maintenance cartridge replacement count clearing	
		HEAD L EXC.	Cumulative count of printhead L replacement count clearing	
		HEAD R EXC.	Cumulative count of printhead R replacement count clearing	
		PARTS Wia-1 EXC.	Cumulative count of unit Wia-1 (waste ink box unit) replacement count clearing	
		PARTS Wia-3 EXC.	Cumulative count of unit Wia-3 (platen ink box unit) replacement count clearing	
		PARTS Wia-4 EXC.	Cumulative count of unit Wia-4 (platen ink box unit) replacement count clearing	
		PARTS Wia-5 EXC.	Cumulative count of unit Wia-5 (platen ink box unit) replacement count clearing	
		PARTS Wia-6 EXC.	Cumulative count of unit Wia-6 (suction fan unit) replacement count clearing	
		PARTS CR-1 EXC.	Cumulative count of unit CR-1 (carriage unit bushing) replacement count clearing	
		PARTS CR-2 EXC.	Cumulative count of unit CR-2 (linear encoder sensor/linear scale/shaft cleaner) replacement count clearing	
		PARTS CR-3 EXC.	Cumulative count of unit CR-3 (carriage height changing cam) replacement count clearing	
		PARTS CR-4 EXC.	Cumulative count of unit CR-4 (ink tube unit/flexible cable unit) replacement count clearing	
		PARTS CR-5 EXC.	Cumulative count of unit CR-5 (multi sensor) replacement count clearing	
		PARTS PG-1 EXC.	Cumulative count of unit PG-1 (purge unit) replacement count clearing	
		PARTS HMa-1 EXC.	Cumulative count of unit HMa-1 (head management sensor) replacement count clearing	
		PARTS PL-1 EXC.	Cumulative count of unit PL-1 (carriage motor) replacement count clearing	
		PARTS PS-1 EXC.	Cumulative count of unit PS-1 (feed motor) replacement count clearing	
		PARTS Mi-1 EXC.	Cumulative count of unit Mi-1 (mist fan) replacement count clearing	
		PARTS MS-1 EXC.	Cumulative count of unit MS-1 (multi sensor) replacement count clearing	
		FACTORY CNT.	For factory	

Print item			Print content	Printed value
COUNTER	EXCHANGE	MTC EXC.	Maintenance cartridge replacement count	Unit: times
		HEAD L EXC.	Printhead L replacement count	
		HEAD R EXC.	Printhead R replacement count	
		BOARD EXC.(M/B)	Main controller PCB replacement count	
		PARTS Wia-1 EXC.	Wia-1 (waste ink box unit) replacement count	
		PARTS Wia-3 EXC.	Wia-3 (platen ink box unit) replacement count	
		PARTS Wia-4 EXC.	Wia-4 (platen ink box unit) replacement count	
		PARTS Wia-5 EXC.	Wia-5 (platen ink box unit) replacement count	
		PARTS Wia-6 EXC.	Wia-6 (suction fan unit) replacement count	
		PARTS CR-1 EXC.	CR-1 (carriage unit bushing) replacement count	
		PARTS CR-2 EXC.	CR-2 (linear encoder sensor/linear scale/shaft cleaner) replacement count	
		PARTS CR-3 EXC.	CR-3 (carriage height changing cam) replacement count	
		PARTS CR-4 EXC.	CR-4 (ink tube unit/flexible cable unit) replacement count	
		PARTS CR-5 EXC.	CR-5 (multi sensor) replacement count	
		PARTS PG-1 EXC.	PG-1 (purge unit) replacement count	
		PARTS HMa-1 EXC.	HMa-1 (head management sensor) replacement count	
		PARTS PL-1 EXC.	PL-1 (carriage motor) replacement count	
		PARTS PS-1 EXC.	PS-1 (feed motor) replacement count	
		PARTS Mi-1 EXC.	Mi-1 (mist fan) replacement count	
		PARTS MS-1 EXC.	MS-1 (multi sensor) replacement count	
	DETAIL-CNT	MOVE PRINTER	Count of secondary transportation	Unit: times
		MEDIACONFIG-CNT	Count of media registered by media editor	
		N-INKCHK BK, MBK, C, M, Y, PC, PM, GY	Count of turning off the ink remaining level detection for each color	

Print item			Print content	Printed value
COUNTER	INK-USE1	INK BK, MBK, C, M, Y, PC, PM, GY	Cumulative consumption amount of generic ink	Unit: ml
		TTL	Total amount of the cumulative consumption of generic ink	
		LINK BK, MBK, C, M, Y, PC, PM, GY	Cumulative consumption amount of generic large ink	
		TTL	Total amount of the cumulative consumption of generic large ink	
		SINK BK, MBK, C, M, Y, PC, PM, GY	Cumulative consumption amount of generic small ink	
		TTL	Total amount of the cumulative consumption of generic small ink	
		NINK BK, MBK, C, M, Y, PC, PM, GY	Cumulative consumption amount of refilled ink	
		TTL	Total amount of the cumulative consumption of refilled ink	
	INK-USE2	INK BK, MBK, C, M, Y, PC, PM, GY	Consumption amount of generic ink of the currently installed ink tank.	Unit: ml
		TTL	Total consumption amount of generic ink of the currently installed ink tanks	
		NINK BK, MBK, C, M, Y, PC, PM, GY	Consumption amount of refilled ink of the currently installed ink tank	
		TTL	Total consumption amount of refilled ink of the currently installed ink tanks	
	INK-EXC	INK BK, MBK, C, M, Y, PC, PM, GY	Cumulative count of generic ink tank replacement	Unit: times
		TTL	Total amount of the cumulative count of generic ink tank replacement	
		NINK BK, MBK, C, M, Y, PC, PM, GY	Cumulative count of refilled ink tank replacement	
		TTL	Total amount of the cumulative count of refilled ink tank replacement	

Print item			Print content	Printed value
COUNTER	MEDIA 1-7	NAME	Media type	
		TTL	Total amount of cumulative print area of roll media and cut sheet	Unit: square/meter, square/feet
		ROLL	Cumulative print area of roll media	
		CUTSHEET	Cumulative print area of cut sheet	
	MEDIA OTHER	NAME	OTHER	OTHER
		TTL	Total amount of cumulative print area of roll media and cut sheet	Unit: square/meter, square/feet
		ROLL	Cumulative print area of roll media	
		CUTSHEET	Cumulative print area of cut sheet	
	MEDIA SIZE1 ROLL P-SQ/P-CNT	44-60	Cumulative print area of roll media equal to or larger than 44 inches but less than 60 inches (physical size)	Unit: square/meter, square/feet, sheets (equivalent of A4)
		36-44	Cumulative print area of roll media equal to or larger than 36 inches but less than 44 inches (physical size)	
		24-36	Cumulative print area of roll media equal to or larger than 24 inches but less than 36 inches (physical size)	
		17-24	Cumulative print area of roll media equal to or larger than 17 inches but less than 24 inches (physical size)	
		0-17	Cumulative print area of roll media less than 17 inches (physical size)	
	MEDIA SIZE2 ROLL D-SQ/D-CNT	44-60	Cumulative print area of roll media equal to or larger than 44 inches but less than 60 inches (data size)	Unit: square/meter, square/feet, sheets (equivalent of A4)
		36-44	Cumulative print area of roll media equal to or larger than 36 inches but less than 44 inches (data size)	
		24-36	Cumulative print area of roll media equal to or larger than 24 inches but less than 36 inches (data size)	
		17-24	Cumulative print area of roll media equal to or larger than 17 inches but less than 24 inches (data size)	
		0-17	Cumulative print area of roll media less than 17 inches (data size)	
	MEDIA SIZE1 CUT P-SQ/P-CNT	44-60	Cumulative print area of cut sheet equal to or larger than 44 inches but less than 60 inches (physical size)	Unit: square/meter, square/feet, sheets (equivalent of A4)
		36-44	Cumulative print area of cut sheet equal to or larger than 36 inches but less than 44 inches (physical size)	
		24-36	Cumulative print area of cut sheet equal to or larger than 24 inches but less than 36 inches (physical size)	
		17-24	Cumulative print area of cut sheet equal to or larger than 17 inches but less than 24 inches (physical size)	
		0-17	Cumulative print area of cut sheet less than 17 inches (physical size)	
	MEDIA SIZE2 CUT D-SQ/D-CNT	44-60	Cumulative print area of cut sheet equal to or larger than 44 inches but less than 60 inches (data size)	Unit: square/meter, square/feet, sheets (equivalent of A4)
		36-44	Cumulative print area of cut sheet equal to or larger than 36 inches but less than 44 inches (data size)	
		24-36	Cumulative print area of cut sheet equal to or larger than 24 inches but less than 36 inches (data size)	
		17-24	Cumulative print area of cut sheet equal to or larger than 17 inches but less than 24 inches (data size)	
		0-17	Cumulative print area of cut sheet less than 17 inches (data size)	
	HEAD DOT CNT.1	BK, MBK, C, M, Y, PC, PM, GY	Dot counts of each colors of the currently installed printhead	Unit: (x 1,000,000) dots
		TTL	Total dot counts of each colors of the currently installed printhead	
	HEAD DOT CNT.2	BK, MBK, C, M, Y, PC, PM, GY	Cumulative dot counts of each colors	Unit: (x 1,000,000) dots
		TTL	Total cumulative dot counts of each colors	

Print item		Print content	Printed value
HEAD INF.1 [Installed head]	1	Date & time installed (last 4 times)	YY/MM/DD Display order: Installed date (last) -> Installed date (2nd to last) -> Installed date (3rd to last) -> Installed date (initial)
	2	Removal date & time (last 3 times)	YY/MM/DD Display order: Last -> 2nd to last -> 3rd to last
	3	Main unit serial No. (last 3 times)	Display order: Last -> 2nd to last -> 3rd to last
	4	CLN_A (auto) count	Unit: Times
	5	CLN_A (manual) count	
	6	Cleaning B (auto/left cap) count	
	7	Cleaning B (auto/right cap) count	
	8	CLN_B (manual) count	
	9	Head replacement ink drain count	
	10	Secondary transport ink drain count	
	11	Secondary transport ink fill count	
	12	Ink filling after head replacement count	
	13	Recovery suction	
	14	Number of sheets printed	Unit: Sheets (A4 equivalent sheets)
	15	Error log	YY/MM/DD xxxx (last 4 digits) 01: Last, 02: 2nd to last, 03: 3rd to last, ..., 20: 20th to last
	16	Refill tank usage log (per chip)	A: x, B: x, C: x, D: x, E: x, F: x
	17	Firmware version (last 3)	XX.XX YY/MM/DD Display order: Last -> 2nd to last -> 3rd to last
	18	Head highest temperature (per chip)	A: xxx, B: xxx, C: xxx, D: xxx, E: xxx, F: xxx
	19	Number of non-discharging nozzles (per nozzle row) chip A row A, chip A row B to chip F row A, chip F row B	AA: xxx, AB: xxx, BA: xxx, BB: xxx, CA: xxx, CB: xxx, DA: xxx, DB: xxx, EA: xxx, EB: xxx, FA: xxx, FB: xxx
	20	EEPROM format Ver	
HEAD INF.2 [Head installed 2nd to last]	1	Date & time installed (last 4 times)	YY/MM/DD Display order: Installed date (last) -> Installed date (2nd to last) -> Installed date (3rd to last) -> Installed date (initial)
	2	Removal date & time (last 3 times)	YY/MM/DD Display order: Last -> 2nd to last -> 3rd to last
	3	Main unit serial No. (last 3 times)	Display order: Last -> 2nd to last -> 3rd to last
	4	CLN_A (auto) count	Unit: Times
	5	CLN_A (manual) count	
	6	Cleaning B (auto/left cap) count	
	7	Cleaning B (auto/right cap) count	
	8	CLN_B (manual) count	
	9	Head replacement ink drain count	
	10	Secondary transport ink drain count	
	11	Secondary transport ink fill count	
	12	Ink filling after head replacement count	
	13	Recovery suction	
	14	Number of sheets printed	Unit: Sheets (A4 equivalent sheets)
	15	Error log	YY/MM/DD xxxx (last 4 digits) 01: Last, 02: 2nd to last, 03: 3rd to last, ..., 20: 20th to last
	16	Refill tank usage log (per chip)	A: x, B: x, C: x, D: x, E: x, F: x
	17	Firmware version (last 3)	XX.XX YY/MM/DD Display order: Last -> 2nd to last -> 3rd to last
	18	Head highest temperature (per chip)	A: xxx, B: xxx, C: xxx, D: xxx, E: xxx, F: xxx
	19	Number of non-discharging nozzles (per nozzle row) chip A row A, chip A row B to chip F row A, chip F row B	AA: xxx, AB: xxx, BA: xxx, BB: xxx, CA: xxx, CB: xxx, DA: xxx, DB: xxx, EA: xxx, EB: xxx, FA: xxx, FB: xxx
	20	EEPROM format Ver	

Print item		Print content	Printed value
PARTS CNT.	[Value of each parts counter]	Status	OK/W1/W2/E
		Number of days after set	Unit: Days
		Count	
		Life threshold	
		Usage	Unit: %
		Cumulative count	
COGFF	CONDITION	Cogging FF result	0: Disabled 1: Enabled 2: Check required 3: Adjust reruired
	PARAM0-F	Parameters 1	REF: Motor error (6 digits) PHASE: Phase (3 digits) AMP: Amplitude (3 digits) RATE: Decay rate (3 digits)
	PARAM0-B	Parameters 2	REF: Motor error (6 digits) PHASE: Phase (3 digits) AMP: Amplitude (3 digits) RATE: Decay rate (3 digits)
LF SCALE adjustment value (user value)	LF-A	LF8 pass	
	LF-B	LF1 pass	
	SCALE-A	Scale clean	
	SCALE-B	Scale fast	
PV AUTO JUDGE		Ink reduction mode	ON (NORMAL/LOW only when ON)/Number of times OFF is entered

b) Sample Layout
PRINT INF layout is shown below.

```
1/5
Canon imagePROGRAF iPFxxx  PRINT INF
  Firm:xx.xx  Boot:xx.xx  MIT(DBF):x.xx  MIT(DB):x.xx
  S/N:xxxxxxxx  Date:yyyy/mm/dd
SYSTEM
 S/N:xxxxxxxx TYPE:12 -LF:1 TMP:xx RH:xx SIZE-LF:xxxxx.x -CR:xxxxx.x AFTER INST:xxxx x
HEAD                              INK
 S/N:xxxxxxxx  LOT:xxxxxxxx   C:xxxxxx  M:xxxxxx Y:xxxxxx  MBK:xxxxxx  MBK2:xxxxxx  BK:xxxxxx
WARNING
  01:MM/DD HH:MM xxxx                    02:MM/DD HH:MM xxxx
  03:MM/DD HH:MM xxxx                    04:MM/DD HH:MM xxxx
  05:MM/DD HH:MM xxxx                    06:MM/DD HH:MM xxxx
  07:MM/DD HH:MM xxxx                    08:MM/DD HH:MM xxxx
  09:MM/DD HH:MM xxxx                    10:MM/DD HH:MM xxxx
  11:MM/DD HH:MM xxxx                    12:MM/DD HH:MM xxxx
  13:MM/DD HH:MM xxxx                    14:MM/DD HH:MM xxxx
  15:MM/DD HH:MM xxxx                    16:MM/DD HH:MM xxxx
  17:MM/DD HH:MM xxxx                    18:MM/DD HH:MM xxxx
  19:MM/DD HH:MM xxxx                    20:MM/DD HH:MM xxxx
ERROR
  01:MM/DD HH:MM xxxx                    02:MM/DD HH:MM xxxx
  03:MM/DD HH:MM xxxx                    04:MM/DD HH:MM xxxx
  05:MM/DD HH:MM xxxx                    06:MM/DD HH:MM xxxx
  07:MM/DD HH:MM xxxx                    08:MM/DD HH:MM xxxx
  09:MM/DD HH:MM xxxx                    10:MM/DD HH:MM xxxx
  11:MM/DD HH:MM xxxx                    12:MM/DD HH:MM xxxx
  13:MM/DD HH:MM xxxx                    14:MM/DD HH:MM xxxx
  15:MM/DD HH:MM xxxx                    16:MM/DD HH:MM xxxx
  17:MM/DD HH:MM xxxx                    18:MM/DD HH:MM xxxx
  19:MM/DD HH:MM xxxx                    20:MM/DD HH:MM xxxx
JAM
  01:MM/DD HH:MM xxxx xxxxxxxx
    01:x 02:x 03:x 04:x 05:xx 06:x 07:x 08:x
    09:x 10:xxx 11:media_sizexxxxxx 12:media_namexxxxxx
  02:MM/DD HH:MM xxxx xxxxxxxx
    01:x 02:x 03:x 04:x 05:xx 06:x 07:x 08:x
    09:x 10:xxx 11:media_sizexxxxxx 12:media_namexxxxxx
  03:MM/DD HH:MM xxxx xxxxxxxx
    01:x 02:x 03:x 04:x 05:xx 06:x 07:x 08:x
    09:x 10:xxx 11:media_sizexxxxxx 12:media_namexxxxxx
  04:MM/DD HH:MM xxxx xxxxxxxx
    01:x 02:x 03:x 04:x 05:xx 06:x 07:x 08:x
    09:x 10:xxx 11:media_sizexxxxxx 12:media_namexxxxxx
  05:MM/DD HH:MM xxxx xxxxxxxx
    01:x 02:x 03:x 04:x 05:xx 06:x 07:x 08:x
    09:x 10:xxx 11:media_sizexxxxxx 12:media_namexxxxxx
```

F-7-55

```
2/5
Canon imagePROGRAF iPFxxx  PRINT INF
 Firm:xx.xx  Boot:xx.xx  MIT(DBF):x.xx  MIT(DB):x.xx
 S/N:xxxxxxxx  Date:yyyy/mm/dd
INK CHECK
 C:x  M:x  Y:x  MBK:x  MBK2:x  BK:x
COUNTER
 PRINTER
  LIFE-TTL:xxxxxx  LIFE-ROLL:xxxxxx  LIFE-CUTSHEET:xxxxxx
  LIFE  A:xxxxxx  B:xxxxxx  C:xxxxxx  D:xxxxxx  E:xxxxxx  F:xxxxxx
  POWER-ON:xxxxxx  SLEEP-ON:xxxxxx  CUTTER:xxxxxx  WIPE:xxxxxx  W-INK:xxxxxx
  PDL: GARO:xxxxxx  HP-GL/2:xxxxxx
 CARRIAGE
  PRINT:xxxxxx  DRIVE:xxxxxx  CR-COUNT:xxxxxx  CR-DIST.:xxxxxx  PRINT-COUNT:xxxxxx
 PURGE
  CLN-A : 1:xxxxx 2:xxxxx 3:xx 6:xxxx 7:xxx 10:xxx 11:xxx 15:xxx 16:xxxxx 17:xxxxx TTL:xxxxxx
  CLN-M : 1:xxxxx 4:xxx 5:xx 6:xxxxx TTL:xxxxx
 CLEAR
  INK CONSUME:xxx  MTC EXC.:xxx  HEAD EXC.:xxx
  PARTS CR1 EXC.:xx PARTS CR2 EXC.:xx PARTS CR3 EXC.:xx PARTS CR4 EXC.:xx PARTS CR5 EXC.:xx
  PARTS SP1 EXC.:xx PARTS PG1 EXC.:xx PARTS HMa1 EXC.:xx PARTS MT1 EXC.:xx PARTS PL1 EXC.:xx
  PARTS Mi1 EXC.:xx PARTS CT1 EXC.:xx PARTS WF1 EXC.:xx PARTS WF2 EXC.:xx
  FACTORY CNT.:xx
 EXCHANGE
  MTC EXC.:xxx  HEAD EXC.:xxx  BOARD EXC.(M/B):xx
  PARTS CR1 EXC.:xx PARTS CR2 EXC.:xx PARTS CR3 EXC.:xx PARTS CR4 EXC.:xx PARTS CR5 EXC.:xx
  PARTS SP1 EXC.:xx PARTS PG1 EXC.:xx PARTS HMa1 EXC.:xx PARTS MT1 EXC.:xx PARTS PL1 EXC.:xx
  PARTS Mi1 EXC.:xx PARTS CT1 EXC.:xx PARTS WF1 EXC.:xx PARTS WF2 EXC.:xx
 DETAIL-CNT
  MOVE PRINTER:xxx  MEDIACONFIG-CNT:xxx
  N-INKCHK:  C:xxxx  M:xxxx  Y:xxxx  MBK:xxxx  MBK2:xxxx  BK:xxxx
 INK-USE1
  INK   C:xxxxx.xml  M:xxxxx.xml  Y:xxxxx.xml  MBK:xxxxx.xml  MBK2:xxxxx.xml  BK:xxxxx.xml
      TTL:xxxxxx.xml
  NINK  C:xxxxx.xml  M:xxxxx.xml  Y:xxxxx.xml  MBK:xxxxx.xml  MBK2:xxxxx.xml  BK:xxxxx.xml
      TTL:xxxxxx.xml
 INK-USE2
  INK   C:xxxxx.xml  M:xxxxx.xml  Y:xxxxx.xml  MBK:xxxxx.xml  MBK2:xxxxx.xml  BK:xxxxx.xml
      TTL:xxxxxx.xml
  NINK  C:xxxxx.xml  M:xxxxx.xml  Y:xxxxx.xml  MBK:xxxxx.xml  MBK2:xxxxx.xml  BK:xxxxx.xml
      TTL:xxxxxx.xml
 INK-EXC
  INK   C:xxxx  M:xxxx  Y:xxxx  MBK:xxxx  MBK2:xxxx  BK:xxxx
      TTL:xxxxx
  NINK  C:xxxx  M:xxxx  Y:xxxx  MBK:xxxx  MBK2:xxxx  BK:xxxx
      TTL:xxxxx
```

F-7-56

```
3/5
Canon imagePROGRAF iPFxxx  PRINT IN F
 Firm:xx.xx  Boot:xx.xx  MIT(DBF):x.xx  MIT(DB):x.x x
 S/N:xxxxxxxx  Date:yyyy/mm/d d

 MEDIA 1                                          MEDIA 2
  NAME    : xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx       NAME    : xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx  x
  TTL     : xxxxxxx.x m2  xxxxxxx.x sq.f           TTL     : xxxxxxx.x m2  xxxxxxx.x sq.f
  ROLL    : xxxxxxx.x m2  xxxxxxx.x sq.f           ROLL    : xxxxxxx.x m2  xxxxxxx.x sq.f
  CUTSHEET : xxxxxxx.x m2  xxxxxxx.x sq.f          CUTSHEET : xxxxxxx.x m2  xxxxxxx.x sq.f
 MEDIA 3                                          MEDIA 4
  NAME    : xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx       NAME    : xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx  x
  TTL     : xxxxxxx.x m2  xxxxxxx.x sq.f           TTL     : xxxxxxx.x m2  xxxxxxx.x sq.f
  ROLL    : xxxxxxx.x m2  xxxxxxx.x sq.f           ROLL    : xxxxxxx.x m2  xxxxxxx.x sq.f
  CUTSHEET : xxxxxxx.x m2  xxxxxxx.x sq.f          CUTSHEET : xxxxxxx.x m2  xxxxxxx.x sq.f
 MEDIA 5                                          MEDIA 6
  NAME    : xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx       NAME    : xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx  x
  TTL     : xxxxxxx.x m2  xxxxxxx.x sq.f           TTL     : xxxxxxx.x m2  xxxxxxx.x sq.f
  ROLL    : xxxxxxx.x m2  xxxxxxx.x sq.f           ROLL    : xxxxxxx.x m2  xxxxxxx.x sq.f
  CUTSHEET : xxxxxxx.x m2  xxxxxxx.x sq.f          CUTSHEET : xxxxxxx.x m2  xxxxxxx.x sq.f
 MEDIA 7                                          MEDIA OTHE R
  NAME    : xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx       NAME    : xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx  x
  TTL     : xxxxxxx.x m2  xxxxxxx.x sq.f           TTL     : xxxxxxx.x m2  xxxxxxx.x sq.f
  ROLL    : xxxxxxx.x m2  xxxxxxx.x sq.f           ROLL    : xxxxxxx.x m2  xxxxxxx.x sq.f
  CUTSHEET : xxxxxxx.x m2  xxxxxxx.x sq.f          CUTSHEET : xxxxxxx.x m2  xxxxxxx.x sq.f

 MEDIA SIZE1 ROLL P-SQ/P-CN T
     36-44: xxxxxxx.x m2  xxxxxxx.x sq.f       0
     24-36: xxxxxxx.x m2  xxxxxxx.x sq.f       0
     17-24: xxxxxxx.x m2  xxxxxxx.x sq.f       0
      0-17: xxxxxxx.x m2  xxxxxxx.x sq.f       0
 MEDIA SIZE2 ROLL D-SQ/D-CN T
     36-44: xxxxxxx.x m2  xxxxxxx.x sq.f       0
     24-36: xxxxxxx.x m2  xxxxxxx.x sq.f       0
     17-24: xxxxxxx.x m2  xxxxxxx.x sq.f       0
      0-17: xxxxxxx.x m2  xxxxxxx.x sq.f       0
 MEDIA SIZE1 CUT P-SQ/P-CN T
     36-44: xxxxxxx.x m2  xxxxxxx.x sq.f       0
     24-36: xxxxxxx.x m2  xxxxxxx.x sq.f       0
     17-24: xxxxxxx.x m2  xxxxxxx.x sq.f       0
      0-17: xxxxxxx.x m2  xxxxxxx.x sq.f       0
 MEDIA SIZE2 CUT D-SQ/D-CN T
     36-44: xxxxxxx.x m2  xxxxxxx.x sq.f       0
     24-36: xxxxxxx.x m2  xxxxxxx.x sq.f       0
     17-24: xxxxxxx.x m2  xxxxxxx.x sq.f       0
      0-17: xxxxxxx.x m2  xxxxxxx.x sq.f       0
```

F-7-57

```
4/5
Canon imagePROGRAF iPFxxx  PRINT IN F
 Firm:xx.xx  Boot:xx.xx  MIT(DBF):x.xx  MIT(DB):x.x x
 S/N:xxxxxxxx  Date:yyyy/mm/d d

 HEAD DOT CNT. 1
  C:xxxxxxxxx  M:xxxxxxxxx Y:xxxxxxxxx  MBK:xxxxxxxxx  MBK2:xxxxxxxxx  BK:xxxxxxxx  x
  TTL:xxxxxxxxxxxxxx x
 HEAD DOT CNT. 2
  C:xxxxxxxxx  M:xxxxxxxxx Y:xxxxxxxxx  MBK:xxxxxxxxx  MBK2:xxxxxxxxx  BK:xxxxxxxx  x
  TTL:xxxxxxxxxxxxxx x

 HEAD INF. 1
  1:YY/MM/DD YY/MM/DD YY/MM/DD YY/MM/DD  2:YY/MM/DD YY/MM/DD YY/MM/D   D
  3:xxxxxxxx xxxxxxxx xxxxxxx x
  4:xxxxx  5:xxxxx  6:xxxxx  7:xxxxx  8:xxx  9:xxx  10:xxx  11:xxx  12:xx  x
  13:xxxxxxxx  19: 1
  14: 1:YY/MM/DD xxxxxxxx-xxxx  2:YY/MM/DD xxxxxxxx-xxxx  3:YY/MM/DD xxxxxxxx-xxx  x
     4:YY/MM/DD xxxxxxxx-xxxx  5:YY/MM/DD xxxxxxxx-xxxx  6:YY/MM/DD xxxxxxxx-xxx  x
     7:YY/MM/DD xxxxxxxx-xxxx  8:YY/MM/DD xxxxxxxx-xxxx  9:YY/MM/DD xxxxxxxx-xxx  x
    10:YY/MM/DD xxxxxxxx-xxxx 11:YY/MM/DD xxxxxxxx-xxxx 12:YY/MM/DD xxxxxxxx-xxx  x
    13:YY/MM/DD xxxxxxxx-xxxx 14:YY/MM/DD xxxxxxxx-xxxx 15:YY/MM/DD xxxxxxxx-xxx  x
    16:YY/MM/DD xxxxxxxx-xxxx 17:YY/MM/DD xxxxxxxx-xxxx 18:YY/MM/DD xxxxxxxx-xxx  x
    19:YY/MM/DD xxxxxxxx-xxxx 20:YY/MM/DD xxxxxxxx-xxx  x
  15:A:x B:x C:x D:x E:x F: x
  16:XX.XX YY/MM/DD  XX.XX YY/MM/DD  XX.XX YY/MM/D   D
  17:A:xxx B:xxx C:xxx D:xxx E:xxx F:xx x
  18:AA:xxx AB:xxx BA:xxx BB:xxx CA:xxx CB:xxx DA:xxx DB:xxx EA:xxx EB:xxx FA:xxx FB:xx   x

 HEAD INF. 2
  1:YY/MM/DD YY/MM/DD YY/MM/DD YY/MM/DD  2:YY/MM/DD YY/MM/DD YY/MM/D   D
  3:xxxxxxxx xxxxxxxx xxxxxxx x
  4:xxxxx  5:xxxxx  6:xxxxx  7:xxxxx  8:xxx  9:xxx  10:xxx  11:xxx  12:xx  x
  13:xxxxxxxx  19: 1
  14: 1:YY/MM/DD xxxxxxxx-xxxx  2:YY/MM/DD xxxxxxxx-xxxx  3:YY/MM/DD xxxxxxxx-xxx  x
     4:YY/MM/DD xxxxxxxx-xxxx  5:YY/MM/DD xxxxxxxx-xxxx  6:YY/MM/DD xxxxxxxx-xxx  x
     7:YY/MM/DD xxxxxxxx-xxxx  8:YY/MM/DD xxxxxxxx-xxxx  9:YY/MM/DD xxxxxxxx-xxx  x
    10:YY/MM/DD xxxxxxxx-xxxx 11:YY/MM/DD xxxxxxxx-xxxx 12:YY/MM/DD xxxxxxxx-xxx  x
    13:YY/MM/DD xxxxxxxx-xxxx 14:YY/MM/DD xxxxxxxx-xxxx 15:YY/MM/DD xxxxxxxx-xxx  x
    16:YY/MM/DD xxxxxxxx-xxxx 17:YY/MM/DD xxxxxxxx-xxxx 18:YY/MM/DD xxxxxxxx-xxx  x
    19:YY/MM/DD xxxxxxxx-xxxx 20:YY/MM/DD xxxxxxxx-xxx  x
  15:A:x B:x C:x D:x E:x F: x
  16:XX.XX YY/MM/DD  XX.XX YY/MM/DD  XX.XX YY/MM/D   D
  17:A:xxx B:xxx C:xxx D:xxx E:xxx F:xx x
  18:AA:xxx AB:xxx BA:xxx BB:xxx CA:xxx CB:xxx DA:xxx DB:xxx EA:xxx EB:xxx FA:xxx FB:xx   x
```

F-7-58

```
5/5
Canon imagePROGRAF iPFxxx  PRINT IN F
  Firm:xx.xx  Boot:xx.xx  MIT(DBF):x.xx  MIT(DB):x.x x
  S/N:xxxxxxxx  Date:yyyyy/mm/d d

PARTS CNT .
  PARTS CR1 : OK     0   0.0          0.0   0%          0.  0
  PARTS CR2 : OK     0   0.0          0.0   0%          0.  0
  PARTS CR3 : OK     0   0.0          0.0   0%          0.  0
  PARTS CR4 : OK     0   0.0          0.0   0%          0.  0
  PARTS CR5 : OK     0   0.0          0.0   0%          0.  0
  PARTS SP1 : OK     0     0            0   0%            0
  PARTS PG1 : OK     0     0            0   0%            0
  PARTS HMa1 : OK    0     0            0   0%            0
  PARTS MT1 : OK     0     0            0   0%            0
  PARTS PL1 : OK     0     0            0   0%            0
  PARTS Mi1   : OK   0     0            0   0%            0
  PARTS CT1 : OK     0     0            0   0%            0
  PARTS WF1 : OK     0     0            0   0%            0
  PARTS WF2 : OK     0     0            0   0%            0

COGFF
  CONDITION :  0
  PARAM0-F : REF: xxxxxx  xxxxxx  xxxxxx  xxxxxx  PHASE: xxx  xxx  xxx  xx   x
                 AMP:      xxx       xxx       xxx       xxx   RATE: xxx  xxx  xxx  xx x
  PARAM0-B : REF: xxxxxx  xxxxxx  xxxxxx  xxxxxx  PHASE: xxx  xxx  xxx  xx   x
                 AMP:      xxx       xxx       xxx       xxx   RATE: xxx  xxx  xxx  xx x

 LF-A
  ROLL  LARGE : XXX.XXXX  MIDDLE : XXX.XXXX  SMALL : XXX.XXXX  SMALLER : XXX.XXX   X
  CUT   LARGE : XXX.XXXX  MIDDLE : XXX.XXXX  SMALL : XXX.XXXX  SMALLER : XXX.XXX   X
 LF-B
  ROLL  LARGE : XXX.XXXX  MIDDLE : XXX.XXXX  SMALL : XXX.XXXX  SMALLER : XXX.XXX   X
  CUT   LARGE : XXX.XXXX  MIDDLE : XXX.XXXX  SMALL : XXX.XXXX  SMALLER : XXX.XXX   X
 SCALE-A
  ROLL  LARGE : XXX  MIDDLE : XXX  SMALL : XXX  SMALLER : XX  X
  CUT   LARGE : XXX  MIDDLE : XXX  SMALL : XXX  SMALLER : XX  X
 SCALE-B
  ROLL  LARGE : XXX  MIDDLE : XXX  SMALL : XXX  SMALLER : XX  X
  CUT   LARGE : XXX  MIDDLE : XXX  SMALL : XXX  SMALLER : XX  X

  PV AUTO JUDGE : ON(NORMAL) ,  0
```

F-7-59

7.2 Special Mode

7.2.1 Special Modes for Servicing

This printer supports the following special modes in addition to the service mode:

- PCB replacement mode
- Download mode
- Counter display mode

1. PCB replacement mode
This mode is used when replacing the main PCB or MC relay PCB.
By executing this mode,
- Backup data of the settings and counter values stored in the MC relay PCB are moved to the new main PCB.
- The data such as the settings and counter values are copied to the MC relay PCB.

a) Entering the PCB replacement mode
Follow the same procedure as that for entering the service mode.
(With the [Load] button and [Navigate] button pressed down, turn on the [Power] button.)
When the printer starts up, compare the serial number memorized in the main PCB's EEPROM with that memorized in the MC relay PCB's EEPROM. If they do not match, or no serial number is memorized in either EEPROM, enter the PCB replacement mode.

b) Procedure

Select "CPU BOARD" or "MC BOARD" using the [◀] and [▶] buttons, and then press the [OK] button to determine it.

- CPU BOARD
Select this after replacing the main PCB.
The data in the MC relay PCB is copied to the main PCB.

- MC BOARD
Select this before replacing the MC relay PCB.
The data in the main controller PCB is copied to the MC relay PCB.

c) Exiting the PCB replacement mode
Turning off the [Power] button of the printer allows you to exit the PCB replacement mode.

For details on how to replace the PCB, see DISASSEMBLY/REASSEMBLY > Points to Note on Disassembly and Reassembly > PCBs.

2. Download mode
Use this mode only when updating the firmware without performing initialization.
This mode can update the firmware even if the printhead and ink tanks have not been installed to the printer.

Reference:
For instruction on how to update the main controller, refer to "TROUBLESHOOTING" > "Version Up".

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a) Entering the download mode
1) Turning off the [Power] button of the printer.
2) With the [Stop] and [Navigate] buttons pressed down, turn on the [Power] button of the printer.
   * Keep pressing the above buttons until "Initializing" appears on the display.

b) Procedure
When "Download Mode/Send Firmware" is shown on the display, transfer the firmware.
When downloading of the firmware is completed, the printer is turned off automatically.

3. Counter display mode
Use this mode to view only printer counter information.

a) Invoking counter display mode
1) Press the [MENU] button to keep [Printer Info] > [System Info] selected.

2) Press the [▲] button whole holding down the [MENU] button + [OK] button to invoke counter display mode.

b) How to view counter display mode
- S/N: Unit serial number
- CNT: Number of copies printed in A4 terms (unit: copies)

Chapter 8 ERROR CODE

Contents

8.1 Outline

8.1.1 Outline

The printer indicates errors using the display and LEDs.
If an error occurs during printing, the printer status is also displayed on the status monitor of the printer driver.
The following three types of errors are displayed on the display:

- Warning
Status where the print operation can be continued without remedying the cause of the problem. This can, however, adversely affect the printing results.

- Error
Status where the print operation is stopped, and the regular operation cannot be recovered until the cause of the problem is remedied.

- Service call error
When a service call error occurs, the error is not cleared and the error indication remains on the operation panel even if the printer is powered off and on again. (Occurrence of the service call error is indicated again at power-on.)
This measure is taken to prevent user's recovery of the service call error and damages to the printer.
Service call errors can be cleared, however, by starting up the printer in the service mode.

Note that some of the warnings, errors, and service call error described in the following tables may not appear in this printer.
In addition, the message that appears on the screen may not be the same as what is described in the table.

The first 4 digits of Warning and Error code show the following description.

The first 2 digits of code	Description
01xxxxxx-xxx	Warning
03xxxxxx-xxx	Error

The next 2 digits of code	Description
xx01xxxx-xxxx	Jam-related
xx03xxxx-xxxx	Cover-related
xx06xxxx-xxxx	Media-related
xx13xxxx-xxxx	Controller-related
xx1Axxxx-xxxx	HDD-related
xx32xxxx-xxxx	Media-related
xx34xxxx-xxxx	PDL-related
xx80xxxx-xxxx	Printhead-related
xx81xxxx-xxxx	Inktank-related
xx83xxxx-xxxx	Inktank-related
xx84xxxx-xxxx	Maintenance cartridge-related
xx86xxxx-xxxx	Print-related
xx87xxxx-xxxx	Cutter-related
xx89xxxx-xxxx	Media take-up unit-related
xx90xxxx-xxxx	Version up-related

8.2 Warning Table

8.2.1 Warnings

*: Codes represent the numbers that are displayed in DISPLAY of the service mode and that are recorded in PRINT INF. As to PRINT INF, the codes record the last 4 digits. Messages that are not accompanied by a code indication are not logged.

Display message	Code*	Condition detected	Action
Cannot cut paper. Lift the release lever and reload the paper.	00000000-1011	Cannot cut perform force cutting because paper is too short.	Reload new paper.
Paper Mismatch.	01061000-1021	Paper type mismatch	Match the paper type in printer driver and the one specified in printer panel.
Papr Size Mismatch	01063000-1022	Paper size mismatch	Match the paper size in printer driver and the one specified in printer panel.
MediaType Mismatch	01063000-1023	Paper size/type mismatch	Match the paper type/size in printer driver and the ones specified in printer panel.
PaperWidth Mismatch	01063000-1054	Roll media width mismatch The occurrence conditions of roll paper width mismatch have been met with "Warning" set in [Detect Mismatch] in the menu settings.	The warning is cleared when the print job is completed or cancelled.
Mail box nearly full. Delete unwanted data	011A1001-2901	The free hard disk space left for Personal Boxes in the printer's hard disk does not have more than 1 GB, combined.	Delete unneeded jobs stored in Personal Boxes.
Maximum jobs stored. Delete unwanted data.	011A1006-2907	Saved jobs exceed the Personal Box capacity.	Press the stop button to cancel the print job. Delete print jobs from the queue. Delete unneeded jobs stored on the hard disk.
The paper is too small.	013200D2-1051	Size clip error	Check the media size check. Change the media size.
GL2:W0501 The memory is full.	01340501-1040	Memory full (HP-GL/2)	Check if there is the non-image area of the print. Verify the transmitted data before reprinting.
GL2:W0502 The parameter is out of range.	01340502-1041	Invalid parameter (HP-GL/2)	Check if there is the non-image area of the print. Verify the transmitted data before reprinting.
GL2:W0504 This command is not supported.	01340504-1043	Invalid command (HP-GL/2)	Check if there is the non-image area of the print. Verify the transmitted data before reprinting.
GL2:W0903 The memory is full.	01340903-1047	Overflow of replot buffer (HP-GL/2)	Check if there is the non-image area of the print. Verify the transmitted data before reprinting.
GL2:W0904 The memory is full.	01340904-1048	Overflow of Polygon buffer (HP-GL/2)	Check if there is the non-image area of the print. Verify the transmitted data before reprinting.
GARO W1221	01341221-1030	GARO (image mode) : Unknown command	Verify the transmitted data before reprinting.
GARO W1222	01341222-1031	GARO (image mode) : Invalid parameter count (no parameters)	Check if there is the non-image area of the print. Verify the transmitted data before reprinting.
GARO W1223	01341223-1032	GARO (image mode) : Required parameter missing	Check if there is the non-image area of the print. Verify the transmitted data before reprinting.
GARO W1224	01341224-1033	GARO error	Check if there is the non-image area of the print. Verify the transmitted data before reprinting.
GARO W1225	01341225-1034	GARO (image mode) : Other warning	Check if there is the non-image area of the print. Verify the transmitted data before reprinting.
GARO W1226	01341226-103A	GARO (image mode) : Image processing table error	Verify that there is no image missing in print result. Verify the transmitted data before reprinting.
GARO W1231	01341231-1035	GARO (setup) : Unknown command	Check if there is the non-image area of the print. Verify the transmitted data before reprinting.
GARO W1232	01341232-1036	GARO (setup) : Invalid parameter count	Check if there is the non-image area of the print. Verify the transmitted data before reprinting.
GARO W1233	01341233-1037	GARO (setup) : Required parameter missing	Check if there is the non-image area of the print. Verify the transmitted data before reprinting.
GARO W1234	01341234-1038	GARO (setup) : Data out of bounds	Check if there is the non-image area of the print. Verify the transmitted data before reprinting.
GARO W1235	01341235-1039	GARO (setup) : Other warning	Check if there is the non-image area of the print. Verify the transmitted data before reprinting.
Problem with Printhead. Chk printing results	01800500-1010	Number of non-discharging nozzles in printhead: Warning level	Clean the printhead. Renew the printhead. Identify the head management sensor unit.
Problem with Printhead R Chk printing results	01800500-1012	Non-discharge occurred in printhead1	Clean the printhead. Renew the right printhead.
Problem with Printhead L Chk printing results	01800500-1013	Non-discharge occurred in printhead2	Clean the printhead. Renew the left printhead.
Ink Level: Check	01810101-1001	Y ink tank near-empty	Renew the ink tank.
No ink tank loaded. Check ink tank.	01810101-1411	Y ink tank removal	Install the Y ink tank.
Ink Level: Check	01810102-1002	M ink tank near-empty	Renew the ink tank.
No ink tank loaded. Check ink tank.	01810102-1412	M ink tank removal	Install the M ink tank.

Display message	Code*	Condition detected	Action
Ink Level: Check	01810103-1003	C ink tank near-empty	Renew the ink tank.
No ink tank loaded. Check ink tank.	01810103-1413	C ink tank removal	Install the C ink tank.
Ink Level: Check	01810104-1000	BK ink tank near-empty	Renew the ink tank.
Ink Level: Check	01810104-1004	PM ink tank near-empty	Renew the ink tank.
No ink tank loaded. Check ink tank.	01810104-1410	BK ink tank removal	Install the BK ink tank.
No ink tank loaded. Check ink tank.	01810104-1414	PM ink tank removal	Install the PM ink tank.
Ink Level: Check	01810105-1005	PC ink near-empty	Renew the ink tank.
No ink tank loaded. Check ink tank.	01810105-1415	PC ink tank removal	Install the PC ink tank.
Ink Level: Check	01810106-1006	MBK ink tank near-empty	Renew the ink tank.
No ink tank loaded. Check ink tank.	01810106-1416	MBK ink tank removal	Install the MBK ink tank.
Ink Level: Check	01810107-1007	MBK2 ink tank near-empty	Renew the ink tank.
Not much ink is left. Prepare to replace the ink.	01810107-100A	R ink tank near-empty	Renew the R ink tank.
No ink tank loaded. Check ink tank.	01810107-1417	MBK ink tank removal	Install the MBK ink tank.
No ink tank loaded. Check ink tank.	01810107-141A	No R ink tank warning	Install the ink tank.
Ink Level: Check	01810108-1008	GY ink near-empty	Renew the ink tank.
Not much ink is left. Prepare to replace the ink.	01810108-100C	G ink tank near-empty	Renew the G ink tank.
No ink tank loaded. Check ink tank.	01810108-1418	GY ink tank removal	Install the GY ink tank.
No ink tank loaded. Check ink tank.	01810108-141C	No G ink tank warning	Install the ink tank.
Ink Level: Check	01810109-1009	PGY ink near-empty	Renew the ink tank.
Not much ink is left. Prepare to replace the ink.	01810109-100B	B ink tank near-empty	Renew the B ink tank.
No ink tank loaded. Check ink tank.	01810109-1419	PGY ink tank removal	Install the PGY ink tank.
No ink tank loaded. Check ink tank.	01810109-141B	No B ink tank warning	Install the ink tank.
Ink tank is empty. Replace the ink tank.	01810301-1401	Y ink tank empty	Renew the Y ink tank.
Ink tank is empty. Replace the ink tank.	01810302-1402	M ink tank empty	Renew the M ink tank.
Ink tank is empty. Replace the ink tank.	01810303-1403	C ink tank empty	Renew the C ink tank.
Ink tank is empty. Replace the ink tank.	01810304-1400	BK ink tank empty	Renew the BK ink tank.
Ink tank is empty. Replace the ink tank.	01810304-1404	PM ink tank empty	Renew the PM ink tank.
Ink tank is empty. Replace the ink tank.	01810305-1405	PC ink tank empty	Renew the PC ink tank.
Ink tank is empty. Replace the ink tank.	01810306-1406	MBK ink tank empty	Renew the MBK ink tank.
Ink tank is empty. Replace the ink tank.	01810307-1407	MBK2 ink tank empty	Renew the MBK2 ink tank.
Ink tank is empty. Replace the ink tank.	01810307-140A	R ink tank empty	Renew the R ink tank.
Ink tank is empty. Replace the ink tank.	01810308-1408	GY ink tank empty	Renew the GY ink tank.
Ink tank is empty. Replace the ink tank.	01810308-140C	G ink tank empty	Renew the G ink tank.
Ink tank is empty. Replace the ink tank.	01810309-1409	PGY ink tank empty	Renew the PGY ink tank.
Ink tank is empty. Replace the ink tank.	01810309-140B	B ink tank empty	Renew the B ink tank.
Prepare for maint cart replacement.	01841001-281A	Maintenance cartridge near-full	Replace the maintenance cartridge.
This type of paper is not compatible with HP-GL/2.	01860006-1015	Non-support paper of HP-GL/2	Exchange for the compatible paper to HP-GL/2.
Borderless printing not possible. Check supported paper.	01861001-1052	Borderless printing disabled (unsupported size) The occurrence conditions of borderless printing not possible error (unsupported size) have been met with "Warning" set in [Detect Mismatch] in the menu settings.	The warning is cleared when the print job is completed or cancelled.

Display message	Code*	Condition detected	Action
Paper position not suitable for borderless printing.	01861001-1053	Borderless printing disabled (physical) The occurrence conditions of borderless printing not possible error (physical) have been met with "Warning" set in [Detect Mismatch] in the menu settings.	The warning is cleared when the print job is completed or cancelled.
Mail box full. Now printing without saving data.	01861003-2902	100 jobs are stored in the Personal Box.	Delete unneeded jobs stored in Personal Boxes.
Before borderless printing, move the blue platen switch.	01861004-1049	The platen shutter is closed at the borderless printing.	Open the corresponding platen shutter. Check the platen and multi sensor and surrounding parts. Replace the multi sensor.
Blue platen switch is dirty. Please clean the switch.	01861004-1050	Platen shutter cleaning warning	Clean the platen shutter.
Before borderless printing, move the blue platen switch.	01861006-1055	Platen shutter No.1 open warning	Open the corresponding platen shutter. Check the platen and multi sensor and surrounding parts. Replace the multi sensor.
Before borderless printing, move the blue platen switch.	01861007-1056	Platen shutter No.2 open warning	Open the corresponding platen shutter. Check the platen and multi sensor and surrounding parts. Replace the multi sensor.
Before borderless printing, move the blue platen switch.	01861008-1057	Platen shutter No.3 open warning	Open the corresponding platen shutter. Check the platen and multi sensor and surrounding parts. Replace the multi sensor.
Before borderless printing, move the blue platen switch.	01861009-1058	Platen shutter No.4 open warning	Open the corresponding platen shutter. Check the platen and multi sensor and surrounding parts. Replace the multi sensor.
Before borderless printing, move the blue platen switch.	0186100A-1059	Platen shutter No.5 open warning	Open the corresponding platen shutter. Check the platen and multi sensor and surrounding parts. Replace the multi sensor.
Before borderless printing, move the blue platen switch.	0186100B-105A	Platen shutter No.6 open warning	Open the corresponding platen shutter. Check the platen and multi sensor and surrounding parts. Replace the multi sensor.
Before borderless printing, move the blue platen switch.	0186100C-105B	Platen shutter No.7 open warning	Open the corresponding platen shutter. Check the platen and multi sensor and surrounding parts. Replace the multi sensor.
Before borderless printing, move the blue platen switch.	0186100D-105C	Platen shutter No.8 open warning	Open the corresponding platen shutter. Check the platen and multi sensor and surrounding parts. Replace the multi sensor.
Before borderless printing, move the blue platen switch.	0186100E-105D	Platen shutter No.9 open warning	Open the corresponding platen shutter. Check the platen and multi sensor and surrounding parts. Replace the multi sensor.
Before borderless printing, move the blue platen switch.	0186100F-105E	Platen shutter No.10 open warning	Open the corresponding platen shutter. Check the platen and multi sensor and surrounding parts. Replace the multi sensor.
Before borderless printing, move the blue platen switch.	01861010-105F	Platen shutter No.11 open warning	Open the corresponding platen shutter. Check the platen and multi sensor and surrounding parts. Replace the multi sensor.
Before borderless printing, move the blue platen switch.	01861011-1060	Platen shutter No.12 open warning	Open the corresponding platen shutter. Check the platen and multi sensor and surrounding parts. Replace the multi sensor.
Before borderless printing, move the blue platen switch.	01861012-1061	Platen shutter No.13 open warning	Open the corresponding platen shutter. Check the platen and multi sensor and surrounding parts. Replace the multi sensor.
Before borderless printing, move the blue platen switch.	01861013-1062	Platen shutter No.14 open warning	Open the corresponding platen shutter. Check the platen and multi sensor and surrounding parts. Replace the multi sensor.
Parts replacement time has passed. Call for service.		Parts counter W2 level	After checking the parts counter in service mode, replace any part whose counter is nearing the error value.
End of paper feed. Cannot feed paper more.		Forced feed limit	Check the remaining quantity of roll media.
Prepare for parts replacement. Call for service.		Parts counter W1 level	Check the parts counter in service mode.

8.3 Error Table

8.3.1 Errors

*: Codes represent the numbers that are displayed in DISPLAY of the service mode and that are recorded in PRINT INF. As to PRINT INF, the codes record the last 4 digits.

Display message	Code*	Condition detected	Action
Paper size not detected. Reload paper.	03010000-200A	Unable to detect the paper width (Paper loaded at an improper position)	Reload the paper.
Paper size not detected. Lift the release lever and reload the paper.	03010000-200C	Unable to detect the leading end of paper	Check the leading end of paper. Reload the paper.
Leading edge detection error. Lift the release lever and align leading edge with orange line.	03010000-200D	Unable to detect the trailing end of cut sheet	Check the sheet length. Check to see if paper has not jammed.
This paper cannot be used. Check supported paper sizes.	03010000-200E	Undersized paper (cut sheets/roll media)	Replace with larger-sized paper.
This paper cannot be used. Check supported paper sizes.	03010000-200F	Oversized paper (cut sheets/roll media)	Replace with smaller-sized paper.
Paper jam. Manually rewind roll all the way.	03010000-2016	Cut sheet feed failure	Check or replace a cut sheet.
Paper size not detected. Lift the release lever and reload the paper.	03010000-2017	Paper (right) edge detection error	Check the right edge of paper. Check the paper type.
Paper size not detected. Lift the release lever and reload the paper.	03010000-2018	Paper (left) edge detection error	Check the left edge of paper. Check the paper type.
! Paper not aligned with right guide. (Change to the following message) ! Push the release lever back, then reload the paper.	03010000-201A	Paper (right) edge detection error (cut sheet pick-up)	Set or replace the media.
! Paper not aligned with right guide. (Change to the following message) ! Push the release lever back, then reload the paper.	03010000-201B	Paper (right) edge detection error (roll media pick-up)	Set or replace the media.
Paper jam. Lift the release lever and remove the paper.	03010000-201C	Paper (right) edge detection error (cut sheet printing)	Set or replace the media.
Paper jam. Lift the release lever and remove the paper.	03010000-201D	Paper (left) edge detection error (roll media printing)	Set or replace the media.
Cannot print as specified. Replace paper with A4/LTR (vertical) or larger	03010000-2E1F	Undersized paper loaded for internal printing (A3 or larger)	Replace with A3/11"x17" or any larger-sized paper A3/11"x17"
Cannot feed paper. Remove paper and press Load/Eject.	03010000-2E25	Paper jam while feeding/ejecting/printing	Remove the paper jam and reload the paper.
Cannot feed paper. Lift the release lever and reload paper. or Paper jam. Manually rewind roll all the way.	03010000-2E27	Paper jam during feeding/printing/ejection	Reload the paper.
Paper jam. Manually rewind roll all the way and press OK.	03010000-2E3A	Media load failure	Check the pick-up unit and roll media. Check to see if paper has not jammed.
Paper jam. Manually rewind roll all the way and press OK.	03010000-2E3B	Media load failure (lower roll)	Check the pick-up unit and roll media. Check to see if paper has not jammed.
! Roll jam Lift the release lever.	03010000-2E3C	When operating with cut sheet, paper jam is detected.	Check the paper path, and check if paper is stuck inside the machine.
! Roll 1 (upper) jam Lift the release lever.	03010000-2E3D	When operating with upper roll paper, paper jam is detected.	Check the paper path, and check if paper is stuck inside the machine.
! Roll 2 (lower) jam Lift the release lever.	03010000-2E3E	When operating with lower roll paper, paper jam is detected.	Check the paper path, and check if paper is stuck inside the machine.
! Roll jam Lift the release lever.	03010000-2E3F	When operating with roll paper, paper jam is detected.	Check the paper path, and check if paper is stuck inside the machine.
Error in cutter position.	03010000-2E47	Cutter position error	Check the cutter unit and surrounding part.
Hardware error. 03130031-2E29 Turn off printer, wait, then turn on again.	03010000-2F29	Feed motor timeout (Roll media)	Check the roll feed unit. Check roll media. Check to see if paper has not jammed in the printer.
Use another paper. Press Online to clear the error.	03010000-2F33	Unadjustable because of transparent media	Replace with adjustable media.
Paper loaded askew. Lift the release lever.	03016000-2010	Skew	Correct the skew in the paper and reload it.

Display message	Code*	Condition detected	Action
Ink tank cover is open. Turn off printer, wait a while, and turn it on again.	03031000-2E10	Ink tank cover abnormally open	Close the ink tank cover and turn on the printer again.
Carriage Cover is open. Turn off printer, wait a while, and turn it on again.	03031000-2E11	Printhead cover open	Close the carriage cover and turn off the printer, and turn it on again.
Rel lever is in wrong position. Turn off printer, wait, then turn on again.	03031000-2E12	Release lever open	Close the release lever and turn off the printer, and turn it on again.
Rel lever is in wrong position. Turn off printer, wait, then turn on again.	03031000-2F21	Pinch roller open error	Check the pinch roller unit and surrounding part.
Top cover is open. Turn off printer, wait a while, and turn it on again.	03031000-2F38	Top cover abnormally open	Close the top cover and turn on the printer again.
! Unable to detect ink level correctly.	03031101-25B7	With ink tank cover open, ink has diminished below the pin check level. During printing with ink tank cover open, the ink has diminished below the pin check level. *Under study as a part of stop-less supply system. This error is intended for preventing the ink tank to be installed in other model (iPF710) using the same ink tank by the hardware configuration that disables writing to ink tank EEPROM while ink tank cover is open.	By closing the ink tank cover, this warning is cleared. If the pin check tank is removed in this condition, the error changes to the pin check tank removal error. Or, if printing is continued in this condition, and the subtank corresponding to the pin check tank is detected empty, the error changes to the subtank corresponding to pin check tank empty error.
! Paper mismatch Make sure media type and paper size match for the adjustment print.	03060000-2E20	Paper type mismatch at adjustment	Choose the same paper type as the first page and perform adjustment printing.
Sheet printing is selected. Press Load/Eject and load sheets.	03060100-2E02	After starting to print sheet, no manual feeding paper has been detected.	Load cut sheet in manual feeding slot.
Sheet printing is selected. Press Load/Eject and load sheets.	03060100-2E04	No front manual feed paper	Load cut sheet in the front manual feed paper slot.
Sheet printing is selected. Press Load/Eject and load sheets.	03060100-2E05	After starting to print sheet, no manual feeding paper has been detected.	Load cut sheet in manual feeding slot.
Sheet printing is selected. Press Load/Eject and load sheets.	03060200-2E03	No cassette paper	Load cut sheet in the cassette.
Cassette printing is selected. Press Load/Eject and remove manually	03060200-2E0B	After manual feed cut sheet had been loaded, data with cassette specification was received.	Load cut sheet in the cassette.
Roll printing is selected. Press Load/Eject and load a roll.	03060A00-2E00	Data with a roll media specification has been received but no roll media are loaded.	Load roll media.
Roll printing is selected. Press Load/Eject and load a roll.	03060A00-2E01	No roll paper at internal printing	Load roll media.
PaprWidth Mismatch Plain Paper ISO A3 Online=Print Stop=Stop Printing	03060A00-2E08	Paper width mismatch	Check the paper width and print.
No Roll Feed Unit. Turn printer off and install roll feed unit.	03060A00-2E0E	Roll media unit not installed.	Install the roll media unit.
The roll is empty. Lift the release lever and replace the roll.	03060A00-2E1B	Roll media end	Renew the supply of roll media.
Roll feed unit err Turn off printer and check roll feed unit	03060A00-2E24	Roll cam sensor error	Check the roll paper unit.
Roll Paper Plain Paper ISO A3 Load Roll Paper Stop Printing	03060A00-2E33	Roll media is not loaded when receiving the printing job. Roll paper is not loaded when a job with roll paper specification has been received.	(1) Choose [Load Roll Paper] and load paper according to the panel guidance. (2) Choose [Stop Printing] or press the Stop button to stop printing. (3) Lift the release lever, and load paper.
! Roll2 (Lower) printing is selected. Press Load/Eject and load a roll.	03060A00-2E34	Roll paper is not loaded. (lower roll)	(1) Choose [Load Roll Paper] and load paper according to the panel guidance. (2) Choose [Stop Printing] or press the Stop button to stop printing. (3) Lift the release lever, and load paper.
Roll printing is selected. Press Load/Eject and load a roll.	03060A00-2E35	Roll media is not loaded for internal printing.	Reload the roll media.
! Roll 1 (Upper) printing is selected. Press Load/Eject and load a roll.	03060A00-2E37	Roll paper is not loaded. (upper roll)	(1) Choose [Load Roll Paper] and load paper according to the panel guidance. (2) Choose [Stop Printing] or press the Stop button to stop printing. (3) Lift the release lever, and load paper.
! Roll printing is selected. Press Load/Eject and load a roll.	03060B00-2E36	Roll media is not loaded for internal printing. (lower roll)	Load the roll media.
! The roll is empty. Lift the release lever and replace the roll.	03060B00-2E39	Lower roll end	Load roll paper in lower roll.

Display message	Code*	Condition detected	Action
This type of paper is not compatible with HP-GL/2. Online: Print Stop: Stop Printing Load/Eject: Change Paper	03061000-2E15	Non-support media of HP-GL/2	Exchange for the compatible paper to HP-GL/2 before reprinting.
Wrong paper size. Check paper size setting in driver. Online: Print Stop: Stop Printing	03063000-2E08	Paper width mismatch	Check the paper width and print.
! Hardware error. 03130000-2E21 Turn off printer, wait, then turn on again.	03130000-2E21	IEEE1394 port error	Restart or replace the IEEE1394 board.
Hardware error. 03130031-260E Turn off printer, wait, then turn on again.	03130031-260E	Gap detection error	Check the carriage unit and surrounding parts. Replace the main controller PCB.
Hardware error. 03130031-260F Turn off printer, wait, then turn on again.	03130031-260F	Gap reference surface error	Replace the multi sensor reference.
Hardware error. 03130031-2618 Turn off printer, wait, then turn on again.	03130031-2618	VH voltage error	Check the power supply unit.
Hardware error. 03130031-290A Turn off printer, wait, then turn on again.	03130031-290A	Hard disk disconnection error	Check the connection status of HDD.
Hardware error. 03130031-2E23 Turn off printer, wait, then turn on again.	03130031-2E23	Cutter unit failure	Check the cutter unit and sensor.
Hardware error. 03130031-2E13 Turn off printer, wait, then turn on again.	03130031-2F13	A/D converter external trigger output stop detection hardware error 1	Check the carriage unit and surrounding parts.
Hardware error. 03130031-2E14 Turn off printer, wait, then turn on again.	03130031-2F14	Writing to the ASIC register disabled	Replace the main controller PCB.
Hardware error. 03130031-2E16 Turn off printer, wait, then turn on again.	03130031-2F16	Mist fan rotation error	Check the mist fan.
Hardware error. 03130031-2E17 Turn off printer, wait, then turn on again.	03130031-2F17	Platen suction fan lock detection error	Check the platen suction fan.
Hardware error. 03130031-2E1F Turn off printer, wait, then turn on again.	03130031-2F1F	Pump cam sensor error	Check the purge unit.
Hardware error. 03130031-2E20 Turn off printer, wait, then turn on again.	03130031-2F20	Purge motor cam position error	Check the purge unit.
Hardware error. 03130031-2E22 Turn off printer, wait, then turn on again.	03130031-2F22	Pump move timeout	Check the purge unit.
Hardware error. 03130031-2E23 Turn off printer, wait, then turn on again.	03130031-2F23	Purge motor error Pump inoperable	Check the purge unit.
Hardware error. 03130031-2E25 Turn off printer, wait, then turn on again.	03130031-2F25	Unable to detect the carriage motor home position	Check the carriage unit. Check the linear encoder for smears.
Hardware error. 03130031-2E26 Turn off printer, wait, then turn on again.	03130031-2F26	Carriage inoperable	Check the carriage unit and surrounding parts.
Hardware error. 03130031-2E27 Turn off printer, wait, then turn on again.	03130031-2F27	Carriage move timeout	Check the carriage unit and surrounding parts.
Hardware error. 03130031-2E2A Turn off printer, wait, then turn on again.	03130031-2F2A	Unable to detect the feed roller home position	Check the feed roller encoder and surrounding part. Check to see if paper has not jammed.
Hardware error. 03130031-2F2B Turn off printer, wait, then turn on again.	03130031-2F2B	LF operation failure	Check to see if paper has not jammed. Check the feed motor and feed roller.
Hardware error. 03130031-2E2E Turn off printer, wait, then turn on again.	03130031-2F2E	Roll travel timeout	Check the roll feed unit.
Hardware error. 03130031-2F32 Turn off printer, wait, then turn on again.	03130031-2F32	Multi sensor error	Check the environment for interferences from outside light.
Excessive temperature or humidity.	03130031-2F35	Calibration environment error	Check if the temperature or humidity is within the scope of calibration operation.
Hardware error. 03130031-2F3A Turn off printer, wait, then turn on again.	03130031-2F3A	Valve motor error	Check the ink supply unit.
Hardware error. 03130031-2F3B Turn off printer, wait, then turn on again.	03130031-2F3B	CS communication error	Remove the ink tanks and then reload them. Replace the ink tank.

Display message	Code*	Condition detected	Action
Hardware error. 03130031-2F3C Turn off printer, wait, then turn on again.	03130031-2F3C	LF pressure error	Check the pinch roller and surrounding parts.
Hardware error. 03130031-2F3D Turn off printer, wait, then turn on again.	03130031-2F3D	HP maintenance jet pump motor overload error	Check the purge unit.
Hardware error. 03130031-2F3E Turn off printer, wait, then turn on again.	03130031-2F3E	HP maintenance jet pump motor move timeout error	Check the purge unit.
Hardware error. 03130031-2F3F Turn off printer, wait, then turn on again.	03130031-2F3F	HP maintenance jet pump motor error	Check the purge unit.
Hardware error. 03130031-2F46 Turn off printer, wait, then turn on again.	03130031-2F46	Platen shutter failure	Check the platen shutter and shutter HP sensor.
Hardware error. 03800500-2F48 Turn off printer, wait, then turn on again.	03130031-2F48	VHT voltage error	Replace printhead.
Hardware error. 03800500-2F49 Turn off printer, wait, then turn on again.	03130031-2F49	VH leakage (left printhead)	Replace left printhead.
Hardware error. 03800500-2F4A Turn off printer, wait, then turn on again.	03130031-2F4A	Incorrect main controller PCB attachment error	Replace the main controller PCB.
Hardware error. 03800500-2F50 Turn off printer, wait, then turn on again.	03130031-2F50	VH leakage (right printhead)	Replace right printhead.
Hardware error. 03800500-2F51 Turn off printer, wait, then turn on again.	03130031-2F51	VH leakage (both printheads/ single printhead)	Replace printhead.
Hardware error. 03800500-2F52 Turn off printer, wait, then turn on again.	03130031-2F52	Carriage PCB of different model installed error	Check carriage unit. Replace the printhead.
Hardware error. 03130031-4027 Turn off printer, wait, then turn on again.	03130031-4027	Lift travel timeout error	Check the carriage unit and surrounding parts.
Mail box full. Delete unwanted data on your computer to resume printing. Press Stop to cancel printing.	031A1001-2905	The job store executed when the free hard disk space left for Personal Boxes in the printer's hard disk is full.	Delete unneeded jobs stored in Personal Boxes.
Hard disk error. Press OK to reformat	031A1002-2908	Hard disk format error	Press the [OK] button to start reformatting the hard disk. When formatting is finished, the printer automatically restarts.
File read error. Turn off printer, wait a while, and turn it on again. Invalid files will be deleted.	031A1002-2909	Hard disk file error	Restart the printer. Only the corrupted files will be deleted, and the printer will restart.
Mail box full. Cannot save. Delete unwanted data on your computer to resume printing. Press Stop to cancel printing.	031A1006-2906	The store executed when 32 jobs are stored in the Personal Box.	Delete unneeded jobs stored in Personal Boxes.
The paper is too small.	033200D2-2E30	Size clip error	Confirm the print data.
No printhead Install printhead.	03800100-2800	Printhead not installed.	Install the printhead.
No right printhead Install right printhead.	03800101-2800	Printhead1 not installed.	Install the right printhead.
No left printhead Install left printhead.	03800102-2808	Printhead2 not installed.	Install the left printhead.
Printhead error Open top cover and replace the right printhead.	03800200-2802	Invalid printhead installed.	Replace printhead.
PHeads: wrong pos. Open top cover and check the printhead positions.	03800200-2804	Printheads installed left and right reversed	Replace printhead.
Wrong printhead. Open top cover and replace the printhead.	03800200-2811	Printhead version error	Replace printhead.
Right printhead error. Open top cover and replace the right printhead.	03800201-2802	Printhead1 ID error	Replace the right printhead.
PHeads: wrong pos. Open top cover and check the printhead positions.	03800201-2804	Printheads installed left and right reversed	Replace printhead.

Display message	Code*	Condition detected	Action
Right printhead error. Open top cover and replace the right printhead.	03800201-2812	Printhead1 wrong version error	Replace the right printhead.
PHeads: wrong pos. Open top cover and check the printhead positions.	03800202-2807	Printheads installed left and right reversed	Check the installation position of printhead. Replace printhead.
Left printhead error. Open top cover and replace the left printhead.	03800202-280A	Printhead2 ID error	Replace the left printhead.
Left printhead error. Open top cover and replace the left printhead.	03800202-2813	Printhead2 wrong version error	Replace the left printhead.
! Printhead L error. Turn off printer, wait a while, then turn it on again.	03800202-282D	Left printhead abnormal temperature detection error (during maintenance jet)	Turn off the printer, and then turn it on again and replace the left printhead.
! Left printhead error Open top cover and replace the left printhead.	03800202-2830	Printhead2 temperature rise error	Replace the left printhead.
Printhead error Open top cover and replace the right printhead.	03800300-2801	Printhead DI compensation failure	Replace printhead.
Right printhead error. Open top cover and replace the right printhead.	03800301-2801	Printhead1 DI compensation failure	Replace the right printhead.
Left printhead error. Open top cover and replace the left printhead.	03800302-2809	Printhead2 DI compensation failure	Replace the left printhead.
Printhead error Open top cover and replace the right printhead.	03800400-2803	Printhead EEPROM error	Replace printhead.
Right printhead error. Open top cover and replace the right printhead.	03800401-2803	Printhead1EEPROM error	Replace the right printhead.
Left printhead error. Open top cover and replace the left printhead.	03800402-280B	Printhead2 EEPROM error	Replace the left printhead.
Execute printhead cleaning. If this message is still displayed, replace the printhead.	03800500-280C	Printhead found to have many non-discharging nozzles during a non-discharging inspection (printing paused)	Clean the printhead. Identify the nozzles in a nozzle check pattern. Replace the printhead.
Execute printhead cleaning. If this message is still displayed, replace the printhead. Printing stopped.	03800500-2827	Printhead found to have many non-discharging nozzles during a non-discharging inspection (printing stopped)	Clean the printhead. Identify the nozzles in a nozzle check pattern. Replace the printhead.
Hardware error. 03800500-2F2F Turn off printer, wait, then turn on again.	03800500-2F2F	The non-discharge of the EVEN or ODD line (640-nozzles) is detected the 320-nozzles or more.	Check the head management sensor and surrounding parts. Check that the printhead is installed correctly. Replace the head management sensor. Replace the printhead.
Hardware error. 03800500-2F30 Turn off printer, wait, then turn on again.	03800500-2F30	Detectable area failure (when adjusting the position of non-discharging nozzle) The gap of detection position of nozzle both ends is big.	Check the ink tube unit and surrounding parts. Check the purge unit and surrounding parts. Check the head management sensor and surrounding parts. Check the flexible cable unit and surrounding parts. Check that the printhead is installed correctly. Replace the main controller PCB. Replace the printhead. Replace the carriage unit.
Hardware error. 03800500-2F31 Turn off printer, wait, then turn on again.	03800500-2F31	Non-discharge detection optical axis error	Check the head management sensor. Replace the head management sensor. Replace the printhead.
Hardware error. 03800500-2F40 Turn off printer, wait, then turn on again.	03800500-2F40	The non-discharge of all colors and chips (A/B, EVEN/ODD) and nozzles is detected.	Check the ink tube unit and surrounding parts. Check the purge unit and surrounding parts. Check the head management sensor and surrounding parts. Check the flexible cable unit and surrounding parts. Check that the printhead is installed correctly. Replace the head management sensor. Replace the main controller PCB. Replace the printhead. Replace the carriage unit.

Display message	Code*	Condition detected	Action
Hardware error. 03800500-2F41 Turn off printer, wait, then turn on again.	03800500-2F41	About all chips and nozzles of one color, the non-discharge is detected.	Check the head management sensor and surrounding parts. Check the flexible cable unit and surrounding parts. Check that the printhead is installed correctly. Replace the main controller PCB. Replace the printhead. Replace the carriage unit.
Hardware error. 03800500-2F42 Turn off printer, wait, then turn on again.	03800500-2F42	About single line (A or B) and all nozzles (1280-nozzles) of one color, the non-discharge is detected.	Check the head management sensor and surrounding parts. Check the flexible cable unit and surrounding parts. Check that the printhead is installed correctly. Replace the main controller PCB. Replace the printhead. Replace the carriage unit.
Hardware error. 03800500-2F43 Turn off printer, wait, then turn on again.	03800500-2F43	About single chip (A or B, EVEN or ODD) and all nozzles (640-nozzles) of one color, the non-discharge is detected.	Check the head management sensor and surrounding parts. Check the flexible cable unit and surrounding parts. Check that the printhead is installed correctly. Replace the main controller PCB. Replace the printhead. Replace the carriage unit.
Hardware error. 03800500-2F44 Turn off printer, wait, then turn on again.	03800500-2F44	The non-discharge of the EVEN or ODD line (640-nozzles) is detected.	Check the head management sensor and surrounding parts. Check that the printhead is installed correctly. Replace the main controller PCB. Replace the printhead. Replace the carriage unit.
Hardware error. 03800500-2F47 Turn off printer, wait, then turn on again.	03800500-2F47	Head management sensor failure The APCCHK signal of head management sensor is out of range.	Check the head management sensor and surrounding parts. Replace the head management sensor. Replace the main controller PCB.
Clean right P Head Press Online to clear error.	03800501-280D	Printhead1 non-discharge detection error	Clean the printhead. Identify the nozzles in a nozzle check pattern. Replace the right printhead.
Execute printhead cleaning. If this message is still displayed, replace the printhead. Printing stopped.	03800501-2828	Printhead1 non-discharge error (printhead replacement)	Execute printhead cleaning. Check nozzles with nozzle check pattern. Replace the printhead.
Clean left P Head Press Online to clear error.	03800502-280E	Printhead2 non-discharge detection error	Clean the printhead. Identify the nozzles in a nozzle check pattern. Replace the left printhead.
Execute printhead cleaning. If this message is still displayed, replace the printhead. Printing stopped.	03800502-2829	Printhead2 non-discharge error (printhead replacement)	Execute printhead cleaning. Check nozzles with nozzle check pattern. Replace the printhead.
Ink tank is empty. Press OK and replace ink tank.	03810101-2501	Y ink tank empty	Renew the Y ink tank.
Remaining level of the ink cannot be correctly detected. Check ink tank.	03810101-2511	Unidentified status of Y ink tank (refill ink tank detection)	Invalidate the ink remaining detection function or replace the ink tank.
Ink tank is empty. Press OK and replace ink tank.	03810102-2502	M ink tank empty	Renew the M ink tank.
Remaining level of the ink cannot be correctly detected. Check ink tank.	03810102-2512	Unidentified status of M ink tank (refill ink tank detection)	Invalidate the ink remaining detection function or replace the ink tank.
Ink tank is empty. Press OK and replace ink tank.	03810103-2503	C ink tank empty	Renew the C ink tank.
Remaining level of the ink cannot be correctly detected. Check ink tank.	03810103-2513	Unidentified status of C ink tank (refill ink tank detection)	Invalidate the ink remaining detection function or replace the ink tank.
Ink tank is empty. Press OK and replace ink tank.	03810104-2500	BK ink tank empty	Renew the BK ink tank.
Remaining level of the ink cannot be correctly detected. Check ink tank.	03810104-2510	Unidentified status of BK ink tank (refill ink tank detection)	Invalidate the ink remaining detection function or replace the ink tank.
Ink tank is empty. Press OK and replace ink tank.	03810105-2508	GY ink tank empty	Renew the GY ink tank.
Remaining level of the ink cannot be correctly detected. Check ink tank.	03810105-2518	Unidentified status of GY ink tank (refill ink tank detection)	Invalidate the ink remaining detection function or replace the ink tank.
Ink tank is empty. Press OK and replace ink tank.	03810106-2506	MBK ink tank empty	Renew the MBK ink tank.
Ink tank is empty. Press OK and replace ink tank.	03810106-2507	MBK2 ink tank empty	Renew the MBK ink tank.
Remaining level of the ink cannot be correctly detected. Check ink tank.	03810106-2516	Unidentified status of MBK ink tank (refill ink tank detection)	Invalidate the ink remaining detection function or replace the ink tank.
Remaining level of the ink cannot be correctly detected. Check ink tank.	03810106-2517	Unidentified status of MBK2 ink tank (refill ink tank detection)	Invalidate the ink remaining detection function or replace the ink tank.

Display message	Code*	Condition detected	Action
Ink tank is empty. Press OK and replace ink tank.	03810107-250A	R ink tank empty	Renew the R ink tank.
Remaining level of the ink cannot be correctly detected. Check ink tank.	03810107-251A	Unidentified status of R ink tank (refill ink tank detection)	Invalidate the ink remaining detection function or replace the ink tank.
Ink tank is empty. Press OK and replace ink tank.	03810108-250C	G ink tank empty	Renew the G ink tank.
Remaining level of the ink cannot be correctly detected. Check ink tank.	03810108-251C	Unidentified status of G ink tank (refill ink tank detection)	Invalidate the ink remaining detection function or replace the ink tank.
Ink tank is empty. Press OK and replace ink tank.	03810109-250B	B ink tank empty	Renew the B ink tank.
Remaining level of the ink cannot be correctly detected. Check ink tank.	03810109-251B	Unidentified status of B ink tank (refill ink tank detection)	Invalidate the ink remaining detection function or replace the ink tank.
Ink tank is empty. Press OK and replace ink tank.	03810112-2504	PM ink tank empty	Renew the PM ink tank.
Remaining level of the ink cannot be correctly detected. Check ink tank.	03810112-2514	Unidentified status of PM ink tank (refill ink tank detection)	Invalidate the ink remaining detection function or replace the ink tank.
Ink tank is empty. Press OK and replace ink tank.	03810113-2505	PC ink tank empty	Renew the PC ink tank.
Remaining level of the ink cannot be correctly detected. Check ink tank.	03810113-2515	Unidentified status of PC ink tank (refill ink tank detection)	Invalidate the ink remaining detection function or replace the ink tank.
Ink tank is empty. Press OK and replace ink tank.	03810115-2509	PGY ink tank empty	Renew the PGY ink tank.
Remaining level of the ink cannot be correctly detected. Check ink tank.	03810115-2519	Unidentified status of PGY ink tank (refill ink tank detection)	Invalidate the ink remaining detection function or replace the ink tank.
Ink insufficient. Press OK and replace ink tank.	03810201-2581	Low on the Y ink tank (as during cleaning)	Replace with a fully replenished Y ink tank.
Ink insufficient. Press OK and replace ink tank.	03810201-2591	Low on the Y ink tank (during pre-printing checks)	Replace with a fully replenished Y ink tank.
Ink insufficient. Press OK and replace ink tank.	03810202-2582	Low on the M ink tank (as during cleaning)	Replace with a fully replenished M ink tank.
Ink insufficient. Press OK and replace ink tank.	03810202-2592	Low on the M ink tank (during pre-printing checks)	Replace with a fully replenished M ink tank.
Ink insufficient. Press OK and replace ink tank.	03810203-2583	Low on the C ink tank (as during cleaning)	Replace with a fully replenished C ink tank.
Ink insufficient. Press OK and replace ink tank.	03810203-2593	Low on the C ink tank (during pre-printing checks)	Replace with a fully replenished C ink tank.
Ink insufficient. Press OK and replace ink tank.	03810204-2580	Low on the BK ink tank (as during cleaning)	Replace with a fully replenished BK ink tank.
Ink insufficient. Press OK and replace ink tank.	03810204-2590	Low on the BK ink tank (during pre-printing checks)	Replace with a fully replenished BK ink tank.
Ink insufficient. Press OK and replace ink tank.	03810205-2588	Low on the GY ink tank (as during cleaning)	Replace with a fully replenished GY ink tank.
Ink insufficient. Press OK and replace ink tank.	03810205-2598	Low on the GY ink tank (during pre-printing checks)	Replace with a fully replenished GY ink tank.
Ink insufficient. Press OK and replace ink tank.	03810206-2586	Low on the MBK ink tank (as during cleaning)	Replace with a fully replenished MBK ink tank.
Ink insufficient. Press OK and replace ink tank.	03810206-2587	Low on the MBK2 ink tank (as during cleaning)	Replace with a fully replenished MBK ink tank.
Ink insufficient. Press OK and replace ink tank.	03810206-2596	Low on the MBK ink tank (during pre-printing checks)	Replace with a fully replenished MBK ink tank.
Ink insufficient. Press OK and replace ink tank.	03810206-2597	Low on the MBK2 ink tank (during pre-printing checks)	Replace with a fully replenished MBK ink tank.
Ink insufficient. Press OK and replace ink tank.	03810207-258A	Low on the R ink tank (as during cleaning)	Replace with a fully replenished R ink tank.
Ink insufficient. Press OK and replace ink tank.	03810207-259A	Low on the R ink tank (during pre-printing checks)	Replace with a fully replenished R ink tank.
Ink insufficient. Press OK and replace ink tank.	03810208-258C	Low on the G ink tank (as during cleaning)	Replace with a fully replenished G ink tank.
Ink insufficient. Press OK and replace ink tank.	03810208-259C	Low on the G ink tank (during pre-printing checks)	Replace with a fully replenished G ink tank.
Ink insufficient. Press OK and replace ink tank.	03810209-258B	Low on the B ink tank (as during cleaning)	Replace with a fully replenished B ink tank.
Ink insufficient. Press OK and replace ink tank.	03810209-259B	Low on the B ink tank (during pre-printing checks)	Replace with a fully replenished B ink tank.
Ink insufficient. Press OK and replace ink tank.	03810212-2584	Low on the PM ink tank (as during cleaning)	Replace with a fully replenished PM ink tank.
Ink insufficient. Press OK and replace ink tank.	03810212-2594	Low on the PM ink tank (during pre-printing checks)	Replace with a fully replenished PM ink tank.
Ink insufficient. Press OK and replace ink tank.	03810213-2585	Low on the PC ink tank (as during cleaning)	Replace with a fully replenished PC ink tank.

Display message	Code*	Condition detected	Action
Ink insufficient. Press OK and replace ink tank.	03810213-2595	Low on the PC ink tank (during pre-printing checks)	Replace with a fully replenished PC ink tank.
Ink insufficient. Press OK and replace ink tank.	03810215-2589	Low on the PGY ink tank (as during cleaning)	Replace with a fully replenished PGY ink tank.
Ink insufficient. Press OK and replace ink tank.	03810215-2599	Low on the PGY ink tank (during pre-printing checks)	Replace with a fully replenished PGY ink tank.
No ink tank loaded. Press OK and check ink tank.	03830101-2521	Y ink tank not installed.	Install a Y ink tank.
! Do not pull out ink tank. (Change to the following message) ! Do not use removed ink tanks in other printers.	03830101-25AC	Y ink tank detachment (when using the refill ink tank)	Install the detached ink tank.
No ink tank loaded. Press OK and check ink tank.	03830102-2522	M ink tank not installed.	Install a M ink tank.
! Do not pull out ink tank. (Change to the following message) ! Do not use removed ink tanks in other printers.	03830102-25AB	M ink tank detachment (when using the refill ink tank)	Install the detached ink tank.
No ink tank loaded. Press OK and check ink tank.	03830103-2523	C ink tank not installed.	Install a C ink tank.
! Do not pull out ink tank. (Change to the following message) ! Do not use removed ink tanks in other printers.	03830103-25AA	C ink tank detachment (when using the refill ink tank)	Install the detached ink tank.
No ink tank loaded. Press OK and check ink tank.	03830104-2520	BK ink tank not installed.	Install a BK ink tank.
! Do not pull out ink tank. (Change to the following message) ! Do not use removed ink tanks in other printers.	03830104-25A9	BK ink tank detachment (when using the refill ink tank)	Install the detached ink tank.
No ink tank loaded. Press OK and check ink tank.	03830105-2528	GY ink tank not installed.	Install a GY ink tank.
No ink tank loaded. Press OK and check ink tank.	03830106-2526	MBK ink tank not installed.	Install a MBK ink tank.
No ink tank loaded. Press OK and check ink tank.	03830106-2527	MBK2 ink tank not installed.	Install a MBK ink tank.
! Do not pull out ink tank. (Change to the following message) ! Do not use removed ink tanks in other printers.	03830106-25B0	MBK ink tank detachment (when using the refill ink tank)	Install the detached ink tank.
! Do not pull out ink tank. (Change to the following message) ! Do not use removed ink tanks in other printers.	03830106-25B1	MBK2 ink tank detachment (when using the refill ink tank)	Install the detached ink tank.
Remaining level of the ink cannot be correctly detected. Check ink tank.	03830107-251A	Unidentified status of R ink tank (refill ink tank detection)	Invalidate the ink remaining detection function or replace the ink tank.
No ink tank loaded. Press OK and check ink tank.	03830107-252A	R ink tank not installed.	Install a R ink tank.
Remaining level of the ink cannot be correctly detected. Check ink tank.	03830108-251C	Unidentified status of G ink tank (refill ink tank detection)	Invalidate the ink remaining detection function or replace the ink tank.
No ink tank loaded. Press OK and check ink tank.	03830108-252C	G ink tank not installed	Install a G ink tank.
Remaining level of the ink cannot be correctly detected. Check ink tank.	03830109-251B	Unidentified status of B ink tank (refill ink tank detection)	Invalidate the ink remaining detection function or replace the ink tank.
No ink tank loaded. Press OK and check ink tank.	03830109-252B	B ink tank not installed.	Install a B ink tank.
No ink tank loaded. Press OK and check ink tank.	03830112-2524	PM ink tank not installed.	Install a PM ink tank.
No ink tank loaded. Press OK and check ink tank.	03830113-2525	PC ink tank not installed.	Install a PC ink tank.
No ink tank loaded. Press OK and check ink tank.	03830115-2529	PGY ink tank not installed.	Install a PGY ink tank.
Ink tank error. Press OK and replace ink tank.	03830201-2541	Y ink tank ID error	Replace with a valid Y ink tank.
Ink tank error. Press OK and replace ink tank.	03830202-2542	M ink tank ID error	Replace with a valid M ink tank.

Display message	Code*	Condition detected	Action
Ink tank error. Press OK and replace ink tank.	03830203-2543	C ink tank ID error	Replace with a valid C ink tank.
Ink tank error. Press OK and replace ink tank.	03830204-2540	BK ink tank ID error	Replace with a valid BK ink tank.
Ink tank error. Press OK and replace ink tank.	03830205-2548	GY ink tank ID error	Replace with a valid GY ink tank.
Ink tank error. Press OK and replace ink tank.	03830206-2546	MBK ink tank ID error	Replace with a valid MBK ink tank.
Ink tank error. Press OK and replace ink tank.	03830206-2547	MBK2 ink tank ID error	Replace with a valid MBK ink tank.
Ink tank error. Press OK and replace ink tank.	03830207-254A	R ink tank ID error	Replace with a valid R ink tank.
Ink tank error. Press OK and replace ink tank.	03830208-254C	G ink tank ID error	Replace with a valid G ink tank.
Ink tank error. Press OK and replace ink tank.	03830209-254B	B ink tank ID error	Replace with a valid B ink tank.
Ink tank error. Press OK and replace ink tank.	03830212-2544	PM ink tank ID error	Replace with a valid PM ink tank.
Ink tank error. Press OK and replace ink tank.	03830213-2545	PC ink tank ID error	Replace with a valid PC ink tank.
Ink tank error. Press OK and replace ink tank.	03830215-2549	PGY ink tank ID error	Replace with a valid PGY ink tank.
Maintenance cartridge full. Replace the maintenance cartridge.	03841001-2819	Maintenance cartridge full	Renew the maintenance cartridge.
No Maintenance Cartridge capacity. Replace the maintenance cartridge.	03841001-281B	Not enough space in the maintenance cartridge prior to cleaning	Replace the maintenance cartridge.
No maintenance cartridge. Check the maintenance cartridge.	03841101-2818	Maintenance cartridge not installed.	Install the maintenance cartridge.
Maintenance cartridge problem. Replace the maintenance cartridge.	03841201-2816	Maintenance cartridge EEPROM error	Renew the maintenance cartridge.
Maintenance cartridge problem. Replace the maintenance cartridge.	03841201-2817	Maintenance cartridge ID error	Renew the maintenance cartridge.
Push paper a little	03860001-2E06	Waiting for manual feed paper to be inserted.	Push the cut sheet a little.
Manual printing is selected, but a roll is loaded. Press Load/Eject and remove the roll.	03860001-2E0C	Data with a cut sheet specification has been received when roll media are loaded.	Load cut sheets at the paper tray port.
Top paper feed slot is selected. Press OK and load a sheet.	03860002-2E02	Data with a cut sheet specification has been received but no cut sheets are loaded.	Load cut sheets at the paper tray port.
Sheet printing is selected. Press Load/Eject and load sheets.	03860002-2E05	Manual feed paper setting job has been received, but no manual feed paper is loaded.	Load cut sheet in the manual feed paper slot.
Remove the cut sheets.	03860002-2E07	Waiting for manual feed paper to be removed.	Remove the cut sheet.
Roll printing is selected, but sheets are loaded. Press OK, remove the sheets, and load a roll.	03860002-2E0A	Data with a roll media specification has been received when a cut sheet tray is loaded.	Replace with roll media.
This type of media is not compatible with HP-GL/2.	03860006-2825	Paper type mismatch at HP-GL/2 printing	Exchange for the compatible paper to HP-GL/2 before reprinting.
! Cannot print as selected. Another roll is in use. Stop: Stop Printing	03860007-2E40	Lower roll data has been received when there is print in the upper roll.	Press the Stop button to delete the print job.
! Cannot print as selected. Another roll is in use. Stop: Stop Printing	03860007-2E41	Lower roll data has been received when there is print in the lower roll.	Press the Stop button to delete the print job.
Borderless printng not possible. Check roll position. Online: Print Load/Eject: Change Paper	03861001-2405	Paper loaded at a position inaccessible for borderless printing	Check to see if a borderless printing spacer is installed. Reload the paper.
Borderless printng not possible. Check paper size setting.	03861001-2406	Data unfit for borderless printing	Check the data, and then print again.
Borderless printng not possible. Paper stretched or shrank. Confirm usage cond. of the paper.	03861001-2407	Borderless printing disabled (engine detection)	Reload the paper.
Borderless printng not possible. Check supported paper.	03861001-2408	Borderless printing disabled (unsupported size)	Check the media size.
Insufficient paper for job Online: Print Stop: Stop Printing Load/Eject: Change Paper	03862000-2E09	Not enough roll media on remaining roll media quantity detection	Renew the supply of roll media.
Insufficient paper for job	03862001-2E31	Not enough roll media	Renew the supply of roll media.
Insufficient paper for job	03862002-2E32	Not enough roll media (lower roll)	Renew the supply of roll media.

Display message	Code*	Condition detected	Action
Cannot adjust printhead. Press Online to clear the error and readjust printhead.	03863000-2820	Printhead registration unadjustable	Check the paper on which a pattern is printed for smears. Check the environment for interferences from outside light. Clean the printhead.
Cannot adjust printhead. Press Online to clear the error and readjust printhead.	03863000-2821	LF unadjustable	Check the paper on which a pattern is printed for smears. Check the environment for interferences from outside light. Clean the printhead.
Cannot adjust eccentric. Press Online to clear the error.	03863000-2822	Eccentricity correction disabled	Check to see if paper has not jammed.
Cannot adjust optic axis. Press Online to clear the error.	03863000-2824	Optical axis error	Check the multi sensor. Check the head management sensor.
LFNG XXX XXX XXX XXX press OK key	03863000-2826	Eccentricity correction error	Check to see if paper has not jammed.
CR MOTOR TUNING ERROR :PRESS OK	03863000-282A	Carriage identification process NG Carriage identification process failed. For service mode.	Press the OK button to clear the error. It may essentially be a sensor failure, and the similar error might be repeated.
CR VIBRATION ERROR :PRESS OK	03863000-282B	Carriage abnormal vibration error Carriage vibration was detected when performing carriage identification process. For service mode.	Press the OK button to clear the error. It may essentially be a sensor failure, and the similar error might be repeated.
CRNG XXX XXX XXX XXX press OK key	03863000-2831	Printhead registration unadjustable (when performing CR REG).	Check the paper on which a pattern is printed for smears. Check the environment for interferences from outside light. Clean the printhead.
! Cannot calibrate. Press OK and try calibration again.	03863000-2F34	Color calibration adjustment failure error	Perform calibration again, and if the same error occurs, replace the multisensor.
Error! E02827 Cannot adjust.	03863000-4034	Sensor calibration error	Check the paper on which a pattern is printed for smears. Check the environment for interferences from outside light. Clean the printhead.
PaprWidth Mismatch. Plain Paper ISO A3 Change Paper Print Anyway Stop Printing	03864001-2E45	Roll media width mismatch: after resuming suspended job At start of printing, all of the following conditions have been met. - GARO PJL command "ROLLWIDTH" was used. - Roll paper has been loaded. - PJL-specified standard paper width and the width of loaded roll paper are different. - [Paper Mismatch Detection] is set to [Stop].	(1) Choose [Print Anyway] to print forcibly. The paper width setting by PJL command will be ignored, and printing is executed using the clip size calculated using the paper width of loaded paper. If borderless printing is specified at the same time, borderless printing status will be continued. At this time, if a borderless printing supported size that is different from the specified roll paper is loaded, it may end up in borders in parts other than the top edge and left edge. (2) Choose [Stop Printing] or press the Stop button to stop printing. (3) Choose [Change Paper] or lift the release lever to change paper.
Wrong paper type.	03864002-2E42	Paper type mismatch	Check the type of paper that can be fed and reload the paper.
! Paper position not suitable for borderless printing Fix Paper Position Print With Border Stop Printing	03864004-2409	Borderless printing disabled (physical) : after resuming suspended job At start of printing, all of the following conditions have been met. - Borderless printing data has been received. - Roll paper has been loaded, and the paper edge opposite to HP is shifted from the predefined position relative to the borderless pre-ejection opening by 1mm or more.	(1) Choose [Print With Border] and execute a forced printing. Borderless printing setting will be ignored and printing will be executed with default margins. The default margins vary depending on the specified feeding slot or paper type. (2) Choose [Stop Printing] or press the Stop button to stop printing. (3) Choose [Fix Paper Position] and fix the position according to the guidance.
Borderless printing not possible. Check supported paper. Change Paper Print With Border Stop Printing	03864004-240A	Borderless printing disabled (unsupported size) : after resuming suspended job At start of printing, all of the following conditions have been met. - Borderless printing data has been received. - Roll paper not supporting borderless printing has been loaded.	(1) Choose [Print With Border] and execute a forced printing. Borderless printing setting will be ignored and printing will be executed with default margins. The default margins vary depending on the specified feeding slot or paper type. (2) Choose [Stop Printing] or press the Stop button to stop printing. (3) Choose [Change Paper] or lift the release lever to change paper.
Cannot cut paper. Lift the release lever and reload the paper.	03870001-2015	Cutting failure	Cut paper manually. Check the cutter.
Cannot cut paper. Lift the release lever and reload the paper.	03870001-2019	Cut failure (during jam occurrence)	Check the cutter unit and surrounding parts. Replace the cutter.
Media Take-up error. Check the paper. Press Online to clear error.	03890000-2920	Media take-up unit cannot take up the media.	Check to see if paper has not jammed.
Rewinding error. Check for jam at indicated position. Press Online to clear error.	03890000-2921	Media take-up unit takes up the media continuously.	Check the media take-up paper detection sensor and surrounding parts. Replace the media take-up paper detection sensor.

Display message	Code*	Condition detected	Action
Unknown file. Check file format. Turn off printer, wait a while, then turn it on again.	03900001-4042	MIT data transfer failure.	Verify the validity of MID data before transferring it.
Unknown file. Check file format. Turn off printer, wait a while, then turn it on again.	03900001-4049	ROM data for another model has been transferred.	Check supported models for firmware or maintenance cartridge.

8.4 Sevice Call Table

8.4.1 Service Call Errors

*: Codes correspond to the numbers shown on the DISPLAY in the service mode.

Code*	Description	Action
E141-4046	Number of recovery rotations reaching 50,000 or more	Replace the purge unit, and then clear the parts counter in the service mode.
E144-4047	Number of carrriage scan operation is full	Replace the tube unit, and then clear the parts counter in the service mode.
E144-4048	Printhead ink filling failure	Replace the printhead.
E146-4001	Waste ink recovery count error	Replace the platen duct or mist fan or mist filter or suction fan, and then clear the parts counter in the service mode. (Confirm the parts reached to the exchange value by the service mode or PRINT INF.)
E161-403E	Abnormal temperature rise in left printhead	Replace the left printhead.
E161-403F	Abnormal temperature rise in right printhead	Replace the right printhead.
E161-4050	Printhead ink filling non-ejection detection error (when installing the printer or replacing the printhead)	Replace the printhead.
E194-404A	Non-discharging nozzle count error	Replace the head management sensor unit, and then clear the parts counter in the service mode.
E196-4040	Checksum error (when executing the firmware update)	Execute firmware update or replace the main controller PCB.
E196-4041	Flash memory erase error (when executing the firmware update)	Execute firmware update or replace the main controller PCB.
E196-4042	Flash memory write error (when executing the firmware update)	Execute firmware update or replace the main controller PCB.
E196-4043	Memory error (when executing the firmware update)	Execute firmware update or replace the main controller PCB.
E196-4044	Firmware size error (when executing the firmware update)	Execute firmware update or replace the main controller PCB.
E196-4045	EEPROM read/write error (controller part)	Replace the main controller PCB.
E196-4049	Firmware data error (when executing the firmware update)	Execute firmware update or replace the main controller PCB.
E196-404C	Serial number mismatch between main controller PCB and maintenance cartridge ROM PCB.	Execute PCB replacement mode or replace the main controller PCB.
E196-404D	Machine ID mismatch between main controller PCB and maintenance cartridge ROM PCB.	Execute PCB replacement mode or replace the main controller PCB.
E196-404E	EEPROM read/write error (engine part)	Replace the main controller PCB.
E198-401C	RTC error	Replace the lithium battery or replace the main controller PCB.
E198-401D	RTC low battery error	Replace the lithium battery or replace the main controller PCB.
E198-401E	RTC clock stop	Replace the lithium battery or replace the main controller PCB.
E199-404B	Temperature/humidity sensor connector out of position	Check the temperature/humidity sensor connector or replace the sensor.
E602-401A	HDD read/write error (HDD failure)	Replace the HDD unit.
E602-401B	HDD connection error	Check the HDD connector or replace the HDD.
E602-405A	HDD size error	Replace the HDD unit.
E602-405B	HDD model error	Replace the HDD unit.

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